Closing the Loop: Identifying Program Goals, Assessing Learning Outcomes, and Re-Examining Practices—KU Intercampus Program in Communicative Disorders

Summary: This portfolio describes the KU Intercampus Program in Communicative Disorders’ process of identifying and assessing student learning goals in their master’s program. The project involved the development of program goal rubrics, a plan for formative assessment and remediation of student skills, and the documentation of student learning through collecting artifacts in an electronic portfolio.

BACKGROUND
The University of Kansas Intercampus Program in Communicative Disorders (ICPD) is a unique program that provides graduate education to students in speech-language pathology and audiology. The KU ICPD combines the faculty, research, and clinical facilities of two departments: Speech-Language-Hearing: Sciences and Disorders, located on the Lawrence campus, and Hearing and Speech, located at the KU Medical Center in Kansas City. While the Department of Speech-Language-Hearing in Lawrence is responsible for undergraduate education, all graduate degrees are conferred through the joint Intercampus Program and include the Master of Arts in Speech-Language Pathology, the Doctor of Philosophy in Speech-Language Pathology and in Audiology, and the Doctor of Audiology (Au.D.). This portfolio focuses on the master’s in speech-language pathology program.

By way of background, graduate programs in speech-language pathology across the country are typically two-year degree programs, consisting of both course work and supervised clinical experiences that cover the full scope of clinical practice for speech-language pathology. At KU, students typically complete nine courses during the first year (i.e., fall, spring, summer) and three clinical practica at our in-house clinics. During the second year (i.e., second fall and spring), students complete three additional courses, two required seminars, one to two full-time clinical placements off-site in the community, and one research experience. One of the challenges of this type of program is aligning training goals across classroom and clinical experiences so that students can apply knowledge gained in one domain to the other. There are usually about 25 students who start the program each year; as it is a two-year program, there are around 50 students total in the program at any given time.

Changes in certification requirements for speech-language pathology that took effect in 2005 led to changes in the master’s speech-language pathology program. Specifically, previously our national organization mandated that graduate students needed course work in certain topic areas, as well as clinical experience with specific communication disorders. Our national organization was dissatisfied with this approach, because it was felt that merely providing experiences did not guarantee learning. Therefore, they decided to move to a system of accountability whereby individual programs had to identify learning outcomes and assess how well their students were achieving those outcomes. This parallels a more general national movement to document learning outcomes at the university level. In this portfolio, we share our experiences in attempting to identify and measure student learning outcomes in the hope that other departments can learn from our experiences.

IMPLEMENTATION
Establishing Learning Outcomes
Although the impetus for documenting program learning outcomes was provided by a mandate from our national organization, this mandate was fully embraced by the faculty. The faculty was motivated to identify and measure learning goals as a more effective means of evaluating program success and identifying areas for revision. Curriculum meetings, involving all faculty members, were scheduled twice per semester beginning in 2003 and continue to present day. These meetings were scheduled prior to faculty meetings and well in advance (i.e., at the beginning of each semester) to facilitate regular attendance. Working with this large group with longer intervals between meetings was somewhat cumbersome for initial development efforts, so we frequently formed smaller working groups to take an initial pass at a given issue. In forming smaller groups, we attempted to ensure that different training perspectives were represented within the smaller group (e.g., different training environments, different topic expertise).

During the 2003-2004 academic year, general program goals were identified. This process began with a smaller group consisting of three faculty members who had expertise in a specific content area and who represented both campuses and training environments (i.e., clinic and classroom). This smaller group attempted to write program goals for their specific content area (i.e., speech sound development and disorders in children). In generating content specific goals, this group realized that their goals could be formulated with more general terms and could apply to all content areas of the program. Thus, five global program goals were brought before the full faculty for discussion and revision. The final five program goals served as the basis for the KU ASHA Knowledge Standards Grid (see Supplemental Material). In additional curriculum meetings, courses and clinical experiences were examined to determine where in the curriculum students were potentially meeting these goals for the different content areas of the program. This process revealed that there were a variety of ways for students to meet program goals in each content area. For this reason, curricular offerings were deemed appropriate. In addition, a standard syllabus format (see Supplemental Material) was agreed upon so that more detailed course goals could be cross-referenced with the program goals, making alignment of program and course goals more transparent.

