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Perceptions and reported changes in the secondary school curriculum by selected Iowa superintendents

by

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CHAPTER I. INTRODUCTION

Public education today is facing a crisis which may be more fundamental than has been faced in the past. While parents of students currently in schools give a positive rating to the education their children are receiving, educational reformers operating from commissions, through media, and through legislation have endeavored to instill changes in public education with an emphasis on secondary curriculum. This emphasis represents a change from the comprehensive high school of the past few decades to one with more academic emphasis.

Diane Ravitch stated in her recent book, The Schools We Deserve:

> Every nation gets the schools that it deserves, and we have today a system that reflects our own conflicts about the relative importance of different social and educational values . . . and it is obvious that we do not yet have a philosophical commitment to education that is strong enough to withstand the erratic dictates of fashion (125, p. 46, 74).

America's propensity is to use schooling as a political football, as both scapegoat and salvation for society's failures and fears. It appears that the reforms of the '80s are motivated more by political interests and short-term, stopgap measures than by long-term commitments and sustained efforts to significantly improve public schooling and the teaching profession.

Taken together, the commission and task force reports and research studies that appeared during 1983 and 1984 constitute a staggering indictment of U.S. secondary education. They portray U.S. high schools as confused about their mission and irresolute about their programs and

standards. According to the reports, U.S. high schools neither inspire students nor educate them well. Most of those "describing, analyzing, and prescribing" (47, p. 71) for the classrooms of America do so with blithe disregard for the practitioners who stand daily in the midst of those classrooms. Roland Barth stated, "It's unthinkable that any other profession, undergoing the same scrutiny, would allow all the descriptions of practice, analyses of practice, and prescriptions for improving practice to come from outsiders looking in" (14, p. 356). The reform movement is headed by laymen and elected officials, not by educators. It is assumed that nothing to upgrade the instructional program, consistent with America's revolutionary new emphasis on educational excellence, is being accomplished at the local level. Laymen are prescribing the reforms; educators must carry them out. This is in contradiction to the findings of Peters and Waterman in their book, In Search of Excellence, where they stated that, "Those who implement the plans must make the plans" (117, p. 31). The present examination of American education has widened the rift between those who engage in educational practice and reformers and by the subordination of practitioners to policymakers. Criticism of public schools is by no means a new phenomenon. What sets the present group of critics apart from their predecessors is that so many of them prefer to renounce the public schools rather than to reform them.

What is unique about the current reform movement is the number--now running into the hundreds--of state and national task forces, networks, advisory boards, councils, centers, round tables, coalitions, alliances, and consortia that have been formed to study the problems of education (162).

Harold Howe II, Senior Lecturer, Harvard Graduate School of Education, and former U.S. Commissioner of Education makes note of the activity relating to educational reform:

> Local school districts and schools have been slower than states to move, not because they are less responsible than the states, but because they are more so. They actually see children, parents, and teachers every day, and they are acutely aware of the complexities of producing changes that are well conceived. Also, they have been through many quick fixes engineered from on high and are suspicious of these . . . . Any ultimate benefit American education will receive from its new turmoil will come from these local responses than from those at higher levels of political decision making (56, p. 214).

The extent of free high school education in this country is astonishing. The crusade for universal secondary education, envisioned almost 100 years ago, is now a reality. The earliest four decades of the twentieth century saw America building its system of mass education. The American high school may be this century's most far-reaching and generous social invention according to Theodore Sizer (145). Unfortunately, and despite well-intentioned, sincere efforts, many schools are not uniformly productive and serve some of their students poorly.

While community values and populations vary widely across the country, the basic structure of the high school is strikingly common, and it is markedly similar to its 1890 founding model. Given the size and demographic diversity of this country and the changes in American society and in scholarship during the last 50 years, this persistent common structure is extraordinary.

However, life has not stood still in high schools since the 1940s. Two noteworthy features of the postwar years have been the almost incessant criticism of secondary education and the succession of movements to reform the schools. If the prewar decades were marked by rather broad agreement about the aims and shape of secondary education, the postwar years have been marked by terrific divisions of opinion: about what was right and wrong with high schools; about what should be fixed, and how; and, therefore, about what the most important purposes of high school education should be. There is, however, very little basis for concluding that high schools have gone downhill. Schools are largely judged on the basis of data which happens to be easy to collect and to manipulate statistically. Taken alone, such data can produce misleading assessments.

The general public continues to expect the schools to provide an opportunity for every student to obtain a quality education and to ensure that each student is offered equal educational opportunity. They want high schools to be genuinely accessible to virtually everyone, and on a basis such that everyone who wants to can complete it. In addition, the overall level of achievement to which the students rise on the outcome measures must be sufficiently high to signify acceptable mastery of the essential curriculum. There are, however, profoundly different notions of what a proper high school education should be. There is no consensus.

The Problem

The study of secondary school curriculum has risen to new heights since the avalanche of reports which began with A Nation at Risk in April, 1983. The thrust of the national reports has been for increased graduation requirements especially in the areas of science, mathematics, language arts, and foreign languages--all academic areas which heretofore were the province of the college-bound student. In response, by mid-1984 48 states had considered new high school graduation requirements, and 35 had approved changes. The state of Iowa was not in either group. However, the 1985 Iowa legislature has documented the necessity for curricular change and has mandated the setting of specific curriculum goals. In addition, the 1984 Iowa studies on excellence in education have given impetus to defining educational programs for students. Minimal information is available on actual practices in Iowa school districts relating to curriculum--graduation requirements, goals, curriculum planning, and curriculum change in courses and content. Because the state of Iowa mandates few graduation requirements and each individual district determines its educational offerings and requirements, the question is what is the curriculum offered in Iowa public secondary schools. This investigator collected data and analyzed perceptions of superintendents in Iowa public school districts on the status of secondary school curriculum in their districts.

