

The MD–MEd Joint-Degree Program at Vanderbilt University: Training Future Expert Medical Educators

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Abstract

Problem

Some medical students are drawn to medical education as an area of academic specialization. However, few options exist for medical students who wish to build a scholarly foundation for future careers in medical education.

Approach

In 2011, Vanderbilt University School of Medicine (VUSM) and Peabody College of Education and Human Development at Vanderbilt University partnered to establish a novel dual-degree program that, through transfer of credit, allows students to graduate with both an MD and a master of education (MEd) degree in five years. The MD–MEd joint-degree

program equips students with robust knowledge and skills related to general education while providing opportunities through independent studies and capstone projects to contextualize these ideas in medical education.

Outcomes

This innovation at Vanderbilt University demonstrates the feasibility of an MD–MEd joint-degree program. MD–MEd graduates' demonstrated commitment to medical education and credentials will allow them to take on greater educational responsibilities earlier in their careers and quickly gain experience. The three author participants feel their experiences allowed them to achieve

desired competencies as educators. They have each gained early experience by chairing the Student Curriculum Committee and contributing to major curricular reform at VUSM.

Next Steps

The authors plan to integrate specific medical education competencies into the program, which will require MD–MEd students to develop and demonstrate proficiency in the knowledge and skills expected of dedicated medical educators. Graduates' career trajectories will be tracked to explore whether they become medical educators, conduct educational research, and assume leadership positions.

Problem

The imperative for physicians to function effectively in complex health care systems and interprofessional teams has forced a reconceptualization of physician training. As a result, expertise in educational theory and practice has become valuable at the institutional, national, and international levels.¹ A large and evolving body of literature demonstrates increasing sophistication in the theory and practice of medical education as a discipline. Medical educators must now develop knowledge and skills related to competencies and milestones, curriculum design, assessment strategies, and program evaluation.² As mastery and effective implementation of these concepts requires dedicated faculty time, educational responsibilities

such as curriculum design, assessment, and program evaluation—previously considered supplemental duties for most faculty—have become a professional focus for a select group of faculty with a strong commitment to medical education.

In response to this growing need for educational expertise, institutions offer a variety of development opportunities for both new and established faculty. A master of health professions education (MHPE) degree has become a popular choice for faculty seeking advanced training in medical education.^{3–5} MHPE programs provide a course of study in educational theory and practice that has been contextualized to health care. These programs are designed primarily for established faculty, however, and do not tap into a reservoir of potential professional educators—namely, medical students.

As the science and practice of medical education continue to develop, some medical students will be drawn to medical education as an area of academic specialization, just as some are drawn to other fields such as public health, basic science research, and health care management. Many students

who aspire to academic careers in these other fields seek out the deeper engagement and professional credential provided by an additional degree program.⁶ In response, many medical schools have established joint-degree programs (e.g., MD–MPH, MD–PhD, MD–MBA) that bring medical students into blended communities of practice. Yet, although some medical schools offer opportunities for students to develop teaching skills through elective experiences, few options exist for students who wish to engage deeply with the educator community.

To address this gap, medical students and leaders of the Vanderbilt University School of Medicine (VUSM) and the Peabody College of Education and Human Development (PCEHD) at Vanderbilt University partnered to create a novel dual-degree program that allows medical students to complete both an MD and a master of education (MEd) degree in five years.

Approach

During medical school, the first author (W.M.S.) developed a desire to advance his educational skill set but found

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no existing program that suited his needs. Using established mechanisms for creating joint-degree programs at Vanderbilt University, he proposed an MD–MEd option to administrators at both VUSM and PCEHD. He met with VUSM’s associate dean for undergraduate medical education (B.M.M., at that time) and PCEHD’s Learning and Design program director. He proposed to them a specific program of study, including course work at each institution, tailored to his interests in medical education. The leadership at both schools, including each school’s registrar, approved the transfer of credits and together organized course work and rotation timing to facilitate completion of the joint-degree program by the end of his fifth year. He began his education course work in fall 2011, after completing his third year of medical school, and graduated with both degrees in May 2013. A second student (J.D.) graduated with both degrees in 2015, and a third student (M.B.) is expected to earn both degrees in 2017. A fourth student began MEd course work in fall 2016.

