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ABSTRACT

The four papers in this document present commentaries by four members of the teacher education faculty of Eastern Michigan University on issues related to time and learning, in response to a visit by the National Education Commission on Time and Learning. Sarah Huyvaert notes the complexity and interrelatedness of issues related to time and learning and recommends a blueprint for change which would address school restructuring, outcome-based education, equity and excellence, needs of children at risk, effects of technology on time to learn, relationship of instructional outcomes to time provided for instructional planning, and ways to use cost/benefit analysis to evaluate different school schedules. Marvin Pasch then focuses on the link between desired learning outcomes and the amount of time required to achieve these outcomes, and the need for teachers to have more time for planning. Alane Starko examines issues such as fiscal resources, curriculum programs, school organization and management, teaching practices, incentives and student motivation, and professional opportunities for teachers. Sarah Martin addresses the issue of the teacher as researcher, pointing out that when teachers serve as researchers, the field gains additional knowledge about the teaching/learning process which then serves to inform practice. References accompany each paper. (JDD)

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ED 368 691

TIME AND LEARNING:
SOME PROFESSIONAL REFLECTIONS

BY SELECTED MEMEBERS OF THE TEACHER EDUCATION FACULTY

Dr. Sarah Huyvaert
Dr. Marvin Pasch
Dr. Alane Starko
Dr. Sarah Martin

TEACHER EDUCATION
EASTERN MICHIGAN UNIVERSITY

September 13, 1993

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INTRODUCTION

In response to a visit by the National Education Commission on Time and Learning to Eastern Michigan University, Dr. James Riley, Department Head of Teacher Education, invited several of his faculty members to respond to the issues that are before the Commission. Faculty members choosing to respond included Dr. Sarah Huyvaert, Associate Professor of Educational Psychology/Educational Technology; Dr. Marvin Pasch, Professor of Curriculum and Instruction; Dr. Alane Starko, Associate Professor of Curriculum and Instruction/Gifted and Talented; and Dr. Sarah Martin, Associate Professor of Reading.

Dr. Huyvaert, in her response, notes the complexity and interrelatedness of the issues related to time and learning and recommends that the Commissioners develop a blueprint for change. Among the issues that should be addressed in the blueprint are school restructuring, outcome based education, practices that increase equity and excellence, the increasing needs of children at-risk, the effects of technology on time to learn, relationship of instructional outcomes to time provided for instructional planning, and ways to use cost/benefit analysis to evaluate different school schedules. She goes on to state that we must further our

understanding of the relationship of time and learning through the use of systems research.

Dr. Pasch focuses on the link between desired learning outcomes and the amount of time required to achieve these outcomes. He then goes on to discuss the need for teachers to have more time for planning, stating that "School reform is best served by increasing the time available to teachers while doing pre-active (planning) tasks."

Dr. Starko looks at several of the issues that are being studied by the Commission, including fiscal resources, curriculum programs, school organization and management, teaching practices, incentives and student motivation, and professional opportunities for teachers.

Dr. Martin addresses the issue of the "teacher as researcher" and the need for teachers to be given time for this important activity. She strongly believes that when teachers serve as researchers the field gains additional knowledge about the teaching/learning process which then serves to inform practice. Seldom, however, is time allocated for this important activity.

--- Sarah Huyvaert

TIME AND LEARNING: A SYSTEM OF COMPLEXITY

DR. SARAH HUYVAERT

To say that the phrase "time and learning" means different things to different people is surely an understatement. As a case in point, one week while I was on Sabbatical from the University, I happened to meet seven of my colleagues in seven different social contexts. Each of my colleagues asked how I was spending my Sabbatical. When I explained that I was doing research on time and learning, the conversations took seven different turns. One faculty member explained to me how technology was one way to increase students time on task. Another professor gave me a brief lecture on developmentally appropriate practice and when was the appropriate age (time) to begin school. A third colleague spoke of a program that was conducted in Michigan in the 1970's in which school districts were given money to extend the school year. A fourth educator was adamant that we needed to increase time on math and science and reduce all the time spent on non-academic subjects. A teacher explained how she didn't have enough time to prepare for the school day, especially when she was expected to meet the needs of individual children. An administrator told me how frustrated he was because he tried to get his

teachers to tell him how much time they spent in each subject area only to be told they had no idea because they were into outcome based instruction. The last educator I spoke to that week suggested that we should get children to stop watching so much television and spend more time doing their homework.