Need for the Study

The focus of the national reports during 1983 and 1984 has been on the secondary school curriculum. Effective schools research has purported that an enriched curriculum is one of the hallmarks of an effective school--one which meets the needs of each student.

Most of the input into what the secondary school curriculum should be has come from people outside of the educational arena--commission members, politicians, college presidents, experts (either self-recognized or otherwise), and lay people. At neither the national nor state levels have educational administrators charged with the education of youth in secondary schools been recognized as having valid input or insights into this problem. Perhaps it is perceived that complacency has rendered these people incapable of dramatically changing the educational process. It may well be that changes were already under way before the clarion call for dramatic overhaul of the system came. It is possible that circumstances beyond the control of administrators are affecting the curricular choices.

By mid-1984 the U.S. Department of Education reported that the majority of the states had considered new high school graduation requirements (119). Unlike most states, Iowa has not mandated minimum graduation requirements except in limited areas and has left it to local districts to determine the majority of the requirements.

While this may seem to be out of step with most of the nation, documentation was necessary to determine if Iowa school districts are

offering comparable educational programs, what is required for graduation, what changes have occurred in high school course offerings between 1982 and 1985, and the curriculum goals and change process being employed.

The adoption of new standards under Iowa HF 686 by July 1, 1987, lends an urgency for districts to examine their curricular offerings. The new requirement for the Iowa Department of Public Instruction to formulate five-year goals instead of one-year goals makes it imperative that school administrators have input into these goals as well as to define their district's goals and objectives and the process of implementation.

Definition of Terms

For the purposes of this study several terms are defined as follows:

Administrative Team: An organized cluster of individuals with specialities who provide leadership and enhance the implementation of the school district's educational program.

Curriculum: For this study, sets of learning opportunities which are subject centered and lead to high school graduation.

ITED Tests: Iowa Tests of Educational Development taken by students in Grades 9 through 12.

Population Density: Term used as an operational definition to define school district characteristics which pertain to either an urban or rural population.

Rural School District: For the purposes of this study will be defined as a district which does not have a city or town larger than 2,499 population within it.

Secondary School: School which contains grades nine, ten, eleven and twelve. Organizational form may or may not contain all four grades. High school and secondary school are used as synonymous terms in this study.

Superintendent: Chief executive officer of the district school board and employee of an approved, independent, consolidated, or community public school district.

Urban School District: For the purposes of this study will be defined as a district which has within it a city or town of 2,500 or larger population.

Delimitations of the Study

Delimitations for this investigation include the following:

1. The population consisted of Iowa public school superintendents.

2. The study was limited to 225 superintendents selected from a stratified random sampling of Iowa school districts utilizing the 1984-1985 Annual Statistical Report to Iowa School Districts provided by Area Education Agencies Educational Services.

3. Curriculum was limited to those courses which can be used for graduation requirements.

4. Changes in graduation requirements were only from the academic year 1982-1983 to 1985-1986 academic year to reflect the influence of the recent national reports, legislation passed during

that period of time, and the current socio-economic status in the state of Iowa.

5. Student achievement was based on the Iowa Tests of Educational Development (ITED) percentages for the 1982-1983 academic year published in The Des Moines Sunday Register of December 4, 1983, for all public schools in the state of Iowa.

Organization of the Study

Information was first sought concerning the demographics of the district--size, rural-urban propensity, and financial information based on the available property tax. The source of information for this study was the school superintendent because he/she occupies the position which oversees the entire educational process as well as being a basic influence on the educational realm of the district. As the educational leader of the district, the educational background of the superintendent might be a factor in the educational program offered so demographic information was sought in this area.

The main focus of most of the educational reforms and commissions was the secondary curriculum, specifically graduation requirements. Superintendents were asked to report on the graduation requirements in their districts as well as the change since the 1982-1983 academic year when the reports started to escalate and the economic conditions of the country began to deteriorate. In correlation with these aspects, staff additions and deletions as well as course additions and deletions during the same period were asked for in addition to the rationale for such changes.

Perceptions on curriculum goals, objectives, and processes together with current status on curricular topics emphasized under Iowa HF 686 were also sought. By coordinating all the material furnished by this study, a picture of the status of secondary education in Iowa can be provided in addition to information on implemented curriculum goals and processes plus progress on mandated curricular topics.

Summary

The growth of American education has, in large measure, been a process of incorporating greater numbers of students within an expanded and unified system of formal school. Schooling emerged from being an activity restricted to an elite few to become a major event in the lives of all Americans.

Although access to schooling has equalized considerably in recent years, the disparity in educational achievement among students has remained large. As a result, a substantial portion of the student body remains excluded from social and occupational opportunities which require school success as a condition of entry. Sensitivity to these apparent "failures" of schools has produced disillusionment and a major alteration of confidence in the promise of schooling. Education reforms in the 1980s, driven by a series of commission reports and major studies, has moved dramatically across the nation. The litany of problems in education has been addressed in an estimated 300 state-initiated task forces.

Education is a long-term priority. The rewards, bountiful or lean, of today's schooling will be reaped not tomorrow, but in the years

beyond 2000. The modern world runs on human skills and knowledge. This makes education the most basic of all national resources, more essential to our economic welfare than raw materials or investment monies. As we enter the new "information age," the importance of schooling will continue to grow. More, rather than less, knowledge will be required for the progress and general prosperity of our nation. Investment in "human capital" must be given the highest national priority.

