



## CHAPTER 1

# Learner-Centered Pedagogy: Teaching and Learning in the 21st Century

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### CHAPTER OBJECTIVE

- Implement strategies for engaging students in planning, implementation, and assessments that address their values and needs

*[H]uman resources are like natural resources; they're often buried deep. You have to go looking for them, they're not just lying around on the surface. You have to create the circumstances where they show themselves.*

—Sir Ken Robinson

Just as we educate our students that the patient is at the center of care, as educators we should know that students are at the center of our teaching philosophy. Over the past decade, a shift has occurred in the delivery of health care curricula. Health sciences schools have begun to restructure their curricula to be more inclusive of hands-on patient care, to dedicate more time to the training of academic educators, and to provide a balanced and multidisciplinary approach to health care (Parkhurst, 2015). Changes in health care economics, managed care, and an increased demand on the health care delivery system have been the catalysts for these changes. Learner-centered pedagogy, or student-centered learning, has become the focus in health sciences academia. The integration of student-centered learning and technology within the classroom has been the topic of numerous studies and continues to be the driving force for curricular changes within the existing, new, and developing health care education curricula (Keengwe, Onchwari, & Onchwari, 2009).

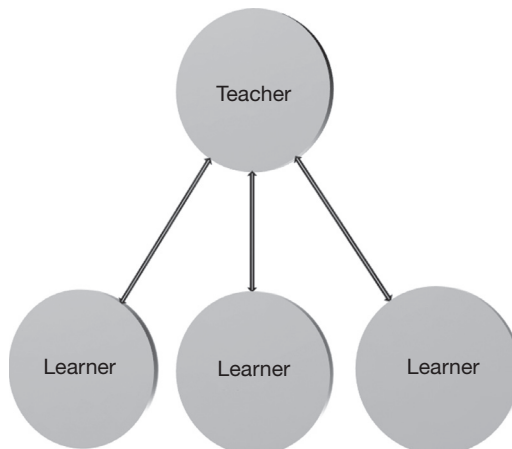
Learner-centered pedagogy creates an environment that speaks to the heart of learning. It encourages students to deeply engage with the material, develop a dialogue, and reflect on their progress (Weimer, 2002). It represents a shift away from the “sage-on-the-stage” mentality and puts the students’ learning at center stage (King, 1993). As students gain greater access to information, it is the educator’s role to guide the application and assimilation of that information into real-world problems. The foundation of learner-centered teaching is rooted in a constructivist framework of learning theory. Constructivists postulate that humans are perceivers and interpreters who construct meaning from new and prior experiences (Jonassen, 1991). Instructional design should therefore focus on providing tools and environments for helping learners interpret the multiple perspectives of the world in creating their own world (Karagiorgi & Symeou, 2005).

### STUDENT-CENTERED PEDAGOGY VERSUS TEACHER-CENTERED PEDAGOGY

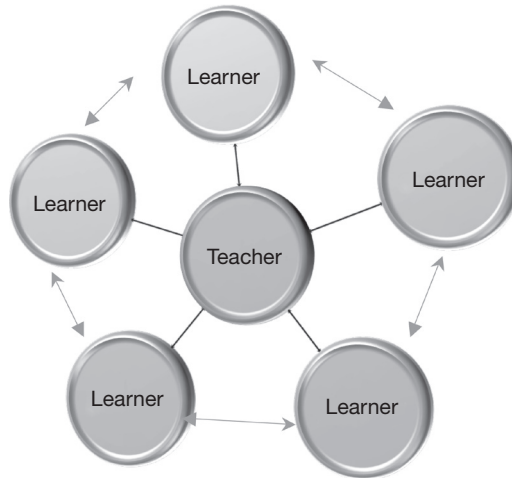
The anthropologist Margaret Mead said, “children must be taught how to think, not what to think” (1928, p. 246). Although health professions students are not children, the same adage applies to them. The notion of engaging students in learning and educating them to be critical thinkers requires a shift in pedagogy from the teacher being at the center of the classroom to the learner being at the center (Table 1.1). In teacher-centered pedagogy, the focus is on the

