NEW VOCATIONALISM TESTED

by

Ian Hammond Stephan

A Master's Research Project submitted in partial fulfillment of the requirements for the degree
Master of Arts

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ABSTRACT

The purpose of this study was to determine whether restructuring high schools using a new vocationalism paradigm would result in student gain in several indicators of student success: lowering the school's drop-out and absenteeism rates; increasing the school's graduation rate; reducing the school's incidental rate of behavioral problems; raising students' scores on standardized tests; and raising students' GPA's. As new vocationalism is a new and developing educational paradigm, quantitative data regarding this issue is limited. That which exists, however, supports the notion of student gain through conversion to and implementation of a new vocationalism curriculum, especially when the school is structured around an occupational field or divided into career academies.

Three schools within Arizona that had adopted academically/occupationally-integrated curriculae were found. Staff (and students, at one school) at those schools were contacted and interviewed for the purpose of obtaining evidence to support or refute the idea that academic/occupational integration increases student gain. As was the case with much of the data found in the literature
review, the data collected from the three schools in the study was scant and often confusing or misleading due to high levels of contributing or conflicting variables. However, the study did seem to indicate that new vocationalism is a positive curricular model for high school students which does engender positive changes in indicators of student success once implemented. This study also suggests that an academy model may yield more results than Career Pathways models that attempt to add career exploration and occupational activities to the existing academic curriculum without changing it substantially.

Further study should be done in this area to add to the existing data and provide more support or criticism of the career academy model. Future studies should be limited to schools that have few variables to obscure the meaning of the data. Amphitheater High School is an excellent school for further study in this area and should be visited in future years for longitudinal data collection.
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CHAPTER 1
THE PROBLEM

Introduction

Within the last several decades, U.S. high schools have seen great changes in student demographics and in U.S. society in general. These changes present new challenges and problems that schools did not need to address in the past. Higher education costs, a national economy which requires both parents, and often their children, to work, declining academic skills among our nation’s youth, and low college graduation rates are causing many high schools to look seriously at overall curriculum reform for the first time in decades.

Development of the Problem

The 1983 report by the National Commission on Excellence in Education entitled A Nation at Risk shocked many educational leaders and galvanized reform efforts throughout the U.S. In the years that followed, many other researchers compiled evidence that the nation’s high schools were doing a poor job of educating a large number of students. For example, a study by the Rand Corporation, cited by Olson (1997), shows that roughly half the students in big city school systems drop out before high school graduation. Gray
(1996) avers

"that only one-third [of graduating high school seniors pursuing a bachelor's degree] are adequately prepared" (p. 530), and that only half of those who enroll in programs leading to a baccalaureate degree ever graduate. The Sandia National Laboratories research center supports these statistics when it reports that "the education system turns out in today's youth roughly 26% as college graduates, an additional 60% with 12 to 15 years of schooling, and the final 14% with less than a high school diploma" (1993, p. 294).

Many types of school reform have been developed and implemented to address these problems. And yet, four major problems remain. One, the nation's high school dropout rate is unacceptably large. Two, a high school education is not itself adequate preparation for the rigors of college-level post-secondary education, the end for which most high schools are the means. Three, at least half of the nation's high school students will spend several years putting money and effort into a college-prep education in high schools, community colleges, and universities, only to find themselves without a college degree at the end of their efforts and with little to no training in any occupational field. This often leads to low-pay, low-skill jobs with little opportunity for advancement or further training.

The fourth major problem facing high schools is just now being brought to legislators' and the public's attention. Gray (1996) writes, "According to US Department of Labor Projections through the year 2005, at least one-third of all graduates of four-year colleges will not find employment commensurate with their education" (p. 530). This statistic points to the limited scope and inadequacy of the nation's high school curriculums. The vast majority of American high
schools teach a college-prep curriculum and take few if any measures to educate students to other post-secondary educational options. Virtually all students are encouraged to train for and attend college despite overwhelming evidence that many of them are not and will not be prepared to do so successfully by the time they graduate high school—if they graduate at all—and then do not inform them that they may not need the degree they have worked so hard for all along.

Need for the Study

With so many different school reform measures being brought to educators' attention, it is important for each to be evaluated to weed out those which are the least effective and to promote those that are the most effective. One reform measure gaining prominence today is an ideology called Academic/Occupational Integration, School-to-Work, School-to-Career, or New Vocationalism.

New Vocationalism is an educational philosophy that sees high school as a means to provide students with meaningful, relevant learning experiences that combine academic study with occupational exploration. It is different from traditional vocational education in several aspects, but maintains many of the inherent benefits of strictly vocational education, such as:

1. It puts learning in context and gives it meaning (current research indicates that at present only 18% of all [high school] teachers spend more than 10% of their [academic] class time putting subject matter into any context at all (Gray 1996, p. 534);

2. It may give the student valuable technical skills of value to employers;
3. It brings the community's businesses and industry into its schools;


New Vocationalism differs from traditional vocational education in many ways. It does not:

1. Funnel students into a specific vocation;
2. Track kids in negative or demeaning ways;
3. Create single-skilled workers who are unable to solve problems, be creative, or communicate effectively;
4. Steer away from teaching academic concepts;
5. Limit any student’s ability to go on to a college or a university. (Goldberger and Kazis 1996, Hartoonian and Van Scotter 1996)

The new vocationalism reform movement recognizes the pitfalls of traditional vocational education, and has promoted practices which discourage them. Most importantly, educators who support the new vocationalism do so due to its philosophic shift from a supplemental program existing separate from the academic curriculum to a program which, in the words of the 1990 Amendments to the Carl Perkins Act, "integrate academic and vocational education ... through coherent sequences of courses so that students achieve both academic and occupational competencies" (Grubb 1996, p. 538). New vocationalism attempts to bridge the gap between the view that schools exist to prepare students for work and that which says schools exist to build students' characters and general skills. It does this by combining these two separate
educational paradigms. Goldberger and Kazis (1996) explain:

It is our view that, by better aligning school-to-career programs with the mainstream of high school reform efforts and by removing the burden of providing most occupation-specific training inside high schools, implementation can be made easier and more palatable to educators while still meeting enough of the labor market needs of participating employers. Moreover, we believe that this strategy also has the potential to yield significant improvement in American high schools—even if it is only partially implemented. (p. 554)

