

BRIEF COMMUNICATIONS**THE JU-LMU LINK FOR MEDICAL EDUCATION:
EXCHANGING PROBLEM-BASED LEARNING AND
COMMUNITY-BASED EDUCATION**

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ABSTRACT

BACKGROUND: *We introduce a newly formed link for medical education between Jimma University (JU) in Ethiopia and Ludwig-Maximilians-University (LMU) in Munich, Germany. Among others this cooperation has the goal to introduce the problem-based learning (PBL) approach already in use at LMU to JU and to possibly the community-based education method (CBE) successfully used in Jimma to the LMU. In order to achieve this, mutual exchange of staff and students between these two universities is necessary.*

METHODS: *As the first part of this exchange, six interns in their final year in Medical School at Jimma University and five staff members visited LMU in Munich in June and July 2002. One of the major components of this visit was the introduction and familiarization of seniors and students with PBL. The students came for four weeks, the seniors for ten days. Upon their arrival, after every week of their stay and just before departure the students filled in questionnaires. The staff members received questionnaires upon arrival and just before departure. All these questionnaires were evaluated after completion of the visit.*

RESULTS: *The evaluation of the questionnaires showed that the subjective wishes and goals had mostly been met, as well as the objectives set in mutual agreement for staff and students. Only minor faults were detectable in the planning; they mostly were due to the limited amount of time available which required leaving out some program points desired by both sides.*

CONCLUSION: *According to the objectives the set goals for seniors and students were sufficiently met. For the future we plan to integrate Ethiopian students coming to LMU for PBL introduction into the courses held for the German students. Staff members travelling to Germany for becoming PBL tutors will participate in LMU's regular PBL-tutor-training program for five full days held twice a year.*

KEYWORDS: **problem-based learning, medical education, community-based education**

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INTRODUCTION

In medicine and health care there exist numerous co-operations between developed and developing countries. These links have included teaching, research, and training, providing personnel (temporary or permanent) as well as donations and technical support.

In the last decade such co-operations have been critically analyzed regarding ethics (1), efficiency and funding (2).

One major problem regarding efficiency that many of especially the early projects have or had in common is that Western physicians came to poor countries to work there for a certain amount of time and left again afterwards with the situation in the country mostly remaining unchanged since no teaching and training of local staff had occurred: „they have been giving fish to the people but they have not taught them how to fish“ (<http://www.addistribune.com/Archives/2002/05/31-05-02/No.htm>).

Teaching collaborations between universities of Western countries and developing countries are quite rare; in most cases “teaching” in the framework of such collaborations is considered to be satisfactorily covered by mutual exchange of staff and students (cf. e.g. (3), (4)). While this is definitely a worthwhile component, a change in the curriculum of the university in the developing country could be considered as more fruitful since in this case the education of many young doctors receives improvement.

We introduce a newly formed link between a major European university (Ludwig-Maximilians-Universität in Munich, Germany - LMU) and a relatively young university in Africa (Jimma University in Jimma Town, Ethiopia - JU). While this link has several components, one of the original reasons for initiation was the implementation of problem-based

learning (PBL), already used in Munich, in Jimma and the possible transfer of community-based education (CBE) (5-7), the main training concept in Jimma, to Munich.

The Project – The JU-LMU Link

The role of medical schools, like that of any other higher learning institution, is to:

1. Teach students to acquire knowledge, attitude and relevant skills that will enable them to function in a society for mutual benefit.
2. Conduct research with the aim of increasing scientific knowledge that will be utilized to prevent and to solve health problems of the society and individuals and to promote health.
3. Provide quality service to the surrounding community.

For successful handling of these responsibilities there must be collaboration of medical teaching institutes beyond their geographic boundaries. The World Federation of Medical education (WFME) task force which worked on setting global standards in medical education recommends links between medical schools. (8)

In view of the above both Jimma University School of Medicine in Ethiopia and Medical Faculty of Ludwig-Maximilians-University in Munich, Germany, have reached the decision to form a partnership.

