

IS IT ETHICALLY PERMISSIBLE TO TEACH ETHICS WITHOUT A CURRICULUM? THE BASICS

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Teaching ethics during a busy residency program or clinical practice can be especially difficult. Clinical demands, new duty hour regulations, and neuroscience and clinical neurology content frequent squeeze out ethics from the curriculum. Frequently ethics is viewed as less of a priority that

Developmental Perspective of Adult Education

In this syllabus I will review the steps for developing a curriculum in ethics for learners in the field of clinical neurology. The underpinning for these steps is the developmental perspective of adult education theory. Therefore, it will behoove us to *briefly* review this perspective first.

Developmental theory of adult education is based on the constructivist work of Immanuel Kant, John Dewey and Thomas Kuhn (1). Instead of merely a set of teaching techniques, the theory postulates interrelated principles of how adults learn (2). In fact, the theory emphasizes learning, not teaching. This is to say that the focus of the theory is on the attributes, needs, background, and motivations of the learner instead of the talents and style of the teacher. Certainly we have all had the experience in which an expert in his or her field eloquently expounded on a topic with aplomb, yet we learned next to nothing because the “teacher” did not understand his or her audience and our prior knowledge of the topic. Developmental theory of education maintains that the learner’s prior knowledge must be activated if the educational session is expected to be successful. For example, medical students and neurology residents have multiple and varied experiences with medical ethics, philosophy, psychology, sociology, religion, and history that will influence how they learn new ethics concepts and principles. Teachers should spend time at the beginning of a discussion session, lecture or course listening to students as they share their prior knowledge and experiences. Learners are not a blank slate, and teachers ought not pretend that they can effectively teach medical ethics before acknowledging the prior experiences and knowledge of the learners.

Once the learners’ prior knowledge has been activated, the teaching should focus on constructing links between the prior (“old”) knowledge and the new knowledge. Developmental education theory maintains that adults retain what they learn to the extent that the new knowledge is built upon or linked with prior knowledge. We cannot learn in a vacuum; new concepts are soon lost if they are presented in an unfamiliar, decontextualized manner. For example, using analogies that compares new concepts with what is already known can be very helpful to learners. A good example of this in the field of medical ethics is Fletcher’s approach to ethical issues because his approach is similar to our approach to clinical practice – obtain a medical history, perform a physical examination, review laboratory studies, consider the differential diagnosis, and select an evaluation plan (3). He compares the approach to ethical questions, a new process, with a process that healthcare professionals know quite well.

Building links between new knowledge, skills, and attitudes and prior experiences takes time. New concepts are rarely fully grasped after the initial lecture or discussion of a topic. The concept must be presented and reviewed several times, and for many learners a time for reflection is required before the topic is fully comprehended. Furthermore, it helps to vary the context in which the topic is presented. For example, a curriculum that seeks to teach the ethical issues of end-of-life care will be most effective if it combines lectures and discussion sessions with simulations, role modeling, observed patient encounters and other clinical experiences that complement the classroom sessions by approaching the same topic from a variety of perspectives. There is no question that such a curriculum requires more time than traditional medical education in which a topic was “covered” by merely having a one-hour lecture each year. While this “checklist approach” to medical education may seek to satisfy ACGME requirements, it is not particularly effective because it underestimates the importance of repetition, contextualization, and reflection for adult learners.

The last aspect of the developmental perspective of adult education that I would like to mention is the importance of learner motivation. Extrinsic motivators such as tests, the RITE examination, and certifying boards are

significant factors in the education of healthcare professionals. Nonetheless, the most powerful motivators for learning are internal, including innate curiosity, a love of learning, and a passion for discovery. I think that the field of ethics is inherently interesting, and an ethics curriculum should be designed to capitalize on this aspect of ethics. Conversely, no curriculum, regardless of how superbly it is designed, can overall a lack of motivation in the learner.

So What is a Curriculum?