Developing Program Rubrics
While these initial program goals were helpful in defining the mission of the program and providing alignment across content areas, levels of performance were not identified. Identifying levels of performance was viewed as particularly critical by the faculty, because this allows tracking of student growth across the two-year master’s program. At the same time that this need was identified, the program was invited to participate in the Provost’s Initiative on Documenting Graduate Student Learning (2006-2007 academic year). A smaller group consisting of the three authors was formed to attend meetings related to the Provost’s Initiative. This group represented both campuses, both training environments (i.e., clinic and classroom), and a diversity of content areas. The goal for this smaller group was to draft a program rubric, containing more detailed program goals as well as levels of performance from novice to advanced. The group used the original program goals and existing course and clinical rubrics to identify more specific skills that cross cut different content areas, resulting in the creation of two rubrics, one for diagnostic skills (see Supplemental Material) and one for treatment skills (see Supplemental Material) which were subsequently presented to the full faculty for discussion and revision. For each skill,
four levels of performance were determined by thinking about the types of performance we were likely to see (or would want to see) as students move through the program.

The final rubrics are being used this year in two ways. First, individual instructors are using these rubrics as templates for course or clinic specific rubrics. An individual instructor or supervisor can select skills from the program rubric that are relevant to his or her specific activity and then adjust skill descriptions or levels of performance to best capture relevant content and skills. See Supplemental Material for an example of how an individual instructor has used these rubrics as a template for their course-specific rubric. This alignment of a program rubric with course/clinic specific rubrics provides continuity between individual goals and evaluation methods and program-wide goals and evaluation methods. Second, in our portfolio pilot project (see Student Performance section Supplemental Material for more information), the program rubric is used at the end of the first year (i.e., program mid-point) and the end of the second year (i.e., program completion) for student self-evaluation. Ultimately, we will be able to use the program rubric to aggregate data across students at the program mid-point and at program completion to identify skills that need to be strengthened at the program level.

STUDENT PERFORMANCE
Measuring Learning Outcomes
Prior to 2003-04, student assessment primarily was summative in nature. That is, students completed projects and exams as a part of individual course requirements, and participated in final oral examinations as required by the university. At the end of their program, they also took a national examination that reflected knowledge across the areas identified by our accrediting body. Our national organization mandated that graduate programs require formative assessments in addition to the more familiar summative assessments. Moreover, our faculty recognized that weaknesses identified at the end of a student’s program in the final oral examination could not be remedied before the student graduated. For this reason, interim formative assessments were viewed as desirable so that weaknesses could be identified earlier in a student’s program and could be remedied before the student graduated. Thus, our faculty on both campuses met on several occasions to develop formative questions and grading standards for a written formative examination to be administered at the program midpoint (i.e., end of Year 1).

Developing Formative Assessments
Achieving faculty consensus on the structure and style of the formative assessment took considerable effort. The first effort resulted in a series of content-specific questions that looked remarkably like a summative rather than formative assessment. The faculty went back to the drawing board and developed a series of eight general questions. Questions were written in such a way that students were expected to apply academic information in clinical and professional settings. For example, one question posed was, “The relationship between course content and clinical practice sometimes isn’t obvious. Provide one instance in which you applied basic information or research evidence from class to clinical contexts.” Students selected four of the eight questions to answer, completing the formative assessment at the beginning of the third semester of their graduate program. Each student’s responses then were graded by two faculty members using a continuum rubric (i.e., does not meet the standard, meets the standard, exceeds the standard). Individual academic advisors subsequently met with students to review performance.
Students in the 2004-05 academic year were the first group to complete the formative assessment. Although faculty spent considerable effort in developing the exam, we initially neglected to consider ahead of time how we might evaluate collective student performance. Faculty met as a group to discuss their impressions of student performance. It was decided that a more formal means of data collection was needed so that we could “close the loop” in our assessment procedures. That is, we wanted to be able to examine the collective performance of the students to identify any weaknesses that occurred across students and consider ways of revising the program to bolster performance in those weak areas. When the second and third formative examinations were administered in 2005-06 and 2006-07, we collected quantitative (i.e., percentage of students meeting or exceeding standard) and qualitative data (i.e., example student papers from two high-, two average-, and two low-performing students) for discussion.

