High school curriculum: Search for unity and coherence

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Many faculties have lost a sense of the underlying unity and purpose of the subjects which make up the high school curriculum. The rapid expansion of offerings and multiplicity of elective courses have created a patchwork—a smorgasbord of educational opportunities reflecting confusion rather than direction. This or that course has been added to the curriculum without a sense of why or how it fits into a vision of a total curriculum or of how each component contributes to what an educated person should know or be or be able to do. How many high school teachers or faculties could take the various disciplines that are taught—English, mathematics, modern language, classical languages, biology, chemistry, art, history, etc.—and present a coherent, reasonable explanation of why these disciplines are taught and how they fit together to produce the ideally educated high school graduate? Yet this coherence and a reassuring sense of the underlying unity of the educational process seem important—even essential—to the sustaining vision of reflective faculty.

Interdisciplinary Courses: An Apparent Solution

One of the most persistently urged and consistently neglected efforts to solve this problem has been the call for an interdisciplinary approach to the curriculum. Proponents of interdisciplinary studies argue that the pursuit of knowledge through the different disciplines creates a disjointed and compartmentalized understanding of the world. Reality is a whole and a unity; to impose successively on the same reality the distinctive modes of inquiry or the conceptual frameworks developed by competing disciplines not only distorts that reality but also confuses the learner. Similarly, the fragmentation created by the separate disciplines imprisons faculty members within their disciplines and keeps them incapable of understanding the relationship of their efforts to those of their colleagues in other departments. The high school student spends his educational day or career wan-
dering from discipline to discipline, only dimly aware that they bear any but a superficial relationship to one another.

Advocates of the interdisciplinary approach argue that this deficiency can be remedied if the barriers among the disciplines are broken down by simultaneously studying reality from the viewpoints of several disciplines. For example, a historical period might be studied with history, literature, art and language teachers cooperating and exploring the era from their unique perspectives with their special tools. The student would achieve a unified understanding of the historical era and simultaneously develop a sense of how the various branches of learning (disciplines) approach and illuminate the same reality. Or a curriculum might be fashioned around key themes—love, death, maturity, etc.—and the tools of each discipline could be brought to bear on an exploration of these themes. Again, the disciplines and faculty work together; what and how the student learns, in a similar way, evolves ‘together’.

**Interdisciplinary Studies: An Impractical Ideal**

The interdisciplinary approach described above is an attractive and exciting ideal. At the same time, it is, in my view, at the moment—and for the foreseeable future—impractical, and as such, an obstacle rather than a help in overcoming the problem of giving a unified vision to the high school curriculum. Large scale interdisciplinary efforts are unlikely for the following reasons.

—Teachers are trained in a particular discipline; even though they may have taken numerous courses in cognate disciplines, their own education has not reflected or produced an interdisciplinary perspective or a confident understanding of other disciplines. This phenomenon has become even more apparent in recent years as the liberal structure and broad requirements of the college curriculum have been reduced.

—Keeping abreast of professional developments and trends in one discipline has become an increasingly demanding task; so much material is produced that fully knowing one’s own discipline will be possible only for the extraordinary teacher; the number of schools or school systems able to operate on the assumption that the majority of its teachers are completely literate in their own, single discipline is extraordinarily few.

—Interdisciplinary courses demand an inordinate amount of both long range and proximate faculty planning and coordination—time for which is more likely to decrease rather than be enlarged, given the economic condition of schools and school systems. Such planning time would also further reduce the availability of faculty to students, for example, for more individualized or personalized instruction.

The above analysis should not be taken as a denial that the interdisciplinary approach is an attractive and worthwhile ideal. However, it does raise the question of whether—at the moment—it is a realistic solution or an economical use of a faculty’s time and energy. Though I am sure that excellent interdisciplinary courses will be developed here and there in the better supported public and private high schools, I do not think that we should look to the interdisciplinary model to provide an underlying unity for the high school curriculum. It is an appealing option, but, at the moment, it involves a task too difficult and a price too high. To continue to propose interdisciplinary studies as the solution to the problem of fragmentation will only delay indefinitely the exploration of other models which may be both equally powerful as well as more practical.

Thus the problem remains: faculties lack a sense of a unifying vision in their efforts; yet the most widely discussed solution to the problem seems a difficult if not impractical ideal.
Another Perspective: The Objectives-Centered Approach

There is another possible solution which, at least at first glance, addresses many of the problems which advocates of the interdisciplinary approach consider important. It is the objectives-centered approach.