The objective of this cooperation is to deepen the understanding of medical problems in Germany for Ethiopian medical students and faculty, and to deepen the understanding of medical problems in Ethiopia for German medical students and faculty. This goal will be reached by establishing various components.

Student exchange program from Jimma to Munich:

Per year, 4-6 students currently enrolled at Jimma University will be given the opportunity to participate in a program of 4 to 6 weeks duration at LMU. The objectives for the students are to broaden their knowledge and give them experience with modern hospital settings and diseases of the affluent society, as well as to expose them to the method of problem-based learning with the intention of establishing and refining the method of problem-based-learning in Jimma after their return from Munich. They also have the opportunity to work in a research program and get familiar with modern research technologies. Each student is expected to contribute to the education process in Jimma according to his or her skills and ability after returning to Ethiopia.

The students who will participate in the program are chosen based on items such as fluency in the English language, previous successful medical clerkships, academic performance and gender as well as their willingness to contribute to education and improving health care upon return.

Student exchange from Munich to Jimma:

Topics such as number of students, duration of the stay, place of activity, selection process etc. are handled in a fashion analogue to the student exchange from Jimma to Munich. The students' objectives (among others) are either

- a) to contribute to the implementation of problem-based learning at Jimma University Medical School by writing paper cases, holding tutorials etc.
- b) to participate in the community-based education (CBE) program implemented at Jimma University and support a possible transfer of

this method to Ludwig-Maximilians-University

- c) to introduce a new laboratory technology in Jimma which the student might have worked on in the framework of his/her doctoral thesis which is both feasible and useful in primary patient care.

Academic staff exchange from Jimma to Munich:

Physicians from Jimma University may come to Munich with objectives including the following: training for future PBL tutors, further training for specialists in new techniques (e.g. endoscopy), specialty training for promising residents etc.

Academic staff exchange from Munich to Jimma:

Selected physicians from LMU Medical School will travel to Jimma in order to train local staff in various techniques (e.g. endoscopy, surgery, laboratory) and to give lectures to staff and students. Eventually they may also serve as external examiners for student exams.

Research co-operations:

In the framework of the project it is also intended to initiate research co-operations between JU Medical School and the various departments of LMU Medical School in subjects ranging from malaria and HIV to obstetrics and trauma.

Library/Internet/Medical equipment project:

The mutual student exchange program would suffer if not enough books were available to medical students or if internet access to the medical literature was insufficient. The current library situation as well as the net access deserves improvement. Therefore, books as well as necessary electronic equipment will be

organized and given to Jimma University along with the necessary technical support. Medical equipment will also be sent to Jimma.

THE STUDY- EXCHANGE

The students

As the first part of the student exchange program and also as the first activity of the entire project, six Ethiopian medical students came to Munich for four weeks in June and July 2002.

These students were all interns at Jimma University, i.e. in their sixth and final year of medical school. They had already passed their major exam which is usually taken after the fifth year. The group consisted of five male students and one female student; the age ranged from 22 to 24 years. Except for one, none of the students had ever been abroad before. They were chosen to participate in the program according to academic merit, discipline and their willingness to further contribute to improving health care in their native land upon return.

The main goals of their stay in Munich at the LMU were to

- a) introduce them to and familiarize them with the concept of problem-based learning (PBL)
- b) introduce them to the setting in which clinical medicine is practiced in affluent societies
- c) provide possibilities for cultural exchange between African and European students.

In order to fulfill these objectives we designed a special curriculum and schedule for the students which included:

ad a).: PBL tutorials and seminars on tutoring, case-writing etc. at least every second day; the students were also required to write their own paper case each during

the time of their stay. These cases consisted of patients the students had encountered themselves in Jimma University Hospital. In the first two weeks, we used cases that had been written for the PBL course conducted for German students and translated them into English. In week 3 and 4 we used the cases that the Ethiopian students had written themselves; in the respective session the student who had written the case also served as tutor, which was done in order to give them some hands-on experience in tutoring.

ad b).: Students were put on rotations in specialties of their choice; they spent their mornings and part of their afternoons at the respective departments and wards. Additionally they had specially organized seminars and practical exercises on selected topics like chest x-ray, basic trauma care or newborn resuscitation in English. They also participated in clinical meetings, which were held in German.

ad c).: Students were offered a variety of leisure time activities including going mountain hiking, opera visit, boat rides etc. and were also given the possibility to mix with German students.

