
Pedagogy, Competencies and Critical Thinking

Mainstreaming and aligning service-learning with priorities in the education of health professionals

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Competencies for health professionals

- **Institute of Medicine:**
 - Delivering patient-centered care
 - Working as part of interdisciplinary teams
 - Practicing evidence-based medicine
 - Focusing on quality improvement
 - Using information technology
 - **AAMC Medical School Objectives Project:**
 - Dutiful physicians
 - Population health
 - Altruistic physicians
 - Knowledgeable physicians
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Competencies for health professionals

■ ACCP – Clinical Pharmacist Competencies:

- ❑ Clinical problem solving, judgment and decision-making
- ❑ Communication and education
- ❑ Medical information evaluation and management
- ❑ Management of patient populations
- ❑ Therapeutic knowledge areas

■ Dental Hygienist (selected competencies):

- ❑ Ethics, skills, knowledge (including life-long learning, self-assessment, communication skills)
 - ❑ Health promotion, disease prevention (individual and community)
 - ❑ Community involvement
 - ❑ Patient assessment and care
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Meeting the social contract

- Cultural competency
 - Altruism
 - Population-based care
 - Accountability to neighborhood and communities
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Learning skills

- Life-long learning
 - Self-assessment
 - Critical thinking
 - Ability to retrieve, understand, interpret a wide-range of information
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Common threads across the health professions

- Professionalism
 - Interpersonal skills
 - Communication skills
 - Commitment to quality
 - Patient care
 - Learning skills
 - Individual patient care and population/community focus
 - Complex knowledge and information
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Challenges in health care

- Knowledge explosion
 - Cost, resource constraints
 - Multiple stakeholders
 - Multiple providers, communication essential
 - Ethical concerns
 - Historical constraints on innovation in teaching
 - Educated consumers/public
 - Demand for equity and social justice
 - More specialists/shortage of generalists
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Key questions

- Do our teaching methods promote and develop the thinking skills that are required in practice?
 - Deep/critical thinking, creativity, adaptability, curiosity, self-awareness
 - Is there something about our teaching methods that discourage generalism and promote specialization?
 - Are we teaching the content areas that will promote social justice and optimal global health?
 - Are we promoting teamwork, collaboration, communication skills and other competencies?
 - Who and what forces influence our students and shape their values?
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**What does this have to do with
service-learning?**

“Service-learning” is defined as a structured learning experience that combines community service with preparation and reflection. Students engaged in service-learning provide community service in response to community-identified concerns and learn about the context in which service is provided, the connection between their service and their academic coursework, and their roles as citizens and professionals. (CCPH, borrowed by LCME-*Liaison Committee on Medical Education*)

Service-learning – an educational experience in which students participate in service activities that meet community needs within the framework of a course. Service-learning provides concrete opportunities to learn new skills, think critically, test new roles, in settings that encourage risk-taking and reward competence. Service-learning also serves a broader agenda to promote civic engagement. (APA, 2007)

Signature pedagogies of service-learning

- Experiential
 - Guided reflection
 - Deliberate ecology of learners
 - Mentoring
 - Reciprocal learning
 - Embedded learning
 - Grounded
 - Values-based
 - Engages emotions, passions
 - Developmentally appropriate
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Service-learning and thinking

Skilled activity is socially and physically situated in particular contexts, depending for its fluency and depth on a web of interactions with peers, mentors, physical and symbolic tools. Skill and knowledge do not so much sit in the heads of individuals as they are distributed through the social setting and constituted through that setting. (Salomon, 1993)

Complex cognition – more likely to develop through “cognitive apprenticeship in the context of rich social and physical support than through instruction that attempts to teach abstract schemas. (Collins, Brown, Newman, 1989)

Service-learning and thinking

Complex knowledge is not just mastery of a domain, but broad patterns of processing, such as engaging anomalies seriously, examining other perspectives, questioning assumptions
(Ritchhart and Perkins)

Mindfulness – an open and creative state in which individuals actively create new categories, draw meaningful distinctions, consider multiple perspectives, and are open to new information.
(Perkins, 2000)

Encouraging flexibility, adaptability, creativity in learning

Traditional strategies

- Topic/systems approach
- Predictable challenges
- Information-oriented exams
- Correlations and connections contrived
- Simulations and cases

Service-learning

- Integrated, multi-faceted experiences
 - Unscripted, unpredictable
 - Success is demonstrated in practice
 - On-the-ground, real connections
 - Real life, real emotions and passions
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How are students taught to think?