Despite the changes to the old paradigm of vocational education, many educators are still wary of any curriculum reform involving an occupational or technical focus. They contend that vocational equipment that schools purchase or receive in today's rapidly changing environment would become obsolete quickly, leaving taxpayers with a glut of enormously de-valued equipment and out-dated programs. Due to ever-increasing technologies and a very dynamic society, it is probably right to say that "concentrating just on job skills and career opportunities will leave us off the mark 20, 10, or even five years from now" (Hartoonian and Van Scotter 1996, p. 556). That is to say, technology and the world of business tend to change far more rapidly than this country's educational establishments do. New vocationalism agrees and differs from more traditional vocationalism by advocating breadth over depth when exposing students to careers. Instead of teaching narrow, job-specific technical skills (depth) which may become obsolete in just a few years or which may never be used, new vocationalism encourages teaching general occupational competencies that can be applied in many occupational situations or work environments
(breadth). It encourages this because research shows that "only about one out of four high school students enrolled in a vocational program finds employment in the field for which he or she is trained" (Goldberger and Kazis 1996, p. 549).

In sum, new vocationalism is the integration of academic learning and occupational exploration. It serves to engage the student and personalize his learning while encouraging him to learn much and learn well. Its focus is to teach and improve the student’s academic skills while teaching him about real-world applications of his learning and exposing him to real-life educational and occupational opportunities after high school.

Given the number of American legislatures that endorse a limited degree of vocational or occupational training in high school and the number of American high schools currently implementing or considering implementing a new vocationalism curriculum, it is necessary to evaluate the effects of academic/occupationally-integrated curriculae on high school students.

Purpose of the Study

The purpose of this study was to determine whether restructuring high schools using a new vocationalism paradigm will result in student gain in five indicators of student success: lowering the school’s drop-out and absenteeism rates; increasing the school’s graduation rate; reducing the school’s incidental rate of behavioral problems; raising students’ scores on standardized tests; and raising students’ GPA’s.
Research Question

Does the implementation of a New Vocationalism curriculum affect a measurable gain on high school students' indicators of success?
CHAPTER II
THE LITERATURE REVIEW

Introduction

The first part of the literature review explores the justification of New Vocationalism based on studies concerning contemporary student beliefs and an analysis of current and future U.S. workforce demographics. The second part of the review looks at relevant U.S. legislation pertaining to academic/occupationally-integrated curriculae in America's schools. The third part of the review discusses the different forms New Vocationalism takes in America's schools. The fourth part of the review analyzes available data to assess whether New Vocationalism has proven a successful model for student improvement or not. The last part of the review summarizes the findings pertaining to New Vocationalism's success or failure in practice in American schools.

Justification of New Vocationalism

Some educators have argued that the answer to high U.S. high school drop out rates and low graduation rates is the implementation of better staff development and teaching practices to make its students better prepared for the rigors of a four-year post-secondary education (Cardellicchio, Cone,
Gardner). And yet, does it really make sense to attempt to prepare so many students for post-secondary education at colleges and universities? Statistics show that college is a very risky proposition, full of failure, and for many, highly over-estimated. Gray (1996) writes that national studies estimate only one-third of graduating high school seniors pursuing a bachelor's degree are adequately prepared to do so (p. 530). The estimation is largely born out by the numbers of students who actually graduate. Gray (1996) states that, at best, only half of those who matriculate in programs leading to a baccalaureate degree ever graduate. Many students academically unprepared for college are also financially unprepared for it. Gray (1996) notes that “since the 1980-81 academic year, college costs have increased 55% at private institutions and 32% at public ones, while family income has decreased 2%” (p. 531). Gray also notes that “forty-eight percent of all students at public colleges and 70% of those attending private institutions receive financial aid that almost always includes school loans” (p. 531).

These numbers show that students enrolling in four-year degree programs are at a significant risk of failure and normally incur debt in pursuing the degree. But that is not the only problem these students face. What does the future hold for those who do graduate with a four-year degree? Johnston and Packer (1987) note that at present only 22% of all occupations require a college degree (p. 97). Hoffman (1996) finds that for that 22%, a college degree still leaves many unprepared for work. “About 15 to 20 percent of new college graduates end up without the credentials they need to
get professional-level jobs, either by choosing the wrong major or by failing to acquire work experience before they graduate" (Hoffman 1996, p. B4). Gray (1996) adds that according to U.S. Department of Labor Projections through the year 2005, at least one-third of all graduates of four-year colleges will not find employment commensurate with their education. Shelley (1992) concludes that this is an enduring phenomenon.

About one college graduate in five who entered the labor force between 1984 and 1990 took a job that generally did not require a college degree ... or were unemployed. But the 1984-90 period was not unique. The proportion of college graduates who were under-utilized has been quite high for nearly two decades. (p. 14)

These statistics indicate that as society becomes more technologically-dependent, a college graduate is more likely to be shortchanged by his/her degree than two decades ago. Further data shows that, with the exception of degrees involving law, medicine, computer technology or engineering, the earning power of non-four year degree professions are catching up with or surpassing those of degreed professions. Shelley (1992) writes that on-the-job experience or one or two years of technical training is still valued above a college degree in many instances.

The U.S. Department of Labor [has] concluded that the lifetime earnings of individuals who work in such occupations as precision metals, the crafts, specialized repair, and other nonprofessional technical occupations will exceed the earnings of all college graduates save for those who are successful in finding work in the professional or managerial ranks. (Gray 1996, p. 532)

A four-year degree may not be a realistic or viable
option for all high school students. Given the economic
deterrents inherent in the pursuit of a four-year college
degree, its limited use to many of those who have earned it,
plus the fact that many students are little qualified for or
interested in its pursuit, American high schools would likely
benefit by looking at alternatives to a college-prep
curriculum for at least a part of their student bodies.

