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INSTRUCTIONAL SUPPORT AND DEMANDS: HELPING TEACHERS HELP STUDENTS MEET INCREASING ACADEMIC STANDARDS

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Recent years have seen a call for significant educational reform in response to the changing opportunities and challenges facing America's high school graduates. In this paper, we suggest a framework for pre-service and in-service teachers, to help them think about the constellation of demands new policy initiatives would impose on students, and the kinds of instructional supports they might develop within the context of their on-going instructional programs to help students meet those demands successfully. We begin by describing a framework that distinguishes three kinds of characteristics of the instructional context: instructional demands, instructional supports, and instructional compensations. We then draw upon the results of two research studies and one intervention study, to illustrate how one might increase students' preparation for higher levels of challenge by increasing instructional demands and supports; we discuss the ways in which excessive instructional compensations appeared to sabotage the effects of increasing instructional demands; and we discuss some of the factors responsible for the reluctance that teachers had about reducing the instructional compensations. We end by spelling out three central considerations derived from our tripartite model of instructional characteristics that should be given careful attention by architects of policy and reform.

Increasingly, teachers are being asked to enhance the academic standards of their classes by requiring students to do more homework, read and study more challenging texts, apply higher order thinking skills to the material they learn, and take and pass more rigorous tests. Efforts to move education in these directions have derived in recent years from pressure placed on schools by local, state and national commissions and tasks forces charged with interpreting the perceived shortcomings of American education (e.g., Goals 2000, 1994). Recommendations emanating from these commissions and task forces most often are framed in terms of policies which, at least on the surface, appear to make good sense. If students graduate from high school with skills that fall below international standards and with weaknesses in the kinds of knowledge and skills that employers seek, then it would appear quite sensible to "require" schools to provide the kinds of educational experiences students need to reach higher levels of educational achievement.

Too often, however, such policy recommendations assume that additional effort and attention on the part of students are alone sufficient to promote the goals of such educational reform. Yet research has demonstrated that it is not enough to "demand" higher levels of achievement on the part of teachers and students. At a minimum, it will be necessary to provide a set of workable strategies to help teachers and students meet these demands.

In this paper, we suggest a framework for pre-service and in-service teachers, to help them think about the constellation of demands new policy initiatives would impose on students, and the kinds of instructional supports they might develop within the context of their on-going instructional programs to help students meet those demands successfully.

To illustrate our points, we have drawn on

two research projects and one intervention study that we have been involved in. The first research project represented an effort to understand the relationships among student characteristics, the types of study activities students engaged in, and their learning outcomes. The intervention study sought to apply some of our basic research findings in a series of high school classes where teachers wanted to improve the study skills of their students. The second research study is an on-going investigation of the determinants and consequences of teachers' perceptions of the intellectual climate in their schools. At first blush, these areas of inquiry might seem to have little in common, inasmuch as the first research study and it's intervention focuses primarily on teachers. However, if one takes, as we do, a more interactionist view of the classroom, and indeed of the school as a whole, one then is led to envision how efforts to spur students on to greater levels of competence and efforts to enhance teachers' commitment to on-going professional development can well be launched together.

A Framework for Assessing Instructional Demands, Supports and Compensations.

In our work in middle school and high school History classrooms, we found repeatedly that (1) students' study behavior was directly related to characteristics of the courses they were enrolled in, and (2) what students appeared to learn from those courses was directly linked to how they had studied (Curley, Rohwer & Thomas, 1987; Strage, Tyler, Rohwer & Thomas, 1987). Thus, for example, in classes where students were given large quantities of reading to summarize and integrate, students' demonstrated increasingly effective note-taking strategies, and were able to write integrative essays on their exams. In contrast, in classes where teachers spent most of their time giving lecture-style linear presentation of factual material, students tended to refine their rote-memorization skills, and tended to do

