

Developing foundational principles for teaching and education for a school of medicine

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In business, high performing organizations define and distribute foundational principles to define their “True North,” and to guide individuals in the organization in their day-to-day activities. These principles should be derived from the organization’s mission and vision. They must be fundamental to the organization, and the organization must be willing to retain them even if they don’t result in financial reward, and they must be timeless.

In his book *Good to Great*, Jim Collins suggests that achieving alignment around foundational principles is a critical element of great organizations, and that alignment is not possible without making these principles

clear to all.¹ Collins notes, “...there is a big difference between being an organization with a vision statement and becoming a truly visionary organization. The difference lies in creating alignment—alignment to preserve an organization’s core values, to reinforce its purpose, and to stimulate continued progress toward its aspirations. When you have superb alignment, a visitor could drop into your organization from another planet and infer the vision without having to read it on paper.”²

Schools of medicine should espouse their foundational principles. Medical education is the foundation of academic medicine, with a core mission to prepare the next generation of physicians, scientists, and leaders. The educational mission can be jeopardized by ever-intensifying financial pressures; increasing focus on regulatory requirements across undergraduate and graduate medical education; biomedical and postdoctoral students and continuing medical education; and competing faculty demands.^{3,4} It is under times of external stress that fundamental principles become most important to an organization to clearly drive decision-making and align performance.

Johns Hopkins has made many contributions to medical and biomedical education throughout its history. In 1910, the Flexner Report⁵ highlighted the Johns Hopkins University School of Medicine as an exemplar of medical education. As medical historian Kenneth Ludmerer, MD, (AQA, Washington University in St. Louis School of Medicine, 1986, Faculty) observed, Johns Hopkins “... became the model by which all other medical schools were measured...”⁶

More than a century after the Flexner Report, Johns Hopkins engaged in a comprehensive strategic planning process with medical education as a key priority. One of five goals of the education strategic priority addressed the importance of cutting-edge science, and novel approaches

in medical and biomedical education. However, foundational principles that guide educational activities and programs were not specifically addressed, because they were generally assumed to be part of the “institutional DNA.” Most Johns Hopkins leaders believed that these principles had been articulated and disseminated decades ago, and were, therefore, surprised to learn that this was not the case. The school’s foundational educational principles had never been formally stated or recorded.

Collins suggests a process of defining core values that starts by engaging a small group of high-performing, well respected individuals who really understand the organization.¹ They define the first draft of such principles. Then, the principles are expanded using consensus strategy.

Johns Hopkins used Collins’ modified Mars group exercise to develop foundational principles for teaching and education.¹ The process began in March 2015, and in October, three of the institution’s leaders in medical education met over a casual dinner to begin the process of creating a document. The institution’s mission and vision statements were reviewed, as were the strategic plan, and available materials from undergraduate medical education; graduate medical education; continuing medical education; Master’s and PhD committees; and post-doctoral offices. A first draft was completed after several additional conversations.

Independently, the Managing Board of the Johns Hopkins Institute for Excellence in Education (IEE) drafted a separate version. The IEE director did not show or discuss the draft document that resulted from the dinner meeting. There was significant overlap in the two documents.

A collated and refined version was circulated among all Johns Hopkins department directors/chairs, vice deans, and the Dean for review and input. The evolving version was refined by the IEE Board of Directors, Faculty Senate, and Advisory Board of the Medical Faculty (the Dean’s committee). Ten principles emerged from this process. (see table)

Each of these principles addresses an important theme of the educational mission and reflects an essential part of the Johns Hopkins culture. It is no accident that the first principle states that “an educator embraces science and instills this passion in learners.” It is as critical today as it was at the time of the Flexner Report, which suggested that physicians practice with “A professional habit definitely formed upon the scientific method,”⁵ and that scientific knowledge, inquiry, and discovery are the foundation of medical and biomedical education.

Some of the principles, such as the importance of being a role model (Principle 3), and educators’ responsibility to develop the next generation (Principle 6) are more self-evident than others. Other principles reflect concepts that have always been important, but have more recently been stressed. These include the importance of diversity and teamwork.⁷

An emerging aspect of teaching and learning is the importance of the learning environment, as noted by the Association of American Medical Colleges,⁸ as well as by the National Institute of General Medical Sciences,⁷ both of which support training programs to develop the next generation of research scientists. Principle 5 states the importance of having a learning environment that is diverse, respectful, inclusive, and collegial. This is coupled with the importance of collaboration across disciplines (Principle 9), whether interprofessional education and practice in medicine,⁹ or collaboration and team-based science in basic research.

Principle 4 emphasizes the importance of individual variability in human biology, genetics, behavior, and environment, a concept that is central to precision medicine, and to the philosophy of the Johns Hopkins Genes to Society curriculum.¹⁰ This concept is taking on greater importance with the emergence of various “omics” and other advances in science that allow for better characterization of individual patients and individualized treatments.