New Vocationalism as an educational philosophy has a
benefit that other reform strategies do not: it necessitates
a study of careers and occupations on the part of the student
In purely academically-focused high school curriculae, too
often the student is left ignorant of the demands involved in
obtaining a four-year degree and uneducated about the
demographics of the American workforce. That this is the
case in the vast majority of schools today is proven by a
Junior-Achievement-Gallup youth survey (Van Scotter 1994).
It showed that nationally, by age 30, 54% of young people
expected to have a professional or managerial career other
than teaching elementary or secondary education, to which 9%
do aspire; and fewer than 10% say that their chosen vocation
will be in the services or skilled crafts. Only 2% plan to
learn a skilled craft like carpentry, plumbing, or electrical
work. The study also showed that despite enormous evidence
to the contrary, young people continue to view higher
education as the key to professional and financial rewards--
82% plan to enter a college or university. Only 4% desired
to enter work training (Van Scotter 1994, p. 75).

The reality of the demographics of the American
workforce is distressingly in contrast to these students' expectations. According to U.S. Department of Labor, "since the 1950's, only around 30% of all jobs have required a four-year college degree and only 20% of all employment has been in the professional ranks" (Gray 1996, p. 530). This discrepancy between young people's expectations and the demographics of the American marketplace clearly illustrates that of the 54% of students who enter college with aspirations of having a professional or managerial career, a full 20% will not be accommodated by the American workforce's demands.

In addition, many college graduates today are finding out that a technical skill is more valuable on the open market than an academically solid four year degree (Gray 1996). Consistently, behavioral skills have been cited by business leaders as the most important work skills, not academic ones (Sandia National Laboratories 1993). Gray adds that for the business leaders sampled in his study of a blue-collar, high-skill, high-wage electronics industry, "the ability to communicate in writing ranked almost last" (Thomas and Gray 1992, p. 73).

**Legislation Pertaining to New Vocationalism**

Vocational education has been around since passage of the Smith-Hughes Act in 1917, but the current emphasis on academic/occupational integration—i.e., the school-to-work movement—has its roots in a federal mandate and accompanying federal funding provided by the Carl Perkins Act passed in 1990 (Hoachlander 1994, p. 77-78). The Carl Perkins Act
attempted to aid disadvantaged youth who were having little success with the college-prep curriculum in use in most of the nation’s high schools.

Another recent endorsement of school-to-career programs came in 1994 with passage of the School-to-Work Opportunities Act. This act also targeted the non-college-bound high school student, calling for high school districts to create and implement programs that integrate academic and vocational curriculums, utilize work-based learning practices, link students to post-secondary educational institutions, and expand educational and work opportunities for all students. The Act strives to achieve these ends by providing states with around $300 million annual seed money for use as cash grants for cooperating districts and schools (Hoachlander 1994, p. 78-79).

Additionally, many states have passed their own legislation regarding the school-to-career philosophy within the last several years. Some, like Oregon, have legislated more sweeping courses of action. Others have called for very little change or have declined to address the topic at all.

**Types of School-to-Career Programs**

No single schedule or formula appears to fit all schools. Consequently, the form that vocationalism takes in the nation’s high schools varies widely from place to place. However, most school’s plans for including vocationalism in the curriculum follow one of the following three models, listed in order of least to most radical compared to the standard American high school: occupational clusters, career
academies, and occupational schools.

**Occupational Clusters.** Some schools have chosen to keep much of the existing academic curriculum intact with little to no modification while adding an occupational component to the curriculum through the addition of a variety of occupational "majors". Students, usually at the end of 10th grade, choose a cluster and take classes associated with that career cluster for one to three periods a day (Grubb 1996, p. 539).

**Career Academies.** Schools with career academies are usually set up as a series of "schools-within-a-school", each focusing on an occupational field. Academic and vocational teachers collaborate together and attempt to integrate study to make it more meaningful for the student while maintaining the goals of both academic and vocational curricula (Grubb 1996, p. 539).

**Occupational High Schools.** Occupational High Schools are schools that typically focus on preparing students for a career within a particular occupational field. The majority of the students' classes each day focus on skills necessary for work within the occupational field. Academic study is thoroughly integrated into occupational preparation (Grubb 1996, p. 539-540).

Typically, all three formats outlined above also offer the student some kind of extra-curricular activities connected with the occupational field. These include opportunities for work-study, internships, or job-shadowing in the field. Mentors, guest speakers, and tours of workplaces are also common experiences available to the
student through his cluster, academy, or occupational school.

**Indicators of Success**

As new vocationalism, or school-to-career, is a relatively new curricular reform measure and has only been adopted by public high schools across the nation to a limited degree, little empirical evidence is available to gauge its effects on high school students. The difficulty of accruing quantitative data has been compounded given the lack of opportunity for experimental or quasi-experimental research in the matter. Many books, articles, and educational documents have focused on affective measures and qualitative data insofar as they have studied or evaluated actual programs. Also widely available are papers which have studied the conversion from a college-prep high school curriculum to an academic/occupationally integrated one. The number of studies in print which focused on quantitative data to show student gains or losses from conversion to a school-to-career curriculum is small. Most of them have already been referenced in this paper; several are still under investigation. N. Adelman (1989) speculates as to the cause of this dearth of information in "The Case for Integrating Academic and Vocational Education", a paper sponsored by National Assessment of Vocational Education (NAVE):

> Despite their escalating interest in the relationship between in-school learning and the ways that people learn or use their learning outside school and in the workplace, the mainstream education and psychology research communities have ignored vocational classrooms as potential research laboratories. We suspect that this is because the research community, like most highly educated people, views secondary vocational education as
both inferior and inappropriate for high school students. (p. IV-6)

However, some quantitative and much qualitative data collected to date does suggest that a school-to-work curriculum improves several student indicators of success as compared to the country's standard college-prep curriculum.