much better on factual definition test items than on concept-application items. There were, however, several cases where students failed to engage in the higher order sorts of learning activities one might have expected of them, given the apparent demands they seemed to be expected to rise to on a routine basis. In one class, for example, students were assigned voluminous amounts of reading but they appeared to have few if any strategies for deciding how to separate the key points or organize the material in any way. In another, students' unit tests contained a large proportion of application items, but students did not report engaging in the sort of problem-solving activities that would enable them to approach such test questions systematically. There were instance where two teachers appeared to be imposing the same levels of demands on their students (amount and difficulty of reading, types of exam questions, etc.), but students in one class reported using higher-order sorts of study strategies while students in the other tended to rely on rote memorization. This sort of mis-match between apparent course demand and student responses prompted us to look more closely at the elements of the class environment.

We developed, as a result of this examination, *a three-part framework*, wherein we distinguished three categories of course characteristics. The first, *instructional demands*, reflects the components of the apparent challenge of a course: the amount of reading, the amount of writing, and the difficulty of test items, for example. The second category, *instructional supports*, reflects elements of the instructional context designed to assist the student in meeting the demands of the course: review sessions where study strategies are discussed; and specific corrective feedback about students' performance throughout the course, for example. The third category of course characteristics distinguished in our framework, *instructional compensations*, reflects instructional practices or elements that serve to negate

and thereby reduce actual course demands: lists of study questions which, effectively, reduce the reading load to only those topics relating to study guide questions, and rehearsal of actual test items prior to the test itself, for example. (See Strage, Tyler, Rohwer & Thomas, 1987, for a more complete description of these three categories.)

Upon re-examination of the data from our classroom observations using this tri-partile framework, we found that, in fact, for a given level of instructional demand, the simultaneous presence of instructional compensations was, indeed, linked to students engaging in lower level sorts of study activities, while the simultaneous presence of instructional supports was related to students engaging in more higher order levels of studying (Thomas, Curley, & Strage, 1987).

In a subsequent investigation of high school Biology Classes, we found further support for our model, and we found links to student learning outcomes. More specifically, the combination of high instructional demands and high instructional supports (e.g., challenging homework assignments plus constructive feedback about incorrect answers) was associated with higher levels of sophisticated study strategies (e.g., the preparation of figures and graphs to represent information), and with higher levels of performance, especially on the concept and application items, on a test of Biology knowledge we devised for the purposes of this investigation. (See Thomas, Bol, Warkentin, Wilson, Strage & Rohwer, 1993.)

Our findings are consistent with other research examining learning, both in laboratory contexts and in classrooms. With respect to instructional supports, for example, specific, constructive feedback has been linked to students' engagement in productive study activities and students' own sense that their study efforts are effective (Duckworth, Fielding & Shaughnessey, 1986), as well as to students' success at academically challenging tasks

(Crooks, 1988). The consensus appears to be that in order to be effective, instructional supports must be specific enough to enable students to modify their approach to studying in concrete and task-appropriate fashion. Thus, providing students with information about their grades, or their standing in the class does not give them enough to go on to modify their approach to studying adequately (Pressley & Ghatala, 1990).

With respect to instructional compensations, teachers often offset the potential danger of giving very challenging tests by minimizing the cost of failure and by providing any of a vast assortment of "safety nets" (Sanford, 1987). This can be done by increasing the weight of homework and other "easy" assignments, for example. The provision of such compensatory safe-guards can be seen as a solution to the problem of minimizing the risks inherent in the radically increased instructional demands in response to administrative and political pressures. (See also Thomas, Strage, Bol & Warkentin, 1990.) It can also be done by "teaching to the test," thus eliminating the need for students to bother with extraneous course material, or to learn to select key information, organize it and master it. Many theorists and practitioners who study the reform movements express concern that as tests become more important, they begin to drive instruction (See for example, Madau, Maxwell West, Harmon, Lomax & Victor, 1992.) It was not uncommon, for example, in our own study, for students to have seen at least 50% of test items prior to the test, on homework assignments and in practice exercises.