When quantitative data from Years 2 and 3 were compared (see Supplemental Material) the faculty expressed disappointment in results, noting that students were not demonstrating the quality of responses expected. Although many students were meeting expectations, few students were demonstrating exemplary performance. In addition, consequences of poor performance were not clear to students a priori and potentially were variable across individual advisors. As a result, three additional documents were created for the 2007-2008 academic year. The first was a formative exam review summary (see Supplemental Material) completed by each exam reviewer, summarizing the student’s strengths and weaknesses and suggesting potential consequences. The second was an action plan form (see Supplemental Material) that the advisor generated with the student, summarizing strengths and weaknesses and creating a clearly outlined and binding plan to address weaknesses. The final document was a list of suggested consequences for specific weaknesses (see Plan of Action Options) that advisors could draw from in creating action plans. In this way, action plans were individualized to student needs and took a variety of forms, including topic readings, meetings with instructors, or work in the writing lab, yet still maintained some uniformity across advisors.

After evaluating student performance over three years, the faculty felt that the formative exam was identifying weaknesses in student learning and providing a means of addressing weaknesses prior to graduation. However, there also was consensus that the feedback provided by the formative assessment rubric might be too general and that the full range of entry level skills was not being tapped by the current evaluation tool. The faculty decided that specifying levels of performance for program goals would aid in tracking student progress, and that a formative assessment that was a more integral component of the program would be more desirable. As mentioned earlier, we developed the Diagnostic Skills Rubric (see Supplemental Material) and the Treatment Skills Rubric (see Supplemental Material) to identify levels of performance for a more specific set of program goals, and these program rubrics can be adapted to individual courses or clinics. This allows for clear feedback across experiences as well as tracking of student skill acquisition across experiences. Within an experience, individual student performance can be summarized to identify common weaknesses across students that can then be addressed during a course or clinic. We subsequently took these documents back to the faculty for review and approval. Several faculty volunteered to utilize these program rubrics in their 2007-08 courses. Our future goal is for more instructors to adapt the program rubrics so that performance across courses and clinics can be summarized to identify overall program strengths and weaknesses, thereby “closing the loop.”
Pilot Portfolio Project
A pilot portfolio project was initiated in the 2007-2008 academic year as a means of making the formative assessment a more integral component of the graduate program. Nine students, or approximately 30% of the entering graduate students in 2007-2008, were recruited for this project. These students archived a portion of their course and clinical work each semester of their graduate program. At the end of two semesters, they completed a self-assessment using the program rubrics for diagnostic and treatment skills and used this information to identify personal strengths and weaknesses. Students then met with their advisors, who reviewed the portfolio and the self-assessment and helped students develop an action plan to improve weaknesses. During the second year of the program, students will continue to archive work in their portfolio and will complete a final self-assessment at program completion. The goal of the final self-assessment and portfolio review is to help the student identify areas for continued learning as she or he transitions to a career. This pilot project will be used to determine whether portfolios are a richer source of formative assessment and should be required of all students. In addition, the pilot project will be used to establish guidelines for future portfolios, addressing issues such as how many samples of work should be archived in the portfolio and how frequently the self-assessment and portfolio review should occur. We also will examine how to best aggregate information across individual portfolios as a means of evaluating the success of our program as a whole, and for identifying areas for future revision.

Examples of Pilot Student Work
In the pilot portfolio project v1.0, students archived two artifacts per semester (except for the summer session when only one artifact was archived). After two semesters, students rated themselves on the departmental diagnostic and treatment rubrics and created an initial plan, summarizing strengths and weaknesses and suggesting a course of action for Year 2. Advisors reviewed the portfolios and met with students to discuss and analyze the action plan. Students will continue to archive artifacts during Year 2 and will again complete a self-evaluation and advisor meeting in their final semester of the program. For a copy of the consent form our department used in the collecting of this work, please see Supplemental Material.

Two sample portfolios from Pilot Project v1.0 are provided for your review. While both students met the basic requirements of the project, clearly the breadth and depth of documents provided by each student was different. Student #1 (see Supplemental Material) provided a rich set of artifacts, reflecting academic knowledge and clinical experiences. She provided three academic artifacts across three consecutive semesters. All three assignments demonstrated her ability to apply factual knowledge to the clinical setting for assessment and intervention purposes. The student also provided two artifacts reflecting her clinical performance. Supervisor assessment revealed that this student consistently applied academic content to the clinical setting, and utilized intervention strategies effectively and in a professional manner. Her clinical performance was described as “exemplary.” Finally, student #1 included Chapters 1 and 2 of her thesis, accompanied by a PowerPoint document created for her thesis prospectus. Consistent with other archived artifacts, this document represented her ability to critically analyze and synthesize previous research in preparation for her own research study. Student #1 correctly identified areas of personal strength at the time of her mid-program self-assessment. Her self-analysis described a weakness (i.e., “lack of experience with dynamic assessment strategies”).