A curriculum is the tangible expression of the soul of an institution

There are three aspects to a curriculum: the formal curriculum, the informal curriculum, and the hidden curriculum. This discussion will focus on the development of a formal curriculum, but a few words about the other two aspects of a curriculum are necessary because they are also very important.

The formal curriculum is the physical representation of an educational encounter, whether it is a lecture, a workshop, a discussion session, a rotation, a course, or an entire training program. The formal curriculum includes, but is not limited to, the orientation materials, lecture notes, readings and references, policies and procedures, assessments, and evaluations.

The informal curriculum is the unplanned, unscripted experiences of the learner. There are innumerable examples of the informal curriculum, including after-class discussions, impromptu conversations with patients or their families, the work routine during an inpatient rotation, role modeling of professional behavior at the bedside, and discussions with other students, residents or faculty when on call. Though the details of the informal curriculum may be unplanned, a curriculum can create opportunities for positive encounters between teachers and learners, such as establishing a mentorship program or scheduling an “agenda-lite” lunch or dinner with a subset of teachers and learners.

Finally, but no less important, is the hidden curriculum. The hidden curriculum is the cultural milieu in which the educational experience occurs. It includes the values and priorities of the teachers and the institution, the embedded reward systems for both learners and teachers, and the principles and values that are codified in the policies and procedures of a course, a residency program, or the institution. The hidden curriculum is addressed by Dr. Michael Williams in another session of this colloquium.

Whereas the formal curriculum is “What we say” and the informal curriculum is “What we do,” the hidden curriculum is “What we value.” Together the formal, informal and hidden aspects of a curriculum comprise the soul of an institution, “What we are.” The content of a lecture, the selection of topics for noontime conferences, the amount of time devoted to various rotations in a residency program, the process of providing feedback to learners, the attendance of faculty at rounds or conferences, and the commitment of faculty members to education are each components of a medical education curriculum. Though the informal and hidden aspects of a curriculum cannot be thoroughly controlled, I do believe that a well-planned, vibrant formal curriculum, when implemented with leadership, can have a profound impact on the culture of an institution. With that in mind, we now turn to the steps for developing a formal curriculum.

Steps to Developing a Formal Curriculum

The most accessible and practical reference for developing a medical education curriculum is *Curriculum Development for Medical Education* by David Kern and his colleagues (4). I strongly recommend this very helpful manuscript to anyone developing a formal curriculum. For this discussion I will be using the Kern manuscript and a modified version of their approach that is used by Dr. Anjala Tess (5).

The six steps are:

1. Goals and Resources
2. Content
3. Education Strategies
4. Assessment of Learners
5. Implementation
6. Evaluation of Curriculum

These steps can be used to develop any type of curriculum, including a single lecture or clinical experience, a series of lectures or discussion sessions, a medical student rotation in neurology, a 4-week rotation for neurology residents, or an entire residency program. For the purposes of this discussion, I will refer to all of these as simply an “educational experience.”

1. Goals and Resources

The first step in developing a formal curriculum is to determine the goal or goals of the educational experience and the resources that are available to the learners. The goals should be a concise summary of the purposes and outcomes of the experience. It may be helpful to conduct a needs assessment of the learners and/or the faculty before developing a comprehensive set of goals. I have found that getting input from individuals who have completed the rotation or residency program in the past few years can be very valuable. For example, as I developed the curriculum in child development for our pediatric residents, I spoke with chief residents and pediatricians who had recently graduated from the program.

Assessment of the resources available for providing the educational experience is also very important as the curriculum is developed. Resources include people, time and money. Personnel resources could include content experts, education consultants, residents and fellows, healthcare professionals from other fields and disciplines (such as nurses, lawyers, etc), and the learners themselves. Since time is frequently a scarce resource for faculty, it is frequently worth the additional time required to coordinate an educational experience in which various teachers are utilized. Minimizing the expectations and time commitment required from each individual faculty member may help garner faculty support for the new or modified educational experience. Fortunately, most educational experiences are not expensive endeavors. However, revision or development of a large curriculum, such as a medical student rotation or residency program, requires a lot of time, and securing salary support or assistance for the work should be discussed before beginning the project.