Upon arrival, after every week and upon departure feed-back sessions were conducted to elaborate how the students felt about their schedule, to set the rotations for the coming week, to see if there were any organizational problems and if the students had any wishes or complaints. During these sessions they also received a questionnaire in order to evaluate the schedule and their stay. These questionnaires contained open questions as well as scale questions with a five-point scale made up of the following items: 1- yes, very much, 2-yes, up to a point, 3- indifferent, 4- no, not really and 5-no, not at all. The questions evaluated the quality of rotations and daily clinical activities (e.g. clinical meetings), seminars,

exercises, PBL topics, overall acceptance of the program and personal issues (e.g. homesickness). The forms also asked for the number of times that the students have attended recurrent program points: ward rounds, clinical conferences and seminar for interns.

The staff members

Additionally to the four-week-long program of the students we also created a schedule for the five physicians from Jimma University (three surgeons, one internist, and one pediatrician) who came for a ten-day-long stay in Munich at LMU at the end of June 2002. The objectives for this group were according to their own wishes:

- a) introduction and familiarization with problem-based learning (PBL)
- b) establish research and other co-operations in various fields
- c) provide possibilities for cultural exchange

In order to achieve as many of these objectives as possible we arranged the following program points:

ad a).: similar to the students the teacher also had PBL tutorials and seminars on tutoring, case-writing etc.

ad b).: meetings with heads and other members of various departments, e.g. Institute for Tropical Medicine, Department of Internal Medicine, Department of Microbiology etc.; joint session with members of several departments and institutions were also organized. They visited three district hospitals (Kreiskrankenhaus Starnberg, Zentralklinikum Augsburg and Kreiskrankenhaus Wolfratshausen) which will participate in the cooperation as partners for district hospitals close to

Jimma University: Gambella, Mizan Teferi and Mettu, respectively.

ad c).: similar to the students the teachers were offered a variety of leisure time activities ranging from city tours and the opera to outdoor activities like mountain hiking. They were also able to make individual arrangements for meetings with German physicians.

Two feedback-sessions were conducted, one upon arrival and one just before departure, on both of which they received questionnaires to fill out; these were all open questions asking for the goals of their visit and their wishes as well as their evaluation afterwards. A third session in the middle of the teachers' stay served as an opportunity to further refine the details of the project and determine future ventures to be carried out.

All the questionnaires were analyzed using SPSS for the scale questions. All values are given as means (\pm standard deviation) unless noted otherwise.

RESULTS

The students received questionnaires upon arrival, after every week of their stay and just before departure. The staff members received questionnaires upon arrival and just before departure.

The questionnaires upon arrival and before departure contained only open questions; the weekly questionnaires of the students consisted of open questions as well as scale questions.

Just before departure, four of the five staff members filled in a questionnaire.

In week 4 and just before departure, only five of the six students filled in a questionnaire since one student had to leave earlier.

Upon arrival: expectations and objectives

When asked for the primary objective for their visit, both staff and students declared

introduction to and familiarization with problem-oriented learning their number-one priority. Other goals mentioned included the possibility for cultural exchange, the introduction to medical care in an affluent society and strengthen of the link between the two universities. While students considered the cultural exchange to be very important, the emphasis of the staff members was mostly put on the cooperation between the faculties and link work.

The answers to the question „Which things in particular would you like to learn / to see/ to get accomplished while you are?“ Showed significant divergence between students and staff members. While both groups again declared PBL their number one priority, the students further hoped to see modern equipment and procedures, share cultures and learn about patient management, while the staff members had specific wishes what they wanted to see in the hospital (endoscopy, newborn resuscitation, surgical procedures), looked forward to lectures on different topics and hoped to create co-operations with different departments and their members.