Traditional

Fact-oriented
My-side bias
Algorithmic
Group think
Stay in comfort zone
Ability to focus may obscure
the big picture
Existing knowledge may
compete with acquisition of
new
knowledge

(Ritchhart, Perkins)

Service-learning

Process-oriented
Diverse perspectives
Diverse strands of information
Take risks
Heightened awareness of
experience
Big-picture orientation
Reflection encourages
openness, self awareness
and critical thinking



Socialization, values and social competencies

Socialization – an example from medical education

	Traditional	Service-learning
■ Social world	homogenous	heterogenous
■ Independence/ autonomy	extended childhood	independence
■ Accountability	self, medical world	communities
■ Individualistic vs. collaborative	individualistic	collaborative
■ Knowledge	values facts	values process and problem solving
■ Geography	institution-based	community, agency-based
■ Status	highest, top	one among many
■ Stakeholders	pharmaceutical industry	public health agencies

Cultural competence

■ What doesn't work

- Learner resistance (Kai, 2001; Shapiro, 2002; Boutin-Foster, 2008)
 - Not learner centered
 - Not valued by students
- De-contextualized
 - Leads to “othering” and stereotyping (van Ryn, 2003; Nunez, 2000)

■ What works

- Contextualized teaching and learning
 - Simulations and real situations
 - Triggers
 - Grounding in self-awareness
 - Opportunities to strongly consider alternative perspectives
 - Reflection as a strategy to reframe prior assumptions (Mezirow, 1997; Tervalon, 1998)
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Cultural competence and service-learning

- Real life situations
 - Engaged – there is a task to be done
 - Longitudinal – opportunities to experience change and personal development
 - Safely outside of comfort zone
 - Opportunities for reflection
 - Articulate and challenge assumptions and expectations
 - Substantive participation in cultures outside of the culture of medicine
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Service-learning, population health, advocacy, civic engagement

- Substantive experiences in community settings
 - Content of experience – includes specific skills in these areas
 - “Hidden curriculum”
 - Evidence supports + affect on civic engagement and social justice (Wang and Rodgers, 2006, undergraduate service-learning)
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Service-learning and altruism

- Socialization

- Issues defined by community
- Reciprocity between learner and group being served
- Defined role and commitment

- Exposure

- Empathy

- Moral development

- From charity to social responsibility
 - Accountability
 - Actions, decisions and consequences
 - Clarification of values
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What do we know about service-learning?

- + effect on personal development: efficacy, personal identity, spiritual growth, moral development
 - + effect on interpersonal development and ability to work well with others
 - + effect on leadership and communication skills
 - + effect on reducing stereotypes and facilitating cultural and racial understanding
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What do we know about service-learning?

- + effect on sense of social responsibility and citizenship skills
 - + effect on commitment to service
 - + associated with continued commitment to service following graduation
 - + impact on academic learning
 - + impact on students' ability to apply what they have learned in the real world
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What do we know about service-learning?

- + impact on complexity of understanding, problem analysis, critical thinking, and cognitive development
- + impact on identity development and cultural understanding

Eyler, JS, Giles DE, Stenson, CM, Gray CJ. At a glance: What we know about the effects of service-learning on College students, faculty, institutions and communities, 1993-2000: 3rd Edition. Corporation for National Service Learn and Serve America National Service Learning Clearinghouse.

Service-learning addresses challenges in health professionals' education

- Knowledge explosion *reflection, lifelong learning, comfort with uncertainty, critical thinking*
 - Cost, resource constraints *??revival of generalism*
 - Multiple stakeholders *accountability to community*
 - Ethical concerns *substantive relationship with community*
 - Historical constraints on innovation in teaching *valuable, translatable pedagogy*
 - Educated consumers/public *substantive contact with public*
 - Demand for equity & social justice *exposure at formative stage*
 - More specialists/shortage of generalists *??increased comfort with uncertainty*
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Service-learning helps medical institutions meet their social contract with neighbors and larger society

- Are we accountable to our neighbors and community? *Improved relationships between academic institutions and neighboring communities (Cotton and Stanton, 1990)*
 - Are we adequately addressing health disparities and promoting social justice?
 - Are we meeting our social contract?
Substantive, longitudinal and respectful community-academic partnerships; commitment to population health; substantive experiences and engagement with community-members and organizations
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Solidly embedding service-learning in health professionals' education

■ Service-learning pedagogy

- Align pedagogy with major educational pedagogic trends and discussions
 - Critical thinking
 - Adaptive expertise
 - Complex and deep learning
 - Refine, optimize and measure signature pedagogic strategies; develop the evidence base specific to education of health professionals
 - Reflection
 - Contextualized teaching and learning
 - Collaborative teaching and learning
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Solidly embedding service-learning in health professionals' education

■ Curriculum

- Align explicit service-learning curriculum with major educational initiatives and competencies
 - Cultural competency
 - Health disparities
 - Professionalism
 - Population health
 - Coordinate and align service-learning experiences with students' developmental trajectory
 - Independence/appropriate mentoring
 - Leadership
 - Altruism
 - Community/civic engagement
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Solidly embedding service-learning in health professionals' education

- Institutionalization and parity
 - Alignment with institution's social mission and obligations
 - Channels for principled, longitudinal and respectful partnerships with community
 - Opportunities for research collaboration (CTSA, etc)
 - Accountability, technical assistance to public agencies
 - Resources
 - Power, a place at the table
 - Concrete resources – funding, space
 - Faculty recognition
 - Promotion and tenure
 - Respect and substantive engagement of community-based faculty
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Service-learning Leaders – tasks and skills

- Comprehensive stakeholder map
 - Principle-driven planning
 - Service-learning scholarship
 - Leadership and collaboration
 - Research
 - Curriculum design and development
 - Faculty development
 - Negotiation and strategic thinking
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Service-learning Leaders

- **Accountability of service-learning to larger societal questions....**

Do carefully designed and implemented service learning experiences make students better learners?(critical thinkers, deep thinkers, comfortable with ambiguity)

If so, does this translate to other aspects of health professionals' education? (fewer errors, able to handle uncertainty, able to use resources more carefully)

Does involvement in well-mentored service-learning experience improve cultural competency? Ability to work in groups?