As a researcher who fervently believes that we need to study both our educational institutions and our educational practices from a systems perspective, I am intrigued by the multitude of responses to the phrase 'time and learning'. As Plane and Kochenberger (1972) have noted, the goal of the systems approach is: "to identify the problem, considering all relevant aspects of the interdependencies of the various components of the system. What appears on the surface to be a problem confined in a particular component may be a problem of considerably different composition and organizational importance when a broader viewpoint is taken." (p. 3). The diversity of the comments of my colleagues demonstrates that what appears on the surface to be a confined problem (e.g., How long should the school day or year be?), is, in fact, a multi-faceted problem with various levels of organizational importance.

As someone who has closely followed the work of the Commission, I am certain that no one needs to explain to the Commissioners how

complex the issue of time and learning really is. The charge presented to the Commission, the list of questions they are expected to address, and the testimony of the many witnesses that they have had before them all attest to this fact. In their capacity as Commissioners, they have attempted to gain an understanding of both the depth and breadth of the issues related to time and learning. As they strove to understand the depth of an issue, they looked at one variable at a time (e.g., year-round-schools, motivation and time spent, academic learning time). As they looked at the breadth of the subject, they no longer sought to isolate the variable but rather strove to develop a broader understanding of the interactions of the variables and their effects on one another (i.e., to gain a system view in which the whole is greater than the sum of the parts). Therefore, in the spirit of the systems approach, the Commissioners identified the problems associated with time and learning, considered the relevant aspects of the interdependencies of the various components of the educational system, and studied the effects of these component interdependencies on time and learning.

It is not enough, however, just to uncover the complexity of the problem - the Commissioners must now provide a blueprint for change that will inform and advise educational decision-makers across the nation. This

plan must recognize the interdependencies of the various components related to time and learning, it must acknowledge that there is no one right solution but that some solutions are better than others, and it must challenge the educational leaders of this nation to work hand-in-hand with citizenry of this nation to revitalize and reaffirm the power of education and its effect on this great nation.

RECOMMENDATIONS AND SUGGESTIONS FOR THE BLUEPRINT

I have spent many hours pondering what I would recommend if I were one of the Commissioners. There are many areas that could be addressed in the blueprint, but there are several themes that come to the forefront for me. One is the issue of restructuring. If you closely examine the structure of formal education in this nation (and most others), you will find that the mortar that holds the current structure together is time. If time is left untouched, it becomes very difficult to "restructure education", and we will find that most of the efforts will go to "redecorating" the existing structure. Therefore, the blueprint must call into challenge restructuring movements that fail to address the issue of time and learning.

A second theme that I would address in the blueprint is outcome based education (OBE). I must admit that I have great concern about the

way in which OBE is being discussed. Bill Spady has stated that OBE is "geared to what we want the kids to demonstrate successfully at the 'real end' -- not just the end of the week, the end of the semester, the end of the year." (Spady, 1992/1993 p. 66). As an educator it is hard to argue with Spady - it is true that our end goal **must** be geared toward what the students can do once they leave our protected environments. However, this statement is being interpreted to mean that it makes no difference how long it takes the students to achieve the goals - just so long as they do. For me this conjures up images of a doctor saying "I'll prescribe this medicine and you can take it until it works or until the disease runs its course." However, if I'm sick, and the medicine isn't working, I want my doctor to know it as quickly as possible so that something else can be prescribed. Or, if another doctor uses a different medicine that works faster, then I want that medicine. I don't want my doctor saying, "It's the end goal were after" but instead "It's the end goal were after, and we are going to get you there as quickly as possible". Therefore, I believe we need to look at the time it takes to achieve a specific outcome so that we can more effectively evaluate our instructional treatments. Please note that I am recommending that we use time as <u>one way to evaluate instructional treatment</u> - not as a way to evaluate the achievement of an individual student. If I were a

Commissioner, I would recommend that time be used not as a rudder to steer or an anchor to hold learning, but rather as a beacon to tell us if we are on the right instructional course.

A third theme that truly needs to be addressed is the issue of time in relationship to equity and excellence. Our current time pattern causes us to refer to equity versus excellence. When time and other resources are limited educators are placed in a forced-choice position. They are forced to choose between equity and excellence and this will affect how they spend their planning time and how they allocate classroom instruction time. Time must be provided within the framework of the school organization so that the teacher is no longer forced to choose between equity and excellence but can strive for both.