Students were also asked which learning/teaching methods they knew about/had already experienced. All six students had had contact with group tutorials in the form of discussions with the tutor as the (active) guide; they also had already experienced video-assisted teaching in classes about seizures etc. All of them knew about computer-assisted teaching, but none had had practical experience with it. Only half of the group knew theoretically about problem-based learning; neither of them had ever had any hands-on experience.

Student questionnaires at the end of week 1, 2, 3 and 4.

Over the course of the four weeks the students repeatedly evaluated the quality of

their rotations, ward rounds, clinical meetings and seminar for interns as well as the specially conducted practical exercises, seminars and PBL tutorials. They were also asked for the number of times they have attended recurrent program points (ward rounds, clinical meetings and seminar for interns). Most questions were asked as scale questions with the scale consisting of: 1-yes, very much, 2-yes, up to a point, 3-indifferent, 4-no, not really and 5-no, not at all, or, according to the question, the numbers from 1 to 5 for the number of weekdays that a certain recurrent program point was attended.

The answers to the questions about the recurrent program points are given in table 1. In week 2, we additionally asked them how they would explain PBL to somebody who had never heard about it in five sentences. Keywords that kept reappearing included „self-motivation“, „creative/innovative“, „independent students“ and „team spirit“. We also wanted to know what they thought was the best thing about PBL; here, answers included „self-motivation“, „life-long learning“, „communication skills“ and „self-learning“.

In week 3 and 4, we also asked how they felt about case-writing and tutoring. Regarding case-writing, most found it „interesting“; one student stated that „[...]it feels good to write a case that others can use[...]“. All students declared that they also liked tutoring very much; as one student put it: „It gives me pleasure when I see students discuss by themselves topics stated by the learning objectives [...]“. Another student wrote: „[I felt] anxious, at the start I had an urgent feeling to talk with the group when something I know well is discussed.“

The seminars on the schedule contained topics ranging from Munich and medical education in Germany in general over the PBL-related topics of an

Introduction to PBL, computer-based PBL, PBL-tutoring and case-writing up to seminars about local anesthesia and basic trauma care. When asking the question „Was this seminar helpful for you?“, all of these seminars received relatively good grades ranging from 1.17 (± 0.408) to 1.83 (± 0.753). When they were asked for comments in open questions the students requested more time or a second seminar for most topics; the seminars with clinical topics often sparked the desire to either see the described concepts in action or to practice them hands-on.

Practical exercises which were conducted included three computer courses (one on computer use in general, one on MEDLINE research and one on word-processing). Each of these courses was well-accepted with very good grades: 1.33 (± 0.816), 1.00 (± 0) and 1.00 (± 0), respectively. Open comments we received when asking „What could be done to make this exercise better?“ mostly prompted the answer: „give more time“, „a bit longer“ etc. A radiology session with the focus on chest x-rays was also organized; the response to this was also a very positive one: the average here was 1.17 (± 0.408). Open comments included suggestions to conduct similar sessions with other x-ray types and imaging techniques like CT scans or MRI.

For PBL tutorials we used prewritten cases in the first two weeks, both with topics that we considered to be important for African students: one patient with tropical malaria, ascariasis and giardiasis, and another patient with chronic hepatitis B. The students considered both of these cases useful for teaching (1.00 (± 0) and 1.33 (± 0.516), respectively), not too easy (3.50 ± 1.049 and 3.67 ± 1.366) and relevant for students from Ethiopia (1.00 ± 0 and 1.17 ± 0.408). We also asked if there were any cultural specialties in the case that would make it hard to understand for

students coming from other cultures. Here, the impressions of the students differed again: the malaria case received grades from 2 to 4 with an average of 2.83 (± 0.983); the answers regarding the hepatitis case ranged from 2 to 5 with an average of 3.50 (± 1.049).

In each of the weeks three and four we practiced PBL with three cases written by one student each. Here we wanted to know if the non-authors considered the cases of their fellow students too easy and if they thought that the case contained topics and learning objectives important to master for a medical student. Replies to the question „Imagine being in the first/second clinical year. Would this case have been too easy for you?“ answers ranged from 2.75 (± 2.062) to 3.67 (± 1.366). [The choice of type of question attributes to the fact that the guest students were already interns who were supposed to write cases for first/second year clinical students.] When we asked „Are the topics and learning objectives of this case important?“, answers were relatively unanimous: averages laid between 1.25 (± 0.50) and 1.50 (± 0.977) for cases 1 to 6.