Recruitment of students occurs primarily through an annual VUSM dual-degree information session and word of mouth. Similar to the process for other Vanderbilt University joint-degree programs, students apply to VUSM and PCEHD separately for admission and financial aid. Each school selects matriculants and awards aid according to its own criteria. Transfer of credit between PCEHD and VUSM allows completion of both degrees in 5 years instead of 6 (Table 1 and Chart 1). VUSM waives one semester of tuition, as students spend only 3.5 years enrolled in VUSM course work. This allows students to obtain both degrees for roughly the same tuition cost as the MD alone.

MD–MEd students begin their master’s studies by spending a full academic year at PCEHD between medical school years 3 and 4. They use the fall of their fifth year to complete the medical school year 4 requirements and begin the residency application process, and they complete the master’s program requirements in their final spring semester. (A newly revised VUSM curriculum, implemented in 2013–2014, will allow greater flexibility in the future; see Chart 1.)

Although PCEHD offers multiple master’s degrees, we chose the MEd program in Learning and Design because it provides

Table 1

Sample Course Work for Master of Education (MEd) in Learning and Design for Students Enrolled in MD–MEd Joint-Degree Program, Vanderbilt University School of Medicine (VUSM) and Peabody College of Education and Human Development (PCEHD)

Courses or electives	Credits
Core course work	10
Learning and Design	3
Curriculum Development and Design	3
Action Research	3
Capstone seminar	1
Elective course work^a	21
<i>PCEHD electives</i>	9
Philosophy of Education	3
Design of Learning Environments	3
Learning in and out of Schools	3
Inquiry into Education	3
Independent study	3
<i>VUSM transfer credits</i>	12
Neuroscience	3
Students as Teachers ^b	3
Med School 101 ^c	3
Medical education research ^d	3
Total	31

^aOf the 21 elective credits required, 9 must be acquired through PCEHD courses. The other 12 credits may be acquired through transfer credits for VUSM courses. This table presents a sample of possible electives and transfer credits.

^bStudents as Teachers is a one-year didactic program, focusing on general teaching strategies, educational theory, and review of educational literature. Students practice teaching skills, gain an appreciation for evidence-based teaching techniques, and receive mentoring and feedback from established medical educators.

^cMed School 101 is an elective experience through which a team of students designs and delivers a coherent and intensive three-week summer curriculum to high school students interested in medicine.

^dVUSM research electives may be submitted for transfer credit if the topic of investigation is education related. Such projects may focus on students, patients, or other relevant populations.

a strong foundation in general education theory and practice. As this MEd program is not a licensure track, it does not require practical teaching experiences. Instead, it engages students in learning about how people learn, how learning is measured, and how to leverage these insights in the curricular design process.

MD–MEd students complete 9 credits of core course work centered on the fundamental concepts of learning theory and the principles of curriculum design

(Table 1). They use these theories and principles to analyze learning materials and apply them in a curriculum design project. They also develop self-assessment and curricular assessment skills as a means to augment their own educational practice. Together, these core courses give students tools to explore, interpret, and deepen their understanding of the education process in a variety of contexts, including medicine.

In addition, students choose 21 elective credits to supplement their course of study. Of these, 9 must be acquired through PCEHD courses. Students have used their electives to further explore investigational methodologies employed in education research; to critically analyze the assumptions underlying the policy, practice, and structure of the U.S. educational system; and to examine how learning occurs in settings beyond the traditional classroom.

MEd students may also develop an independent course of study, guided by faculty mentors, that allows exploration of topics outside the PCEHD offerings. PCEHD has no courses specifically related to medical education, so MD–MEd students may choose to create independent studies that allow for this focus. After generating reading lists for particular topics, students have explored the relevant primary literature from medical education sources and general education journals. As an example, one author (M.B.) designed her independent study to generate a conceptual understanding of participatory learning, identity formation, and communities of practice. She used these concepts to analyze the goals, objectives, and outcomes of the clerkship phase of clinical education at VUSM and to subsequently recommend strategies for improvement. Faculty at PCEHD and VUSM jointly guided this effort, which led to a synthesis of general education and medical education perspectives.

