The emphasis on educational outcomes, rather than processes, has resulted in consideration of two critically important changes that allow programs to make curricular changes. The first is that there will no longer be any specifically required courses. Current standards, for example, require “at least one course in the linguistic and psycholinguistic variables related to the normal development [bold in the standards] of speech, language, and hearing…” The implication is that at least one entire course will be devoted to processes not involving disorders of communication. Soon, applicants for certification will be required to have knowledge of anatomy, but not necessarily a dedicated course.

The second vital change considered here is that there will no longer be a specified sequence of learning activities. Current certification standards, for example, indicate, “applicants should be assigned practicum only after they have
had sufficient course work to qualify for such experience.” However, the standards do not define “sufficient.”

The purpose of this paper is to present a framework for making curricular choices. It is not the intent to advocate a position, but to delineate bases upon which programs may make choices, keeping in mind the important changes from current to new standards. Although there are no doubt more, I will suggest three bases for making decisions about curricular change: (1) continua of educational styles, (2) meshing with accreditation standards, and (3) environmental considerations.

**Continua of Educational Styles**

Within any curriculum, educational practices typically exist along several continua (Wiles & Bondi, 1998). I will offer three continua to consider in designing curriculum. The reader should keep in mind that these are continua, not dichotomies. That is, neither a course, nor certainly an entire curriculum, necessarily needs to be entirely at one end of a continuum or another. Further, the reader should realize that continua coexist; they are overlapping, interactive, and synergistic.

**The Linear-Cyclical Continuum**

Curricula may exist on a continuum I will call “Linear-Cyclical.” At the extreme linear end, topics are presented in an order, for example, normal process to disorders. Curricular designers would consider some knowledge and skills as “earlier” ones, and these are prerequisite to “later” ones. That is, the curricular designers would consider it difficult for a student to master later material if the student has not mastered material presented earlier. Thus, topics presented later in a curriculum assume mastery of earlier material.

At the cyclical end of the continuum, a curriculum would introduce and reintroduce knowledge and skills several times. It is probable that each
reintroduction of a topic would include additional knowledge and require greater depth of understanding. Thus we may think of this process as an “up-spiraling” of any topic (Wiles & Bondi, 1998). Further, a cyclical, or spiraling, process would blur the line between “earlier” and “later” topics.

A Linear-Cyclical Example: Phonological Rule Development. We may take the topic of phonological rule development as an example, and see how a curriculum might present it in a linear process and in a cyclical one. The linear process, in this case, is certainly the more typical one in current practice.

In a linear mode, phonological rule development would be presented in a (probably undergraduate) course called, for example, “Speech and Language Development.” Later courses, which often concentrate on developmental language disorders, may briefly review phonological rule development. However, typically, the instructor would assume students in the class know about the topic, because they have completed “Speech and Language Development,” a prerequisite course for the course on disorders.

In a cyclical mode – and remembering that there is no longer a requirement for a course on normal development – we may propose a multicourse sequence, titled, perhaps, “Language Development and Disorders.” In such a sequence, the topic of phonological rule development is presented early, perhaps before any discussion of disorders, perhaps not. Students then might observe children with both typically developing and disordered phonological rule systems. They then might read about disordered phonology, followed by reading more about normal development. They then might compare normal and disordered phonology. Students might next engage in some practicum experiences with children having disordered phonology. Finally, they might next return to readings in normal phonology, evaluating current research.
In the above sequence, the topic of phonological rule development is not limited to one educational experience. Each time it is introduced, students use their previous experiences – in both normal and disordered phonology – to delve ever more deeply into the topic.

The Decontextualized – Contextualized Continuum

It is well known that, from the earliest school experiences on, knowledge is presented in ever more decontextualized format (Moran, 1997; Nelson, 1998). Decontextualized material is presented in a “package,” with little or no reference to other knowledge and skill. It is up to the student to incorporate previous and contemporaneous knowledge from other areas to derive a broad perspective. Students learn contextualized material, by contrast, within a set of circumstances, often complex. Thus the purpose is to present topics in an ecological framework.

A Decontextualized-Contextualized Example: Acoustic Cues for Speech Perception. The topic of acoustic cues for speech perception may provide a good example for structuring a curriculum along the decontextualized – contextualized continuum. Toward the decontextualized end, students learn about formant transitions, plosive bursts, and so forth in a (usually undergraduate) course, for example, “Speech and Hearing Science.” The instructor and the readings would not refer to disorders of speech production or perception. This is likely how most curricula currently incorporate the topic.