CHAPTER II. REVIEW OF LITERATURE

What knowledge is of most worth? Herbert Spencer made this question famous in his 1859 essay, but it has preoccupied educators from the beginning of formal schooling. Furthermore, this is the precise question that is troubling not only educators today but the general public as well. Ernest Boyer (27) stated that there is a growing national consensus that our future depends on public education, and the failure to educate every young person to his or her full potential threatens the nation's social and economic health. There is general agreement that the present educational curricula is not adequately preparing students.

The recent national studies set broad guidelines for resolving the problem and achieving excellence. The one common weakness in all these reports for improving schooling is that they do not adequately deal with the process of how to implement and to fund the proposed improvements. The real effort must be made by the individual districts and their schools as espoused by John Goodlad (63) who stated that the individual school is the key unit for change. In the majority of Iowa school districts this encompasses only one secondary school. Districts must avoid the error made in the national reports--the tendency to consider all schools the same. Even in relatively small districts with standardized administrative and instructional procedures, school environmental variances are great (152). Thus, prescribing the same remedies for all schools within the nation, or even within a district, may be administratively convenient but is not likely to produce appreciable recovery from educational ills.

Educational reforms of a sweeping and significant nature rarely have come through the actions of schools in and of themselves. The input from the school reform movement of the 1980s focuses primarily on mechanical solutions that are imposed from the top and that can be implemented quickly (39). Increased graduation requirements and more stringent course work were primary recommendations. Forgotten is the fact that the present curriculum grew out of the well-documented failure of the traditional curriculum to interest students in subject matter or to give them a grounding in "basic" knowledge and skills.

One consequence of the competing and varied demands placed on the schools is the difficulty in maintaining perspective. When time, energy, and resources are scarce, there is an appeal to capitulation to one set of demands to the exclusion of others. The results of the decisions made today about curriculum policies and classroom practices will be with us for many years to come. It is crucial that the questions of what should be taught, how it should be organized, who should make the decisions, and what educators should and can do should be debated and considered. The issues which are being raised must be dealt with or as Apple (7) stated, the public will continue to blame the school and its curriculum, its teachers, and its administrators for something over which they have little control.

Historical Perspective of Secondary Curriculum

Education was important in American society from the beginning: Harvard College was founded only sixteen years after the arrival of the Pilgrims at Cape Cod. Education in the United States began to

diverge significantly from its European origins in the nineteenth century establishing the background for the emergence of curriculum thought in the twentieth century.

In her study, Sequel observed that curriculum as we use the term today was not a subject of professional discussion until after 1890 (136). Rugg contended that decisions about curriculum content prior to the twentieth century were decided primarily by textbook writers and textbook publishers (131). It was not until 1918 that Bobbitt wrote the first definite work on curriculum. Curriculum history does not indicate a bountiful harvest of instant changes. Slowness to change in education has been a common complaint. Historical perspectives on curriculum provide specifics and generalizations about the unique experiment which is American education.

The first public high school was opened in Boston, Massachusetts, in 1821, with private academies dominating secondary education. The public high school eventually replaced the academy. Just what the high school was supposed to be and whom it was supposed to serve has been a matter of confusion and controversy since the first high school was established. The most far-reaching attempt to set a standard for high schools was the report of the "Committee of Ten" of the National Education Association (NEA) in 1892 (150), which took as its task the recommendation for the selection and organization of high school curriculum and established firm control of the secondary school curricula by the universities for a generation. By the early 1900s, the stage had been set for the separate subjects organization of the culture

content to be used in schools. In the early secondary schools, pupils were taught a selection of subjects that were directly associated with the disciplines taught in the college or university. Even though the separate subjects organization was used before curriculum became an area of professional study, it is still in existence. Subjects have been added and others altered, but the separate subjects remain the dominant approach to curriculum design. In 1918, a second NEA report, Cardinal Principles of Secondary Education, was issued and called for a curriculum based on a scientific assessment of individual and social needs. To a great extent, this commission shaped the form of curriculum for several decades.

The public composure of education was shattered on October 4, 1957, when the Soviet Union successfully launched Sputnik I, the world's first artificial satellite. The public and political anxiety aroused soon found a target in the public schools. Spokesmen such as James Conant, president of Harvard, and Hyman Rickover, admiral and submarine expert, found a ready audience for their advocacy of academic rigor and selectivity in the schools. The discipline-centered approach to curriculum inevitably produced a reaction in the 1960s. Critiques of subject-centered curricula was echoed by a host of critics of the schools.

The task of influencing the American curriculum is difficult for unlike most other nations in the world, except Canada, the U.S. has a decentralized school system. The school districts in the nation operate autonomously under the laws of the fifty states. The comprehensive high

school is an American invention. The broad variety of programs in the secondary schools does not exist anywhere else in the world. The most striking feature of American secondary education has been its rapid growth into a nearly universal institution. Silberman stated in Crisis in the Classroom that the United States educational system appears to be superbly successful on almost any measure (142). The United States has succeeded in doing what, until very recently, almost every European educator and a good many Americans insisted could not be done. It has managed to insure intellectual excellence and creative scholarship in a system of mass education.

Educators who work in secondary schools have never lacked advice about how to make the system better. Educational reforms are tied intimately to reform of society itself. Alvin Toffler stated that the human race has undergone two great waves of change, each one largely obliterating earlier cultures or civilizations and replacing them with ways of life inconceivable to those who came before (154). The First Wave of change--the agricultural revolution--took thousands of years to play itself out. The Second Wave--the rise of industrial civilization--took a mere three hundred years. Today history is even more accelerative, and it is likely that the Third Wave will sweep across history and complete itself in a few decades. Thus it would seem that American secondary education is caught between eras and is experiencing the resultant turbulence. Hunter stated that restructuring is a painful process; the transition from one level to another is a long, painful,

dislocating process which would seem to describe the situation that exists in education today (71).