The fourth theme I would include is one that addresses the responsibility of the school to assist in providing for the basic welfare of our children. In the last quarter of a century, educational institutions, particularly at the elementary level, have become more and more responsible for the administration of social services for children. The number of children in poverty and the number of children at risk from child abuse, violence on our streets, drugs, AIDS, and other health problems are increasing daily. This strongly suggests that even more of the

school resources will be going to meet the needs of these children. School must be a safe-haven for children and this may require that schools be open longer and provide an ever-increasing number of programs and services. In the process, however, we must be careful not to lose sight of the basic function of our schools - to educate. The Commission, through their blueprint, must help both the policy makers and the general citizenry to understand the need for increased resources (including time) that will be required to meet the dual functions of social services and education.

Time for teacher planning is another area that should be addressed in the blueprint. One of the most compelling findings from the research on academic learning time is that teaching behaviors have a very direct and strong positive relationship to academic learning. Teachers who spent more time diagnosising instructional problems were better able to prescribe effective instructional treatment and their students did better on all evaluation measures (not just standardized test). In order for teachers to spend more time, they must have more time. However, simply providing more time will not guarantee that teachers will spend more time in planning. If teachers are given more time, they must be held accountable - there must be some outcome based evaluation tied with the increased planning time.

Being an educational technologist, I would be remiss if I did not include educational technology as part of my blueprint. Technology can be a great timesaver for both the student and the teacher. In selected studies, it has been shown that computers can reduce the amount of time required to learn specific content, increase the critical thinking and problem-solving abilities of students, and increase student motivation - hence increasing time-on-task. But in reality, we know very little about the role technology can, and should play, in education. When we examine the impact that technology has had on many other fields we find that technology didn't just help to speed up a job, or reduce anxiety in the job, or make a job safer - but actually added to the field's understanding of the inherent nature of the job which then lead to improvements in the job itself. We haven't experienced this restructuring in education, but the hope is that eventually we will. It will not happen, however, simply by saying that technology will reduce the amount of time students spend learning specific content, or that it increases their time-on-task, or that it enhances their problem-solving ability. It will only happen as we begin to develop large databases of educational statistics for the specific reason of analysis and model building. As we begin to tackle the problem of time and learning we need to collect and analyze the data related to time issues; build alternative organizational,

institutional, and instructional models; and test these models using computer simulations. The Commission needs to call upon researchers and school leaders to aid and contribute to this process. But even more importantly, the Commission's blueprint should incorporate a plan that compels that this process be undertaken by a community of scholars from many different areas including, but not limited to, social research, operations research, economic development, information science, and psychology.

The seventh area I would address is cost/benefits. Because of the complexity of issues involved in time and learning, some of which are site-specific, "one best solution" is a pipe dream. Recognizing this fact does not mean that we give up. It simply means that we look at several alternatives and decide which approach accomplishes the most with a reasonable amount of investment. This may vary from school district to school district. Educational leaders will need to recognize the constraints and restraints within their system and to understand what benefits they can expect to reap and at what cost. The Commission can provide, and should provide, a checklist for evaluating the alternative plans in light of the various trade-offs that may need to be made, i.e., in light of cost/benefit ratios.

Having put my thoughts to paper, I have an even greater respect for the task before the Commission. It has been said that the curse of informed individuals is that they can no longer answer "yes" or "no" to a simple question. Of course the reason for this is that many "simple questions" involve complex issues. Such is the case with the question, "Will academic achievement increase if we increase the amount of time students spend in school?" If is true that the informed person is cursed, then surely a change agent is doubly cursed. Change agents are informed individuals who understand that there are many sides to the same question but who must take a position supporting one side or another and do it with their voice, their influence, and their professional reputations. I do not envy the Commission for the task before them, but I applaud them for the effort they are making.

KEY REFERENCES:

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Staff. (December 1992/January 1993). A conversation with Bill Spady, *Educational Leadership*, p. 66.

ANOTHER VIEW OF TIME & LEARNING

DR. MARVIN PASCH

The issue of time for learning is an important construct in explaining the quantity and quality of achieved learning. As indicated in the scope of the Commission's investigation, there are dozens of fruitful directions one could pursue under the rubric of time for learning. My perspective may be somewhat different than those typically selected.