Drop-Outs. A number of studies have shown that school-to-career programs, in the form of high school career academies, can dramatically lower a high school's drop-out rate, its absenteeism rate, and its truancy rate. In the two original California Peninsula Academies, one-year dropout rates of 2 percent and 4 percent in the early eighties contrasted sharply with 10 and 11 percent rates for comparison groups (Resnick and Wirt 1996, p. 60). And in California academy replications,

the three-year dropout rate was 7.3 percent in the academies and 14.6 percent in the comparison groups. For the cohort entering in the fall of 1986, the two-year dropout rate was 6.6 percent in the academies and 14.3 percent in the comparison groups. (Resnick and Wirt 1996, p. 60)

Olson (1997) points to several schools nationwide that have undergone curricular reform and adopted school-to-career programs. Patterson High School in Baltimore, Maryland, changed its curriculum and modes of educational delivery by dividing its 2,100 students into five career academies. Results were impressive:

The percentage of teachers who thought that tardiness was a problem in grades 10-12 dropped precipitously, from 88.9 percent to 6.8 percent. The percentage who thought absenteeism in those grades was a problem fell from 97.8 percent to 19.0 percent. The percentage who thought class cutting was a problem plummeted from 82.2 percent to zero. Teachers perceived that these problems
percent to zero. Teachers perceived that these problems had been cut roughly in half among ninth-graders. In addition, they reported decreases in vandalism, drug use, verbal abuse of teachers, drug peddling, fights, and theft. (Olson 1997, p. 215)

At Roosevelt High the dropout rate for freshmen declined from 13 percent in the late 1980's to about 6.5 percent in the early 1990's (Olson 1997, p. 203). Not only does a school-to-career program help students stay in school longer, the data suggests, but it may also help retain staff.

In a study of 10 career academies nationwide the Manpower Demonstration Research Corporation found that many teachers were originally drawn to the academies and stayed in them because of the chance to work together with colleagues. These teachers also reported a strong sense of isolation prior to joining the academy. (Olson 1997, p. 213)

**Graduation Rates.** Data shows that school-to-career programs can greatly raise graduation rates in comparison with pre-program implementation graduation rates and in comparison with other non-vocational schools with similar students demographics. In their evaluation of career academy programs in California, Philadelphia, and New York City, authors Resnick and Wirt (1996) cite the following evidence for such a claim: Among seniors in 1985 ... 94 percent graduated from the two Peninsula Academies, while only 79 percent graduated from the comparison groups, and higher graduation rates occurred in the California replication sites than in comparison groups.

**Grade Point Average (GPA).** Data shows that school-to-career programs can have positive impacts on participating students' GPA's, on the number of credits earned, and on
class rank. Resnick and Wirt (1996) found that students in
the California academies "recorded better attendance, failed
fewer courses, earned more credits, and obtained better
grades than did the students in comparison groups" (Resnick
and Wirt 1996, p. 61)

College Enrollment. Data shows that school-to-career
programs can have positive impacts on post-graduation
educational enrollment rates and the number of college
credits earned. The National Center for Research in
Vocational Education (NCRVE) (n.d.) cited several school-to-
career schools’ college attendance rates as evidence:

Chicago’s High School of Agricultural Science sent 80
percent of its students to college in 1996. The
Philadelphia Academies send nearly 60 percent of their
students to post-secondary schools. [And] about 85
percent of the graduates of New York City’s Cooperative
Education enroll in college. (NCRVE n.d.)

Standardized Tests. Evidence to show a correlation
between school-to-career programs and improved test scores is
just beginning to emerge due to the difficulty of creating
experimental conditions for such testing. However,
preliminary data is encouraging. The NCRVE reports that one
study, using a control group consisting of students who were
not selected by lottery for New York City’s Career Magnet
schools, showed that school-to-work programs had positive
effects on academic test scores (NCRVE 1998). Additionally,
an evaluation of the Manufacturing Technology Partnership
(MTP) program in Flint, Michigan, found its students to have
higher average GPA’s and class rank than a similar comparison
group of non-participants (NCRVE 1998). Another study
conducted by the Southern Regional Education Board (SREB)
reported that

students completing vocational programs at SREB sites in 1990 who reported that their vocational teachers stressed reading, mathematics, and science skills had significantly higher average NAEP scores in all three subjects than students who reported no such emphasis. (Vocational Education 1996)

Summary

In summary, New Vocationalism is an attractive school reform measure because it recognizes that not all students will attend four-year degree programs after high school and does not limit most students to a "one size fits all" college-prep curriculum. It also forces students to investigate careers and occupations, theoretically resulting in greater student awareness of occupational possibilities and workplace realities than most students currently exhibit.

The data presented in this literature review shows that schools which implement academically/vocationally-integrated curriculum models exhibit quantitatively greater indicators of success than comparison schools which utilize traditional college-prep curriculae. It also shows that schools which have converted from a traditional college-prep curriculum to an academically/vocationally-integrated curriculum saw improvements in many of these same indicators of success. Indicators of success that experienced positive changes included reduced drop-out rates, improved teacher morale and longevity, improved student graduation rates, improved student scores on standardized testing, improved student GPA's, and an increased numbers of students attending post-secondary educational institutions after graduation. This
data is limited to a small number of schools, however, as few schools nationwide have had a new vocationalism curriculum in place long enough to garner quantitative data to indicate change in one direction or the other. The positive results of the schools listed in this review, however, suggest that a new vocationalism curriculum is not inferior to the traditional college-prep curriculum nor inappropriate for high school students. For the roughly 75 percent of U.S. high school students who will not graduate from college with a four-year degree despite having spent several years in high schools, community colleges, and/or universities, perhaps just such a curriculum would be beneficial.
Purpose

The purpose of this study was to determine whether restructuring high schools using a new vocationalism paradigm will result in student gain in several indicators of student success: lowering the school's drop-out and absenteeism rates; increasing the school's graduation rate; reducing the school's incidental rate of behavioral problems; raising students' scores on standardized tests; and raising students' GPA's.

Research Design

This research project used a descriptive case study as its research design. Merriam and Simpson (1995) define the purpose of a research design as that of

systematically describe[ing] the facts and characteristics of a given phenomenon, population, or area of interest. Description may include (1) collection of facts that describe existing phenomenon; ...(3) project or product evaluation; or (4) comparison of experience between groups with similar problems to assist in future planning and decision making. (p. 61)

Population and Sample

The researcher studied and described three Arizona high schools that have embraced a new vocationalism curriculum within the last six years and have reformed their schools
accordingly: Amphitheater High School in Tucson; Blue Ridge High School in Lakeside/Pinetop; and Kingman High School in Kingman. Student populations considered in the study were each high school’s total school population for the two years preceding implementation of the vocationalism curriculum (where possible) and each year since then. The years covered by the study were 1994 to 1999.

