A Novel Approach for Investigating Curricular Redundancy

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ABSTRACT

Curricular redundancy can be a major problem for medical schools, especially those with a highly integrated curriculum. Although some redundancy is desirable, many forms of redundancy are not. Unfortunately, evaluating curricular redundancy and discerning desirable redundancy from undesirable redundancy can be quite challenging. Further, pinpointing undesirable redundancy and quantifying it so as to produce an estimate of inefficiency is even more difficult. This brief article describes a novel, and promising, student-led strategy for evaluating redundancy in a highly integrated medical school curriculum

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Introduction

Curricular redundancy can be a major problem for medical schools, especially those with a highly integrated curriculum (1). Although some redundancy is desirable (e.g., intentional efforts aimed at reinforcing prior content), many forms of redundancy are not. Undesirable redundancy can result in a loss of valuable instruction time and could seep into a curriculum in a variety of ways, including but not limited to a lack of communication among instructors or course offerings that present content that is too similar. Unfortunately, evaluating curricular redundancy and discerning desirable redundancy from undesirable redundancy can be quite challenging. Further, pinpointing undesirable redundancy and quantifying it so as to produce an estimate of inefficiency is even more difficult. Thus, the purpose of this report is to describe a novel student-led strategy for evaluating redundancy in a highly integrated medical school curriculum.

Evaluation Perspective

Typically, curricular redundancy is investigated by faculty as part of the curriculum mapping process (2). Although a great deal of literature is available that describes various approaches to curriculum mapping, the literature on curricular redundancy is incredibly sparse. Most articles describing curriculum mapping simply acknowledge the need to identify "gaps" and "overlaps" within the curriculum, but stop short of offering any details. Most curriculum mapping processes involve faculty convening for a meeting, sharing course syllabi, and engaging in a discussion of course topics and the breadth and depth of the associated content.

A medical school curriculum that is incredibly rich in content volume and highly integrated across specialties poses considerable challenges to accurately identifying redundancy, especially unwanted redundancy. It is our perspective that no one has a better, more intimate view of the curriculum than advanced students that have recently navigated its channels. These advanced medical students have devoted significant time and energy to mastering content, preparing for various internal and external assessments, and otherwise devoted their most recent years to learning what is truly necessary to become a highly-qualified physician. We believe any investigation of the curriculum must be informed by the valuable insights such students bring. It was for this reason that we solicited the assistance of two third-year medical students and offered them a small stipend to investigate curricular redundancy.

Evaluation Framework

The evaluation framework utilized in our investigation stems from the *participatory evaluation* approach. Cousins and Whitmore (3) state participatory evaluation "implies that, when doing an evaluation, researchers, facilitators, or professional evaluators collaborate in some way with individuals, groups, or communities who have a decided stake in the program, development project, or other entity being evaluated" (3, pg.5). A thorough investigation of curricular redundancy requires participation from both faculty and students, as each have a major stake in the program.

Evaluation Process

The evaluation process consisted of four steps. First, students operationalized redundancy in one of two ways: Content was judged to be *redundant* if more than one lecture or small group covered virtually identical material. Content was judged as *excessively detailed* if material was taught that was beyond the depth needed for both taking Step 1 and the start of the 3rd year of medical school. Second, students divided the number of courses in half and began reviewing syllabi, course lecture notes, and other

artifacts from each of the courses. The evaluators documented the main topics covered in each of the lectures and small groups on the content outline while also noting instances where the content seemed too detailed. Evaluators then jointly reviewed the completed documentation to look for potential redundancies and revisited relevant lectures and small groups to judge whether a true redundancy existed, and if so, whether this redundancy was appropriate or not. Third, student evaluators divided results into three categories: 1) redundancy between the 1st and 2nd year curriculum (vertical) (4); 2) redundancy within each year (horizontal) (4); and 3) material that was excessively detailed. Finally, students were asked to quantify the undesirable redundancy and identify exactly where in the curriculum reduction could occur.

Results

Student evaluators' insights were tremendously valuable in identifying where the curriculum could be streamlined. The student evaluators identified where approximately 167 hours (or 8.35 weeks) could be shaved from the curriculum. The students were asked to formally present their findings to the School of Medicine's Curriculum Committee which consists of multiple teaching faculty and medical education administrators. Members of the curriculum committee sought clarification about the details of the evaluation project and engaged in discussion about which types of redundancies have the propensity to cause the most harm to the curriculum and should be eliminated. Collectively, the curriculum committee judged the student-led evaluation as a success and found the findings to be incredibly helpful for identifying where potential cuts and compromises should be made in a curriculum that is undergoing a massive revision.

Lessons Learned

Because the curriculum is so highly integrated, we believe the information yielded from the student-led evaluation would likely have never been revealed without students' assistance. Further, we found the information gleaned from

the students' evaluation to be invaluable in closing communication gaps between faculty and the evaluation report served as a great product for faculty to use when starting discussions, and negotiations, about curricular modifications.

It is also important to set up some decision-rules about the magnitude of a potential redundancy. Student evaluators opted not to take into account redundancies that take up small amounts of instructional time (approximately less than 30 minutes). It would be virtually impossible to accurately account for every redundancy, and any resulting report would likely provide excessive detail that would likely overwhelm the faculty. We encourage others interested in using this evaluation approach to be particularly mindful about collecting information that is both useful and manageable.

The student-led evaluation process described here involved only two advanced medical students. It is important to note that some element of subjectivity is inescapable when evaluators are asked to provide judgments. We believe two student evaluators effectively provided the types of information we sought, however, educators looking to replicate this process at other institutions may choose to adopt additional methodological rigors (e.g., larger sample of student evaluators, formal instruments to assist students in constructing standards and measurements, rater training exercises, etc.) to ensure accurate and reliable judgments.

Implications for Medical Education

The methodology presented in this work has a number of important implications for medical education. First, is the acknowledgement of the role of students as evaluators of a curriculum. While it is a common practice to collect students' feedback about teacher and course quality (both via survey and focus group), it is a far less common practice to involve students directly in additional types of evaluation practices. We contend that students can play an invaluable role in virtually all aspects of educational assessment and evaluation. Institutions would be wise to leverage students'

invaluable insights and perspectives in more, and creative, ways.

Second, having students provide assistance as evaluators can have an enormous impact on institutional politics. Curricular changes are often painful for faculty as discussions, negotiations, and a host of political issues tend to surface during these processes. Having students serve as neutral, objective evaluators can negate a number of potential disputes, arguments, and "turf war" challenges among the faculty (and administration) and preserve an environment of collegiality among faculty peers.

Conclusion

We believe invaluable information about our curriculum was identified by the student evaluators and strongly recommend others in medical education consider using student evaluators to investigate redundancies in their curricula. The participatory evaluation approach described here is rooted in rich evaluation theory research, and the implementation of the methodology is quite straight-forward and practical. We encourage others to replicate this method and further fine-tune ways to make the evaluation strategy more robust.

Reference

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