**TABLE 1.1** Teacher-Centered Versus Learner-Centered Pedagogy

Teacher Centered	Learner Centered
Focus is on the instructor	Focus is on both students and the instructor
Students work individually	Students work in groups or alone, depending on the activity
The instructor observes and corrects students’ responses	The instructor provides feedback and corrective action when needed
Only the instructor answers students’ questions	Students may answer each other’s questions and use the instructor as a resource
Only the instructor evaluates students’ learning	Students evaluate their own learning, which is supported by the instructor



**FIGURE 1.1** Focus in teacher-centered pedagogy.



**FIGURE 1.2** Focus in learner-centered pedagogy.

instructor and students work independently. The instructor controls the conversation and makes corrections to students' responses. The instructor also evaluates students' learning (Figure 1.1). In learner-centered pedagogy, the role of the teacher is more that of a coach than a person with all the answers. The focus is on both the instructor and students. Learning occurs through the process of interaction between the instructor and students and among the students (Figure 1.2). Both the instructor and students answer questions and provide feedback and corrective measures when needed. Both the instructor and students evaluate students' learning. A similar approach occurs during clinical teaching, when trainees are taught to round together and care for a patient as a team rather than individually.

Weimer (2002) discusses five characteristics of teaching that make it learner centered:

1. Learner-centered teaching engages students in the hard, messy work of learning.
2. It is teaching that motivates and empowers students by giving them some control over learning processes.
3. Learner-centered teaching encourages students to reflect on what they are learning and how they are learning it.
4. It is teaching that encourages collaboration, acknowledging the classroom (be it virtual or real) as a community where everyone shares the learning agenda.
5. Learner-centered teaching includes explicit skill instruction. It teaches students how to think, solve problems, evaluate evidence, analyze arguments, and generate hypotheses.

## DOMAINS OF LEARNER-CENTERED PEDAGOGY

Student-centered learning can be implemented in several ways—as team projects, nontraditional writing assignments, role play, and service learning assignments, just to name a few. Weimer (2002) discusses five domains that need to be considered when transitioning to learner-centered teaching (Table 1.2). The role of a teacher should be to facilitate the learning process and allow shared decision making about learning with students. It is important to create the right environment for learning, and faculty must be aware of knowledge-building processes and incorporate them depending on the course and curriculum. Assessment processes should be used to promote learning and should include self-evaluation and peer-evaluation strategies. When the factors of learner-centered teaching are well balanced, learners are able to retain the knowledge and develop skills for lifelong learning.

**TABLE 1.2** Five Domains of Learner-Centered Teaching

Factor	Learner-Centered Pedagogy	Example
Role of the teacher	Instructional action should focus on students' learning	Approaches that avoid the tendency to tell students what to learn: <ul style="list-style-type: none"> <li>▪ Not "reading the syllabus" to students</li> <li>▪ Providing "how-to" study advice</li> </ul>
Balance of power	Faculty share decision making about learning with students	Assignment choices and policy setting
Function of content	Content should be used to build a knowledge base and develop learning skills and learner self-awareness	Approaches that do not separate learning strategies from content: <ul style="list-style-type: none"> <li>▪ End-of-class summaries</li> <li>▪ Exam-review sessions</li> </ul>
Responsibility of learning	Cocreate learning environments that motivate students to accept responsibility for learning	Student-driven activities to create constructive classroom climates and logical consequences
Process and purposes of evaluation	Evaluation activities should also be used to promote learning and develop self- and peer-assessment skills	Self- and peer-assessment Evaluation of participation

Source: Adapted from Weimer (2002).

## LEARNER-CENTERED PEDAGOGY IN THE ERA OF TECHNOLOGY AND SOCIAL MEDIA

Learner-centered pedagogy is gaining ground in the realm of online education, where the concept of a classroom without walls harnesses the power of technology. Current and future generations of students are being raised in an environment that straddles the transition from books to terabytes of information. These generations are "digital natives" (Essary, 2011, p. 50) who are hooked up, linked in, and better connected than any prior generation. Faculty need to meet this shift in order to remain current and relevant within education. In conjunction with this shift, the attitude and methodology of educators needs to adjust to ever-evolving technologies. Already the role of teachers at the K-12 education is being redefined (Johnson et al., 2014), and so should the role of health professions educators. Students enter health professions programs with a preexisting e-professional profile and "netiquette" is ingrained (Kaczmaxczyk, 2013), which, impacts their behavior as students and their journey toward professionalism. We present techniques that we have successfully used to engage the new generation of digital natives: blogging, debate, and art.