In the open comments, the students viewed their own cases far more critically than the prewritten cases; for 5 out of these 6 cases the suggestion was made to improve the narrative style and to make it more „story-like“. They also repeatedly advised each other to „modify it through time“.

Before departure: achieved goals, fulfilled expectations

When the staff members left at the end of the students' third week, they again received a questionnaire, seeking to evaluate to what extent their expectations had been fulfilled.

All four of the staff members who turned the questionnaire in stated that their expectations had been more than fulfilled;

the only point of critic was that because of the tight link program in these ten days, the cultural exchange and clinical encounter had in comparison suffered a little. When asked which program points were especially valuable to them personally, 3 out of 4 included PBL in their list; further reappearing topics were lectures given on various topics by experts in that field as well as meeting „prominent intellectuals“ and „respected professionals“. For their own professional career the training in „new medical education methods“ and exposure to modern techniques in their respective specialties (laparoscopy, endoscopy) were claimed to have been most important. On the part of the university, the most important achievements were – according to the staff members– the „various links formed–research, scholarship opportunities, internet connections and PBL“.

The 5 students who had filled out the questionnaire just before their departure also claimed that their expectations had been almost or totally fulfilled. Most

commonly stated critic point was that due to the full schedule there had been too little time for cultural exchange and sight-seeing. For them personally they found a variety of programs especially helpful, including PBL topics, clinical attachments and the cultural exchange including the excursions. When asked which program points they considered to be most helpful for their professional career, the clinical attachments as well as the PBL experience were repeatedly mentioned. For their university they considered the PBL training as well as the newly acquired clinical skills to be most valuable. They were also questioned about teaching-methods again; when asked which they liked best, PBL was the almost unanimous answer (one student stated „all are best for me“). Computer-assisted teaching was considered to be the method with the most disadvantages including „it needs a lot of resources“, „very difficult for our country“, „no group interaction“.

Regarding their overall schedule they were satisfied with the ratio of academic program and leisure time.

Table 1. Answers to questions about recurrent program points in each week of the program.
Answers were given on a five point scale: 1=yes, very much; 2=yes, up to a point; 3-indifferent; 4=no, not really, 5=no, not all

	week 1 (n=6)	week 2 (n=6)	week 3 (n=6)	week 4 (n=5)
Ward rounds				
Monday through Friday: ward rounds.	1.75 (\pm 2.062)	1.17 (\pm 1.329)	3.17 (\pm 0.753)	2.40 (\pm 1.517)
How many times were you able to attend?				
... Did you understand what was going on?	2.00 (\pm 0)	1.67 (\pm 0.577)	1.67 (\pm 0.816)	2.00 (\pm 0)
... Was the ward round interesting for you?	1.00 (\pm 0)	2.00 (\pm 1.00)	1.83 (\pm 1.169)	2.00 (\pm 0.816)
Morning conference (clinical meeting)				
Monday through Friday: morning conference.	4.83 (\pm 0.408)	2.33 (\pm 1.862)	4.33 (\pm 0.816)	3.40 (\pm 0.548)
How many times were you able to attend?				
... Did you understand what was going on?	3.00 (\pm 0.894)	2.33 (\pm 0.516)	3.00 (\pm 0.894)	2.40 (\pm 0.548)
... Was the morning conference interesting for you?	1.83 (\pm 1.602)	2.50 (\pm 1.517)	2.67 (\pm 1.033)	2.00 (\pm 0.707)
Seminar for interns				
Tuesday to Friday: seminar for interns.	2.50 (\pm 0.5489)	2.33 (\pm 1.506)	2.50 (\pm 1.049)	3.60 (\pm 0.548)
How many times were you able to attend?				
... Did you understand what was going on?	1.33 (\pm 0.516)	1.00 (\pm 0)	1.33 (\pm 0.516)	2.20 (\pm 0.447)
... Was the seminar interesting for you?	1.33 (\pm 0.516)	1.00 (\pm 0)	1.33 (\pm 0.516)	1.40 (\pm 0.548)
Clinical or lab work (rotation)				
Monday through Friday: clinical or lab work (rotation)	5.00 (\pm 0)	4.17 (\pm 0.408)	4.83 (\pm 0.408)	4.40 (\pm 0.548)
How many times were you able to attend?				
... Did you understand what was going on?	1.17 (\pm 0.408)	1.17 (\pm 0.408)	1.50 (\pm 0.837)	1.20 (\pm 0.447)
... Was the rotation interesting for you?	1.17 (\pm 0.408)	1.33 (\pm 0.516)	1.50 (\pm 0.837)	1.20 (\pm 0.447)
... Were people friendly with you?	1.00 (\pm 0)	1.33 (\pm 0.516)	1.33 (\pm 0.516)	1.00 (\pm 0)
... Were there enough patients?	1.50 (\pm 0.837)	1.50 (\pm 0.837)	1.50 (\pm 0.548)	1.60 (\pm 0.548)
... Did the others answer your questions?	1.33 (\pm 0.516)	1.33 (\pm 0.516)	1.17 (\pm 0.408)	1.20 (\pm 0.447)
... Would you have preferred to be on another rotation?	4.00 (\pm 1.549)	4.00 (\pm 1.673)	3.83 (\pm 1.472)	4.20 (\pm 1.789)

