



Development and implementation of a technical and didactical training program for student tutors in the dissection course

Thomas Shiozawa^{a,*}, Bernhard Hirt^b, Nora Celebi^c, Friederike Baur^d, Peter Weyrich^c, Maria Lammerding-Köppel^e

^a Institute of Anatomy, Department of Experimental Embryology and Tissue Engineering, University of Tuebingen, Elfriede-Aulhorn-Str. 8, 72076 Tuebingen, Germany

^b Institute of Anatomy, Department of Cellular Neurobiology, University of Tuebingen, Germany

^c Department of Internal Medicine IV, Endocrinology, Diabetology, Angiology, Nephrology and Clinical Chemistry, University Hospital of Tuebingen, Germany

^d Deanery of Student Affairs, Faculty of Medicine, University of Tuebingen, Germany

^e Competence Centre for University Teaching in Medicine, University of Tuebingen, Germany

ARTICLE INFO

Article history:

Received 30 August 2010

Accepted 7 September 2010

Keywords:

Tutor training

Curriculum development

Anatomy

Peer teaching

ABSTRACT

Background: Student tutors have a long tradition in gross anatomy instruction. However, the full potential of the tutors is generally not tapped, since little attention is paid to their technical and didactical training. The aim of this paper is to report a systematic approach to the development, didactic reasoning and implementation of a curriculum for training student tutors in gross anatomy.

Methods: The training program was developed using the six-step approach of Kern's curriculum development model. For needs assessment, the literature research was amended by a survey among the 1st and 2nd year students of the dissection course ($n = 167$) and two independent 90 min focus group interviews with the tutors who supervised these students ($n = 15$). Protocols were transcribed and analyzed by margin coding. The training curriculum was setup on the basis of these data.

Results: Corresponding to the literature, the students want student tutors with good teaching competence as well as adequate content knowledge and technical competence. Supporting that, the tutors request a training program enhancing their didactic skills as well as their knowledge of content and working using relevant methods. Thus, a combined didactic and professional training program has been developed. Six professional and 11 didactic learning objectives were defined. A 3 weeks training curriculum was implemented, using microteaching and group exercises for didactics and active dissection for technical training. Both parts were interlocked on a contextual and practical level.

Conclusion: Our focus group analyses revealed that a specific training program for student tutors in the dissection course is necessary. We describe a feasible task-oriented training curriculum combining didactic and professional objectives.

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1. Introduction

The involvement of student tutors in gross anatomy education has a long tradition, for our institute it can be dated back more than a century (Moerike, 1988). Over the years, several variants have evolved in this field. Reviewing literature, Topping (1996) distinguishes between near-peer teaching (cross-year) and reciprocal peer teaching (equal year), which is even not necessarily

the same as team based learning. Beyond this, the instructional setting for peer teaching in anatomy is variable, ranging from one-to-one teaching (Walker-Bartnick et al., 1984) to group and seminar teaching (Krych et al., 2005; Nieder et al., 2005) and to problem-based learning (PBL) (Youdas et al., 2008). Peer teaching has been used throughout different fields of health education, human medicine (Nnodim, 1997), dental medicine (Brueckner and MacPherson, 2004) or other health sciences (Youdas et al., 2008). The benefit of peer tutoring in medical education for both tutors and students has recently been reviewed (Santee and Garavalia, 2006).

The role of the student tutor in the dissection course is special, and differs from other cross-year peer-teaching tutorials. The main focus is not the only role as a demonstrator (Lee et al., 1999). The tutor additionally conveys practical skills as well as knowledge and, as lecturers are also present, moves in a mediator position between

* Corresponding author. Tel.: +49 7071 2973018; fax: +49 7071 295097.

E-mail addresses: thomas.shiozawa@uni-tuebingen.de (T. Shiozawa), nora.celebi@med.uni-tuebingen.de (N. Celebi), friederike.baur@med.uni-tuebingen.de (F. Baur), peter.weyrich@med.uni-tuebingen.de (P. Weyrich), maria.lammerding@med.uni-tuebingen.de (M. Lammerding-Köppel).

the students and teaching staff. Furthermore, the preparatory work at the cadaver commences in small groups, so the social development of the group is also accompanied by the tutor. Finally, tutors are first in line at a vital point a student's career: the first contact with a dead body. Thus, our student tutors require anatomical knowledge as well as practical, social and interactive skills.

The high commitment and enthusiasm of the student tutors is per se a good basis for teaching, but they do not necessarily correlate with the individual ability to teach or with their knowledge of content and techniques. Dolmans et al. (2006) categorize various problems in the qualification of student tutors: tutors who do not evaluate adequately, tutors who are too directive, tutors who are too passive and tutors who lack knowledge of content. Students, on the other hand, ask for tutors who encourage independent thinking, emphasize clinical relevance, set value on interaction and create a non-threatening group atmosphere overall (Steinert, 2004). Steinert summarizes these qualitative data under the factors of "personal attributes", "facilitation skills" and "knowledge of content".