Armed with our model and our findings regarding links between course characteristics and student outcomes, we launched a year-long intervention designed to enable teachers to address their students' study skill deficiencies by altering characteristics of the instructional demands, supports and compensation in their class. We worked with six talented and com-

mitted high school Biology teachers who were open to most of our ideas. But they balked at the suggestion that they should reduce many of their instructional compensations (such as opportunities for extra credit that did not require demonstration of mastery of core course curriculum); and they feared that students would not know how, or care, to take advantage of instructional supports they might provide in the place of the instructional compensations (such as strategies for creating integrative summaries of large amounts of information). In their words, it boiled down to a matter of trust. They were afraid their students would not take kindly to being prodded into taking more responsibility for their own learning; they feared too many of their students would fail or become discouraged if the "safety nets" were removed; and perhaps most significantly, they candidly admitted to being afraid to relinquish control over their students and their students' outcomes.

This theme of the problems inherent in taking chances arose in our more recent work investigating the determinants and consequences of teachers' perceptions of the intellectual climate in their schools. As part of our pilot work, we brought together a group of eight high school teachers from various disciplines. They differed in their years of experience, in the size of their schools, and in the types of students they taught. They shared a passion for teaching, and a commitment to education. We asked them to consider the question of intellectual climate in their schools. We asked them to discuss what it was, why it was important, what tended to impede it, and what tended to foster its growth. One theme came up repeatedly. To a person, every teacher indicated that reflecting on pedagogy was central to their vision of intellectual climate. Each recounted instances where they had struggled with how to teach a new curriculum, or how to teach to a new type of learner. They also spoke at length about the risk inherent in change, the

risk inherent in trying out new ways to teach, even when it was clear that the old ways were not working, and even when the zeitgeist seemed to support innovation of all sorts. They worried about the repercussions if their innovations "didn't work." Would students' test scores suffer if they tried something new? Would their colleagues be annoyed that they were making waves? Would school administrators disapprove of their innovations? They described occasions where change had been forced upon them, for any of a variety of reasons ranging from changes in State curricular frameworks, to space reallocation due to asbestos removal, to colleagues taking unexpected medical leave. In each of those instances, they spoke of the surprisingly positive outcomes, including a sense of renewal, a sense of respect for their colleagues, a sense of accomplishment and triumph.

Summary and Conclusions

What do these research findings have to contribute to discussions of school reform? Taken together, the patterns we observed in the classrooms we visited, the model we derived based on our observations, the near failure we experienced in trying to implement our simple intervention, and the themes expressed by the teachers with whom we talked about school climate all serve to underscore three central considerations that should not be overlooked by architects of policy and reform. We conclude by spelling them out here.

First, while adjusting the levels of challenge in any instructional context one must be careful to not offset increases in instructional demand with increases in instructional compensations. Advocates of more challenging educational curricula are pressing for net increases in demand, once compensations are taken into consideration. Seen from another perspective, one must be careful in assessing the true changes introduced into a given curriculum, and avoid being lulled into a false

sense of complacency if only apparent demands are increased.

Second, one can avoid many of the problems inherent in raising the level of instructional demands beyond a threshold of comfort by pairing those instructional demands with the appropriate instructional supports. Perhaps the most significant types of instructional supports are the *variety of learner strategies* that will, once mastered, equip the learner to become a more autonomous, self-directed and self-regulated life-long learner, who can cope with learning challenges in a broad variety of school and work contexts.

And third, one must recognize the fundamental shift in paradigm that goes along with replacing demand-moderating instructional compensations with instructional supports. This move, which ultimately empowers students to direct their own learning, is tantamount to a transfer of control from teachers to student. And in a climate where students' failure is often seen as indicative of poor teaching, where many students are seen as so hard to teach, many teachers and school administrators are loathe to take the chance that students will rise to the occasion.

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