2. Content

The identification and organization of the core content of a curriculum is the next step in developing an educational experience. Classically, the domains of a curriculum’s content have been divided into three basic categories or domains: knowledge, skills, and attitudes. For each goal of the curriculum, it is helpful to carefully consider the various knowledge items, skills, and attitudes that will be included in the curriculum. These can also be linked to specific core competencies since the ACGME, the American Board of Psychiatry and Neurology, and other organizations that provide credentialing to programs and professionals are now making this a requirement.

Since the topic of medical ethics is quite broad, it may be helpful to consider ethical issues that are particularly relevant to the field of neurology. Dr. Michael Williams and I are currently editing the first edition of a case-based ethics curriculum for neurology residents and fellows. The topics in ethics that we believe could be discussed during a neurology residency program are listed in Supplement 1.

Selecting helpful reference texts is another important aspect of developing the content for the curriculum. Dr. James Bernat’s excellent manuscript, *Ethical Issues in Neurology*, is an excellent resource for neurologists (6). There are several good general medical ethics manuscripts, and a detailed review of each of them is beyond the scope of this presentation. However, I believe that *Fletcher’s Introduction to Clinical Ethics* deserves special commendation (3). It provides a highly readable, practical, and case-based approach to medical ethics. Each chapter includes insightful historical and legal information, case discussions, and questions for small group discussions. Additionally, seminal ethics works and cases are thoroughly discussed in two texts by Pence, *Classic Works in Medical Ethics* (7) and *Classic Cases in Medical Ethics* (8), respectively.

In addition to textbooks and manuscripts, journal articles can provide up-to-date ethics information. I have found that the best medical ethics articles are typically published in the following journals: the New England Journal of Medicine, JAMA, the Annals of Internal Medicine, the British Medical Journal, the Hastings Center Report, and Journal of Medical Ethics. In addition, practice parameters and guidelines published by the American Academy of Neurology in Neurology and other medical professional organizations can also quite helpful. Depending on the goals of the curriculum, it may be possible to find curriculum on the web that can be modified to meet your particular needs. Finally, insights and personal experience from content experts at your own institution can be an invaluable resource.

Once the core content of the curriculum has been determined and the resources and references identified, it is then time to delineate the goals of the curriculum as objectives. Objectives are specific, brief, measureable outcomes of the educational experience that can be used to demonstrate that the learner has indeed comprehended and learned the experience. Kern recommends using definitive words, including list, define, identify, give examples of, write, compare and contrast, solve, perform, illustrate, rate and rank (9). Since these verbs offer ways to measure whether the educational experience was successful, they are better than nonspecific terms like know, understand, know how, learn, and appreciate.

3. Teaching Strategies

I believe that a lecture, discussion session, rotation, or any other educational experience ought to be planned twice. Once the content of the experience is selected, then the teacher or teachers should decide what the best strategies are for teaching the content. The teaching strategy should correlate to the content domains. For example, if the goal is to teach facts and cognitive knowledge, then a lecture supplemented with references may be adequate. But lectures are rarely the best method for teaching. For example, if the goal is to teach a problem solving method or approach, then case discussions will be most productive. On the other hand, if learning a specific skill is one of the objectives of the experience, then a simulation, model, or clinical experience with observation and feedback can be particularly useful. Since learners have various learning styles and most curricula teach a combination of knowledge, skills and attitudes, it is most effective to use multiple teaching strategies during an extended educational experience, such as a rotation, workshop, or seminar. Using multiple teaching strategies at different times to teach the same content means that more time is devoted to a particular topic and fewer topics can be addressed within a given period of time. However, this approach significantly increases the likelihood that the material will be learned. Since learning is the primary goal, bear in mind that less is definitely more when designing a curriculum.