To meet the students' demands, and to solve the above mentioned problems in tutor qualification, we decided to prepare the tutors for their teaching experience by a task-oriented training program. Several programs of tutor training have already been described (Pasquinelli and Greenberg, 2008). However, most of them are to prepare future residents for teaching. Specific training programs for tutors were particularly introduced for problem-based learning (Grand'Maison and Des Marchais, 1991), but these also focus on the training of lecturers as tutors. Furthermore, conveying practical skills and student counselling are not regular parts of PBL tutoring.

Taken together, a specific training program for student tutors in anatomy seems warranted. A detailed tutor training program has not been described so far for the anatomy or the dissection course. The aim of the present paper is to report on a systematic approach to the development of and didactic reasoning behind a task-oriented training curriculum for student tutors as well as its implementation in gross anatomy education at our university.

The research questions are:

1. Which content is important for specific task-oriented training of student tutors for the dissection course?
2. How should the training curriculum be designed?

2. Material and methods

The tutor training program was designed using Kern's curriculum development model (Kern et al., 1998), which defines six steps: (1) general needs assessment, (2) needs assessment of targeted learners, (3) goals and objectives, (4) educational strategies, (5) implementation, and (6) evaluation. For the general needs assessment, a literature review was performed which is presented in the introduction. Electronic searches were conducted in the MedLine, ERIC and PsycInfo databases with the Keywords: *student tutor*, *peer tutor*, *peer teaching*, *tutor training* and *tutor education*. Truncation was used when applicable to retrieve alternate word endings. Articles were chosen from the results of the searches based on relevance. Additional references were identified from reference lists within selected articles and reviews.

To specify the demands on the tutors and to obtain a context specific basis for the development of the training curriculum, the students evaluated their tutors in the dissection course. The evaluation was conducted via the faculty's online evaluation tool TUEVALON.¹ We designed a short questionnaire surveying gen-

eral information and six items related to the performance of the tutor. The introductory part recorded gender, age (only ordinal scale), and semester at the university; the specific part comprised a global rating of anatomical knowledge, a global rating of didactical competence, and subitems for the quality of practical instruction, answering questions sufficiently, good explanations and aid in understanding of complex issues. Free text comments were also possible. The items were rated on a six-point Likert scale (1 = agree/6 = disagree). The data from the questionnaires were recorded in Microsoft[®] Excel 2003 (Microsoft Corporation, Redmond, Washington, USA). The descriptive statistics were then calculated with this program. Mean and standard deviation are displayed for the results of the evaluation items.

Furthermore, two informal, independent, 90 min focus group interviews were held 1 month after the tutoring experience with the tutors from the dissection course. Participation was voluntary, although all tutors were invited to take part. The standardized questions were: "Do you need a training program for tutors in the dissection course?" and "What content is most important for training of student tutors?" The questions were formulated to open a group discussion. Digital recordings and written protocols were transcribed and analyzed for semantic content. Margin coding (Bertrand et al., 1992) was used to categorize the data.

An ethics proposal to this research project was submitted to the ethics commission of the Medical Faculty of Tuebingen. The commission approved the project with documents 296/2008A and 508/2008A.

3. Results

The literature confirms that peer teaching has an effect (Trevino and Eiland, 1980; Walker-Bartnick et al., 1984; Santee and Garavalia, 2006; Torke et al., 2007). Further insights were that quite a number of tutorial programs in anatomy have been published, and that, a number of tutor training programs have been described. However, we found no specific tutor training program for tutors in the anatomical dissection course. From the described training programs we adopted several ideas for the development of our curriculum: The important factors which should be taken up in the training are facilitation skills and content knowledge (Steinert, 2004). It is important to interlock didactical and technical training, as the training program is more effective if held in the appropriate teaching context (Baroffio et al., 2006). To effectively facilitate students' learning, tutors should regularly review group dynamics in the tutorial setting (Papinczak et al., 2009). Feedback skills are important for effective tutorials and they can be improved through training (Baroffio et al., 2007).

The evaluation of the tutors commenced electronically 3 weeks after the dissection course. A total of 38 tutors could be evaluated by the students. The 22 male and 16 female tutors studied on average in the 4th year. Out of 236 questionnaires distributed to all students of the dissection course 167 were returned (response rate: 70.7%). Students were in either the 1st ($n=78$) or 2nd year ($n=89$), most of them (65.1%) were between 18 and 22 years old. Of these, 65.3% were female and 31.1% male, 3.6% did not mention a gender.

The tutors were attested to be well prepared concerning the content and technical knowledge (1.96 ± 1.1) and to be able to explain well (1.82 ± 1.06). Relative shortcomings were noted for didactical competence (2.15 ± 1.16) and instruction for practical work and dissection (2.32 ± 1.28).

A total of 15 out of 38 tutors took part in two informal, independent, 90 min focus group interviews. The tutors emphasized unanimously that a training program would be important for them. On the contextual level two categories of reasoning could be developed from the transcription: technical training and didactical training.

¹ www.tuevalon.de.

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