The Third Wave has been labeled the "information society," which makes dramatic new demands upon schools. Not only are higher levels of learning necessary to meet the tough competition from abroad, they also are essential to the quality of an individual's contributions to community, occupation, and home. With knowledge becoming the new economic resource in the modern world, surpassing raw materials or financial capital, schooling suddenly achieves new prominence. Chief executive officers interested in the future of their corporations and governors interested in the future of their states have become the new "parents" of the schools. It would appear that the curriculum must change to reflect the foregoing influences.

Superintendent of Schools

The superintendency of schools is one of the most crucial and perhaps most difficult public positions in American life today. The occupant of this position, more than any other single person in the community, influences the shape of public education (114). The superintendent has many functions, but all are focused on a single goal: to provide for the best possible education in the community, and in the forefront of the superintendent's considerations is the instructional program of the schools.

Two movements appear to have created the need for a superintendent of schools. The first was the reorganization of school districts. As long as school districts were organized in the early New England pattern,

each district containing a single one-room school, administrative duties could be handled quite adequately by the board of education. However, when these districts were combined as was done in numerous cities during the first half of the nineteenth century, the management of the entire enterprise tended to become a demanding one for a board of education made up of citizens who were volunteering a part of their time to public service (59).

In the development of the superintendency there were four stages. The beginning stage found that the office was essentially a clerical one. As the educational program became more complex, the superintendent was primarily an educator, often a scholar of some note. The third stage was the development of the function of business manager. Then the superintendent became the chief executive for the board of education dealing with the purposes and procedures of the district making the superintendent the chief executive and chief professional adviser in the school system. The first city superintendency in Iowa was recorded in 1854 (19). In 1884 an Iowa school superintendent was defined as the chief executive officer of the board of education (102). This definition of more than a hundred years ago is very similar to the present concept of the superintendency.

During the past several decades, the financial aspects of a school district have impinged upon the instructional role with the result that the superintendency has taken on different emphases as society moved through two major conflicts and a depression. A glance at any school board agenda shows that business concerns, not educational issues,

predominate. In 1978 Fenwick W. English, Director of the National Center for the Improvement of Learning, stated that if the curriculum was to become an effective tool of learning, the superintendent must once again become a genuine curriculum leader for someone must be in control of the curriculum (54). Today's administrators cannot stand aside and let the instructors teach individual units as they see fit (32). Instructional leadership must be provided so that the curriculum is responsive to student needs. In addition, curriculum today, and for the immediate future, must meet the needs of society. The superintendent must understand the various levels of learning and be able to develop a curriculum that reflects those various levels.

Superintendents do feel that they have the prime responsibility for setting the instructional program. Research done in a doctoral study by David Behner in Ohio, 1979, affirmed this and found that superintendents stated that their role as instructional leader was considerably important (17). Teachers also believe that the superintendent is the instructional leader of the school system as revealed in a 1984 doctoral study in South Carolina by Bishara (22). The American Association of School Administrators (AASA) stated in 1971 that "leadership in the development of the curriculum is the prime responsibility of the superintendent. Operation of a school system without strong leadership in curriculum is potentially a detriment to the quality of education each child receives" (5, p. 70). Other research has indicated that superintendents, rather than lay boards, dominate educational decision making (Zeigler, Jennings, and Peak [171]; Peterson

[118]; Tucker and Zeigler [155]). In a study of school governance, it was reported that when a superintendent's position on an issue is known, he or she is successful in having the position accepted in approximately 100 percent of all cases (155). A doctoral study by Davis indicated that the closer a position occupant group was to the superintendent, within the heirarchy, the more the group perceived the principles, practices, and procedures of curriculum to be utilized (43). In 1966 the American Association of School Administrators commented in one of their publications: "The superintendent of schools has been a key person in the education process since the third decade of the 19th century. The broad outline of the community's education program emerges as he marshals resources, supplies information, and as he evaluates, recommends, and initiates action" (6, pp. 54-55). Kennedy in 1984 stated that the board hires a chief school officer who usually makes key decisions and turns to the board for confirmation (86).

Educational background for the development of curriculum by superintendents is an essential ingredient for the leadership role of superintendents in curriculum. Because of the number of small school districts in Iowa without curriculum personnel, superintendents are in a position to directly influence the curriculum to a greater extent than in many other states. In a 1985 doctoral study Zenor reported that a 1984 national survey of Ph.D. candidates in education showed that participants questioned their ability to develop a systematic school curriculum. When a district is large enough, a professional in charge of curriculum is added as part of the administrative team. Building

principals, operating under the administrative team approach, often assume responsibility for curriculum development in their building in many districts. In these situations a superintendent may influence the direction of curricular change but will have other administrators also taking an active role.

The present and future of Iowa education rests heavily on the shoulders of the present complement of professional leaders. Superintendents now in leadership positions will make many of the crucial decisions that lie ahead aided by other professionals in the district.

School District Demographics

There is one system of land classification that is simultaneously a homogeneous area and a functionally integrated area. This is the urban-rural classification. Various criteria are used, and it is not possible to give a single definition of the term. Barclay stated that while the terms are fundamentally vague, they refer to any political unit larger than some arbitrary figure, such as 2,500, in population (11). Bogue stated that urban areas are densely populated areas where manufacturing, commerce, administration, and a great variety of specialized services are available. Rural areas are more sparsely populated and tend to be specialized in agriculture, forestry, or other exploitation of resources (24).

An official definition of the urban population in the United States was given in a government publication: "The urban population comprises all persons living in (a) places of 2,500 inhabitants or more

incorporated as cities, boroughs, villages, and towns, and (b) unincorporated places of 2,500 inhabitants or more" (161).