I believe that ethics is best taught through small group, case-based discussions and role playing. Discussions and role playing are particularly useful in teaching a combination of problem-solving skills, communication skills, and professional attitudes, and these are the principle content domains in the field of medical ethics. Nonetheless, time constraints and limited faculty support may make it unfeasible to teach ethics in small groups settings. Consequently, I would like to briefly review selected strategies for teaching ethics in large groups or in a clinical setting, such as during inpatient rounds or in an ambulatory care setting.

Although lectures remain the principle method for teaching in medical education, large group teaching through a lecture format is frequently ineffective because it is passive and does not engage the learners. However, lectures can be effective if the teacher liberally uses questions to activate the learners' prior knowledge and to guide the group through a case discussion (10). Another useful technique is the 10-2 lecture. After presenting a concept for ten minutes, the learners then discuss a question in groups of two or three for a few minutes. At the completion of the minigroup discussions, the teacher can ask for volunteers to summarize their small group discussions and then bridge the comments to the next 10 minute presentation. When facilitated well this simple technique can keep a large group of learners engage for 60 minutes or longer. Alternatively, the large group can be divided into several smaller groups and assigned various roles or perspectives, such as the patient, patient's family, physician, resident, nurse, etc. After an extended period of discussion each small group can present a summary of its discussion to the larger group. If time permits, debate and discussion between smaller groups can be encouraged. Finally, at the end of the session each member of the audience could be asked to reflect by writing down the main points that they learned from the session or lingering questions that they may have from the discussion. These comments and questions can be used as an evaluation tool for the session and could be an excellent introduction to the next educational session.

Time constraints frequently limit the length of ethics-related discussions that can occur during rounds or in the outpatient setting. But there are a few simple strategies that can be utilized in these setting to teach ethics, as well. For example, for a critically ill patient in which the goals of care need to be established, before entering the room the learners can be asked to role play how they would discuss this end-of-life issue. Since most learners are uncomfortable with role playing, the teacher must strive to create a nonthreatening environment, and all the learners could work together so an individual person is not singled out. Alternatively, the learners can observe the faculty member discuss the issues with the family and write their thoughts, comments and questions on note cards. Then, the faculty member could facilitate a discussion of the encounter. If time will not permit a discussion immediately after the encounter, the note cards can be used to help the learners recall the encounter so a discussion can be facilitated at a later, more convenient time. I frequently use note cards in clinic so that the learners can capture their thoughts and questions and then discuss them with me at the completion of clinic.

4. Assessment of Learners

Just as the goals and objectives guide the selection of teaching strategies, they also should guide the selection of assessment tools that are utilized in the curriculum. If a formal test is required, then short answer questions are much better for assessing the learners' knowledge of ethics-related content than multiple choice questions. Active participation in small group discussions is also a reasonable method for assessing a learner's knowledge of ethics. Though it can be time consuming, direct observation of the learner during a clinical encounter is an excellent method for determining the ability of the resident to apply ethical principles to clinical practice. The encounter can be with a standardized or real patient. Having an observer in the room does influence the encounter, but the effect can be minimized if the teacher has developed a good rapport and professional relationship with the learner. For example, a genetic counselor or I directly observe residents provide genetic counseling with patients and their families to ensure that the counseling offered is complete, appropriate, and professional. I also observe senior residents disclose genetic diagnoses after they have seen these encounters modeled many times during the first few years of their training. I have found that the residents genuinely appreciate the feedback that they receive. Though time in clinical settings is limited, these simple, relatively brief educational techniques can have a beneficial and long-lasting effect on the learner.

Once the learner has been assessed, it is also important for the teachers to provide feedback to the learner based on the results of the assessment. Feedback is an important component of any curriculum, but a full discussion of the topic is beyond the scope of this presentation. There are many helpful articles that the interested participant may review for additional information (11, 12, 13).

