ABSTRACT

        This document reports on the design and development
of a comprehensive longitudinal monitoring system that allows for the
identification of at-risk students and the evaluation of district
programs and services by one high school and five elementary school
districts in California and the School of Education at San Jose State
University. The goal of the management information system is to
gather and analyze data in order to allocate district and state
resources to support student achievement. The system is unique for
the following reasons: (1) it coordinates collection of longitudinal
data on students from elementary, to junior high, to high school; (2)
it provides a system for reporting student placement and progress
from the high school level back to the elementary level; and (3) it
allows districts to monitor benefits of resource and financial
allocations. Twenty-three variables, including socioeconomic
characteristics, school related behaviors and characteristics, and
psychological states, form the student's individual profile. Each
variable is defined with gradations that teachers or other support
personnel use in evaluating students. System design also includes a
three-dimensional evaluation of student achievement that assesses the
amount of work a student produces, the level of application of what
is learned, and the subsequent performance of the student. A student
self-assessment component measures academic self-esteem, feelings of
personal autonomy, and educational aspirations. A scan document is
used to assess each student and allows school districts call up data
relevant to a specific individual or selected population. The system
is ideal for reporting state mandated accountability data. A list of
three references and a checklist of student socialization behaviors
are appended. (FMW)

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Abstract:
A Student Monitoring System for At-Risk Intervention and Program Improvement
by Linda Webster, Ph.D. and Larry Larson, Ed.D.

This article describes the efforts of six districts and the School of Education at San Jose State University to design and develop a comprehensive, longitudinal, monitoring system that allows for the identification of at-risk students, and the evaluation of district programs and services. The goal of the system was the gathering and analysis of data that would allow for the judicious allocation of district and state resources to support student achievement. The system is unique for a variety of reasons: 1) it allows for the coordinated collection of longitudinal data on students throughout their years in public elementary and secondary education; 2) it provides a system of reporting student placement and progress from the high school level back to the elementary level; and 3) it allows districts to monitor benefits of resource and financial allocations.

23 variables measure characteristics correlated with students who drop out of school: socio-economic characteristics (e.g., family mobility, SES), school related behaviors and characteristics (e.g., socialization patterns), and psychological states (e.g., self esteem). Included in the system is a three-dimensional evaluation of student achievement that goes beyond standardized achievement scores and course grades. The assessment measures the amount of work a child produces, the level of application of what is learned, and the subsequent performance of the child. A student self-assessment is also included in the monitoring system.

A scan document is used in the assessment of each student and affords flexibility in that at any given time, school districts can call up data relevant to a specific individual or selected population it wishes to monitor. The system can be replicated for use within other school districts and is ideal for reporting state mandated accountability data.

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A Student Monitoring System for At-Risk Intervention and Program Improvement

by Linda Webster, Ph.D., and Larry Larson, Ed.D.

"While it is too harsh to say that most schools have ignored students who drop out or who are at risk of dropping out, it would be hard to find an aggressive, system-wide anti-drop out strategy..."
School Dropouts, Everybody's Problem. Institute for Educational Leadership, Washington, D.C., 1986

"Management information systems which link the three levels of school as well as programs in the out of school environment, are not 'pie in the sky' niceties. They are essential elements of a comprehensive dropout prevention strategy."
Dropouts in America, Enough is Known for Action. Institute for Educational Leadership, Washington, D.C., 1987

California's educational system currently faces a major challenge as community and school demographics change as a result of increased numbers of minority and limited-English proficient students, more children living in poverty, a higher incidence of substance and child abuse, and growing numbers of dysfunctional families.

School districts must confront the difficult challenge of meeting greatly expanding student needs and of redirecting human and financial resources to provide for more effective curricula, programs, and support services. Unfortunately, data collection at the local, state and even national level which might serve to help educators understand the scope and nature of the problem, remains largely nonexistent or lacking standardization. Without these necessary data, school districts lack the information needed for the development, implementation, and evaluation of both current and future programs--programs and services which not only provide vital prevention and intervention strategies for dropouts but also promote equal access to a high quality education for all students.