Nearly two-thirds of all schools, one-half of all public schools, and one-third of all teachers in the U.S. serve predominately rural constituencies(112). These statistics are reflected in Iowa where as of September, 1985, 53.9 percent of all schools had an enrollment of less than 600 students K-12, and 76.1 percent had an enrollment of less than 1,000 students K-12.

Rural secondary schools present special challenges in the planning and implemention of programs. Although the small student population allows for a low student-teacher ratio, it also frequently makes specialized courses impossible. Most small districts cannot offer students a choice of advanced classes. Problems cited by rural districts are similar--size, location, resources, lack of funds, and limited faculty (170). In addition, other characterizations of rural schools are physical and cultural isolation. There is, however, a close bond between school and community where citizens have a real sense of ownership of the local school. The school is one of the most visible consumers of local tax dollars, and many individuals may demand input into its operation.

Thomas Urban stated after participating in debates about the large school/small school issue that "small schools are not poor schools per se" (160, p. 4). He went on to say that the quality of the teacher-pupil relationship is the key to quality education and the small school atmosphere is quite rewarding. Smith L. Holt stated, however, that

although many rural schools do a superior job of educating students in the basics, most do not have sufficient staff and facilities to provide the variety of courses needed by students preparing to enter college or the workplace (66).

Urban public schools are experiencing numbers of students they are unable to educate successfully. Students bring social, psychological, and educational deficits to the classroom which the schools are not able to counteract successfully (115). School records are replete with absenteeism, early withdrawals, and poor academic performance. James Conant stated that "in no school district within a great metropolitan area is there the sense of social and economic cohesion such as one finds in a small city" (36, p. 5). Likewise, small schools reduce anonymity, invite involvement in school activities, and provide a learning environment which is an important variable in student achievement (5). Balanced against that, urban schools usually have a sufficient number of programs to offer a comprehensive program which can meet the needs of their diverse population. Pay scales are higher, and they are able to attract teachers of good quality and advanced training.

School Finance

Public schools are the one publicly controlled educating institution with which virtually every child comes into close and prolonged contact. They occupy a strategic, perhaps critical, position in American society and have been an important factor in the culture of the nation. Now, fiscal problems appear to be rampant in today's public schools. In a

1981-1982 national survey of the members of the American Association of School Administrators (AASA), almost 60 percent reported that their district had reduced the number of teaching positions due to budget cuts (172).

Two important components of the Iowa Foundation Plan for financing education for Iowa students are based on student body population and the valuations of property in each school district. These two items regulate the amount of state funding and the local funding available for educational purposes which can be garnered by taxing property within the district. Thus these two factors govern the educational program a district can provide.

Iowa educational funding is a major portion of the state budget, and it is up to the Governor and the legislature to decide the priority of education funding in the allocation of the state's monetary resources. It is difficult to maintain and to improve the quality of education programs during a period of serious economic problems such as Iowa is now experiencing. Fewer education dollars will ultimately mean fewer school teachers for school budgets are allocated largely for salaries and cannot be cut appreciably without staff layoffs.

In 1967 the state of Iowa adopted a major change in its approach to educational funding by equalizing the school property tax burden throughout a county and returning a portion of the income tax paid by county residents to be distributed on a per pupil basis. This was the beginning of state aid to schools and put the major portion of educational

financing on property tax assessments and the number of pupils enrolled in the district.

In 1971, Chapter 442, "The School Foundation Program," was enacted. This legislation is the current Iowa school funding mechanism and was developed to ensure that all schools would be guaranteed a certain funding level. Basic features of Chapter 442 include a uniform property tax levy requirement for all districts, establishing a state foundation base, establishing an annual growth formula, providing for a means for low-spending districts to reach a state average, guaranteeing minimum state funding to all districts, and budgeting on the basis of the number of students enrolled (72).

In the process of this change in funding for education, schools became the only units of government to have spending limits rather than tax levying limits. During the late 1970s and early 1980s, the state of Iowa experienced severe budget restraints and, in various ways, has reduced its commitment of financial support to school districts. This reduction has forced districts to realign resources and expenditures.

State allowable growth is the second factor with statewide application that is built into the school foundation program. It is a percentage figure and provides for an increase in the state cost per pupil for the budget year. When a district is experiencing declining enrollment, only a minimum of additional money can be expected for a budget year. For the 1986-1987 school year 50 percent of the districts can expect only the minimum increase even if money is budgeted by the Iowa legislature.

The fiscal situation will vary across districts, but it is clear that schools as a whole cannot expect to continue adding programs and personnel as they have done in the past. In spite of an effort to equalize programs in school districts across the state of Iowa, there is still a discrepancy in the finances of districts.

In 1983 the average teacher salary in school systems with more than 3,000 students was $5,730 greater than in those of 500 or fewer students. The disparity in teacher salaries provides one piece of evidence that the school funding formula has not benefited rural schools. A recent study comparing suburban, urban, and rural districts showed that the suburban districts had experienced the largest budget growth since 1972, and the rural schools have had the smallest budget increases. The schools with the largest enrollments have not fared well; but, because of their large size, have been able to cope with enrollment declines (129). Rural schools with their small size and sparse populations also have to spend a greater portion of their budgets for transportation and other fixed costs.

Richard Groth, chairman of the 1986 Iowa House Education Committee, stated that the current formula has done a better job of creating financial equity among schools than of providing students with equal access to educational programs (129).

The role of the superintendent becomes crucial when the financial resources of a district are allocated. Alexander W. Astin stated in 1983, "research so far suggests that the relationship between available financial resources and the excellence of educational programs is a

weak one at best, but the manner of resource utilization is probably of much greater importance than the sheer level of resources per se" (9, p. 3).