**Instrumentation**

The researcher interviewed school personnel from the schools being studied in person and via telephone. The researcher contacted the Arizona Department of Education to find schools which have implemented school-to-career curricula and contact people within each school. If no contact person was available from the Department of Education, the school was called and staff was asked for the person most responsible for the school-to-career program at that site. A questionnaire (Appendix A) was used during the oral interviews to gather uniform data from each site to be studied. The questionnaire insured that equitable and commensurate data was collected from each sight wherever possible. Oral interviews allowed the gathering of data germane to the topic but not necessarily prompted by the questionnaire. The questionnaire’s questions were short and open-ended, allowing for the collection of as much data as possible, both quantitative (drop-out rate, graduation rate, etc.) and qualitative (Why was such a curriculum implemented?).
Procedure

This study examined three schools which have adopted a secondary education curricular reform referred to as "New Vocationalism" within the last several years. It compared school data from before and after academic/occupational curriculum integration to gauge whether or not New Vocationalism had proven an effective and viable reform measure. Data was collected from the schools by telephone and in-person interviews with staff and district officials, as well as, wherever possible, students at the sites in question.

Method of Analysis

The data on each indicator of student success (school’s graduation rate, drop-out rate, attendance or absenteeism rate, standardized test scores, rate of behavioral-related incidents) was collected for each school (where possible), and the level of change from before program implementation to after implementation was computed and expressed in percent form. Qualitative data (where available) was also considered. Results were posted separately for each indicator at each school.

Assumptions and Limitations

Assumptions. The results of this research project may be used to influence the design of program implementation. It was assumed that all answers to the questionnaire were honest and accurate.

Limitations. Amphitheater, Blue Ridge, and and Kingman
high schools' distances from the researcher's home limited the researcher's access to official records and school personnel. Most interviews were done via telephone during the course of the school day, when the schools' staff was busy with official school business. This factor limited the amount of time that members of the schools' personnel were willing to speak to the researcher. Any predictions or extrapolations made in regards to the effectiveness of new vocationalism or its effects on other schools on the basis of this limited study are tenuous at best; it is understood that this report will not conclusively prove nor deny the validity of new vocationalism as an educational philosophy.
CHAPTER 4
PRESENTATION AND ANALYSIS OF THE DATA

Demographics

Kingman High School. Kingman High School has seen little change in the make-up of its student body by race in the last decade. Its current student population breaks down accordingly:

85.8 % White
.7 % Black
8.3 % Hispanic
3.9 % American Indian
1.3 % Asian/Pacific Islander (Fraley 1999)

Kingman High School has one campus for grade 9 and one for grades 10-12. The freshman class of 1999-2000 consists of approximately 725 students; the 10th, 11th, and 12th grade classes consist of approximately 1,450 students (Wentling 1999).

Kingman’s curriculum has seen a limited degree of academic/vocational integration. All freshmen take a Career Pathways inventory, begin and maintain a career folder and portfolio, and attend lectures by speakers from the Pathways occupational fields they have chosen. Once they transfer to the 10-12th grade campus, they are given the opportunity to take courses that relate to their chosen pathway, as well as more traditional high school courses. The six career pathways at Kingman High School and some related courses are as follows:
Arts/Communications/Humanities Pathway: Video Production, Technical Drawing, Architectural Drafting, Science Fiction Literature, Creative Writing

Engineering/Industrial Systems Pathway: Framing Carpentry I, Advanced Auto Diagnostics

Natural Resources Pathway: Agricultural Science, Agricultural Structure and Land Development, Foods

Business Systems Pathway: Accounting, Business Law, Data Base Management, Marketing

Health Services Pathway: Applied Biological Systems, Medical Terminology/Health Occupations, Nutrition


A guidance counselor at Kingman High School notes that though many Pathways courses are offered, integration between them and the traditional high school courses is very limited. She attributed this to a lack of time and effort on the part of the teachers to do so, reluctance to change the traditional curriculum, and college/university course and credit requirements (Wentling 1999).

The school’s revitalization efforts are far broader than merely the Career Pathways component. In the 1990/91 school year, the district implemented the Positive Alternatives for Student Success (PASS) program to combat the school’s high drop-out and low graduation rates (Fraley, 1999). The PASS program is housed at the nearby Mohave Community College and provides students with a largely self-directed and computer-driven curriculum. It allows students to complete course work using flexible hours away from the high school campus.
Since 1991/92, the PASS program has seen enrollment increase from 49 to 145 students (McCoy n.d.).

In 1995/96, the Career Pathways program and a stricter attendance policy were introduced to help improve the school's graduation rate and reduce the school's drop out rate (Fraley 1999).

Three additional programs started up in the 1996/97 school year: PALS, I-CARE, and directed study (Fraley 1999). The PALS program, directed at tenth-grade students, is a highly structured program that uses a team-taught, 3-period block schedule for core classes and extra support (McCoy n.d.). I-CARE targets students who have been chronic discipline problems in the past or who have no other alternatives for a public education. I-CARE separates students from the mainstream student population and reduces the number of hours per day they are required to attend school (McCoy n.d.). Directed study is a tutoring period given to students who appear to need it (McCoy n.d.).

In the 1997/98 school year, Kingman High School added three more programs/resources for students to improve the graduation rate: Saturday School, Night Track Classes (P.M. classes for those who failed English or Math), and a tutoring center (Fraley 1999).

Blue Ridge High School. Blue Ridge High School is located in Pinetop/Lakeside, Arizona. Its student body consists of roughly 700 students, and it receives around 180 new ninth-graders every year. Its current student population breaks down accordingly:
92.0 % White
.2 % Black
7.0 % Hispanic and American Indian
.5 % Asian/Pacific Islander (Ray 1999)

Taking advantage of a $5,000 grant from the Department of Commerce, Blue Ridge High School officials developed and introduced the 6 pathways endorsed by the Arizona Department of Commerce at the school in the spring of 1996. The six pathways are:

Art/Humanities/Communication
Business Systems
Engineering/Industrial Systems
Health Services
Natural Resources
Social/Human Services (Harrel, n.d.)

