

Appendix

Additional Information About Medical Education

As your journey into medical education unfolds, you may want to refer to advanced resources in the field. Below we have compiled a list of medical education resources that should help your teaching career.

Medical Education Publications

Academic Medicine: This is the official journal of the Association of American Medical Colleges (AAMC). This journal publishes articles pertaining to the organization and operation of academic medical centers, emerging themes and contemporary issues and medical education research findings.

Advances in Health Sciences Education: *Advances in Health Sciences Education* is a forum for scholarly and state-of-the-art research into all aspects of health sciences education. <http://www.springerlink.com/content/102840/>

British Medical Journal: The *British Medical Journal* publishes a series of articles entitled “ABC of Teaching and Learning in Medicine”. The series covers various practical aspects of medical education. <http://www.bmj.com>

The Clinical Teacher: This is a publication of the Association for the Study of Medical Education. The editor describes the publication as aiming “to provide a digest of current research, practice and thinking in medical education presented in a readable, stimulating and practical style.” <http://www.theclinicalteacher.com>.

Focus on Health Professional Education: This is a refereed journal sponsored by the Association for Health Professional Education. It is primarily directed at educators and students in Australia, New Zealand, South-East Asia and the Western Pacific Region. <http://www.anzame.unsw.edu.au/journal/journal.htm>

International Electronic Journal of Health Education: This journal is an open access online resource that is owned by the American Association of Health Education. The journal emphasizes international health education and promotion, and technology-based health education.

Journal of the American Medical Association: This journal publishes an annual issue devoted to articles on medical education. <http://jama.ama-assn.org>

Journal of the International Association of Medical Science Educators: *JIAMSE* is a peer-reviewed publication of the International Association of Medical Science

Educators. This electronic journal publishes original research, reviews, editorials and opinion papers on medical education. <http://www.jiamse.org>

Journal of Interprofessional Care: This journal publishes original, peer reviewed papers of interest to those working on collaboration in education, practice and research between medicine, nursing, allied health, veterinary science and other health related fields.

Medical Education: This is published by the Association for the Study of Medical Education (ASME). *Medical Education* is a prominent journal in the field of education for health care professionals, and primarily publishes research related to undergraduate education, postgraduate training, continuing professional development and interprofessional education. <http://www.mededuc.com>

Medical Education Online: This is an online journal that publishes peer-reviewed investigations in medical education. <http://www.med-ed-online.org>

Medical Teacher: This journal is published by the Association for Medical Education in Europe (AMEE). *Medical Teacher* offers descriptions of new teaching methods, guidance on structuring courses and assessing achievement, and is a forum for communication between medical teachers and those involved in general education. <http://www.medicalteacher.org>

New England Journal of Medicine: This top clinical journal also publishes occasional articles devoted to the topic of medical education. <http://content.nejm.org/>

Teaching and Learning in Medicine: This is an international forum for scholarly research on medical teaching and assessment. The journal addresses practical issues and provides the analysis and empirical research needed to facilitate decision making about medical education. <http://www.siumed.edu/tlm>

Understanding Medical Education: This is a series of extended papers produced by ASME that addresses special topics in medical education.

Curriculum Resources and Repositories

Best Evidence in Medical Education (BEME): BEME is a group devoted to dissemination of information about the best practices in medical education. They produce useful systematic reviews that reflect the best evidence available for various topics. <http://www.bemecollaboration.org>.

Multimedia Educational Resource for Learning and Online Teaching (MERLOT): MERLOT is a free searchable collection of peer reviewed and selected online learning materials. This collection contains materials from all fields, but does feature a large repository of health sciences content. Resources are available for use under terms described by the author and users may also contribute content to the repository as well. <http://www.merlot.org>

MedEdPORTAL: MedEdPORTAL is a free publishing venue and dissemination portal sponsored by the Association of American Medical Colleges. It features peer reviewed online teaching and learning resources in medical education including tutorials, virtual patients, cases, lab manuals, assessment instruments, faculty development materials, etc. MedEdPORTAL covers undergraduate, graduate, and

continuing medical education. Users can also contribute materials for peer review. <http://www.aamc.org/mededportal>

Health Education Assesses Library (HEAL): HEAL is a digital library of peer reviewed multimedia teaching resources for the health sciences. HEAL provides access to tens of thousands of images, videoclips, animations, presentations, and audio files that support healthcare education. Users can contribute media files for inclusion into the library. <http://www.healcentral.org>

Organizations

In addition to publishing scholarly journals medical education organizations offer many other benefits, especially the opportunity to interact and network with medical teachers and scholars. The following organizations offer a variety of venues for faculty development and scholarship of teaching such as annual meetings, special conferences, online faculty development opportunities, etc.