My focus question on learning time is, "To what ends are we allocating learning time?" The greater the scope of learning, that is the number of outcomes we hope to achieve, the more time that will be required to accomplish them. Furthermore, the more penetrating the depth of study into a particular topical area, the more learning time that will be required. The same is true in respect to the level of complexity we demand from students in their response to a topical area. A requirement that students recall information previously taught is less exhaustive of time than is a demand that students apply that information to solve unfamiliar, real-life problems. The latter requires practice activities that devour classroom time. Furthermore, complex tasks mock the inflexible nature of school time, especially the frozen time and grouping found in the typical

junior and senior high schools. This perspective on time is persuasively argued in F. N. Dempster's, "Exposing our students to less should help them learn more" (February, 1993 pgs. 433-437). Among the citations in his article are four that also have influenced my thinking about the subject:

Newman, F.M. (1988). Can depth replace coverage in the high school curriculum?. *Phi Delta Kappan*, January, 1988, 345-48.

Powell, A.G., Farrar, E., & Cohen, D.K. (1985). *The shopping Mall high school*. Boston: Houghton-Mifflin.

Sizer, T.R. (1984). *Horace's compromise: The dilemma of the American high school*. Boston: Houghton-Mifflin.

Sizer, T.R. (1992). *Horace's school: Redesigning the American high school*. Boston: Houghton-Mifflin.

Sizer has popularized the notion that broad, reality-based, culminating experiences can be a vehicle for school reform. In his books *Horace's Compromise* and *Horace's School*, he argues for a reduction of content as a natural consequence when curriculum is organized to prepare students to demonstrate their achievement of carefully selected "exhibitions". These exhibitions would not be replications of knowledge but instead would demonstrate the student's capability to apply knowledge within a particular set of conditions. As stated by Sizer, exhibitions both

point the way through a course of study and provide a motivation to pursue the journey. Content that is not essential to the journey would be jettisoned. Sizer's principles for reforming secondary schools are given life in his *Coalition of Essential Schools* (See attached), a voluntary association of over 200 mostly public secondary schools in twenty-three states. Among the principles that guide Coalition practice are the following that have clear relevance to the Commission's scope of work:

1. The school should focus on helping students to use their minds well. Schools should not attempt to be "comprehensive" if such a claim is made at the expense of the school's central intellectual purpose.
2. The school's goals should be simple: each student should master a number of essential skills and be competent in certain areas of knowledge. Although these skills and areas, to varying degrees, reflect the traditional academic disciplines, the program's design should be shaped by the intellectual and imaginative powers and competencies that students need, rather than by conventional "subjects". The aphorism "less is more" should dominate: curricular decisions are to be directed toward the students' attempt to gain mastery rather than by the teachers' effort to cover content.
3. The schools' goals should apply to all students, but the means to

these goals will vary as these students themselves vary. School practice should be tailor-made to meet the needs of every group of adolescents.

4. The governing metaphor of the school should be student as worker, rather than the more familiar metaphor of teacher as deliverer of instructional services. Accordingly, a prominent pedagogy will be coaching, to provoke students to learn how to learn and thus to teach themselves.
5. The secondary diploma should be awarded on a successful final demonstration of mastery for graduation -- an Exhibition. The emphasis is on the students' demonstrations that they can do important things.
6. Teaching and learning should be personalized to the maximum, feasible extent. No teacher should have direct responsibility for more than eighty students.
7. Administrative and budget targets should include substantial time for teacher planning.

Similar in spirit to Sizer's approach is Spady's framework for reform known as Outcome-Based Education or OBE. Spady defines OBE as a

response to four pedagogical principles. Curriculum must be *designed-down* from what students can do when they exit an educational system. OBE reverses the usual curriculum development process where goals and activities are created first and then evaluation procedures follow. In OBE, the evaluation procedures in the form of complex culminating outcomes are determined first, goals and activities are then developed to enable students to succeed at these demonstrations. Thus, in a similar way to Sizer, Spady is concerned with culminating demonstrations of learning. The result is *clarity of focus*, in that all

> "curriculum design, all instructional delivery, all assessment design is geared to what we want the kids to demonstrate successfully at the 'real end' - - not just the end of the week, the end of the semester, the end of the year -- but the end of their time with us." (On Outcome-Based Education: A conversation with Bill Spady, *Educational Leadership*, December, 1992/January, 1993, p. 66)

As with mastery learning, an idea from which OBE borrowed much of its structure, students are entitled to *expanded opportunity*. That is, students who need them should be given additional time and instructional opportunities. Individuals learn at a different pace and through different

methods and should be provided with these alternatives. Fourth, the spirit of OBE is one of *high expectations*, that significant products and performances can be expected of all youngsters; high standards and the belief that all can be successful should govern the curriculum.