The staff compiled a student/parent explanatory booklet for each pathway and designed 4-year student course plans for five to seven strands within each pathway. Each strand within a pathway leads to occupations within the pathway at different educational levels. Within the Engineering/Industrial Systems pathway, for example, the lowest strand would lead to careers like ‘construction worker’, whereas the highest strand would lead to careers like ‘civil engineer’ (Waldo, 1999). Every class listed in the school’s course catalog for students and parents was also marked with symbols representing each pathway. Some classes, like ‘English I’, would be labeled with all six pathway symbols, while others, like ‘Drafting’, would carry only the label for the Engineering/Industrial Systems pathway (Waldo, 1999).

In the spring of each year Blue Ridge High School brings its feeder school’s eighth graders to the campus where the
high school's student government gives a tour of the campus and teachers describe the pathways to the students and their parents. Parents and students are given the pathway brochures and course schedule. They then set an appointment to meet with a school counselor to register for classes. As ninth-graders, all students are required to take a class entitled "Skills for Success". One of the most important components of this class is its emphasis on careers and its job-related activities. The ninth-graders take an occupational interest inventory and then a skills test for purposes of matching the careers in which they express the most interest with those for which they are the most prepared. Students then choose from 68 local occupations and 400 local businesses three careers to view first-hand. A coordinator paid with School-to-Work funds assigns each freshman to a local worker that most closely matches the student's preferences, and on one day all of the students job-shadow a member of their chosen career for a few hours. As a part of the job-shadow, each student must ask their host 12 questions related to career preparation and the career itself. Following this experience all students give oral presentations to their classmates on the experience they had. Each student has the opportunity to do a second job-shadow should he/she so choose (Waldo, 1999).

While during successive years a limited amount of academic/occupational integration has taken place within the mainstream curriculum, the integration has consisted primarily of the sharing of resources between academic and vocational departments.
Since the 1992/93 school year, Blue Ridge High School has used a block schedule. Students have four classes per semester (two academic, two non-academic in nature) lasting 85 minutes each.

Amphitheater High School. Amphitheater High School is located in the Tucson Unified School District in Tucson, Arizona. The school has a student population of approximately 1900 and is virtually half Anglo and half minority. Its student ethnic breakdown is as follows:

49% White  
8% Black  
36% Hispanic  
5% American Indian  
2% Asian/Pacific Islander (Julian, 1999)

In the 1996/97 school year the faculty and staff at Amphitheater began a new academically-occupationally integrated curriculum for the freshmen and have continued it as each new class has begun the ninth grade at the school. The new effort was based on two principles: one, that "program clumping" or "program stacking", which adds more and more programs to improve the performance of student sub-groups while largely ignoring the mainstream population, results in a fragmented, non-unified approach to solving the school's problems that is ineffective and wasteful; and two, that all students at the school need more assistance in exploring post-secondary options and planning for the future, as well as a greater ability to choose the path their education will follow. To this end, the staff adopted several curricular changes: One, the traditional departments were divided into houses, or teams of teachers who would
share a common group of students and curricular focus. Two, the curriculum was divided into four areas of focus, or 'Academies': the Honors Academy, the Business/Law Preparatory Academy, the Fine Arts and Communication Preparatory Academy, and the Human/Engineering and Environmental Sciences Preparatory Academy.

In the Spring of the feeder middle schools' eighth grade year, parents are invited to a presentation of the high school academies. The high school's counselors also address the eighth graders prior to ninth grade registration to explain the high school's format and assist students in selecting the academy that best suits the student.

The teachers in each academy share a common prep hour to make curriculum integration across content areas possible. Additionally, this time allows the teachers to integrate academic instruction with the academy's occupational theme. Academy specialty classes (electives that relate to the occupational theme) and work-based learning and career-exploratory activities are also offered through the academies. The work-based learning and career-exploratory activities vary from year to year. Freshmen are subject to academy-specific Career Fairs, where students select 5 speakers (related to the academy's occupational theme) from a list of around 20 with whom they would like to visit. On the Career Fair day, each student spends around 15 minutes with each speaker in small groups at the school and has the opportunity to talk to and hear about the speakers' professions. Freshmen also complete research papers on professions within their academy's occupational focus.
Sophomores are subject to academy-specific guest speakers, and as a group the students visit academy-related work sites and other venues. Juniors listen to academy-related guest speakers and participate in a half- or whole-day job-shadow experience. The students also have the option of engaging in service learning projects (volunteering for credit, etc.). Seniors will have the option to engage in cooperative education courses (VOTECH), school-based business enterprises, community or business internships, volunteerism for credit, or independent study work-based learning projects. Additionally, this year’s seniors, as well as those of the future, present a Senior Exit Project (SEP) which is reviewed by SEP evaluation boards composed of students, faculty, and community members (Kanner, 1999).

The school also made some scheduling changes to facilitate the adoption and implementation of the new curriculum in the same year. The students now follow a partial-block schedule that meets for standard 50-minute periods Mondays, Tuesdays, and Fridays, and has 85-minute extended periods Wednesdays and Thursdays. This block schedule allows the school to add one ‘Seminar Period’ a week for club meetings, tutoring sessions, make-up work time, guest speakers, etc. A late start for students Thursday mornings gives the faculty and staff a regularly scheduled time to conduct faculty planning meetings, department meetings, academy meetings, in-services, etc.
Findings and Results

Kingman High School. Kingman High School implemented an academic/occupational curriculum in the 1995/96 school year. It could not supply adequate nor accurate data regarding the school’s attendance or absenteeism rate, standardized test scores, average student GPA, or rate of behavioral-related incidents. It could, however, supply data regarding the school’s graduation and drop-out rates. The graduation and dropout rates for the year preceding implementation, the year of implementation, and successive years are shown in Tables 1 and 2:

Table 1

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<td>55%</td>
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(Fraley, 1999)

Table 2

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<td>15.85%</td>
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(Fraley, 1999)

Table one shows that the year in which the Career Pathways program was introduced (1995/96 school year), the graduation rate actually fell 8.5 percent. Staff at Kingman High could give no explanation for this phenomenon. However, tracking the graduation rate over a three year period
beginning with the year prior to Career pathways implementation shows an overall increase of 18.3 percent. If one exempts the 8.5 percent drop from 1995 to 1996 from the equation as a statistical aberration which may or may not be valid and uses the graduation rate from 1994/95 for 1995/96, the increase in the graduation rate since the year of the Career Pathways program adoption is still a healthy 8.5 percent. That this increase is due to the existence of the Career Pathways program is speculative. The PALS, I-CARE, and directed study programs implemented by Kingman High School in the 1996/97 year are likely to be at least partially responsible for the increase in the graduation rate.