5. Implementation of the Curriculum

The implementation of a new or revised curriculum requires that the designers of the curriculum act as change agents. As with leading any change within an organization, one of the keys to success is to deconstruct the larger curriculum into smaller components that are more manageable (14). Iterative implementation of the smaller components helps to ensure early wins in the change process and increases the likelihood of a success. Additionally, I have found that piloting one small aspect of the curriculum first can be an invaluable learning experience for the teacher, if not the student. For example, before implementing a comprehensive curriculum for teaching end-of-life care to neurology residents, the teacher could initially try just a few new teaching strategies, such as the 10-2 lecture approach or the utilization of note cards by learners who are observing family meetings. Again, less is more. Small steps that are successful can create an atmosphere of early wins that will empower the teachers and learners to persevere through the changes.

I have found that face pages can be a particularly effective way to formalize many aspects of the curriculum. Supplement 2 is a face page that I use in my clinic. A different face page is used for each half-day session that an individual learner is with me in clinic. My contact information as well as the clinic time and location are included on the page. The objectives and expectations of the learner are clearly delineated, including preparation before clinic and recommended readings. Finally, multiple choice or short answer questions relevant to the objectives are included. Ethics topics can easily be added to the list of objectives, reading list, or preparation questions. We discuss the preparation items and the answers to the questions at some point during the clinic, such as between patients or at the end of clinic. Pediatric residents are required to complete one month of a developmental medicine rotation. Our faculty and staff have prepared a face page for every clinic, discussion session, or community agency visit that occurs during the rotation. The residents can access these documents as well as PDFs of the recommended readings and resources through a password-protected page on our website. We have learners from a variety of disciplines attend our clinics, including undergraduates and students in medicine, nursing, and psychology. These face pages can be used for these learners, as well.

Successful implementation of a new or revised curriculum requires faculty development. Since the use of facepages were new to our faculty, we spent a lot of time during our weekly noontime conference reviewing adult education theory, the content of the pediatric residency rotation in developmental medicine, effective use of the facepages, and teaching strategies. If feasible, I recommend contacting your local faculty development office or the education department at your school to help create faculty development workshops in education. Though this requires another time commitment, I think it is essential to ensuring that the curriculum is accepted by the faculty and implemented well.

6. Evaluation of the Curriculum

We are revising our curriculum for the pediatric residency rotation in developmental medicine on an ongoing basis. Through the use of anonymous evaluation forms, we solicit input for every learner who completes a rotation with us. We also provide opportunities for the faculty and staff to review the curriculum and provide input on the content and teaching strategies. This process emphasizes the important point that a curriculum is not a static product. Instead, the most successful curriculum is constantly evolving. In fact, I encourage you to think about curriculum development as a circular process. Based on the results of learner assessments and curriculum evaluations, the core content and teach strategies may be revised, and the modified curriculum can again be implemented and evaluated. This process improves the quality of the curriculum, but it also provides invaluable insight about effective medical education that the teachers can apply to other curricula.

Conclusion

Developing a successful curriculum can be very rewarding, and I have found that learners genuinely appreciate the educational experience that they receive from a well-designed curriculum. These learners recognize that education is more than an informative process of accumulating knowledge, skills and attitudes. Instead, it is transformative. Their participation in the educational experience changes them. If they are learning about ethics, then they will develop new insights and perspectives, new approaches to ethical conundrums, and new questions to ponder and consider. In this way perhaps good medical education is like good medical research, participants gain new knowledge while creating more opportunities for discovery and inquiry in the future.