As Francis S. Collins, MD, PhD (AQA, University of North Carolina, 1976), and Harold Varmus, MD (AQA, Columbia University, 1964) stated in their commentary on precision medicine, “The concept of precision medicine... is not new...But, the prospect of applying this concept broadly has been dramatically improved by the recent development of large-scale biologic databases (such as the human genome sequence), powerful methods for characterizing patients (such as proteomics, metabolomics, genomics, diverse cellular assays, and even mobile health technology), and computational tools for analyzing large sets of data.”¹¹ And, as Sir William Osler stated, “Care more particularly for the individual patient than for the special features of the disease.”¹²

Principle 7 specifically states that an educator always strives for excellence. The explicit mention of the importance of wanting to always do better implies a degree of humility important for teachers and educators.

The Johns Hopkins University School of Medicine Foundational Principles for Teaching and Education

1. A Johns Hopkins SOM educator embraces science and instills this passion in learners. Scientific knowledge, inquiry and discovery are the foundation of medical and biomedical education.
2. A Johns Hopkins SOM educator demonstrates integrity and thoroughness, and expects this from learners. Educators must emphasize to learners that outstanding discovery and patient care require a total commitment to careful, complete, and comprehensive inquiry and examination.
3. A Johns Hopkins SOM educator is a role model. The actions of SOM educators must always model honesty, integrity and kindness; and fair, equitable and respectful treatment of others.
4. A Johns Hopkins SOM educator instills in learners an appreciation for the importance of individual variability in human biology, genetics, behavior, and environment. Educators must always emphasize to learners that under most circumstances, knowledge of the patient as an individual is necessary to provide the best patient care. In the same vein, biomedical research should, in most circumstances, address fundamental biological processes that have the potential to provide insights into the precise genetic, biological, environmental, and behavioral factors that influence human health and disease.
5. A Johns Hopkins SOM educator fosters a positive learning environment that is diverse, respectful, inclusive and collegial. Educators must recognize, respect and support the needs of our diverse student body, faculty, patients and community. Learners must understand their responsibility to the learning process.
6. A Johns Hopkins SOM educator develops the next generation. Every individual should pass on knowledge, skills and attitudes to learners.
7. A Johns Hopkins SOM educator always strives for excellence and aspires to continually do better. Educators must demonstrate in their teaching, and in their personal behaviors and actions that a commitment to lifelong learning and self-improvement is critical to being an outstanding scientist and physician.
8. A Johns Hopkins SOM educator teaches and serves as a role model for the wise use of society's resources. Learners must understand that medicine is a public trust. The trust placed in physicians and scientists by the public mandates that physicians always strive to deliver the highest quality care at the lowest cost, and that scientists in the pursuit of new knowledge always strive to use public support of biomedical research in the most judicious manner possible.
9. A Johns Hopkins SOM educator helps learners understand and appreciate the value of collaboration across disciplines. Educators teach that the scale and complexity of high quality health care and scientific research requires a broad range of ideas, knowledge and perspective. Educators demonstrate deliberate and intentional interaction, knowledge sharing, and collaboration among professionals with different knowledge, skills, and attitudes.
10. A Johns Hopkins SOM educator demonstrates to learners a focus on the public good. All of our actions as physicians and scientists must reflect a commitment to the public and to the health of all members of society.

Principles 8 and 10 speak to the conviction that medicine and biomedical science are public trusts. The public provides considerable support for medicine and biomedical science, not for the benefit of physicians and scientists, but to promote the public good (Principle 10). This focus on the public's interests is central to professionalism in both medicine and biomedical science. Educators should be expected to teach and serve as role models for the wise use of society's resources (Principle 8), while the actions of physicians and scientists must reflect a commitment to the public, and to the health of all members of society. Principle 8 is particularly important in the context of rising expenditures for health care and biomedical research, increasing National Institutes of Health funding,⁴ and health care spending as a percentage of gross domestic product. Although schools of medicine understandably argue for more funding for medicine and biomedical science, support cannot go unbridled, and it is imperative that educators reinforce the importance of wisely using available resources that fund the organization's mission.

Although the number of foundational principles was not predetermined, the process resulted in the establishment of 10, which prompted many to think about other top 10 lists in popular culture and, not surprisingly, to the Ten Commandments. While other academic institutions have unwritten standards for medical and biomedical education, much as other societies almost certainly had codes of conduct before the Old Testament, in both instances a written record serves to preserve and disseminate guiding principles to individuals throughout time.

Those involved in medical and biomedical education in the 21st century face challenges to teaching and education unimagined in the times of the Flexner Report, making it more difficult to maintain a focus on core principles and values if they are not clearly documented.

The hope is that the Foundational Principles for Teaching and Education will be inspiring to Johns Hopkins educators, and help them align their teaching and educational efforts. These ideas are shared with faculty, learners, and leadership throughout the organization, and are posted on the IEE website.

While many of these principles will ring true across schools of medical and biomedical sciences, it is recognized that each school of medicine and biomedical science has a unique mission and vision, along with its own history and institutional culture.

On a national level, much can be learned from these and other principles, which can help to advance teaching, learning, and education across all schools of medical and biomedical sciences.

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