The 12 remaining elective credits may be obtained through transfer credits for VUSM courses. Transferable courses can either substitute for PCEHD offerings (e.g., an elective in neuroscience) or provide further contextualization of general education principles within the medical field. Examples of the latter include a “Medical School 101” elective—in which medical students design

Chart 1

Timeline for Completion of Five-Year MD–MEd Joint-Degree Program, Vanderbilt University School of Medicine (VUSM) and Peabody College of Education and Human Development (PCEHD)^a

	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	June	July
Year 1	VUSM preclinical												
Year 2			VUSM clinical clerkships										
Year 3			VUSM Immersion ^{b,c}										
Year 4			PCEHD core course work and electives ^c										
Year 5	VUSM Immersion ^b						PCEHD capstone					Begin residency	

^aThis timeline reflects how PCEHD course work fits into VUSM's new curriculum (introduced in 2013–2014) and the schedule of the fourth student to participate in the program.

^bVUSM's Immersion phase is a highly individualized postclerkship period that allows students to build a curriculum from a broad menu of courses spanning a wide range of clinical and academic content and contexts. It is designed for students to solidify clinical skills, deepen foundational science knowledge, address areas of personal learning needs and/or interest, ensure readiness for residency, and enhance workplace learning skills. It allows deep exploration of potential career choices, but certain types of learning experiences are required to ensure that each student develops a well-rounded curriculum. Each of these requirements can be satisfied by multiple courses to maintain individualization. (For more information about the Immersion phase, see "Curriculum 2.0: Immersion Phase" at <https://medschool.vanderbilt.edu/ume/IP/>)

^cVUSM's Immersion phase offers students increased flexibility in their postclerkship curriculum and schedule. This increased flexibility will allow MD–MEd students to choose to complete PCEHD course work during year 3 or year 4 of the 5 year program (i.e., between clinical clerkships and the Immersion phase or in the midst of the Immersion phase, as depicted here).

and deliver a three-week summer course for high school students interested in medicine—and medical education research blocks (Table 1). Administrators at both VUSM and PCEHD must approve transfer credits.

The MEd course work culminates in a capstone project that integrates knowledge and skills developed across the course of study. The capstone must represent original scholarship, but students may complete this requirement in a number of

Table 2

Differences in Medical Education Degree Pathways: Comparison of MHPE Programs and the MD–MEd Joint-Degree Program at Vanderbilt University School of Medicine and Peabody College of Education and Human Development (PCEHD)

Parameter	MHPE programs	MD–MEd joint-degree program
Target applicant	Faculty physician, established health care professional	Medical student
Instructional format	Varied ^a	On-site learning
Program focus	Education theory and principles tailored to health care professionals	General education theory and principles
Exposure to education theory application in nonmedical contexts	Minimal	Extensive ^b
Contextualization within medical education	Extensive, inherent in program structure	Some, driven by individual student efforts ^c
Thesis/capstone project	Required for degree	Required for degree

Abbreviations: MHPE indicates master of health professions education; MEd, master of education.

^aMHPE programs vary greatly in instructional format and use distance learning (online), on-site learning, or a combination of the two.

^bStudents in PCEHD classes have varied backgrounds, motivations for pursuing a master's degree in education, and envisioned applications of their degrees. Their contributions to course discussions and MD–MEd students' learning experiences are all nonmedical.

^cContextualization of PCEHD course work into a medical education framework occurs most prominently through individual projects pursued within courses, independent studies, and capstone projects. These opportunities for contextualization are based on individual student interests rather than being structured within the program.

ways. For example, they may write a paper that addresses a scholarly question through synthesis of existing literature or design an educational tool, such as an assessment, a curriculum, or a learning environment intervention. One of the authors (J.D.) developed a supporting framework for vertical curricular integration based on principles of adult learning theory and situated learning theory. This framework then guided his design of a curriculum for an advanced clinical anatomy elective for senior medical students.

