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**“ARZT UND ZUKUNFT” – AN EXAMPLE
OF ENTREPRENEURSHIP AT THE FACULTY
OF MEDICINE AT LUDWIG-MAXIMILIANS
UNIVERSITY (LMU), MUNICH**

INTRODUCTION

It was our objective to develop a one-semester elective course that fills a gap in the national undergraduate medical curriculum in Germany. Basically, German medical students are not well-prepared for the business aspects of practicing medicine.

This has many consequences for doctors in private practice, ranging from dependency on insurance brokers and banks to bankruptcy. Serious cases have led to the disruption of families or suicide. As described in several studies the risk of committing suicide and the successful suicide is higher among physicians compared to the corresponding general population. Reasons may vary and range from psychiatric disorders, family problems, economic strain to overworking (Klaus & Sarah, 2006; Gold, Frost-Pineda & Melker, 2005; Reimer, Trinkaus & Jurkat, 2005). Ignorance of financial coherency, miscalculation of the expected income at acquisition and faulty cost accounting were the leading reasons for failing in private practice (Thomas, 2006).

CONCEPT

Most medical faculties in Germany have a relatively strict curriculum with little space for self-directed learning. Learning environments that are based on constructivist learning theory are the exception and not the rule. Hence it was our objective to support self-directed learning and to develop an environment that is strongly motivating such that students with their tight schedule will eke out the time necessary to work for the course.

There are 36 medical faculties in Germany, and we have checked their online course announcements. Five were offering programs on economics for medical students as of summer 2011. As documented by internet research in early November 2011 two out of five faculties offered a Masters Program for Postgraduates, whereas the other three faculties offered elective programs comparable to ours.

A good vehicle for this goal is project-based work in a group (Blumenfeld, Soloway, Marx, Krajcik et al., 1991). Students who volunteered for the course

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formed groups spontaneously during the starting session and decided in the group about the type of project that they were going to collaborate on for the next semester.

GOAL

Participants were expected to develop a business plan and present it by the end of the semester - this was the major structural requirement given to them. Although this is not quite a real-life task, it can at least be regarded as a “meaningful whole practice task” (van Merriënboer & Kirschner, 2007). The course was started with a few frontal type lectures. During their sessions, the groups were guided by experienced coaches, and they advanced their business plans in group discussions with experts for law, tax, marketing and medical businesses. Independent research was an implicit practical goal, e.g. to clarify the legal and business aspects or the local competition for the project.

DETERMINING THE OBJECTIVES

During a planning phase of roughly 12 months, repeated sessions took place with the growing team of experts, consisting of the coaches, the business experts, a medical educator and medical undergraduate students. Recruiting of further trainers and coaches was by word of mouth recommendation from one key person (M.B.) initially, and by all expert team members later on. Most of the coaches and the business experts were from non-academic workplaces, such as private practice, or retired business persons. Consensus decisions were made about new team members, and about the allocation of learning objectives to the different persons and sessions. The meetings of this expert team were essential for building a common understanding of the course, its learning objectives and the teaching strategies. Learning objectives were identified (cf. Table 1). Discussion time was required also before a consent about the learning environment could be reached.

The following activities and attitudes were identified as learning objectives by the developing team (see table 1).

Table 1. Learning objectives

Participants ...

- give a presentation in front of others
- research the location for a private medical practice
- analyse the economic framework for obtaining a bank loan
- experience themselves in a specific role in a team that runs a private doctor's office
- write a business plan
- negotiate with lawyers, accountants, bankers, etc.
- reflect their own personal values and perspectives
- value leadership
- value the well-being of their employees
- value long-term working relationships with their employees
- value their partners, patients and employees

The other resources for the course were quickly established. Neighboring faculties and neighboring universities were informed. Beginning in October 2009, the course was held for the first time. Recruiting of participants was successful in most of the semesters since 2009, and was easier in winter semesters than in summer semesters.