DISCUSSION

The official goals that were set for this exchange were – for the students – to broaden their knowledge (medical as well as non-medical), to give them experience with modern hospital settings and diseases of the affluent society and to expose them to PBL. The fact that these plans were not made over the heads of the students but rather were coherent with their wishes can be seen from the answers on the students' questionnaires: when asked for their primary objective for their visit to Munich, the answers given most often were: PBL, cultural exchange, to see medicine and patient management in an affluent society and to strengthen the link between JU and LMU. The program designed – consisting of tutorials, seminars, practical exercises and ward rotations as well as leisure time activities – obviously fulfilled these desires: upon departure all students who filled out the questionnaire claimed that their expectations had almost or totally been fulfilled. The only objective that had not been met to the students' content was the cultural exchange and the exploration of city and country; students repeatedly complained that there was too little time to mix with German students (apart from the ones in the organizational team) and to see the city and other parts of Germany properly. Yet again they claimed themselves to be satisfied with the ratio of academic versus leisure time activities.

When looked at in an objective way, the official goals have also mostly been fulfilled; for PBL, the students attended tutorials, held them as tutors, observed German students in their tutorials, had seminars on tutoring and case-writing and even wrote (at least) one case of their own each. Regarding clinical work there were the ward rotations as well as seminars and practical exercises on selected topics. The only problem that occurred here was that these students who were all interns in their sixth and final year and already took care of their own patients back in Ethiopia were

hardly able to do anything here, mostly due to the language barrier and the unfamiliarity of the algorithms implemented in the daily hospital routine. For the cultural exchange the invitations to the homes of local staff were well liked, as were leisure time activities like an opera visit, a mountain tour in the Alps, a tour of Munich etc. where always at least a few German students also participated. They were also able to make contacts with local medical students on the wards, in the library and the cafeteria, for example.

Regarding these experiences the two major problems that will have to be overcome for future student exchange visits are for one to provide more possibilities for cultural exchange and mixing with local staff and students. The other problem that will need to be attended to is the more active involvement of the Ethiopian students on the ward and in the lab; overcoming the language barrier at least partly might be the key to this ordeal.

The official goals for the staff members were set in mutual agreement of the JU and LMU staff members. They included the introduction and familiarization with PBL, the establishment of research and other co-operations in various fields and to provide possibilities for cultural exchange.

The individual goals given in the questionnaires upon arrival included the above plus the strengthening of the JU-LMU-link, the improvement of one's own educational skills and also to see clinical work, specific procedures and to have lectures or seminars on certain topics.