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Her academic advisor noted that this self-described “weakness” really reflected a lack of clinical opportunity and a plan was developed to provide this experience in Year 2.

**Student #2** (see Supplemental Material) met the basic requirements identified for the pilot project. She included two course artifacts, both more reflective in content although still incorporating academic content (i.e., perceptual and acoustic features of voice, and speech fluency strategies). Student #2 selected three clinical artifacts that demonstrated improvement in the analysis of client performance and in the content and quality of her professional documentation. Student #2 correctly noted in her self-analysis that her written documentation had improved. She also identified continuing areas of need, including expanding pediatric intervention strategies and improving her ability to communicate evaluation results to clients and other professionals. Together with her academic advisor, Student #2 identified several strategies for assessing her own professional communication skills, including the use of videotaping her performance for self-analysis.

**Initial Reflections on the Pilot Portfolio Review**

While we haven’t fully aggregated the data yet, since the first round of portfolios are not yet complete, we have some early thoughts about the work that has been collected so far. Daniels, Storkel, and Wegner met in August 2008 to discuss the project. Students participating in the pilot were judged to be “average” to “exceptional” master’s students. All felt that the student summary of strengths and weaknesses and initial action plan tended to be a bit cursory (i.e., lacking deep reflection). However, advisor meetings and discussion tended to lead to deeper reflection and problem solving. All of the students appeared to be making adequate progress in the program, but all had areas that could be improved, as well. The advisor meeting seemed helpful in identifying ways to approach already planned Year 2 experiences to promote further development in these weaker areas. In general, the group felt that portfolios were a promising avenue for tracking and promoting student learning but potential changes were identified.

At the beginning of the third semester, it became evident to the three faculty members participating in this pilot project that changes were necessary to improve the consistency and quality of archived artifacts across students. These changes included increasing the number of artifacts included in the portfolio, allowing artifacts outside of the requirements, assisting in the selection of appropriate artifacts, and putting the portfolios into an electronic format. Each of these changes, and the rationale behind them, are outlined below.

**a. Increase the number of artifacts:** The group felt it was important to monitor clinical progress throughout the program. In some of the portfolios, a weakness would be evident from a clinical artifact but in the following semester a student may not have included a clinical artifact. This made it difficult to determine whether this weakness improved. Thus, it was decided that a clinical artifact should be required every semester except for the summer session. In addition, it was decided that two coursework artifacts would be required for all semesters, excluding the summer. The goal in increasing coursework artifacts was to provide a larger sample of work at the mid-program evaluation point.

**b. Allow “outside” artifacts:** Many students participate in outside experiences that significantly impact their learning (e.g., training grants, research grants, volunteer opportunities). It was
decided that students should be allowed to substitute one outside artifact for a required artifact to allow greater flexibility in documenting learning.

c. Appropriateness of artifacts/reflection throughout the program: Some students occasionally selected artifacts that didn’t seem to represent the breadth or depth of a given experience. Several options were considered to address this issue. One option was to have instructors or supervisors designate artifacts for a course. This option was rejected because it placed the responsibility on the instructor rather than the student. The group felt it was important for the student to reflect on what s/he learned in a given experience and what item best represented that learning. Thus, it was decided to create an Artifact Description Sheet (see Supplemental Material) that would be completed for every artifact and would prompt this reflection.

d. Go electronic: All agreed that the portfolios must be electronic to save file cabinet space and to facilitate archiving and reviewing. The group will continue to explore electronic portfolio resources. Several departments in Lawrence and Kansas City already use electronic portfolios, so we will begin by visiting those programs. Once an appropriate resource is identified, we may be able to use some funds from the Departmental Teaching Award to hire someone to build the site for our purposes. In addition, the faculty needs to consider the structure of assignments and feedback. If we move to program-wide electronic portfolios, we will need to make it easy for students to have electronic artifacts to archive in their portfolio. Many of us are still very “paper based” in our assignments and feedback, which will be a barrier to using an electronic portfolio. Another issue is that many of us like to keep assignments, exams, and cases confidential so that students across semesters have equal access (i.e., no access is given in class). This also is a barrier to using an electronic portfolio. If we want to move to program-wide electronic portfolios, ideally every experience (i.e., class or clinic) should provide at least one “freely” available electronic artifact, which could take many forms from a summary or performance to the actual work itself. The faculty needs to consider whether this is realistic and also needs to consider whether any new resources are needed to accomplish this. We again could use some of the funds from the Departmental Teaching Award to support this (e.g., purchase new equipment such as scanners or digital cameras). To see the current template that we have used for our electronic portfolios, please see Supplemental Material.