METHODS

The kick-off and the subsequent event were created as frontal type lectures, where basic methods of accounting were taught by two financial experts. Law, taxation, marketing and further medical business was taught “on-the case”, so that upcoming problems while creating the business plan were solved quickly. Each group of participants had one principal coach, helping out with everyday problems. The allocation of tasks was up to the group and differed from semester to semester. Upon personal request feedback on leadership, team spirit or other soft skills was given to the participants by the coaches. Furthermore, formative feedback was given to the groups of participants by the coaches and the experts. Main sources of feedback for the participants were the numerous informal talks between experts or coaches and participants, as well as an anonymously written evaluation of the course by the participants before and at the end of the course. These anonymously written evaluations built the basis for our results. Modifications of the course were made from semester to semester, based on the feedback from participants, by regular expert team meetings. The latest idea was to replace the initial frontal lectures by problem-based learning using a business case scenario before each group of participants begins to work on its own business plan.

RESULTS

Anonymously written evaluations were completed by the participants before and after the course. The original questionnaires were in German language and were hence not reproduced in this article. Before the course, participants thought they had relatively little knowledge in the fields of taxation, law, marketing, etc. (cf. Figure 1).

After the course, participants thought they had gained some knowledge in these fields (cf. Figure 2).

Also, the participants made very positive comments about the course, and fiercely rejected the item “I could have done it as well without the course” (cf. Figure 3).

CONCLUSION

Our objective was met to develop a one-semester elective course that fills a gap in the national undergraduate medical curriculum in Germany. Groups of participants successfully developed a business plan as the basis for project-based learning. Acceptance of the course by participants was good.

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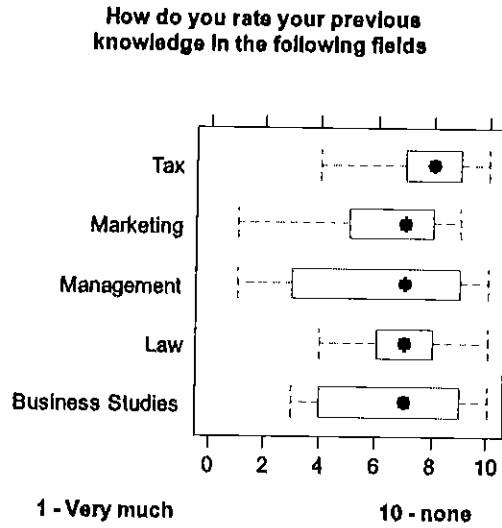


Figure 1. Pre-test, participants estimate their previous knowledge in 5 different areas. Tukey's box plots, Likert scales.

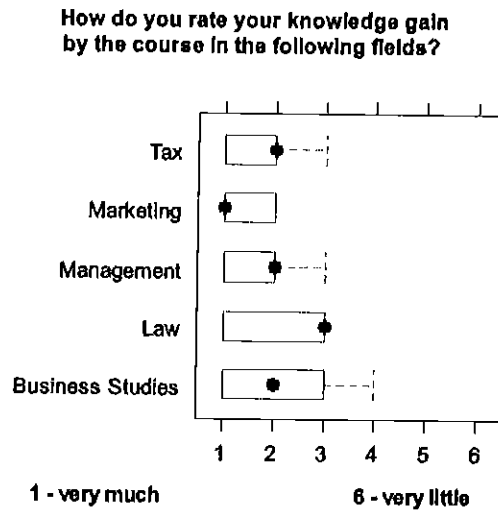


Figure 2. Post-test, participants estimate their gain of knowledge after the course in 5 different areas.

Post test - fulfillment of prior expectations

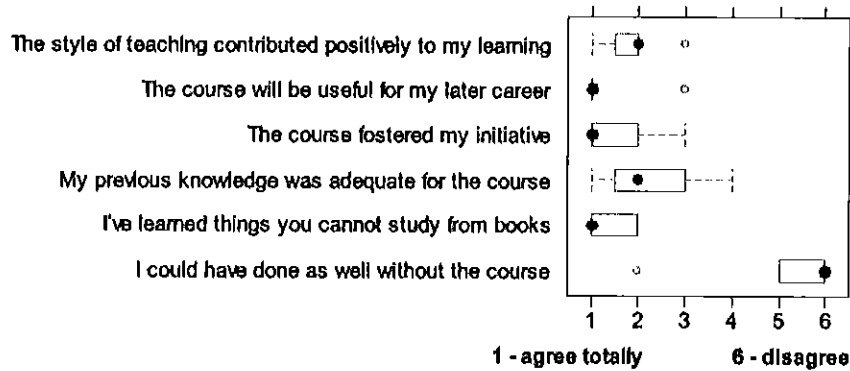


Figure 3. Post-test, participants estimate results against their prior expectations.