### Social Media and Blogging as Tools in Learner-Centered Pedagogy

Use of social media as a communication tool has become the norm in many industries. The evolution of technological industries has led to the advent and higher acceptance rate of such tools in education (see Chapter 10 for more information). At our institution, we have used blogging as learning strategy in Professional Issues, a first-semester course in which students blog and self-reflect on a number of health care and ethical case studies.

The implementation of a student blog requires foresight and deliberative execution. The idea of the blog is twofold: to harness the student's enthusiasm early and to create a living

document of the student's reflections as the student progresses. The student's advisors are also given access to the blog, providing a way to foster the mentor–mentee relationship. The creation of the student blog begins prior to the arrival of the student on campus. As soon as the student has an institutional email account, his or her blog page is created. Invitations with a message about how the blog will be used in his or her education are sent out via email. Various postings are made on the student blog throughout the Professional Issues course. Blog topics include compassion and empathy, discussions of various aspects of being a physician assistant (PA), and analysis of an ethics case. An assignment called “Gray Paper,” which is the first post of the blog, provides a further example of implementation.

For the Gray Paper, students select from a variety of gray paint chips from a local hardware store and are asked to read their shade of gray and share with the class how they will embrace gray areas in health care as they navigate the upcoming year. On the paint chip they write one word that describes best how they balance the science and art of health care and then attach the paint chip next to the board in front of the classroom as a constant reminder of this reflection. This in-class activity is followed by a blog-posting assignment.

In the Gray Paper blog, students are asked to reflect on how they feel at the beginning of their journey to becoming a clinician and how they will embrace the gray areas of medicine. Students ponder how and why they chose this profession and what in their past lives led them to this point. They are further asked to reflect on what they think constitutes professional versus unprofessional behavior. Questions used to prompt reflection include (a) What experiences have you had as a consumer of health care with relation to professionalism? (b) How did those experiences impact your notion of what is considered professional versus unprofessional behavior? (c) How will that experience impact your future practice as a health care provider? Our experience with this reflective activity and with blogging in general is that students begin to see the challenges and acknowledge the difficult journey they will all navigate together.

At the end of the first academic year the paint chips are removed and, one by one, students read their words and once again reflect on their progress and their journey. They rededicate their gray message to the next year of their learning journey. They reread their initial post from the beginning of the year and make one last post to the blog about the past year, reflecting on what they have learned and experienced—physically, academically, emotionally, and mentally. As illustrated by the Gray Paper assignment, blogging is a learner-centered activity that motivates and empowers students, which encourages self-reflection and collaboration.

## The Role of Debate in Learner-Centered Health Professions Education

Use of debate as an educational tool has historical roots that date back to the Greeks and Romans. Protagoras of Abdera is credited with implementing debates in the educational arena more than 2,400 years ago (Hall, 2011). However, it was not until the late 19th and early 20th centuries that debate was incorporated into American higher education.

Debate in health professions education has been used successfully to bridge the gap between didactic education and its clinical application, particularly in controversial areas such as ethical issues (Darby, 2007). Debate as a teaching–learning tool shifts the responsibility for learning to students, and requires active engagement in the process. In addition to allowing immersion in a topic, debate builds critical competencies beyond the content covered that are essential to the practice of students as clinicians. These include evidence-based practice, creation and oral presentation of logical arguments, and analysis of evidence and differing points of view (Darby, 2007). Debate requires student engagement with the health sciences literature and incentivizes the development of skills required to answer complex clinical and ethical questions in a systematic way.

### *Implementing Debate as a Learner-Centered Strategy*

The selection of debate topics can be based on current issues involving the health care professions or system. In our case, we cross-pollinated two courses: Evidence-Based Medicine and Infectious Diseases. We use four issues that are actively evolving in the news and being debated in the media as well as in the medical literature. To keep the topics timely and relevant to current practice, they are changed every year. Debate topics used in our course have ranged from the pros and cons of Ebola quarantine to needle exchange programs.