Do students who participate in service-learning experiences become better citizens?

Service-learning Leaders

- Accountability of service-learning to larger societal questions....

And – ultimately, are these skills and attributes associated with outcomes that matter to society as a whole?

- more generalists rather than specialists

- colleagual and collaborative behavior

- fewer clinical errors

- more appropriate use of resources

- community and civic engagement

- less burn out

Big lesson: It's the real world and you work with what you have. I was most interested in hearing perspectives that challenged my own, as these helped me see the real issues surrounding the problem and made me more sensitive to different views. I think conflict is absolutely an opportunity, one that can help translate differing opinions into something workable. I am excited to take all of the lessons learned and reflections during this project to future work, as I hope it will be a reminder to view conflict as an opportunity, to be flexible, to be daring, and to know myself.

I slept and dreamt that life was joy.
I awoke and saw that life was service.
I acted and behold, service was joy.

Rabindrath Tagore

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- THE FOLLOWING SLIDES PROVIDE A BIT MORE DEPTH TO SOME OF THE AREAS DISCUSSED



Medical errors

- Faulty triggering
 - Faulty context formulation
 - Faulty information gathering and processing
(Bordage, 1999)
 - Faulty verification (Kassirer and Kopelman, 1989)
 - Faulty integration (Voytovich, 1979)
 - Difficulty reframing the first hypothesis;
premature closure to avoid confronting
inconsistencies (Borrell-Carrio, Epstein, 2004)
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Faulty thinking

- Medical errors
 - Poor decision-making
 - Sub-optimal outcomes
 - Limited horizons in medicine
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Critical thinking

- Complex, no single definition covers
 - Thinking about thinking
 - Deconstruct and apply to medical professionals
 - Problem solving – ability to translate or transfer theoretical reasoning into constructive action within a given environment
 - Decision-making: using a combination of empirical knowledge and ability to anticipate problems
 - Diagnostic reasoning: arriving at a probable conclusion regarding a patient's condition by process of elimination(a rule-out process)
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Good thinking dispositions

(Perkins, Jay, Tishman, 1993)

- **Broad and adventurous** (open-minded, generate multiple options)
 - **Sustained intellectual curiosity** (wonder, probe, alertness for anomalies, observe closely)
 - **Seek clarity and understanding** (seek connections, build conceptualizations)
 - **Planful and strategic** (set goals, make and execute plans, envision outcomes)
 - **Intellectually careful** (urge for precision, organization, thoroughness, alertness to error or inaccuracy)
 - **Seek and evaluate reasons** (question the given, demand justification, alertness to the need for evidence, ability to weigh reasons)
 - **Metacognitive** (be aware of and monitor flow of one's own thinking; able to exercise control of mental processes, reflective)
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Expertise

- The process of gaining expertise is assisted by other people and artifacts (unlike in school learning, novices are not expected to solve problems all by themselves)
- Expertise occurs in socioculturally significant contexts; as a result, in expertise, learning is not clearly separated from solving socially significant problems and performing tasks)
- Expertise is distributed (because there are a large number of domains in which people can gain expertise and expertise in each domain takes time)

(summarized by Hatan and Oura, 2003)

What learning experiences foster adaptive expertise?

Flexibility, innovation, creative application

- Provide a variety of challenges
 - Application of knowledge in unpredictable and varied ways
 - Exploration of new and unknown
 - Reflection
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Critical self-awareness

(Borrell-Carrio and Epstein, 2004)

- Emotional self-awareness and self-regulation of attention
 - Develop insight and self-awareness to detect thought processes
 - Promote curiosity
 - Attentive to factors that limit capacity to tolerate uncertainty and ambiguity
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Population Health, Advocacy and Accountability to the Public's Health

- Understanding of population health
 - Policy-making
 - Communication
 - Translation of science to serve the public's health (IOM, 1988; IOM, 2002)
 - Civic engagement
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Teaching social justice

- Legacy of empowerment movements of the 1960's and 1970's
 - “Role of oppression and social power in perpetuating inequitable social arrangement” (O’Grady, 2000)
 - Involves emotional and cognitive domain (Adams and Zhou, 1994)
 - Challenge thinking modes
 - Question beliefs
 - Tolerate dissonance and change
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Service-learning & social justice

- Should service-learning incorporate social justice education?
 - Value neutral? (Deans, 1999; Leeds, 1999)
 - Intrinsic to service-learning experiences (Kahne and Westheimer, 1999; O'Grady, 2000; Sleeter, 1996)
 - Emphasizes social issues, root causes, social injustice, commitment to change
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