Student Achievement

Determinants of student achievement have been limited in scope and tend to be measured in the terms of standardized tests. Despite their limitations, they have been adopted as the single relevant performance measure for schools and students. It is cheap, easy and convenient, and seems to be objective. The tests do serve as useful sources of information on the items tested. Test score ranks reflect what schools throughout the state or nation have accomplished in the areas tested.

Gardner has developed criteria for distinguishing among different intelligences and identified seven separate intelligences: linguistic, musical, logico-mathematical, spatial, bodily-kinesthetic, interpersonal, and intrapersonal (58). There is almost exclusive emphasis on logico-mathematical intelligence in U.S. schools. Most testing is based on this kind of intelligence to the exclusion of the others. Policy makers have created the illusion that test performance is synonymous with the quality of education at the expense of wider, deeper purposes for education.

Using standardized tests as the sole measure of student achievement does not measure all the goals and purposes of education. It is, however, the one universal measure used by most schools in Iowa. Almost 95 percent of the state's high schools regularly participate in the nationwide testing program, the Iowa Tests of Educational Development (128).

According to the authors of the testing manual, the Iowa Tests of Educational Development are measures of abilities that are important in adolescent and adult life that constitute a major part of the foundation for continued learning (78). It is further claimed that the level of student performance on the tests will reflect in large measure the effects of school experiences and are appropriate for virtually all high school students, regardless of the particular courses they are taking or the curriculum they are following. The test norms provide descriptive information not affected by the atypical characteristics of the local school population.

These tests are designed so that the local school district can use the results to monitor the effectiveness of its educational programs and to focus on areas of student deficiency. Information on individual student results are available to the student, parents, and school district. Statewide results are not usually available even though they are public information. On December 4, 1983, the statewide results for all participating high schools for the 1982-1983 academic year were published in The Des Moines Sunday Register. These figures were used as the student achievement figures for this study using Iowa rankings only. No other comparative measure on a statewide basis was available to use even though significant areas of the school curriculum are not measured.

Graduation Requirements

Both the content of instruction and the extent to which all students should study the same material have been continuing sources of debate and disagreement over the past century. As what is taught is a major determinant of what is learned in schools, the various segments of the population have diverse ideas of what this should be.

In the period from 1880 to 1920, commission after commission gave strong recommendations regarding particular subjects which soon became required in each school. The Carnegie unit which fixed the number of hours of instruction in a class per week in any subject has become a universal measuring rod and has standardized the 40 or 50 minute period of instruction (1). The work of many of the commissions in this period produced a college preparatory curriculum reflecting the composition of the backgrounds of the members of the commissions.

Those who advocate a common academic curriculum hold that the presentation of a common body of knowledge to all students can be effectively accomplished by using different methods to teach students of varying ability. Most of the reports of the Eighties propose the standard college-bound program with few electives and little curricular differentiation, a common curriculum to be taken by all students. The greatest single weakness of the host of reform reports has been the lack of attention given to the learner.

In his recent book, The Neglected Majority, Parnell stated that we must constantly remind ourselves that the majority of our population will never earn a baccalaureate degree and these students want and need an

excellent education, but one that is applicable to his or her talents and future. He indicated that an educational crisis may be created by insisting that one kind of educational program be applicable to all students (116).

In a recent publication by the American Association of School Administrators, respondents opposed to a required core curriculum were quoted as follows:

1. A core curriculum would limit students' chances by eliminating options to deal with individual interests and needs.

2. It would have a severe impact on the majority of students who are not going to college.

3. It would require some students to take courses they don't really need.

4. It would have a "crushing effect" on the number of students going into the fine arts, vocational programs, and the practical arts (119, p. 16).

The evidence of the Eight-Year Study refuted all of the perceptions for fixed curricula and required courses. The results of this study amply demonstrated that students who came from the innovative progressive schools, who had not studied the traditional curriculum, did as well or better in college as did the students who came from the traditional school (2). In the 1970s the Wilson Campus School at Mankato State University, Minnesota, confirmed the Eight-Year Study (60). The Wilson students were graduated when they were ready, without grades, class rank, Carnegie units, credits, or courses.

Virtually no other social institution has the task of serving such matured diversity at the same time and in the same place. Within any high school there are really several curricula operating simultaneously. They include:

1. The horizontal curriculum which refers to differences in actual subjects.

2. Subjects with the same title are offered at various levels and degrees of difficulty in a vertical curriculum.

3. An extracurriculum of sports and other nonacademic or avocational activities and is regarded by students and the public as anything but extra; it is an integral part of the educational program. It is often an indispensable way to attach students to something that makes them feel successful.

4. A services curriculum through which schools address emotional or social problems deemed educationally valid in themselves or essential prerequisites for other kinds of educational involvement (120).

The increasing variety of students in attendance has tended to press secondary schools toward differentiated curricula as a way of capturing students' interest and holding them in school. Although differentiation has sometimes meant some form of vocational preparation, it has more often meant a less demanding version of the college preparatory curriculum or a series of poorly coordinated elective courses.

Weighed against the pressures toward differentiation, which stem from a desire to attract and accommodate increasing numbers and varieties of students, has been a continuing set of beliefs favoring

a common course of studies. These beliefs are rooted in the demand that there be a common core of shared knowledge and assumptions among U.S. citizens and that there be maximum opportunity for social mobility, particularly into the more powerful and privileged sectors of society.

In practice, neither an absolutely common course nor a completely differentiated program has prevailed. High schools compromised by requiring a minimum amount of work in the basic disciplines and then permitting students to choose electives--including vocational courses--to fill in the rest of their programs. The requirements, often quite minimal, can sometimes be met by such a variety of courses that the seeming commonalities in the programs are actually nonexistent. This has sometimes been termed a cafeteria education, and it is this aspect that has been the focus of the educational reformers.