References

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SUPPLEMENT 1

Ethics Topics for Neurologists in Training

Core Topics

Approach to ethical problem solving
Informed consent
Confidentiality
Truth telling
Advance directives and advance care planning

Withdrawing and withholding life-sustaining therapy
Brain death and organ donation
Conflict resolution
Genetic testing
Teacher-learner relationships
Gifts from industry

Supplemental Topics

Allocation of scarce resources
Clinical research
Dementia
Driving restrictions for the neurologically impaired
End-of-life care for neurologically impaired child
Enhancement
Gifts from patients
Impaired physicians
Informed assent in children
Medical errors
Medical student – patient relationship
Mental retardation
Neonatal neurology
Opiate treatment for chronic nonmalignant pain
Organ donation following cardiac death
Palliative care
Persistent vegetative state
Physician assisted dying
Professional misconduct of a sexual nature
Termination of physician - patient relationship

SUPPLEMENT 2: Sample Face Page

Neurogenetics Clinic I: Cytogenetic and Chromosomal Microarray Analysis in Global Developmental Delay & Cognitive Impairment

Contact: Tyler Reimschisel, MD (Office: 6-8177; Pager: 835-5685)

Location: Neurology Clinical Suite, 9th Floor, DOT

Time: Wednesdays from 1:00 – 5:30 PM

Objectives:

1. Determine the developmental quotient and discuss with family for at least one patient in clinic (*Patient Care, ICS*)
2. Describe the rationale, logistics, diagnostic yield, sensitivity and specificity for chromosome analysis in individuals with GDD or cognitive impairment (*Medical knowledge*).
3. Describe chromosomal microarray analysis technology and explain the logistics, diagnostic yield and sensitivity and specificity of this technology in individuals with GDD or cognitive impairment (*Medical knowledge*).

Preparation:

1. Read the articles provided (*Medical knowledge*).
2. Review medical records for patients scheduled in clinic (*Patient Care*).
3. Using the Online Mendelian Inheritance in Man (OMIM) website (google "OMIM"), develop a differential diagnosis for a child with mental retardation, strabismus, and failure to thrive. Print the Clinical Synopsis for one of the disorders on your differential and bring to clinic (*PBL*).
4. Complete the preparation questions (*Medical knowledge*).

Readings:

Battaglia A and Carey JC. Diagnostic evaluation of developmental delay/mental retardation: an overview. *AJMG Part C (Semin Med Genet)* 2003;117C:3-14.

Lupski JR. Structural variation in the human genome. *NEJM* 2007;356(11):1169-1171.

Lee C, Iafrate AJ, and Brothman AR. Diagnosis of constitutional disorders. *Nature Genetics* 2007; 39 (7 Suppl):S48-54.

Supplemental References:

Shaffer LG and Bejjani BA. Medical applications of array CGH and the transformation of clinical cytogenetics. *Cytogenet Genome Res* 2006;115:303-309.

Preparation Questions:

1. In individuals with nonsyndromic mental retardation, the diagnostic yield of chromosomal microarray analysis is approximately
 - a. <1%
 - b. 2%
 - c. 7%
 - d. 15%
2. You are discussing the common indications for chromosome analysis with a group of third-year medical students. Of the following, the MOST appropriate statement to include in your discussion is that
 - a. A blood karyotype should be obtained in any newborn who has multiple congenital anomalies and growth retardation
 - b. A blood karyotype should be obtained only for a girl who has short stature if a buccal smear is negative
 - c. Chromosome analysis is not necessary to confirm the diagnosis of Down syndrome if the major clinical features are present
 - d. Chromosome analysis must be obtained to assess the reproductive risk for a woman who has a sibling who has trisomy 21
 - e. Routine chromosome analysis is adequate for the diagnosis of microdeletion syndromes, such as DiGeorge syndrome
3. Of the following, which is a continuous gene deletion syndrome associated with mental retardation that can be diagnosed with chromosomal microarray analysis?
 - a. Fragile X
 - b. Smith-Lemli-Opitz
 - c. Smith-Magenis
 - d. Rett

4. Which of the following tests or studies are recommended for all individuals with nonspecific cognitive impairment/mental retardation?
- a. EEG and Fragile X testing
 - b. Fragile X testing and karyotype
 - c. Karyotype and Rett syndrome testing
 - d. Rett syndrome testing and EEG
5. Copy number variation has recently been identified in what percentage of individuals with autism?
- a. 1%
 - b. 3%
 - c. 10%
 - d. 15%