e. Keep the rest: The other elements of the portfolio were deemed appropriate. The rubrics and action plan should be retained in their current form.

f. Expand the pilot: The group recommends that a second wave of students be recruited for a second version of the portfolio pilot project. This group will complete portfolios following the above recommended procedures. A new portfolio instruction sheet (see Supplemental Material) was developed. In addition, the pilot will be opened to all faculty, not just Daniels, Storkel, and Wegner, for fuller faculty input on potentially making portfolios a program requirement.

REFLECTIONS
Closing the Loop
As can be seen from the previous descriptions, our department embarked on a process of documenting student learning in 2003 that involved discussion and input from the entire faculty involved in the master’s speech-language pathology program. The overarching goal of this
program revision was to clearly identify program goals and establish a means of evaluating whether students are meeting these goals, with the ultimate intent of providing feedback to individual students as they progress through the program and to the program to identify areas that need revision. Clearly this has been an iterative process, spanning five years and continuing into the future. We began with a global set of program goals that provided alignment of goals across experiences (i.e., courses and clinical practica) and allowed us to evaluate the breadth and depth of our course offerings. We made an initial attempt to assess learning across experiences through our formative exam and to provide feedback and program revision to individual students through the formulation of action plans. We summarized performance on the formative exam across students and reflected on these data as a group. This reflection yielded a new set of objectives:
1. We needed to create more specific program goals that identified levels of performance from novice to advanced to better track student learning across the course of the program; and
2. Our formative assessment needed to be better integrated with our overall program.

As a result, we developed two program rubrics that incorporate more specific goals and identify four levels of performance for each goal. These rubrics currently are being adapted by individual instructors and supervisors for specific courses and practica. We currently are piloting a more integrated formative assessment through the use of student portfolios. In the future, our goals are to have:
• A common language for evaluating students (i.e., adapted program rubrics for each experience),
• A means for summarizing performance across experiences within individual students (i.e., individual portfolios) to identify strengths and weaknesses across content areas to improve each student’s learning during his or her program, and
• A means for summarizing performance across students (i.e., aggregating information across portfolios) to identify areas for program revision.

National pressure is mounting for universities to document learning outcomes for all students. In many professional degree programs, this pressure already has been translated into policy through revision to accreditation standards. While we may balk at this potential external mandate, our experience is that there are benefits to creating transparency between program learning goals and course/clinic-specific learning goals. Chief among these is alignment of goals across experiences so that both faculty and students can keep their eyes on the prize. Moreover, clearly identified goals lend themselves to program-wide assessment. The benefit of program-wide assessment is that areas of strength and weakness across students can be identified so that informed program revision can be undertaken. Documenting student learning outcomes forces us to close the loop and take action if those learning outcomes are not as expected. Ultimately, this cyclical practice of identifying learning goals, assessing learning outcome, and re-examining program practices will lead to a stronger program for all students.

SUPPLEMENTAL MATERIAL
Background
Contact People:
Holly L. Storkel, Assistant Professor (hstorkel@ku.edu)
Deborah B. Daniels, Clinical Assistant (ddaniels@ku.edu)
Implementation
KU ASHA Knowledge Standards Grid.doc. Along with examining where students were meeting these goals in their curriculum, the depth of each experience was examined to determine whether the course or clinic constituted a primary (noted with a * on the Grid) or secondary learning opportunity. That is, experiences that provided multiple opportunities to develop a particular skill were designated as primary, and those that provided fewer opportunities were designated as secondary.

Student Performance
Formative Exam Results 06-07.doc. This table outlines an excerpt of the results from the analysis of cumulative student data from 2006 and 2007 on the following question: “The relationship between course content and clinical practice sometimes isn’t obvious. Provide one instance in which you applied basic information or research evidence from class to clinical contexts.” Note: 65% of students in 2006 answered this question, and 70% of students in 2007 answered this question.