Among the citations focused on Outcome-based Education are the following. Reading them serves as an introduction to the topic:

King, J.A., & Evans, K.M. (1991). Can we achieve Outcome-based Education? *Educational Leadership,* October, 1991, 73-75.

Spady, W.G. (1986 Spring). The emerging paradigm of organizational excellence: Success through planned adaptability. *Peabody Journal of Education,* 46-64.

Spady, W.G. (1992). On Outcome-Based Education: A conversations with Bill Spady. *Educational Leadership,* December, 1992/January, 1993, p. 66).

Spady, W.G., & Marshall, K.J. (1991). Beyond traditional Outcome-Based Education. *Educational Leadership,* October, 1991, 67-72.

Spady, W.G., Filby, N., & Burns, R. (1986). *Outcome-Based Education: A summary of Essential Features and Major Implications.* Santa Cruz and San Franscisco: The Spady Consulting Group and Far West Laboratory.

Another view on instructional time distinguishes between pre-active and interactive instructional time. Pre-active time is what we popularly refer to as planning time. This is the time when the teacher works alone or with colleagues to transform information to be taught into what Less Shulman has called "pedagogical content knowledge" (Shulman, 1986; Shulman, 1987), knowledge organized into a meaningful network of principles, concepts and associated detail. E.D. Hirsch, in his 1987 book *Cultural Literacy*, a book that too many educators have criticized but failed to read, calls the former 'mental models' and the latter 'background knowledge'. Both are necessary ingredients of well-conceived pedagogical content knowledge. The mental models must be robust, free of distortions and appropriate to the student's developmental level. They must be surrounded by a network of detail that includes attributes, examples, and factual support. A second purpose of planning time is to identify, create and gather resources to implement learning activities and evaluation procedures and to reflect on the results of teaching.

Interactive instructional time is what is typically described as teaching, the teacher in face-to-face contact with students. My view has remained fixed over the years that too much attention and effort have been allocated to strategies, principles and practices designed to alter what the

teacher does while interacting with a classroom of students; too little effort has been made to alter what the teacher does in pre-active time. School reform is best served by increasing the time available to teachers while doing pre-active tasks rather than attempting to impact teacher behavior while teaching. Most staff development programs, aware that they cannot increase teacher planning time, concentrate their efforts on improving teachers' awareness of what they should or should not be doing in their classrooms during interactive teaching. Programs to assist teachers to be more effective questioners, to respond to student questions and comments, to use praise and reinforcement more judiciously, to diagnose and monitor classroom events, and to be more equitable in their classroom interactions with students are excellent analytical tools to interpret and evaluate teacher behavior. I continue to have doubts that these staff development programs produce and sustain teacher behavioral change, and even greater doubt that they impact student learning of academic content to a degree that changes appear in clinical trials.

Shulman, L. (1986). Those who understand: Knowledge growth in teaching. *Educational Researcher*, (15) 2, February, 1986.

Shulman, L. (1987). Knowledge and teaching: Foundations of the new reform. *Harvard Educational Review*, (57) 1, February, 1987.

TIME AND LEARNING IDEAS/ISSUES/ETC.

DR. ALANE STARKO

Title: Fiscal Resources

Comments: If anyone is going to look at the cost of "summer set back", it would also be worthwhile to look at the activities that take place because of the assumption there will be a summer set back. Enormous amounts of time are spent in review at the beginning of the year, often without any assessment to see if such review is warranted. My personal experience with teachers suggests that they are very hesitant to omit anything that is in the text. If it's there, they do it, regardless of whether it is necessary for a particular student or students.

A second fiscal dilemma occurs around the formulas that tie school funding to school enrollments in a given year. If graduation is related to mastery of outcomes or content, some students will certainly be eligible to graduate earlier than the norm (see later material on accelerated learning). If, when a student graduates, schools lose funding, schools are highly motivated to keep that student in his/her "seat" regardless of the student's need for additional instructional time.