Over the past several years, six school districts in Santa Clara County independently struggled with the problem of addressing demographic changes within their communities and schools. Changes within the districts over a period of four years include increases in 1. the number of students

dropping out of high school; 2. the percentage of students living in single-parent homes; 3. the number of failing grades in English, math and social science; 4) the reported use of illegal substances by students; and, 5) the percentage of students working 40 hours per week.

A year ago the six districts and the School of Education at San Jose State University joined into a consortium to begin collaborative efforts for the design and development of a comprehensive, longitudinal, monitoring system that would assist in the identification of at-risk students, and the evaluation of district programs and services. The school districts include Cambrian Elementary, Campbell Union Elementary, Luther Burbank Elementary, Moreland Elementary, Union Elementary, and Campbell Union High School District.

The consortium was born primarily because of an interest on the part of Campbell Union Elementary School District. While a system for monitoring student placement and progress existed to some extent within the school district, no coordinated system of reporting such information existed from the high school level back to the elementary level. Because of this, data were unavailable to measure the impact of programs or the deployment of special resources at the elementary level. Longitudinal data on academic assignments and progress of students at the high school level, as well as information on drop outs were also unavailable.

The comprehensive student monitoring project that w⁻⁻ developed by the five elementary feeder school districts and the high school district was designed to serve as an early at-risk detection instrument and as an evaluation tool for the assessment of specific district curricular programs and support services. The goal of the system *(which can be replicated for use within other school districts)* was the gathering and analysis of data that would allow for the judicious allocation of district and state resources to support student achievement. Three critical factors that dropout research highlights, are addressed by the monitoring system: 1. Early detection of students likely to not complete school; 2) The coordinated collection of longitudinal data on students throughout their years in public elementary

and secondary education; and 3) The provision of significant resources to assure equitable expenditures to improve failing schools.

The management information system that evolved from the work of consortium members monitors students as they progress from elementary, to junior high, to high school. It is unique because it provides for coordinated longitudinal information management and because it reflects the work of six individual school districts joining together to serve the needs of its common, K-12 population of students.

Variables included in the system measure characteristics correlated with students who drop out of school: **Socio-economic characteristics** (e.g., family mobility, number of siblings, SES, number of parents residing with the student), **School related behaviors and characterisitcs** (e.g., attendance, socialization patterns, school placement), and **psychological states** (e.g., self esteem, educational aspirations, and sense of efficacy). The measured variables are in addition to basic data gathered on students such as age, grade, gender, race, number of grades repeated.

There are 23 variables (called data elements in the system) which form the individual student's profile. Each variable or element is defined with gradations that teachers or other support personnel use in evaluating students. For example, Behavior or Socialization can be ranked 1, (withdrawn/loner/isolated), 2 (few friends/shy), 3 (average), 4 (acting-out, mischievous/minor ωiscipline/referrals/detention), 5 suspensions/malicious intent, abusive), 6 (major discipline problem/suspensions/some criminal activity), or 7 (criminal behavior/expulsion). *See figure one.*

Included in the design is a three-dimensional evaluation of student achievement that goes beyond standardized achievement scores and course grades. The assessment concentrates on actual behaviors and productivity of students, and measures the amount of work a child produces (termed INPUT), the level of application of what is learned (termed THROUGH-PUT), and the subsequent performance of the child (termed OUTPUT). As with socialization, the achievement variables are also ranked. For example, Input, the amount of work a child produces, can be evaluated as 1 (no work), 2

(some work), 3 (below required), 4 (at required levels), 5 (more than necessary), 6 (excessive work levels).

A student self assessment, adapted from questionnaires used in the national High School and Beyond Report is also included in the monitoring system. Variables measured include academic self esteem, feelings of personal autonomy, and educational aspirations. Student responses to the questionnaire are ranked and translated to an index score which becomes part of the student's profile.