Table two shows that the year in which the Career Pathways program was introduced (1995/96 school year), the dropout rate fell 1.68 percent. Tracking the dropout rate over a three year period beginning with the year prior to Career pathways implementation shows an overall decrease of 6.03 percent. That this decrease is due to the existence of the Career Pathways program is speculative. The new attendance policy implemented by Kingman High School in the 1995/96 school year and special programs implemented in the 1996/97 year are likely to be at least partially responsible for the increase in the graduation rate.

No qualitative data was available to gauge the effect of the Career Pathways program on students at Kingman High.

Blue Ridge High School. Blue Ridge High School implemented the academic/occupationally integrated curriculum in the 1996/97 school year. It could not supply data for the
school's attendance or absenteeism rate, standardized test scores, average student GPA, rate of behavioral-related incidents, dropout or graduation rate for that year or for successive ones.

Qualitative data collected from the school, however, indicates that the program has had a noticeable effect on students, parents, and faculty. The vocational director at Blue Ridge High School spoke of a student who had had her mind set on being a veterinarian until she job-shadowed a veterinarian. After the job-shadow, the student expressed how the experience had changed her perspective. The director also expressed the feeling that the Pathways Flow Charts and Four-Year Plans that are shared with the students and their parents have been an important part of the program in changing students' and parents' expectations and in getting them to focus on a future more specific than going to college.

"We feel it's headed off a lot of problems. Some parents have unrealistic expectations from their children... Vocational education has a stigma... But when they see the difference between [the four-year plans of] a doctor and a paramedic... Parents look at other options without the counselor having to say that the kid isn't prepared for it. They come to that conclusion on their own." (Waldo 1999)

The director also expressed that the academic/occupational integration focus is getting more teachers to teach differently. As an example he talked about the physics teacher having his kids use the industrial arts shops to make projects and an English teacher having her students perform a scene on videotape using the school's TV studio.
Amphitheater High School. Amphitheater High School implemented an academic/occupationally integrated curriculum in the 1996/97 school year. It could not supply adequate nor accurate data concerning the school's absenteeism rate, standardized test scores, average student GPA, or rate of behavioral-related incidents.

As the new curriculum started with the freshman class three years ago, no students in the program have yet graduated. Whether or not the curriculum change has had an effect on the school's graduation rate will have to be determined at a later date.

Amphitheater's dropout rate has decreased since the career academy program was implemented. One of the school's assistant principals notes that the school's dropout rate was around 17 percent prior to conversion to the career academies, and was 11 percent at the end of the 1998/99 school year--a drop of 6 percent (Julian 1999).

Amphitheater has tracked data concerning the percentage of freshmen who did not earn enough credits in their first year of high school to be promoted to the sophomore level, and the average number of credits this group earned during their freshman year. At the conclusion of the 1995/96 school year, around 33 percent of freshmen failed to earn the five credits necessary to become sophomores in their first year of high school. At the conclusion of the 1998/99 school year, around 20 percent of ninth graders did not complete enough credits to be promoted. These numbers constitute a reduction in the number of freshmen who have been retained of around 13 percent (Julian 1999). The average number of credits earned
in their first year by this group has also increased since the introduction and implementation of the career academies. At the conclusion of the 1995/96 school year, freshmen who had failed to earn the five credits necessary to become sophomores in their first year of high school had earned, on average, zero to two credits by the end of their first year of high school. At the conclusion of the 1998/99 school year, freshmen who had failed to earn the five credits necessary to become sophomores in their first year of high school had earned, on average, 2.5 to 4.5 credits by the end of their first year of high school (Julian 1999).

Amphitheater High School also had data concerning the number of students in AP classes. In the 1997/98 school year, 193 students took AP classes. In the 1998/99 school year, 217 students took AP classes, an increase of 12% (Julian, 1999).

Students at Amphitheater indicate that the academy structure is beneficial. In a student survey from May 1998 taken by the school's ninth and tenth graders, students marked whether they agreed or disagreed with several statements concerning the Academy program. In response to the statement, "This program is working well for me," 161 of 230 freshmen (70%) agreed; only 59 (30%) did not agree. Of 121 sophomores, 83 (68%) agreed; only 38 (32%) did not agree (Kanner 1999).

Qualitative data from Amphitheater High School was mixed. The faculty said that the program is being successful in making students more aware of post-secondary options and in making school more attractive to students. Students,
however, tended to be less excited about the academies. Students in the sophomore level Honors Academy praised the occupational exploratory activities; they talked about having gone to the theater, the courts, a hospital, and having access to UoA 101—a career exploration course through the nearby University of Arizona. Students from the freshmen and sophomore level Business/Law Preparatory Academy, however, were less enthusiastic. Other than the Career Fair Day, they said, they had not gone on any field trips nor done anything notable by way of career exploration. They also said that their academy did not integrate the curriculum with the occupational field—only among academic courses. Students in the sophomore level Fine Arts and Communication Preparatory Academy said that they had good teachers, a lot of personal freedom, and many friends within the academy. However, they also said that the curriculum was not challenging and did not integrate the academics with the academy's occupational theme.
CHAPTER 5
SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

Summary

The purpose of this study was to determine whether restructuring high schools using a new vocationalism paradigm would result in student gain in several indicators of student success: lowering the school's drop-out and absenteeism rates; increasing the school's graduation rate; reducing the school's incidental rate of behavioral problems; raising students' scores on standardized tests; and raising students' GPA's. As new vocationalism is a new and developing educational paradigm, quantitative data regarding this issue is limited. That which exists, however, supports the notion of student gain through conversion to and implementation of a new vocationalism curriculum, especially when the school is structured around an occupational field or divided into career academies.