Association for Medical Education in Europe (AMEE): The Association for Medical Education in Europe is a worldwide organization including teachers, researchers, administrators, curriculum developers, assessors and students in medicine and the healthcare professions. AMEE hosts an annual meeting and offers courses on teaching, assessment and research skills for teachers in the healthcare professions. <http://www.amee.org>

Association for the Study of Medical Education (ASME): ASME draws members from across the continuum of medical education – undergraduate, postgraduate and continuing. It serves as a forum for debate and exchange of information and promoting knowledge and expertise in medical education. <http://www.asme.org.uk>

Association of American Medical Colleges (AAMC): The AAMC is an organization of allopathic medical schools in the United States and Canada. The AAMC holds an annual meeting that deals with topics of interest to all aspects of medical education: organizational issues, research and best practices in medical education, student affairs and postgraduate training. The Group on Educational Affairs of the AAMC also hosts regional conferences devoted to curriculum and medical education research. <http://www.aamc.org>

ANZAME: The Association for Health Professional Education: ANZAME is an organization that promotes education in the health professions and fosters communication between educators in the health professions. ANZAME's scope includes undergraduate and postgraduate training and continuing education. <http://www.anzame.unsw.edu.au>

International Association of Medical Science Educators (IAMSE): IAMSE follows the guiding principle that "all who teach the sciences fundamental to medical practice should have access to the most current information and skills needed to excel as educators." IAMSE sponsors an annual meeting as well as other conferences and faculty development activities and publishes a journal. <http://iamse.org/>

International Ottawa Conferences on Medical Education: This biennial conference is held alternately in North America and elsewhere in the world. This

conference focuses on development of education in the healthcare professions by providing a forum for the discussion, debate and the reporting of innovations in the field of assessment. <http://www.ottawaconference.org>

Pan American Federation of Associations of Medical Schools (PAFAMS): PAFAMS is an academic, non-governmental organization whose mission is the promotion and advancement of medical education and the biomedical sciences in the Americas and the Caribbean.

World Federation for Medical Education (WFME): The WFME is a global organization representing six regional associations for medical education. It is primarily concerned with enhancement of the quality of medical education worldwide through establishment of standards. <http://www2.sund.ku.dk/wfme/>

Index

- A**
- Abstract conceptualization, 82
 - Academic argument, 14, 16
 - Accreditation Council for Continuing Medical Education (ACCME), 185
 - Active learning, 2, 19–20, 81, 91–92, 96–97, 99, 106, 108
 - Active learning methods, 11–13, 21–24
 - Active observation, 72
 - Active participation, 29, 109
 - Assessing the student, 114, 143–177
 - Assessment, 4–5, 7–8, 37–38, 44, 49–50, 58, 62, 67, 75, 77, 80, 88, 91, 95–96, 113–114, 119, 121, 124–126, 128–130, 133, 135–136, 140, 143–177
 - Assessment *versus* evaluation, 145
 - Assessment methods, 7, 13, 96, 146–151, 176
 - Association of American Medical Colleges (AAMC), 110, 190, 197, 199–201
 - Attention span vs. lecture length, 19
 - Audience response system, 20, 23, 62, 101, 117–118, 121, 185
 - Audiovisual materials, 20–21
- B**
- Belfield, 184–185
 - Blogs, 37, 108–110, 121, 175
 - Bloom’s Taxonomy of Thinking Skills, 5, 83
 - Blueprint, 126, 148, 154, 156, 161
 - Brainstorming, 36, 48
 - Buzz groups, 20, 22, 35
- C**
- Case discussion, 34–35, 69–70
 - Case presentations, 67, 71
 - Chat rooms, 108
 - Checklists, 87, 163–164, 167–170
 - Chronological order model, 130
 - Class survey techniques, 23
 - Clinical procedures, 93–95
 - Clinical skills, 50, 65–76, 146–149, 162, 164, 167, 172
 - Clinical skills lab, 74
 - Clinical teaching, 65–68, 71–72, 74–76
 - Collaborative learning, 8–9, 52
 - Competence, 56, 68, 74, 85, 95, 127, 138, 146, 148
 - Components of effective simulation session, 85–86
 - Components of instructional design, 124
 - Computer-assisted learning (CAL), 101, 105–115
 - Computer-based tutorials, 107–108
 - Conditions for an effective small group session, 33
 - Construction of an argument, 16
 - Content-oriented plan, 66, 126
 - Continuing Medical Education (CME), 185, 201
- Course**
- design, 44–52, 125–133
 - goal, 123, 127–128, 130–131, 133–135, 140
 - objectives, 13, 126, 128–130, 133, 136, 148–149, 159, 161–162, 174
 - outline, 15, 17
 - rationale, 127, 133
 - units, 123, 126, 133–139
- Critical thinking, 14, 16, 60, 79, 81, 84, 96, 114
- D**
- Debriefing, 38, 45, 84–87
 - Deductive approach, 16
 - Deep learning, 2–3
 - Diagrams, 6, 75, 116