Cross stated that a core curriculum that fails to provide for individualization will simply replace parallel tracks with vertical ones. Instead of shunting lower-achieving students into vocational or general education curricula, we will find them occupying the lowest ranks among students in the core curriculum (39). She goes on to say that it is simply unrealistic to think that all students can learn from the same materials, to the same standards of performance, in the same amounts of time, taught by the same methods. Learning tasks must be realistic and important to students, as well as affording them opportunities to succeed.

Curriculum Goals

Of the many aspects of curriculum, perhaps the most critical and elusive is that of goals and objectives. Until the aims of a school district are stated and evaluated, there is no way of telling how well the district is performing its mission--or even knowing what its mission is advised Victor Doherty and Linda Peters (46).

Comprehensive curriculum planning includes both long-range and short-range goals and objectives. Steller maintains that they are the basic building blocks for curriculum planning (146). However, Goodlad stated that long-term curriculum planning, enlightened by relevant data regarding current practice, is not characteristic of schools generally (64). Lewis echoes this by saying that "most school districts do very little long-range planning . . . short-range planning results have been of questionable value" (96, p. x).

The nature of society influences the purposes and goals for education; at the same time, achievement of educational purposes and goals influences the future of society. Saylor, Alexander & Lewis maintained that the selection of purposes and related general goals is a highly subjective activity growing out of philosophical assumptions and value positions rather than from objective data (134). They further stated that "an examination of past and present practices of curriculum planning indicated a frequent lack of a continuing focus on goals and objectives, which is essential to systematic curriculum planning. One problem is the failure to relate the various components of the curriculum to long-term goals as well as to short-term specific objectives" (134, p. 31).

Schools that are effective tend to have certain common characteristics. The curricular facts which seem to typify effective secondary schools include: (1) a clear sense of purpose, (2) a core set of standards within a rich curriculum, (3) a commitment to educate each student as completely as possible, and (4) a special reason for each student to go to school (110).

In her study of good high schools, Lightfoot noted that such schools have clearly delineated purposes (97). Parnell concurs as he stated that clear goals for the individual student are absolutely essential to achieving excellence in education (116). He continued, however, to state that goal development and goal setting have never been driving forces in the educational enterprise with the result in a lack of continuity, coherence, and connectedness in much of the educational program. In a recent American Association of School Administrators publication this is carried one step farther when it is stated: "Effective schools not only stress educational goals; they clearly communicate the expectation that all students will reach these goals" (119, p. 32).

There is a widespread American belief that nearly everyone should attend high school, nearly everyone should graduate from high school, and nearly everyone should find the experience constructive (120). This creates as Sizer stated a diverse set of goals: to prepare some students for college and university attendance, while preparing others for work; to integrate, socially and academically, students pursuing these varied curricula; to provide for such special needs as vocational training; the education of the handicapped; and courses for the academically talented; and to offer humane custodial care; and even programs for the

many students with no sense of vocation or destination, and nowhere else to go (144).

Curricular Processes

Educational change at any level can be a lengthy and complex process, but there are special complications involved in trying to implement change at the high school level. The secondary school is a complex system, and any change is reflected throughout its entirety and has ramifications not understood from without the system. Every important aspect of high school operation is connected with every other one. Change one piece, and the others must change--or resist change--to prevent any alteration of supposedly unchallenged pieces.

According to John Horvat and David Clark education change occurs essentially in three ways:

1. Unplanned or non-directed changes, the sort that just seem to happen; e.g., the sort of change that occurs when a school population grows or shrinks rapidly and curriculum is altered on an ad hoc basis to accommodate this growth or shrinkage.

2. Reactive changes that grow out of pressures or disturbances in society, such as the changes that were forced upon America's schools by public outcries shortly after the Russian launching of Sputnik in 1957.

3. Changes that occur through educational planning by those directly involved in education (67).

External pressures brought about by rapid social and economic change have forced most schools into the model of change dictated by pressures

or disturbances in society. This appears to be the format of change which is now taking place.

There is no agreement concerning who should be involved in curricular change and decision making. The issue has been debated for several decades with little consensus as to participants. Belscher researched lay participation in curriculum planning and found that while lay involvement in curriculum planning was vigorously advocated in curriculum theory literature, generally, the quality of lay participation in curriculum was deficient; and board members held a consistently low level of desired influence for laymen in curriculum planning compared with other potential participants (19). In his recent study John Goodlad found that parents appeared not to be intensively involved in planning curricula for their schools (63). The inclusion of students on a curriculum planning team is generally, but not unanimously, accepted. Webb stated that the decision to involve students in curriculum planning is generally advocated in the literature but no model effectively incorporates student input into this process (164). Involvement of teachers in curriculum has varied acceptance. Sullivan stated that teachers have had little experience with decision making in curriculum development and vary in their quality of preparation and experience (149). Selden counters this by stating that teachers should be treated as professionals capable of contributing to curriculum planning (135). Howard found that administrative control of curriculum change processes dominates in the functions assigned curriculum directors, the limited power and responsibilities of curriculum committees, and allocation of research

and development funds (68). The administrator is positioned at the critical confluence of the intraorganizational and extraorganizational forces which either foster or impede educational change and improvement.

In 1978, Emrick and Peterson documented some generalizations from studies on educational change. Included was that meaningful change occurs as a process, not as an event, a human process at that; and that administrators occupy a crucial role by supporting the utilization process (53). Findings of the Rand Coporation in 1979 suggested that the administrator is the most effective change agent at the school level.