Three schools within Arizona that had adopted academically/occupationally-integrated curriculae were found. Staff (and students, at one school) at those schools were contacted and interviewed for the purpose of obtaining evidence to support or refute the idea that academic/occupational integration increases student gain. As was the case with much of the data found in the literature review, the data collected from the three schools in the
study was scant and often confusing or misleading due to high levels of contributing or conflicting variables. However, the study did seem to indicate that new vocationalism is a positive curricular model for high school students.

Conclusions

The data gathered in this study offers minimal support for new vocationalism as a positive curricular model for high school students.

Since adopting the Career Pathways model, Kingman High School has shown an impressive decline in its dropout rate (over 4 percentage points) and enormous strides in its graduation rate (over 18%) in only three years. However, other variables are most certainly affecting the data to some degree. The same year that the Career Pathways program was adopted, a strict attendance policy was implemented. In the following two years, six more programs were put in place to increase student graduation rates and decrease the drop-out rate. It is impossible to ascertain what the effects of the Career Pathways program are in isolation. The programs in place prior to Career Pathways were undoubtedly having some effect on the dropout rate; the year before Career Pathways implementation, the school saw the dropout rate fall 1.62%. However, it does seem likely that the nearly two and a half percent decline in the dropout rate in the year that the Career Pathways program was implemented was largely due to the program itself. Given that to one who drops out of school, credit is not of paramount importance, it is unlikely that an attendance policy designed to punish students with
poor attendance by stripping them of credit would keep them from dropping out—the result is the same for a dropout whether the attendance policy is in place or not. In this frame of mind, it is not imprudent to attribute at least some of the improvement to the Career Pathways program.

Blue Ridge High School, with its complete lack of quantitative data, only provides qualitative data—and limited data at that. With no student input from that school, it is difficult to accept the faculties’ conclusions as valid for fear of bias. The account of the freshman who learned about veterinarians from job-shadowing does leave the impression, however, that some students do benefit from a new vocationalism program. The anecdotes about the teachers are heartening—better teaching practices have been found to increase student achievement. But without student input it is premature to say that the instructional practices at Blue Ridge High School are actually of a higher caliber by virtue of the new vocationalism efforts at the school.

The data from Amphitheater High School is undeniably the strongest of the three sets. Few external variables allows the researcher to view the change in data as very highly correlated with the academies program which attempted to foster the noted changes. In the three years that Amphitheater has used the career academies model, it has seen a six percent reduction in the dropout rate; a 13 percent drop in the number of freshmen who are retained; an average increase of 2.5 credits earned on the part of those freshmen who are retained; and a 12 percent increase in the number of students taking AP courses. These numbers are highly
suggestive evidence that an academy system can make a difference on students' behavior and rate of success. The data from students indicates that some academies outperform others. The differences between academies, however, appear to be a result of the teachers' willingness to integrate academics with the academy's occupational theme. Several students expressed a desire to change to more challenging academies despite an affinity for the theme of the academy in which they were presently enrolled. Were their own academy equally challenging and occupationally-focused, they said, they would stay in it.

In sum, while the data from the three schools is at times minimal and often obfuscated by external variables, all three schools can point to some student benefit—qualitative or quantitative—derived from the change to an academic/occupationally integrated curriculum. This study suggests that should a school adopt such a curriculum, it will more than likely realize some degree of student improvement and positive changes in indicators of student success. While the measurable results may be small, as is the case with Blue Ridge High School, or non-definitive, as is the case with Kingman High School, this study suggests that it will be evident in some form or another. This result corresponds to the findings of other studies referenced in the literature review. This study also suggests that an academy model may yield more results than Career Pathways models that attempt to add career exploration and occupational activities to the existing academic curriculum without changing it substantially. That career academies
appear to reduce a school's dropout rate is not surprising when one considers why most students who drop out do so in the first place: their academic classes do not play to the students' talents or interests and are usually separate from any real-world context. Any academically/occupationally integrated curriculum attempts to address and rectify these problems, but perhaps academies--like those at Amphitheater--do a better job of bringing occupational study and students' talents and interests to the fore than add-on Career Pathways models like those found in Kingman and Blue Ridge.

**Recommendations**

Further study should be done in this area to add to the existing data and provide more support or criticism of the career academy model. Future studies might be better done during summertime when administrators are not so busy and may be more available to researchers. However, future studies should also make it a point to incorporate more student responses as part of data collection. The students are a valuable source of information for gleaning information that does not exist in print. This is especially valuable for drawing conclusions about the efficacy of the programs and for interpreting data. Additionally, future studies should be limited to schools that have few variables to obscure the meaning of the data. Amphitheater is an excellent case. Unlike Kingman High School, which had seven programs affecting the data, Amphitheater had only one--the Career Academies. Researchers should return to Amphitheater High School in a few years to evaluate the academies' effect on
the graduation rate. By the looks of the dropout rate and other data, the graduation rate data will likely be positive as well.


APPENDIX A

INTERVIEW QUESTIONNAIRE
Interview Questionnaire

1. Why did ___________ school adopt a school-to-career curriculum for its students?

2. When did it adopt a school-to-career curriculum?

3. How many students are affected by this change this year? Since its adoption?

4. How did the school’s structure change as a result of this adoption?

5. How are academic and vocational curriculums integrated at the school?

6. Will the school continue the school-to-career curriculum in its present form for the foreseeable future? Why or why not? If not, how will it change?

7. How has the adoption affected the school’s graduation rate?

8. How has the adoption affected the school’s drop-out rate?

9. How has the adoption affected the school’s attendance or absenteeism rate?

10. How has the adoption affected the overall student GPA?

11. How has the adoption affected overall standardized test scores?

12. How has the adoption affected the school’s rate of behavioral-related incidents (detentions, suspensions, expulsions, etc.)?

13. Is there anything else that you would like to add regarding the adoption of a school-to-career curriculum at your school that has not been mentioned as of yet?