In a contextualized framework, students might learn about acoustic cues as they are relevant in courses or course sections on disordered communication. For example, in learning about effects of hearing loss, students might learn that people with cochlear hearing loss have difficulty discriminating between consonants having different places of articulation (Revoile, 1999; Walden, Prosek, & Worthington, 1975). They then might explore the relationship between place of articulation and second formant transition (Pickett, 1999). They might
then delve into mysteries of vocal tract resonance. An example like this could be repeated for other acoustic cues and in the context of any communicative disability producing disordered perception or production of acoustic cues.

**The Analytic – Synthetic Continuum**

Analysis, the process of breaking things into component parts, is a typical way of approaching curriculum in communication sciences and disorders. Just the fact that we have courses devoted to single topics of communicative disorders provides evidence of our penchant for putting things into compartments.

Synthesis, on the other hand, the process of putting things together, of even “manufacturing” information, or creating a Gestalt, provides the other end of this curricular continuum. We often see synthesis in clinical practicum, where students need to solve clinical problems by putting together relevant, and even occasionally disparate, pieces of information to solve the clinical puzzle.

**An Analytic – Synthetic Example: Various Speech, Language, and Hearing Disorders.** To include attention to various speech, language, and hearing disorders, our curricula could allow us to use a highly analytic approach. To introduce voice disorders, we might have a sequence of 0.5-credit modules, each devoted to a single subtopic of voice. A curriculum might contain, for example, one module each on acoustic description of disordered voice, medical aspects of voice disorders, instrumental analysis, therapy principles and methods, and practicum with patients having voice disorders.

Learning about aural rehabilitation might provide an opportunity to use the synthetic end of the continuum. For example, we might have a multicourse sequence (or one really long course, if we ever break free of three credits per topic). The course(s) could be offered in a problem-based format, in which, from the outset, students would continually need to put information together to solve a
real-world problem (Boud & Feletti, 1991). The course(s) could contain all the topics relevant to aural rehabilitation, without breaking them into units such as “speech and language of the hearing impaired,” “educational options,” or “counseling.” The course(s) might even integrate information about clients with problems other than hearing disability, as many of the techniques, for example, discrimination training or communication management, can be used with other clinical populations. Practicum can be interwoven, providing both a source of information for solving problems and an opportunity to apply learned information.

The Yang – Yin Continuum

The Taoist conception of universal forces – yang and yin – provides yet another, and perhaps multicultural, way of structuring a curricular continuum. Yang is the “masculine” (not necessarily male) universal force. Some of its typical characteristics are logic, individuality, separateness, and competition. Yin, the “feminine” (not necessarily female) force, is typically characterized by intuition, inclusiveness, connectedness, nurturance, and cooperation. In a Taoist framework, we need to seek a balance (not necessarily half and half) of yang and yin.

A Yang – Yin Example: Instructional Methods. The curricular use of yang and yin probably has its most obvious application in varying instructional methods (Nagel, 1994). Typical yang methods include lecture, single-student presentations, and competitive grading. Yin teaching can manifest in methods such as group presentations, cooperative learning, and service learning.

Meshing with Accreditation Standards

Ultimately, if programs wish their students to be eligible for ASHA certification, curricula and other program factors must meet standards for accreditation (ASHA, 1999). I wish to focus on two standards that may constrain and guide curricular changes.
Standard 3.1: Sufficiency of Curriculum.

Standard 3.1 says, in part, “The curriculum … is sufficient to permit students to meet ASHA-recognized national standards for entry into clinical practice.” Currently, the only “ASHA-recognized” standards are those for the Certificates of Clinical Competence (SCCC).

The upcoming SCCC for both audiology and speech-language pathology contain lingering process standards, and programs must take care that curricula will allow students to meet these. For example, the 2007 SCCC in Audiology require students to accrue 75 semester credit hours beyond the baccalaureate degree and, as of January 1, 2012, to have a doctoral degree. Those students must have practicum hours equivalent to at least 12 months of full-time employment.

The upcoming SCCC have lists of knowledges and skills students will need to attain, representing a rather broad cross-section of the respective scopes of practice. Thus (some fears to the contrary), a program that does not permit it students to learn about dysfluency, and to develop clinical skills with dysfluent clients, seriously jeopardizes its accreditability and, thus, its students’ certifiability.

Both sets of SCCC require students to demonstrate their knowledge and skills via formative and summative assessment. In 2002 ASHA’s semiautonomous accrediting body, the Council on Academic Accreditation (CAA), will require all programs seeking accreditation or reaccreditation to present a plan for formative assessment of its students (T. Kirsch, personal communication, May 8, 2001).

These three factors - process standards, required knowledge and skill, and assessment method - do place some constraints on making curricular change. They serve as a mechanism to ensure a smooth and reasonable transition if programs wish to make substantial changes in curriculum.
Standard 3.5: Appropriate Sequence.