Dr. Fox Effect, 18, 25
 Dunn's Adapted Model of Experiential Learning, 83

E

Educational Philosophy Statement, 180
 Effective slide presentations, 21
 E-mail, 108, 113, 195
 Engagement, 16, 18, 20, 25, 27–28, 35–36, 181, 190–195, 197
 Essays and modified essay questions, 156–159
 Evaluating participation and learning, 37–38
 Evaluating teaching, 38–39
 Experiential learning, 32, 79, 81–83, 86
 Extended-matching questions, 150, 154–156

F

Face-to-face contact, 29–30
 Faculty development for simulation, 81, 87–88
 Faculty global ratings, 150, 161–163
 Feasibility, 44, 118, 124, 146, 148–149
 Feedback, 7–9, 18–20, 23–24, 33–36, 38, 45, 57–58, 62–63, 65, 67–71, 73–76, 79, 82, 84, 86, 88, 98, 104–105, 107, 110, 112, 114, 116, 119, 125, 139, 143–145, 155, 158–160, 162–165, 167–173, 176–177, 179–180, 182–183, 186, 191, 193, 195
 Focal Problem, 46
 Formative assessment, 145, 159, 162, 172, 174
 Formative evaluation, 49, 183
 Four S's, 58, 60–61

G

Glassick, 188–191, 193–194
 Goals, 4, 7, 13, 29, 31, 49, 66–67, 75–76, 81–82, 85–87, 94–99, 110, 128, 131, 134, 136, 143–144, 167, 180, 188–195
 Grading, 23–24, 49–50, 62, 114, 144, 147, 158–159, 166, 176
 GRAT, 57–58, 62
 Gross anatomy, 92–93, 95
 Group round, 36
 Guided discovery, 104–105, 113

H

Handouts, 20, 129–130
 Hidden curriculum, 2

I

Immediate Feedback-Assessment Technique (IF-AT), 58, 62
 Instant messaging, 108

Instructional methods, 95, 101, 106–107, 113, 138–140

Interference, 19

Internal consistency, 147

Interpersonal skills, 28

Interviews, 36, 136, 185

IRAT, 57–58, 62

J

Journals, 189, 201

K

Kirkpatrick, 183–185

Kolb's Model of Experiential Learning, 83

L

Laboratory

courses, 28

set-up, 96

teaching, 91–96, 99

Large group teaching, 1, 3, 25

Learner evaluation, 123, 134–135

Learning

activities, 2–3, 5–7, 9, 66

environment, 2, 4, 8–9, 87–88, 97–98, 104, 171, 173

and retention, 3, 15, 20

strategies, 7, 61, 123, 134

style, 3–4, 27, 32

Lecture

respite, 22

structure, 43

M

Maastricht Step method, 48

MedEdPORTAL, 112, 200–201

Medical simulator, 79–80

Memorization, 2, 21, 82, 139

METRC model, 70–71, 74

Michaelsen, 55, 61

Miller's Pyramid, 136–137

Mindtools, 105

Minute paper, 24, 35

Modified essay, 156–160

Motivation, 2–3, 7–9, 16, 125, 144, 194–195

Muddiest point, 20

Multimedia

design, 101, 103–105

principle, 103, 105

Multiple choice questions (MCQs), 147, 149–156, 158, 160

N

Netiquette, 110
Note

- check, 22–23
- taking, 19–20

O

Objectives, 4–5, 7, 12–17, 19, 24–25, 30–31, 35–36, 44–46, 49, 57, 59, 63, 66–68, 75, 81, 85–87, 94–99, 114, 126, 128–131, 133–136, 138, 140, 144, 148–149, 154, 159, 161–162, 174, 190, 194

