



Gaining Competencies During Early Medical Training: Medical Students as Teaching Assistants in Dissection-Based Anatomy Course

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Introduction and Objectives

- In 2002, ACGME identified six ACGME Core Competencies: patient care; medical knowledge; practice-based learning and improvement; interpersonal and communication skills; professionalism; and systems-based practice.
- AAMC recommended lists of similar competencies for the curricula of medical schools. Competency based curricula have been widely implemented in medical schools.
- Effective shifting in the graduate medical educational programs has been reported in various clinical specialties.
- There is a lack of reported efforts and development on competency training in early preclinical years of medical education.

Objectives:

- To explore methods for strengthening medical students' competency training during preclinical undergraduate medical education.
- To measure improvement in five out of the six ACGME Core Competencies, namely: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, and professionalism.
- To establish a foundation for implementation of future programs aimed at improving pre-clinical medical student competency training.

Methods

- Summer Anatomy Course for Physician Assistant (PA) Students
- Medical Students Recruited as Teaching Assistants
- TAs' Responsibilities: Preparation; Teaching; Creating assessments; Tutoring; Instructional tool development; Advanced dissection.
- Post-program survey for TAs: 5-point Likert scale opinion questions to solicit feedback and assess the influence of the program. The questionnaire addresses five of the six ACGME core competencies.
- Post course survey for PA students: PA students were required to evaluate the TAs in terms of their teaching effectiveness and professionalism on a 5-point Likert opinion scale. PA students were also asked to reflect anonymously on their experience with the TAs.

Results

Medical students valued their role as teaching assistants & Teaching enhanced their anatomical knowledge.

Statement	Strongly agree (%)	Agree (%)	Neither (%)	Disagree (%)	Strongly disagree (%)	N/A (%)
I enjoyed my experience as a TA in the PA dissection laboratory	89	11	0	0	0	0
I have a better understanding of medical science education.	56	33	11	0	0	0
I would recommend this program to other medical students.	100	0	0	0	0	0
My knowledge of anatomy was strengthened through the program.	78	22	0	0	0	0

Results (continued)

Medical students learned key attributes of professionalism.

Statement	Strongly agree (%)	Agree (%)	Neither (%)	Disagree (%)	Strongly disagree (%)	N/A (%)
I learned that I must respect students and have compassion for their needs as learners.	100	0	0	0	0	0
I enjoyed working with the other TAs, as a team, to provide more efficient and coordinated assistance to students.	89	11	0	0	0	0
I learned to correct my mistakes in identification, explanation, etc. with special care to ensure the students understood the correction and thus grew in humility and integrity.	78	22	0	0	0	0
I learned that medical education requires a commitment to excellence through adequate preparation and respect for learners.	78	22	0	0	0	0
I understand that commitment to timeliness is an important professional responsibility.	56	44	0	0	0	0
I understand better now that medical educators strive to provide accurate and clinically relevant scientific information.	44	56	0	0	0	0
Learning when to provide answers, and when to challenge students to make progress on their own, enhanced my leadership and decision making skills.	56	33	11	0	0	0
I enjoyed providing help outside of class to students who were facing academic difficulties in the course.	56	22	0	0	0	22
I learned that I must wear professional attire when teaching and participating in professional activities.	11	56	11	0	0	22
Faculty members were strong role models for professionalism, commitment to excellence and compassion for education.	89	11	0	0	0	0

Teaching strengthened Interpersonal and communication skills.

Statement	Strongly agree (%)	Agree (%)	Neither (%)	Disagree (%)	Strongly disagree (%)	N/A (%)
My responsibilities as a TA enhanced my professional interpersonal skills.	56	33	11	0	0	0
Learning to express my knowledge and opinions to colleagues and students enhanced my confidence in my oral communication skills.	67	33	0	0	0	0

Teaching promoted life long learning skills.

Statement	Strongly agree (%)	Agree (%)	Neither (%)	Disagree (%)	Strongly disagree (%)	N/A (%)
Questions that the students asked stimulated me to pursue independent learning and advanced study.	44	33	11	11	0	0
I consulted a variety of learning resources (e.g., atlas, textbook, and/or online resources) in preparation for teaching in the laboratory.	78	22	0	0	0	0
I learned the critical importance of seeking help from faculty and my peers when I could not solve a problem or answer a question.	56	33	11	0	0	0
Generating innovative learning tools illustrated the importance of creativity and critical thinking in medical education.	56	33	0	0	0	11

Teaching promoted TAs' competence related to future patient care.

Statement	Strongly agree (%)	Agree (%)	Neither (%)	Disagree (%)	Strongly disagree (%)	N/A (%)
Responding to questions from students enhanced my problem solving skills, which will help me solve clinical problems in the future.	78	22	0	0	0	0
The teaching skills that I learned as an anatomy TA will enable me to more effectively teach patients in my future medical career.	67	33	0	0	0	0

PA students appreciated contributions of the teaching assistants.

Statement	Strongly agree (%)	Agree (%)	Neither (%)	Disagree (%)	Strongly disagree (%)	N/A (%)
MS TAs were helpful for dissection.	65	35	0	0	0	0
The video of the foot model was helpful.	75	10	0	0	0	15
More videos on challenging anatomical topics should be made available during the course.	80	15	0	0	0	5

Discussion

Teaching is a complex human activity that benefits both students and teachers. Appreciation of the value of teaching for physicians -in-training as a learning tool and as a skill to be used daily with patients, colleagues, and students is central to our program.

We believe that the teaching experience offered by our program is unique in four essential ways:

- The medical students (TAs) work side-by-side with allied health professionals (PA students) in an interdisciplinary environment. This interaction between different groups of health professions students is valuable, because it models relationships that will continue in future clinical practice.
- The medical students collaborate with teaching faculty. This close interaction enhances leadership and interpersonal communication skills. Faculty mentors are widely recognized as crucial role models for medical competency training. The medical students in our TA program shared this point of view.
- Our TA program provides considerable time for medical students to integrate knowledge and improve their understanding of human anatomy. It also provides an opportunity for students to engage in scholarship and independent study (e.g., videos and demonstrations).
- The anatomy TA program provides an opportunity for medical students to learn from their mistakes. This is an important life lesson that is not easily learned in a traditional classroom. If a TA did not know the answer to a question, he/she quickly learned that the best practice was to admit the lack of information. This encounter also provides strong motivation for TAs to seek guidance, collaborate, and share information with colleagues.

Conclusion

Our teaching assistant program demonstrated improvement of pre-clinical medical students in five core competencies, namely: patient care, medical knowledge, practice-based learning and improvement, interpersonal and communication skills, and professionalism. We believe that promoting professional development through early competency training provides medical students with a strong foundation for continued personal growth, and facilitates a smooth transition to subsequent clinical training. An important next step will be to identify assessment tools that can be used to measure professionalism so as to validate our hypothesis. We encourage other institutions to develop similar opportunities for health professionals to enhance learning and acquire medical competencies.

References

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