A related issue concerns students who, while in high school, have mastered most of the secondary school objectives and are ready for college level material in one or more subject areas. If high schools have Advanced Placement courses, the need can be easily met. If not, and a student needs Calculus II or French V in order to maximize his/her learning, those needs can be most easily met through dual enrollment, enrollment in a college course for both high school and college credit. The question, of course, is, "Who pays the college tuition?" In the past, Michigan law required that if students received high school credit for college courses, the school must pay for the college credit. This was a nobel effort to make sure that college courses were available to students regardless of income. The unfortunate side effect was that some districts refused to give credit for college courses in order to avoid paying for them. This could mean than an advanced student needing several college courses, even if his/her parents circumvented the law and paid for the courses, could not always accumulate the number of credits necessary to graduate (especially if no credit was given for high school level material mastered in junior high). Recently, Michigan adopted a comprehensive dual enrollment policy requiring districts do allow and finance dual enrollment for qualified students. Additional information on this policy could be obtained from Mary Baily-

Hengesh, State Consultant for Gifted and Talented, Michigan Department of Education.

Resource: Educational R&D Report (1980-81) Consumer group finds students knew most of their texts' content before they spend the year 'learning it.' This report states, among other things, that 60% of the fourth graders scored over 70% on a test of the content of their math text before they had seen the book. The full report may still be available from: EPIE Institute, P.O. Box 620 Stony Brook, NY 11790.

Title: Curricular Program

There can be no 'optimum' amount of time necessary for learning particular content. The amount of time necessary or desirable will vary enormously from student to student. One aspect of this that schools do particularly poorly in dealing with students who need less than the average amount of time to learn material. Two recent studies by the National Research Center for Gifted and Talented (NRC) confirmed that the large majority of third and fourth grade teachers make little or no modification in classroom activities for above average learners. *In many cases this can*

mean that while students are 'engaged', they may not be learning, because the material with which they are engaged was mastered long ago.

Another variation on this theme is the dilemma of highly able learners. Few schools offer programs that can deal with the needs of the twelve year old ready for algebra or geometry. One program that has successfully dealt with such students is the Study of Mathematically Precocious Youth, originally at John Hopkins University. Similar "Talent Search" programs are located at about half a dozen universities throughout the country. Young adolescents, identified through the SAT-Math, are provided with the opportunity to attend "fast track" math classes, often finishing one or two years of high school math in a six week period. This raises two issues. First, the long term success of these programs offers substantial evidence that highly able students can master at least some content in a compressed time period. Much evidence of this success can be found in the writing of Camilla Benbow and Julian Stanley. Second, when such students return to their home schools, it is often an uphill battle to get high school credit for their experiences or be allowed in the next appropriate math course. Districts do not always accept evidence of content mastery if students have not attended a "real" course, and may force all but the most persistent students to repeat material. I believe that

almost any state-level consultant for gifted education could cite relevant examples.

Similar roadblocks are faced by accelerated students within districts. A third grade student who has completed sixth grade math may not be allowed to advance to the next level because seventh grade math "belongs" to the junior high. Again, the student may spend the next three years "engaged" in learning tasks, but the time may still not be well spent because the tasks are inappropriate. In ungraded primaries, it is very common to have provisions for students who need additional time to master basic learning skills. What is to be done with students who master the three year curriculum in one year is much less clear. The lack of articulation among programs or buildings is extremely common. I have seen it in districts across the country.

In a related example, another NRC study examined what happened when teachers did modify curriculum for above average learners by testing for previously mastered material and omitting 24-70% of the regular content. Achievement tests (using the above level tests necessary for this population) indicated that students whose curriculum was modified ('compacted') attained scores equal to or better than those who had completed all the regular content assignments. This would certainly suggest

that many students could be using their time more productively if repetitious or unnecessary assignments were replaced with challenging activities allowing new learning.

Resources:

Archambault, F.X., Westberg, K.L., Brown, S.W., Hallmark, B.W., Zhang, W., & Emmons, C.L. (1993). Classroom practices used with gifted third and fourth grade students. *Journal of the Education of the Gifted, 16*, 103-119.