Outcomes

Because our program is young, we can report only immediate outcomes. First, this innovation at Vanderbilt University demonstrates the feasibility of an MD–MEd joint-degree program offered through a partnership between a medical school and a school of education, that enables attainment of both degrees within five academic years. Second, our three author participants (W.M.S., J.D., M.B.) feel that their experiences allowed them to achieve desired competencies as educators. The MEd program in Learning and Design provides a foundation in many areas critical for expert educators: learning theories; the design of learning experiences and assessments; the nature of optimal learning environments; and the practice of continuing improvement at the individual, organizational, and national level. We feel that graduates will be able to build upon this foundation to contribute meaningfully to the academic and educational missions of their institutions throughout their careers.

Some may question the benefit of obtaining this deeper training in education while in medical school. Although graduate course work does not obviate the value of or need for experience, we believe that it can jump-start a career in education. It is our intent that credentials and demonstrated commitment to medical education will allow our MD–MEd graduates to take on greater educational responsibilities earlier in their careers and thus quickly acquire valuable experience. Our dual-degree program participants have already begun gaining such experience: Three have chaired the VUSM Student Curriculum Committee and worked closely with faculty in designing and implementing the recent major curricular reform at VUSM.

Others may question the value of a general education degree when MHPE programs provide a course of study tailored to the health professions. We have found several key differences between MHPE programs and our MD–Med joint-degree program to be unexpected strengths of our program (Table 2). For example, in our program, immersion with peers from diverse backgrounds, experiences, and professions provides an array of perspectives through which to examine health care education systems. Similarly, we believe that the perspectives medical students provide to their nonmedical peers add value to those students' experiences and foster collaboration between disparate groups. Nonetheless, opportunities to situate general concepts and principles within the context of medical education are essential for the long-term success and utility of the program. Although some contextualization occurs within established PCEHD courses—where professors encourage students to apply theory and practice to their primary profession—-independent studies and capstone projects are essential for making the degree program relevant and applicable to medical education.

Next Steps

Although our early experience has been rewarding, our novel MD–Med program must continue to evolve, and better integration of the PCEHD course work into the framework of medical education must be pursued. At present, both the MD curriculum and the Learning and Design curriculum are undergoing changes that will increase flexibility for students. If the two programs evolve in tandem, it could allow development of a highly integrated dual-degree curriculum that promotes scholarly engagement at the intersection of the two fields. For example, VUSM has moved to a competency-based assessment system, while PCEHD assesses students based on major writings and projects. These assessment methods inform students about their progress

within each domain separately, but they do not measure student development in the blended realm of medical education. Moving forward, we plan to integrate specific medical education competencies into the MD–Med program. Through course work offered by both schools, MD–Med students will be required to develop and demonstrate proficiency in the knowledge and skills expected of dedicated medical educators.⁷ Innovations could include the development of interdisciplinary team-taught courses as well as practicum requirements. Such options will require further exploration as our program develops, and could represent a significant departure from the standard, generally compartmentalized dual-degree format. MD–Med graduates who remain at Vanderbilt University Medical Center for residency (W.M.S., J.D.) will lead this effort, creating a novel and sustainable model for continued growth and innovation.

We are eager to witness and evaluate the long-term outcomes of our program, but such evaluation will be dependent on continued interest and enrollment. We hope at least one student will enroll every one to two years to maintain a dynamic relationship between VUSM and PCEHD. We will track our MD–Med graduates' career trajectories to explore not only whether they become medical educators but also the extent to which they engage with the larger community of educators, conduct educational research, and eventually assume leadership positions. We anticipate that they will be called on early in their careers—as residents, fellows, and junior faculty—to use their educational expertise. Even with these outcomes pending, we consider this program to be a success, and we encourage other medical schools to partner with colleges of education to create similar programs as the education community works to transform the future of health care education.

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