Including these three components (socio-economic characteristics, school related behaviors, and psychological states measured in the self assessment) within the profile addresses the major descriptors related to students at risk of not completing high school. As is pointed out by the Institute for Educational Leadership,

"We do know enough about why students drop out of school to help educators understand and deal with the connection between schooling and a student's decision to leave. The early signs include low test scores, particularly in reading; low grades; no feeling of competence in any subject; low attendance; and retention in a grade. The single best predictor of a potential dropout is that a student is held back before eighth grade. Warning signs in high school include low grades, failed courses, and low attendance. Other good predictors of potential dropouts are low academic self concept. little sense of control over academic environment, lack of "connectedness" with the school through extracurricular activities or a personal identification with a teacher or other adult, and lack of belief that the effort to graduate will be beneficial."

A scan document is used in the assessment of each student and affords flexibility in that at any given time, school districts can call up data relevant to a specific individual or selected population it wishes to monitor. Districts can elect to conduct yearly assessments of students or they can choose alternative intervals. Frequent, regular evaluations allow for the monitoring of characteristics and behaviors so that changes in student profiles can be spotlighted and appropriate follow-up interventions recommended.

That districts are able to obtain data relative to their particular needs is an important feature of the monitoring system. For example, one of the consortium's school districts is interested in the long-term benefits of its advanced placement program. AP courses in the district are considered high cost items given the low teacher-student ratios. Because of this the district is interested in determining the relationship between students' participation in advanced placement courses at the middle school level, and academic assignments of the same students as they progress through high school. By monitoring academic placements and student success at the high school level, the district will be able to support or refute the value (cost-benefit payoff) of its current expenditures.

Another need particular to one of the school districts is validating the prediction that students from particular geographic regions within the district are more likely to drop out of high school than students from other areas within its boundaries. Basic to this is the question of whether it is possible to identify sources of at-risk students so that specific prevention programs can be targeted to areas of greatest need. The assessement component of the monitoring system will allow the district to identify these populations so that resources and support systems can be allocated where maximum benefit is possible.

Finally, four of the thirteen school conditions to be evaluated through Proposition 98's **California Accountability Report Card**, can be assessed by the monitoring system. These include Student Achievement, Dropout Rates, Expenditures of Services Offered, and Counseling/Support Services. In addition to information on student achievement and dropout rates, data encoded in the system include indices of special program placements (e.g., GATE, vocational programs, day care) and processes available to students (e.g., student study teams, counseling). Counts of students benefitting from these services will be one measure of the Expenditures of Services Offered and of Counseling/Support Services.

There are no quick fixes to the problem of students at risk of not completing their education. Likewise, there are no single factors or patterns of characteristics that are guarantees that a student will not finish high

school. While dropouts are a major national problem confronting all schools, it is imperative that school districts and communities analyze *individually* the characteristics of their own at-risk populations. Educational administrators need to be presented not only with better information for the selection of alternative courses of action, but also with more efficient means of processing that information in usable forms. At a time when administrators are confronted with more information than they can readily use, what is needed is a means of sifting the worthwhile from the useless information rather than simply acquiring more information.

The model for student monitoring and program improvement that is described in this article offers school districts a vehicle for this. It is valuable in that the data encoded into the system are reflective of up-to-date demographics and changes in students' behaviors and characteristics. This provides school districts the opportunity to study and define their own at-risk populations. The model is unique in that it looks at program evaluation as a process of dealing with youth at risk. Through the on-going evaluation of students, school districts are able to identify areas of program strengths and weaknesses so that where necessary, structural change, and changes in curriculum and methods of delivery will be made.

1.
   Peter Treadway, "Beyond Statistics: Doing Something About Dropping Out of School. A Synthesis of Relevant Research." Whitney Foundation School Dropout Prevention Conference, March, 1985.

2.
   Contractor Report: High School and Beyond, 1980 Sophomore Cohort Third Follow-up, 1986. Center for Educational Research and Improvement, U.S. Department of Education, 1987.

3.
   School Dropouts: Everybody's Problem. Institute for Educational Leadership, 1986, p.32.

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Figure 1

BEHAVIOR (Socialization)
1. Withdrawn/loner/isolated
2. Few friends/shy
3. Average
4. Acting-out/mischievous/minor discipline/referrals/detentions
5. Suspensions/malicious intent/abusive
6. Major discipline problems/suspensions/some criminal activity
7. Criminal behavior/expulsion