test, 153

Objective structured clinical examination (OSCE), 49–50, 96, 151, 167–168, 192

One-to-one, 35

Online communities, 37, 107–110

Oral exams, 151, 165–167, 176

Outcomes, 3–4, 27–30, 43, 88, 94, 128, 144–145, 171, 173, 175–176, 183–186, 188

P

Pacing, 19, 105, 107

Peer assessments, 152, 169–172, 175

Peer evaluations, 8

Peer teaching, 24, 55, 58, 63

Physical examination, 72–74, 129, 131, 134, 148, 151, 164, 167

Physical exam skills, 148

Portfolio, 114, 173–175, 180–181, 183, 186

PowerPoint, 21, 115–116

Presenting the session, 17–21

Priming, 71

Problem

- based learning, 1, 3, 8, 41–52, 80, 102, 109
- solving activities, 23

Procedural skills, 74, 151, 169

Q

Q² Engage, 181, 190

Quellmalz Taxonomy of Thinking Skills, 5

R

Readiness Assurance Test (RAT), 57–58

Real Time Feedback, 20, 62–63

Reflection, 9, 25, 28, 37, 68, 75–76, 79, 81–82, 84, 86, 91, 107, 114, 119, 144, 146, 151, 172, 174–175, 179, 186, 192, 198

Reflective critique, 189, 191, 193–195

Rehearsal, 12, 17, 19–20

Reliability, 38–39, 50, 146–147, 150, 153–154, 156, 158–166, 168–169, 171, 173–175, 183

Role playing, 36

S

Scaffolding, 2, 42

Scholarship criteria, 188–194

Selecting patients, 67–68

Self-assessment, 7, 44, 67, 91, 113–114, 119, 151–152, 172–173

Self-directed learning, 2–3, 9, 45–46, 49, 70–71

Short answer questions, 150–151, 157, 159–161

Shulman, 197–198

Simulated patients, 7, 45, 79, 129, 136, 140, 145, 149–150

Simulation, 1, 37, 47, 79–88, 92, 94, 101, 135, 150, 169

Simultaneous reporting, 61

Small group

- activities, 22–23, 29, 38
- discussion techniques, 35–36
- teaching, 4, 11, 27, 28–30, 33, 35, 37–39

SMART objectives, 94–95

SNAPPS model, 71

Snowballing, 35

Standardized patients, 34, 36, 50, 80, 85, 111, 119, 145, 149, 152, 165, 167–169, 178, 188

Standardized patients and OSCEs, 152, 167–168

Student

- accountability, 62
- groups, 46–47
- orientation, 67

Summative assessment, 95, 114, 145, 149–150, 165, 168–169, 174, 176

Surface learning, 2

T

TBL Collaborative, 55

Teaching academy, 182

Teaching as scholarship, 187–198

Team Based Learning, 3, 9, 24, 55–63, 179

Team Development, 63

Team Formation, 61–63

Team Maintenance, 61–62

Technology based simulations, 151–152, 168–169

Theme and variation model, 131

Think-pair-share, 23

Threaded discussion boards, 108

Tools and approaches, 80, 188

Triple jump exercise, 49

Tutorial groups, 11

Two minute observation, 73

Two minute paper, 24

U

Unguided discovery, 113

United States Medical Licensure Examination, 50

Unit goals, 134–136

V

Validity, 38, 50, 132, 146–150, 153–154, 156, 158–164, 166, 168–169, 171, 173, 174–175, 183

Video recording, 38, 86, 118

Virtual patient, 89, 107, 110–112, 200

Visual model, 123, 130–131, 133–134

W

Wikis, 37, 108–110, 175

Wrap up rounds, 75

W.B. Jeffries
K.N. Huggett
Editors

An Introduction to Medical Teaching

Few faculty members in academic medical centres are formally prepared for their roles as teachers. This work is an introductory text designed to provide medical teachers with the core concepts of effective teaching practice and information about innovations for curriculum design, delivery, and assessment. It offers brief, focused chapters with content that is easily assimilated by the reader. Topics are relevant to basic science and clinical teachers, and the work does not presume readers possess prerequisite knowledge of education theory or instructional design. The authors emphasize application of concepts to teaching practice. Topics include: Helping Students Learn; Teaching Large Groups; Teaching in Small Groups; Problem Based Learning; Team-Based Learning, Teaching Clinical Skills; Teaching with Simulation; Teaching with Practicals and Labs; Teaching with Technological Tools; Designing a Course; Assessing Student Performance; Documenting the Trajectory of your Teaching and Teaching as Scholarship.

Chapters were written by leaders in medical education and research who draw upon extensive professional experience and the literature on best practices in education. Although designed for teachers, the work reflects a learner-centred perspective and emphasizes outcomes for student learning. The book is accessible and visually interesting, and the work contains information that is current, but not time-sensitive. The work includes recommendations for additional reading and an appendix with resources for medical education.

ISBN 978-90-481-3640-7