Subjectively, these objectives have mostly been fulfilled: in the questionnaires filled out just before departure the staff members claimed that their expectations had been more than fulfilled. But similar to the students they felt that they had had too little time for exchange with local staff and students and to see the daily clinical work in action.

Objectively, the goals have also been (mostly) reached: the staff members experienced PBL tutorials as “students”, had seminars on case-writing and tutoring and watched German as well as their own students in their respective tutorials – these activities covered the PBL aspect of the program. For the establishment of co-operations we arranged meetings with several heads of various departments, had an official joint session where all medical university staff was invited, visited three district hospitals (Starnberg, Augsburg, Wolfratshausen) which will participate in the link and had a reception that included university staff from several fields; contact-making was furthermore enabled through the clinical rotations that the staff members attended. For cultural exchange more or less the same opportunities were provided that the students were offered, including opera, mountain-hiking, city tour etc.

The main problem that presented itself during the visit of the staff members was time: since their duration of stay was only ten days, it was not possible to cover all program points that were wished for by both sides. With the next staff members coming, a change of schedule is to be implemented: they will participate in LMU’s official PBL-tutor-training program for five full days; then they will have another ten days for clinical work, making contacts, establishing further co-operations and experience German culture.

The overall goals of this link are modeled on the tasks of a medical school, namely to:

1. Teach students to acquire knowledge, attitude and relevant skills that will enable them to function in a society for mutual benefit.
2. Conduct research with the aim of increasing scientific knowledge that will be utilized to prevent and to solve health problems of the society and individuals and to promote health.
3. Provide quality service to the surrounding community.

Additionally we also consider it to be important that German staff and students increase their awareness of the medical problems in Ethiopia and that Ethiopian staff and students get aware of medical problems in Germany.

In reaching these goals a major step has been done with this first exchange visit. Regarding Nr. 1, the introduction and familiarization with PBL and its components and the following possible introduction of it into the curriculum of JU will enhance the quality of teaching and learning for the medical students and teach them ways of acquiring knowledge and following the concept of life-long learning. There is also the prospect that not only Jimma University School of Medicine but also other departments will benefit from this since PBL has in other places already been used in different subjects, e.g. in Engineering Schools (9). As for Nr.2, it is clear that the initiation of research co-operations with several departments of Medical Faculty at LMU (Department of Tropical Medicine, Department of Infectious Medicine, and Department of Surgery among others) is something both sides will benefit from and that will increase the knowledge of everyone involved. Research results may also serve as a base for prevention programs. Nr. 3 has been covered by the clinical rotations that staff and students have attended, where introduction as well as some training in certain techniques has taken place. These activities will be taken further by German physicians traveling to Jimma to provide local training for staff (and possibly students). These rotations that staff and students had attended also served to fulfill the last goals stated above: to increase their awareness for medical problems in Germany.

Regarding the objectives given above and their degree of fulfillment it appears that the exchange program and the way it is laid out is on the right track. The two major problems we encountered were the problems of time and language. Due to the

relatively tight-packed schedule of educational and clinical program there was obviously too little time to get an appropriate idea of German culture and to get to know the German people better. For the next Ethiopian students coming to Germany we plan to change the schedule radically: instead of offering all tutorials, seminars etc. ourselves (which – on the organizational part – was just on the border of possible), we intend to let the students participate in a PBL-course offered for the German students where two tutorial groups will be held entirely in English. This also eradicates the problem of there being too little time to mix with other students. For the future staff members coming we will also change course of action: they will participate in the LMU's official PBL-tutor-training for full five days and then will have another ten days for clinical work, contact-making etc.

The other problem – which was especially hard on the students – was the language barrier. The students, who already cared for their own patients at home, were mostly forced to inactivity on the ward and in the out-patient department and dependent on translations from German physicians. This is a problem, which lies in the nature of things and will also occur to German students traveling to Ethiopia. One possible way of solving this problem might be little language-courses before the respective students travel, so that they will be able to comprehend the most important phrases and words which will at least break the passive language barrier.

The next activities in this link will include a group of German students traveling to Jimma, local training for staff in Jimma by German physicians and the set-up of a satellite communication system for broader Internet access.

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