CAA standard 3.5 requires that “The academic and clinical curricula reflect an appropriate sequence of learning experiences.” Traditionally, this has meant that students learn about disorders first in didactic courses, and then engage in practicum with clients having those disorders. Also generally acceptable is students’ having practicum while they are learning about a disorder, as long as the program is careful to protect client welfare and have practicum students adhere to the ASHA Code of Ethics.

However, there is no evidence of what constitutes an appropriate sequence of educational experiences. Outside of communication sciences and disorders, there are institutions experimenting with curricular order. In some medical curricula using non-traditional curricula, for example, students see patients (under appropriate supervision) early in the first year of their education (see, for example, Case Western Reserve University, n.d.). In our professions, there is no research base to verify what constitutes an adequate background to just begin seeing patients. This holds true, despite a resolution (Klim, 1988) “That the Council of Graduate Programs in Communication Sciences and Disorders encourage the generation and dissemination of scientific, experimental data on which to base curricular decisions” (p. 51). It is entirely possible that students, after having only very minimal classroom exposure, could work with clients under appropriate supervision. It is conceivable that the clinical exposure would enhance the classroom learning, which could then enhance further clinical learning. Members of our discipline need to complete the rigorous research to support or refute these possibilities.

Thus, CAA Standard 3.5 may present a challenge to experiment with curricula to determine best learning sequences. To date, we have not undertaken those experiments.
Environmental Considerations for Curricular Choice

Curricula do not change by themselves. Neither do programs change curricula in ideal settings. Programs considering changing their curricula must attend to numerous environmental factors.

Institutional and Programmatic Culture

Institutions and programs develop historical ways of doing everything from who approves syllabi to who makes morning coffee. That is, programs have a culture, dictated in no small part by the mission of the institution. A program in an institution largely devoted to research, may have curricular emphases, even at the clinical entry level, very different from those of a program in a comprehensive university. A university may have developed a particular culture for teaching style, such that, for example, “yin” teaching is frowned upon (Maher & Tetreault, 1994). If a program wishes to make curricular changes to approach the new SCCC, it will need to do so with consideration of whether the institutional forces at large will accept those changes.

Human Resources

Obviously, it is the people in a program who will implement (or not implement) any curricular changes. Programs contemplating curricular change need to consider, for example: (1) the number of available faculty, both full-time and part-time, (2) the talents, abilities, interests, and motivation of available faculty, (3) the teaching styles of relevant faculty. This list is probably not exhaustive. The point is, there are human factors to consider in making curricular changes.

Fiscal and Physical Resources

Implementing any curriculum costs money, and programs need to consider the direct and indirect costs of curricular changes. Costs may be incurred for personnel, technology, supplies, and clinical materials. Some people may need or want retraining, at some expense to the institution. Programs need to
consider the costs of curricular changes in light of budget capabilities and priorities of the institution and of the program itself.

The curriculum must be implemented in physical space. Whether it is classroom, clinic, laboratory, or affiliated off-campus sites, programs need to consider the availability and adequacy of the current and potential physical resources.

**Administrative Support**

No program can be successful in making curricular change without administrative support. Programs contemplating making curricular changes need to begin now to educate deans and provosts about the impending changes and the rationales for them. Program directors need to convince higher administrators of the benefits of the changes in both tangible (e.g. increased tuition revenue) and intangible (e.g., enhanced student learning) terms.

**Student Body**

The composition of the student body may have a very strong influence on decisions about curricular changes. A program that serves many part-time students, or commuting students, may need to structure aspects of the curriculum in a way different from that of programs with full-time students. Modules that meet many times a week, for example, may pose a hardship on the former.

**Instructional Delivery**

In this time of technology, programs can offer curricula in any of several formats. Eaton (2001) notes, “Distance learning is creating alternative models of teaching and learning… Virtual programs are being offered on brick and mortar campuses [and] computer-mediated instruction is being provided in traditional lecture halls” (p. 1). Offering a curriculum via distance education, for example,
will pose challenges in monitoring quality, in sequencing learning experiences, and in experimenting with various teaching strategies (Eaton, 2001).

Summary

The impending SCCC in audiology and speech-language pathology will offer programs in our professions the opportunity to examine curricula and make or not make changes. Using a framework of curricular continua, adherence to accreditation standards, and consideration of environmental factors, programs can alter curricula both across and within courses and practica. Programs may change what students learn, how they learn, and when they learn. I have offered some considerations here, but would conclude by saying that there are likely other continua and factors to consider. Each program will need to discover its own best way to use the standards.

References