FUTURE

In the future, we would like to have students of other faculties (e.g., law or business) or medical doctors who are in the process of planning a private office among the participants of the course. We anticipate that students from other faculties would bring in more skills and a different perspective on founding a business and would benefit from working with medical students at the same time. Doctors intending to establish their practice would benefit from the ideas and the spirit of a bright young team and their working enthusiasm, and, as a benefit to the students, they would bring a more authentic project behavior to the team.

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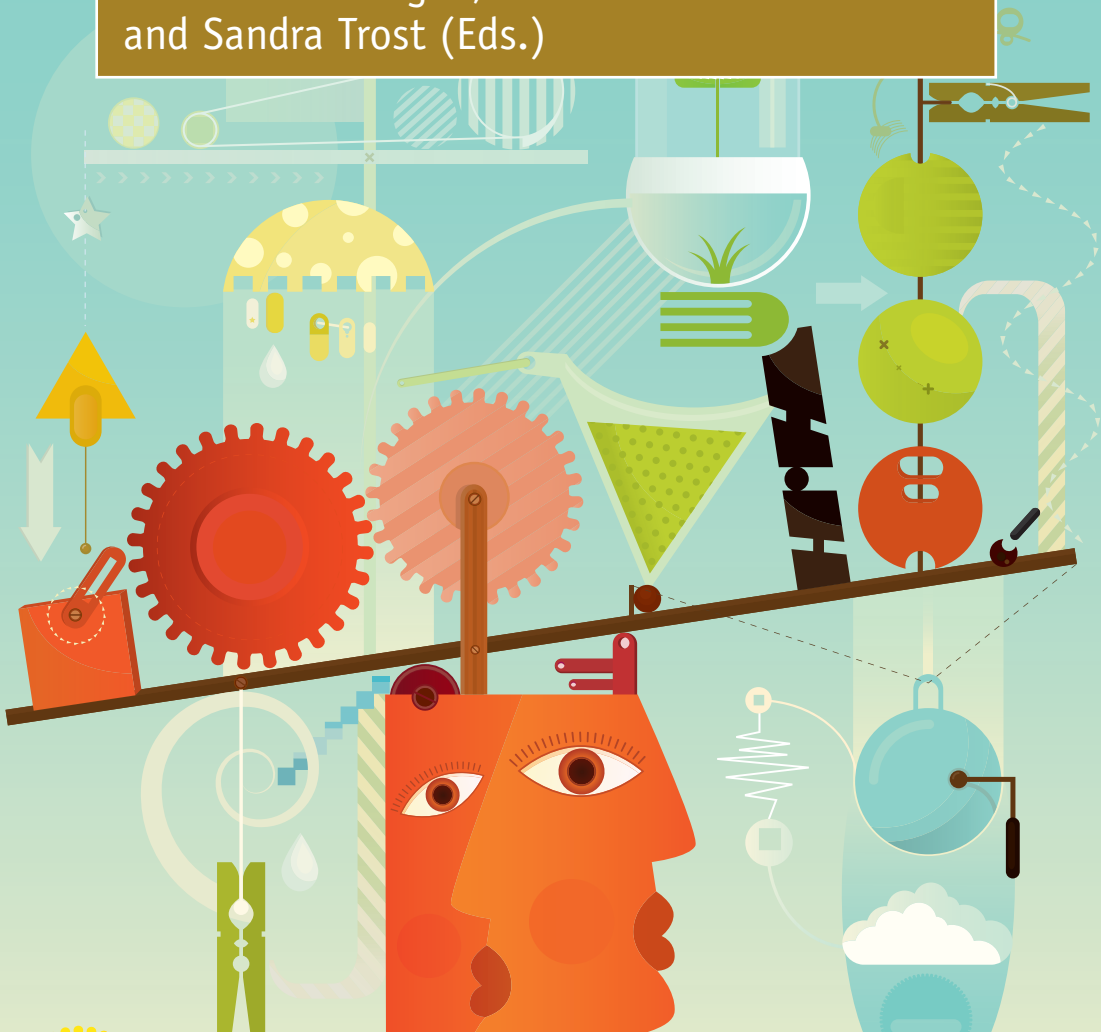
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