Benbow, C.P. (1991). Meeting the needs of gifted students through the use of acceleration. In M.C. Wang, M.C. Reynolds, & H.J. Walberg (Eds.), *Handbook of Special Education* (Vol., 4, pp. 23-36).

Benbow, C.P. (1992). Challenging the gifted: Grouping and acceleration. *Gifted Child Quarterly, 36* (Special Issue), 2.

Brody, L.E., & Stanely, J.C. (1991). Young college students: Assessing factors that contribute to success. in W.T. Southern and E.D. Jones (Eds.), *The academic acceleration of gifted children* (pp. 102-132). New York: Teachers College Press.

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Swiatek, M.A. (1993). A decade of longitudinal research on academic acceleration through the study of Mathematically precocious youth. *Roeper Review, 15*, 120-124.

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Topic: School Organization and Management

Comments: The question regarding optimal organizational structures to maximize learning time and student outcomes has only one potential answer: It depends. More specifically, it depends upon the types of outcomes one is trying to attain. It is essential that one be extremely cautious about generalizing from one situation or research study to

another. The types of organizational structures that most improve math computation scores on third grade achievement tests may be very different than those that facilitate complex problem-solving in third grade, to say nothing of 'real world' accomplishments at the secondary level. This caution is particularly important in generalizing the research on effective teaching. While much important information was gained in those studies, there are major limitations that must be considered before any generalizations can be made. Most of the studies on effective teaching involved 5 to 10 observations during a school year, with all the data aggregated. This, among other things, 'lumps together' behaviors that may be important in very different types of lessons. Even more importantly, the outcomes by which the teaching strategies were assessed were standardized test results. While that is important information, it may not represent the end products we truly seek. If the goal of education is that students be able to use information in authentic and complex ways, we must use such tasks as the dependent variables in studies assessing school organization. Thus, research on effective school organization must be tied to the quest for alternative assessments. Without such ties, it is too easy to fall back on variables that are easy to measure rather than variables that are important.

Frankly, I might not <u>care</u> very much which school structures most

raise achievement test scores if those scores do not represent the types of thought that are important and valuable outside school situations, If you think about it, schools have very bizarre criteria for success. Outside of Jeopardy or Trivial Pursuit, I can't think of very many places on earth where we consider a person successful because s/he can reproduce information. Successful people use information in productive ways. It seems only logical that we demand that studies evaluating the success (or lack of success) of our schools look for behaviors that matter after the test is over.

References:

Shulman, L. (1992). On research on teaching: A conversation with Lee Shulman. *Educational Leadership, 49* (7), 14-19.

Title: Teaching Practices

Comments: A concern in this area relates to the nature of research itself. I think most research studies should come with huge red letters on top saying BUYER BEWARE. Any research purporting to identify one

strategy as 'more effective' than others is clearly comparing the strategy of choice to something. To me, one important question is whether the alternative was valid or even worthwhile. A classic example is research 'examining' the effectiveness of cooperative learning for gifted students. First, very little research has examined that population at all (some of the studies claiming to do so examine the top third of the sample!) Even when the sample is reasonable, the alternatives may not be. For example, some researchers examining grouping research want to isolate the variable 'grouping' to avoid contaminating the research with differing instruction in the different groups. Educationally, that makes no sense. Educators group in order to differentiate instruction. Grouping, then giving each group the same instruction, is purposeless. In the same way, some studies have compared 'individualistic' teaching with cooperative learning. To take a simplistic example, one group may study spelling words alone and another group study them with a partner. If a gifted speller, Suzy, already knew how to spell the words, she would get 100% on the spelling test either way. The researcher could then say gifted spellers do 'just as well' in cooperative learning groups. That may not be the important question. The important questions might be whether Suzy should have been doing those spelling words at all, whether she learned anything in spelling either way, and what

Suzy might have achieved had she spent that time doing something else. If Suzy scored 100% on Monday and spent spelling time for the rest of the week pursuing independent research on local history or writing the Great American Novel, she may have had a very different educational experience that would not be reflected in her spelling scores.

References:

Kulik, J.A. (1992). *An analysis of the research on ability grouping: Historical and contemporary perspectives.* Storrs, CT: Research-Based Decision Making Series, The National Research Center on the Gifted and Talented.

Robinson, A. (1991). *Cooperative learning and the academically talented student.* Storrs, CT: Research-Based Decision Making Series, The National Research Center on the Gifted and Talented.