In order to prepare for debate, students must be able to develop an answerable question and to retrieve and evaluate evidence to answer it. Predebate instructions thus include principles of evidence-based practice and how to formulate a question using the PICO (population, intervention, comparison, outcome) format (Sackett, Richardson, Rosenberg, & Haynes, 1997). To show the validity of the evidence used in their debate, students are required to turn in Critically Appraised Topic forms. An exemplar of this form may be found in the online supplement (Chapter 1 Exemplar). Using these forms, students indicate the methodology for their search and the validity of the evidence critiqued. Students are required to include at least two systematic reviews or meta-analysis papers to serve as a teaching point about interpretation of new studies concerning evolving academic, political, and socioeconomic viewpoints. Each group is assigned a “faculty coach” who guides them in formulating debate strategies, avoiding errors in reasoning and illogical connections, and using propaganda techniques.

Setting the parameters for the faculty coach role in debate preparation is crucial. The faculty coach motivates, coaches, and guides students toward a deeper understanding of the issue at hand. Rather than telling them where to look for information, guiding them to think and see the issue through several lenses helps solidify the concepts of evidence-based medicine and their application. As an example, students in a group preparing to debate mandatory flu vaccine for health care workers were struggling with how to make the argument against vaccination. They initially looked to their faculty coach to tell them the answer. The coach prompted them to think about the issue and who it impacted. While the students talked, the faculty coach wrote their ideas on a whiteboard, sorting into three categories: health care workforce, economics, and patients/communities. After just this 5-minute activity helping students visually organize their thoughts, students were able to identify new search terms and phrases, new websites to be visited, and developed deeper searches for stronger evidence. Thus, in a debate, the inquiry process alone is a learning experience. By the time students actually debate, they are more knowledgeable about the content, citing references by author and year, quoting and paraphrasing articles, and comparing studies.

The style of debate used typically depends on how much time is available and where it is integrated into the curriculum. Debate formats commonly used in health professions education include (a) online, (b) team (Karl-Popper format), (c) parliamentary, (d) legislative, and (e) public forum (International Debate Education Association, n.d.). Detailed information regarding these debate types and their uses may be found in the online supplemental material for this chapter (Chapter 1 Debate Format Types).

No matter which format is used, expectations and rules for the debate should be made explicitly clear. Parameters should address expectations around dress code, use of certain types of language, rebuttal timeline, use of visual aids, and whether there will be a “winner.” If a winner is to be decided, judging criteria and who will judge must be determined. A template of a modified British Parliamentary Debate format used in our PA program may be found in the online supplement (Chapter 1 Template).

Debate is adaptable to various health professions curricula. Potential challenges to be addressed in implementing debate as a teaching–learning strategy include faculty development and



preparation of educators, creating time within the curriculum, and balancing course workload for students. Overall, the benefits outweigh these potential challenges. In our experience students report that debate proficiency translates into their clinical experiences in the form of increased confidence as they address issues with patients and colleagues.

## Use of the Arts as a Driver for Learner-Centered Pedagogy

The use of humanities in medical education is experiencing a revival. Observing and creating works of art allows students to engage in a nonmedical topic, and these techniques are easily transferable to learning health-related topics (Bardes, Gillers, & Herman, 2001; Dolev, 2001). Art fosters curiosity, creativity, and exploration, which are important in health professions education. Naghshineh and colleagues (2008) found that students who participated in seven or more educational sessions linking visual arts observation with physical diagnosis made 38% more observations than the control group. In addition, students who completed visual arts training provided qualitatively different evidence for their interpretations than the control group, including more supporting evidence for observations and increased awareness of pertinent negatives (Naghshineh et al., 2008).

### *Implementing an Arts and Medicine Curriculum*

Within the curriculum of our PA program, we implemented a 2-hour medicine and the arts class in conjunction with the local museum of fine arts. Situated just prior to the beginning of the clinical phase of the program, this class consists of four exercises: visual thinking strategies, a drawing activity, a sculpture reflection activity, and a discussion about death and dying. The class was cotaught by PA program faculty and a museum docent.