The interdisciplinary approach attempts to derive a sense of unity and coherence by focusing on the fact that the reality being studied is ‘one’; it attempts to adjust the educational process to recognize that oneness. The objectives-centered approach, on the other hand, focuses on the oneness or same-ness of the intellectual process that is pursued and experienced by the student in the learning situation.

This approach is based on the assumption that the underlying process of intellectual development is fundamentally the same irrespective of the discipline to which it is applied. Further, the approach assumes that one of the important goals of the educational process is the careful and systematic development of the skills and abilities that are the components of intellectual inquiry and growth. Bloom’s taxonomy of educational objectives is an analysis of cognitive goals which is familiar to most teachers who are alert to developments within their disciplines. Bloom proposes that an ordered set of educational objectives can provide an underlying structure of educational goals and intellectual skills in cognitive activity, regardless of what area of reality is the focus.

After an exhaustive search of educational sources, he identified six major categories:

1. **knowledge**—recalling information from memory, e.g., facts, definitions, symbols, forms, conventions, steps in a process, etc.,
2. **comprehension**—demonstrating understanding by translating, restating, interpreting, recognizing the most important elements, etc.,
3. **application**—using knowledge and understanding gained in one context in a novel situation in order to solve a problem in different circumstances,
4. **analysis**—breaking a whole into its components, analysis of relationships or organizational principles,
5. **synthesis**—putting together known elements into essentially new combinations, and
6. **evaluation**—making judgments as to the appropriateness of solution to a given problem by using either external criteria or internal evidence.

Bloom has categorized and ordered the key intellectual skills which underlie the process of intellectual development. The schema of objectives, if viewed as the structure of the educational process in each discipline, can provide the basis for a unified understanding of the curriculum.

Whether one is teaching English or mathematics or science, the core process is identical. It consists in helping the student 1) to develop a basic knowledge of the subject, 2) to comprehend the material, 3) to apply what he has learned to novel situations, 4) to sort out and order the components of a problem, 5) to use what he knows in new combinations, and 6) to make judgments on the correctness of potential solutions. The element that changes from discipline to discipline is the segment of knowledge or reality which is the focus of these intellectual operations, e.g., a poem, a mathematical formula, a chemical theory, a historical era, etc. The ‘skeleton’ of intellectual skills and operations, applied and exercised in the treatment of each of these subjects, remains the same.

The Primary Advantage: A Coherent Framework

The fundamental advantage of this proposal is that it can provide a basis from which a coherent view of the high school program can be evolved. Rather than perceiving themselves as working in different—and by definition exclusive—spheres, English and
physics teachers could view their tasks from a more universal perspective with a common language. Although recognizing that they turn their student’s attention to different phenomena, they can understand that what they are attempting to do for the student—develop and sharpen his intellectual skills—is more the same than it is different.

Whether the student is analyzing a Shakespearean sonnet or a historical document, or is evaluating the internal consistency of a political theory or a mathematical solution, the intellectual processes in each case are similar if not identical. The core intelligence and intellectual capacities of the student are being developed by focusing on the segments of reality which are the domains of the different disciplines. Rather than working toward separate and disconnected goals, teachers of the disciplines can see themselves as working toward a common purpose which at the same time permeates and transcends each discipline.

**An Addition to the Bloom Cognitive Taxonomy**

I would add a 7th element to the six major cognitive categories that are suggested by Bloom. It intrudes into the realm of affective objectives and the general concept of ‘internalization’; however, I think it deserves to be incorporated into the paradigm presented above. It is the category of ‘personal appropriation.’ In every intellectual venture, it would seem essential that the student develop the habit of reacting personally to ideas, concepts, formulations, etc., which stimulate, excite, or disturb him, which challenge him to raise questions and doubts, or which spur him to further investigation.

Without such a personal reaction to the material under study, the process will likely remain a dispassionate and generally sterile treatment of academic material. In every discipline—obviously adapted to the level of proficiency of the student—students should be challenged to develop the habit of active assimilation or rejection of what they study.

This is vital and perhaps the most important intellectual habit that a student can derive from his education. In a sense, he should be encouraged to turn every book he reads or unit he studies into a personal statement.

**Other Advantages of an Objectives Theory**

The objectives-centered perspective has several other advantages. As with any good theory, it provides an analytic tool for illuminating and giving deeper insight into what is already known. It also supplies a framework in which either persistent or novel problems can be confronted. Many examples are possible.