Rogers, K. (1991). *The relationship of grouping practices to the education of the gifted and talented learner.* Storrs, CT: Research-Based Decision Making Series, The National Research Center on the Gifted and Talented.

Title: Incentives and Student Motivation

Comments: I am concerned about the use of the word 'incentives' as tied to motivation. Incentives are external rewards. My understanding of the research is that this type of extrinsic motivation can increase some kinds of activity and inhibit others. The behaviors that may be inhibited seem to be among the most valuable: higher level thinking and creative behavior.

I am particularly interested in Theresa Amabile's research on intrinsic motivation and creativity. Amabile believes that the exploratory behavior, experimentation and risk taking that are part of the creative process demand intrinsic rather than extrinsic motivation. The motivation to be creative comes from the task itself, or the interaction of the individual and the task. She has identified four factors that inhibit intrinsic motivation: competition, reward, evaluation, and lack of choice. Sounds like school to me!

References:

Amabile, T. (1983). *The social psychology of creativity.* New York: Springer Verlag.

Deci, E.L. & Ryan, R.M. (1985). *Intrinsic motivation and self-determination*

in human behavior. New York; Plenum Press.

PROFESSIONAL OPPORTUNITIES FOR TEACHERS:

TEACHER AS RESEARCHER

DR. SARAH MARTIN

COMMENTS: The idea of teacher research is not a new one. It gained popularity in the '50s under the name of "action research", the major goal of which was to involve teachers in working for social change (Corey 1953). But even that movement had earlier roots in the philosophy of John Dewey who emphasized the need for educators to be reflective in their practices and to be both teachers and students of classroom life. More recent goals of the teacher research movement develop it as a means by which teachers can provide a rich data source, a new perspective with new questions and frameworks, and a critical view of existing theory (Cochran-Smith & Lytle, 1993). The teacher is an integral part of the classroom, and, therefore, has a closer understanding of what goes on there and why (Florio-Ruane & Walshe, 1980). However, teacher inquiry must be supported and developed for knowledge about teaching to improve to better meet the needs of both teachers and students.

Goswami and Stillman (1987) characterize teacher research as "an

agency for change." They see at least six ways in which teachers may benefit from conducting such inquiry:

> 1. Their teaching is transformed... 2. Their perceptions of themselves as writers and teachers are transformed. 3. They become rich resources who can provide the profession with information it simply doesn't have. 4. They become critical, responsive readers and users of current research... 5. They can study writing and learning and report their findings without spending large sums of money. . . 6. They collaborate with their students to answer questions important to both, drawing on community resources in new and unexpected ways (p. ii).

These benefits go beyond the individual teachers. When teachers are given even minimal support for classroom inquiry, they become more professionally involved, personally, and with other teacher researchers (Martin, 1993). Their individual professional development can extend to benefit their students as well as their school's development.

CONCERNS: While teacher research is gaining recognition and some support (National Council of Teachers of English provides individual research grants; U.S. Department of Education's Office of Research and

Improvement provides grants for work by teachers which leads to school improvement) unless this support becomes, in some way, systemic, teachers are not likely to be able to conduct in-depth research. Such projects require some time to plan and to interpret. Such projects require some time to plan and to interpret. The major concern is that this time is not provided in most teachers' daily schedules. As we consider time and learning, we need to focus on teachers' time and how it might best be used to help them continue as learners.

KEY RESOURCES:

Cochran-Smith, M. & Lytle, S. (1993). *Inside/outside: Teacher research and knowledge*. New York: Teachers College Press.

Corey, S. (1953). *Action research to improve school practices*. NY: Teachers College Press.

Dewey, J. (1904). *The relation of theory to practice in education*. The third NSSE yearbook (pt. 1). Chicago, IL: University of Chicago Press.

Florio-Ruane, S., & Walshe, M. (1980). The teacher as colleague in classroom research. In H. Trueba, G. Guthrie. & K. Au (Eds.) *Culture in the Bilingual Classroom: Studies in Classroom Ethnography*. Rowley, MA: Newbury House.

Goswani, D. & Stillman, P.R. (1987). *Reclaiming the classroom: Teacher research as an agency for change*. Portsmouth, NH: Heinemann.

Martin, S. H. (1993). *Classroom research leads to answers to tough questions*. Paper presented at the Michigan Reading Association Conference. March 13-16. Grand Rapids.