### *Visual Thinking Activity*

The visual thinking strategy is designed to make the connection between medicine and arts using three questions. While students observe a painting, they are asked to ponder, “What is going on in this picture?” “What do you see that makes you say that?” “What more can we find?” Once students are able to answer these three questions, they apply the concepts to a clinical scenario using three similar questions: “What is going on with this patient?” “What are the signs and symptoms you have found that make you say that?” “What other signs and symptoms are you looking for to confirm your findings?” Answering these three questions provides core skills for formulating a differential diagnosis and can be applied in many settings and over many skill levels.

### *Drawing Activity*

The drawing activity is designed to foster team building and consideration of multiple perspectives. In this activity, students sit in groups of 12 around a large sculpture and, using paper and pencil, draw what they see for 30 seconds. Each student then passes his or her drawing to the left. After 12 passes, all drawings are compared side to side to see how the images come together. Typically, students comment on not knowing which one is their initial drawing and that seeing a patient from multiple perspectives would help open their minds to more creative and better care of that patient. This activity can be further extended to the clinical realm with a discussion of how views differ between a specialist and a primary care provider, discourse on the importance of precise documentation, and strategies for clear communication among the team.

### *Sculpture Reflection Activity*

The sculpture reflection activity focuses on self-reflection. It acknowledges the hard work of providing health care and how, for students, it is often difficult to see beyond the next exam or class. In this activity, students sculpt clay into a reflection of how they feel about entering the next (clinical) phase of their education, using the process of self-reflection. This activity is coupled with a dialogue about the importance of self-care and rededication to their craft that acknowledges the difficulties of their pursuits and clarifies the big picture.

### *Discussion About Death and Dying*

The discussion about death and dying takes place in front of an Etruscan sarcophagus. Students are given a brief history of the sarcophagus and then asked to walk around it and observe the reliefs and images sculpted on its top and sides. A discussion facilitated by PA program faculty is framed around acknowledging death and dying as a natural part of life and recognizing that it is uncomfortable to have discussions with patients about death and dying. Questions used to facilitate this discussion include “How do you think the dying process has changed over the millennia?” “What are the commonalities and differences between ancient and modern times?” “How do *you* feel about death and dying?” This activity characteristically resonates with students at a deep level. Engaging students in this discussion can be difficult, but it is important. Faculty development to assure that they are comfortable with the topic is key. In addition, appropriate placement of this activity within the curriculum is paramount. A preparatory session regarding issues around death, such as advanced directives, “do not resuscitate,” and POLST (physician orders for life-sustaining treatment) orders (National POLST Paradigm, n.d.) provides the foundational language and a departure point for subsequent conversations. Similar to previous reports (Perry, Maffulli, Willson, & Dylan, 2011; Schwartz et al., 2009), the use of art in our curriculum has improved students’ observation skills and accuracy in the description of physical exam findings, improved students’ interpretation of patients’ emotional state, and increased students’ awareness of multiple perspectives. Although we conducted our sessions in conjunction with a museum docent, other data support doing similar activities without specially trained personnel or museum partnerships. Shapiro, Rucker, and Beck (2006) found that small-group training by faculty with either clinical photographs and paper cases or art plus observation of dance have the same impact and outcomes.

## CONCLUSIONS

The future of learner-centered pedagogy lies in the ability of institutions to develop and foster learning communities and to harness the power of technology and innovation both within and outside of the classroom. As the delivery of health care becomes more personalized and digitized, the educational philosophies of yesteryear can no longer sustain the health care education of future generations. Innovation breeds innovation; it is imperative that we shift our focus and broaden our acceptance that students have information at their fingertips, and to innovate how students learn so that they are better prepared for the future of medicine. As reflected by creativity expert Sir Ken Robinson (2010) in his Ted Talk:

We have to recognize that human flourishing is not a mechanical process; it’s an organic process. And you cannot predict the outcome of human development. All you can do, like a farmer, is create the conditions under which they will begin to flourish.



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