The objectives framework can be superimposed on the existing curriculum in order to determine what goals are actually being pursued and to uncover areas which are possibly being neglected. For example, the pervasive complaint that “students are not being taught to think but merely to give back what they have been told” could be systematically investigated through an analysis of the cognitive level of the examinations given in a particular department. If such an analysis did prove that attention was being directed exclusively or predominately to the lower cognitive levels of recall and comprehension, then the objectives framework would provide a clear picture and definition of the neglected areas. In many cases, given the availability of learning materials constructed on the objectives approach, it would also suggest strategies for reducing or eliminating these deficiencies. On the level of curriculum planning within a department or the construction of objectives for a particular course, the theory provides an important analytic checklist against which the completeness or proper emphasis being given to various goals can be evaluated.

An objectives-centered approach would increase teachers’ understanding of other disciplines as well as their confidence in dealing with teachers of subjects other than their own. It provides a familiar context into which they can integrate what they know about the
educational programs of other departments. It can also be the basis for ongoing dialogue on the purposes and interrelationship of courses on various levels, e.g., an agreement among departments to explicitly relate the development of ‘application’ skills across disciplines at a particular stage in a student’s development.

The objectives approach can provide an analytic framework for supervision. Teacher or student behavior or interaction can be analyzed in terms of the cognitive levels that occur in a class or series of classes. The analysis can be matched against teacher objectives which are also expressed in cognitive terms. Careful recording and breakdown of teacher-student interaction can produce an accurate picture of what kind of behavior is occurring. As in the case of most teacher behavior, one might expect to find in a particular teacher’s behavior recurrent patterns which focus most of the interaction on one or two cognitive levels. Through such an analysis, a supervisor could help a teacher develop an in-depth picture of the skills on which he is focusing and those which are being neglected. Either a reaffirmation of present practice or an awareness of areas of deficiency along with an indication of the direction in which change should occur could emerge from such a process.

The objectives approach also provides an easily understandable set of criteria against which the classroom teacher himself can periodically check his own performance. The objectives for a particular class, the level of questions in a series of examinations, the demand level of assigned work—all can be analyzed with precision to give the teacher deeper insight into what is actually being attempted and/or accomplished.

There is also no reason why students could not be brought to explicit awareness of the cognitive categories in order to enable them to focus their activity more precisely both in the classroom and in outside assignments. Assuming that teachers in different disciplines are using similar terminology, the students could transfer what they have learned, for example, about the processes of synthesis or application, across disciplinary lines with an obvious positive reinforcing effect.

Many other advantages could be suggested. The wealth of learning materials that are being published with an objectives orientation provides multiple resources and assistance for the interested teacher. The most significant advantage, however, remains the coherence which the objectives-centered perspective would provide for faculties who now see their efforts as scattered and discrete and who lack a larger vision into which they can insert and understand their own positive efforts.

A Potential Objection

It might be argued that an objectives-centered approach to curriculum disregards the importance of what is taught. As a result, it is essentially a valueless process which neglects substance in order to stress process.

Though the objectives orientation does not prescribe what must or should be taught, it would be incorrect to say that this question is either eliminated or minimized by this orientation. Decisions concerning the disciplines to be incorporated and their sequence in the curriculum are separate questions; such decisions on substance are as important as the process issues addressed by the objectives-centered approach. A faculty may decide that its program should be traditional in substance, emphasizing the disciplines normally associated with preparation for a liberal arts college education. Or the stress may be on a relevant curriculum which speaks more directly to the immediate needs and interests of students. With either alternative, the objectives orientation has application and will promote deeper penetration and absorption of the material under study. Thus, while the objectives orientation does not prescribe substance, it recognizes it as a vital but independent question.
Conclusion

This essay began with the recognition of the lack of coherence and unity within the high school curriculum. Interdisciplinary studies were examined as an attractive and valuable proposal; however, the interdisciplinary approach was rejected as an impractical ideal because of the unusual demands it would place on already overburdened faculties. The objectives-centered approach was described and offered as a more practical and, in many ways, more powerful solution to the lack of unity and coherence in the curriculum. Though not proposed as a panacea, it was presented as a way to help high school educators examine their educational efforts more analytically and reflectively, and—in the process—to provide a seriously needed sense of common purpose both to the high school curriculum and to those who implement it.

Notes