In Lightfoot's research on good schools and in much of the research on effective schools, the individual school is the significant unit (97). If the individual school becomes the unit, planning is necessary so that central office personnel might serve in the function of coordinating efforts and sharing resources. McCoy and Allred stated that before proceeding with any change measures, school districts should have a clear picture of exactly what change is desired, why the change is needed, how the decision was arrived at, and where the support base lies (105). Experience from the past three decades shows that curriculum changes should be based on studies at the local level which have come to be called "needs assessment." This will help to alleviate a lack of focus on what is needed in the local district for Sergiovanni stated that program and curriculum decision-making is not as rational or objective a process as one might think (137). Curriculum workers and chairpersons tend not to start with objectives when engaged in planning and development,

nor do they bring to the decision-making process total objectivity or rationality.

As the education reform movement bears fruit, policy makers must realize that decisions made closest to students will always be the most important. Districts and teachers vary greatly in the ways in which they react to adopted external, state-mandated reforms. In many cases what one district must do to raise standards will vary widely from the required actions in a neighboring district. Local circumstances must be prime considerations in what is done--and when, although lack of finances is an inhibiting factor for some districts, however intent they are to raise standards.

In curriculum development it is important not only to understand the nature of content, but also to consider its relation to educational goals. It is sometimes claimed that there is a direct connection between content and goals of the school, but in many cases the connection between content and goals is very tenuous and indirect if it exists at all. Curriculum as presently perceived is compartmentalized. Subject matter is the oldest and most used framework for curriculum organization, primarily because it is convenient. The departmental structure of secondary schools tends to prevent thinking about curriculum in other ways. Curricular changes usually occur at the departmental level. Courses are added, omitted, or modified but rarely is there any comprehensive, systematic curriculum development. The compartmental design is outmoded; knowledge is not segmented; it is interrelated. Larson stated in "Designing School Curriculum for the Twenty-First

Century," that the secondary curriculum must become more interdisciplinary. integrated, and holistic in its design (92). Even though the curriculum is subject centered, there is presently no assurance that the title of the course accurately reflects the course content in Iowa or in the nation. Pratt maintained that the evidence appears to suggest that the curriculum content, far from being immaterial, is critical and must be designed and justified accordingly (121). There is a tendency of educators to base curriculum and content on tradition, on the academic disciplines, or on their own intellectual interests rather than on the needs of the learner.

It is important to realize that the development of curriculum is an ever-evolving task and the importance of curricular process and procedures should not be underestimated.

Related Curricular Topics

Changes in Iowa secondary education will become a reality when the mandated changes initiated by the Iowa legislature become defined as standards under the planning in process by various selected groups under the mandate of Iowa HF 686, the centerpiece of the education legislation enacted in 1985. The bill requires the state board of public instruction to develop new standards for approved schools and establishes a process for school districts to meet those standards by July 1, 1989. In all, there were fourteen mandated areas, several of which dealt with curriculum. Eight standards have been chosen to survey in this study because of their implications for curriculum offered by school districts. They are:

1. Objectives and assessment procedures for teaching specific competencies related to higher order thinking skills, learning skills, and communications skills.

2. Integration of the applications of current technologies into the general curriculum.

3. Procedures for curriculum development and refinement.

4. A specific number of hours per year for students to be engaged in formal academic instruction.

5. Learning opportunities for students whose needs are not met in the conventional classroom.

6. Career exploration activities and specific vocational education programs.

7. Community and parent involvement in the education process.

8. Communication with business, industry, labor, and higher education regarding their expectations for adequate student preparation.

Now that the governor and legislative leaders have acted, the responsibility for implementing reforms rests with school boards, superintendents, and principals.

Thinking skills

One of the fourteen resolutions of 1985 of the Association for Supervision and Curriculum Development was "Development of Thinking Skills." Part of the rationale for that resolution is as follows:

> Participation in a changing and increasingly complex society requires citizens to process large amounts of information, sometimes to change careers and jobs, to relate with high sensitivity to others, and to operate effectively in ambiguous and unstructured situations.

> Such a world demands thinking and thoughtful people.
>
> It is assumed by many that the educational process automatically fosters student thinking skills. Thinking skills must be planned for if they are to be practiced systematically, routinely, and with regularity (8, No. 8).

Arthur Costa in a recent book stated that thinking "is an integral component of instruction in every school subject, and achievement depends largely on the inclusion of those mental processes prerequisite to mastery of that subject" (38, p. xi).

Since the turn of the century, U.S. schools have considered mastery of thinking skills a major goal of instruction in almost all subject areas. Considerable evidence suggests that there is still a long way to go in achieving this goal. Little has happened in the last 15 years to remedy what Hilda Taba once referred to as "the haziness about what is meant by thinking" (150, p. 26).

According to Beyer, an effective curriculum on thinking skills should exhibit five important features:

1. It should introduce a limited number of thinking skills at each grade level.

2. It should clearly describe for teachers the key components of each skill to be taught.

3. It should provide for the teaching of the same skill across all appropriate content areas.

4. It should provide instruction in each skill in a variety of media and contexts.

5. It should provide sequenced development of each skill from the primary through the secondary grades (21).

Learning skills

According to the April, 1983, report of the National Commission on Excellence in Education, "Instruction in effective study and work skills, which are essential if school and independent time is to be used effectively, should be introduced in the early grades and continued throughout the student's schooling" (113, p. 7). A solid base of research supports that recommendation.

Learning skills are learned abilities for acquiring knowledge and competence. They are skills for learning, tools for solving the learning problems that students encounter both in school and elsewhere in their lives. Marshak stated that learning skills are universal in their relevance, and they are as basic to the learning process as any other skills that are taught (103).

This set of abilities is different in kind from other proposed learnings. Successful study skills are necessary for acquiring other competencies as students are unlikely to be efficient in any part of their learning without these skills. Lovell and Kennedy stated that if every student is to succeed, then sufficient time must be spent on the process of learning how to learn--on developing study skills (100). Study skills, like reading and language skills, are developmental in nature. Students need to practice such skills on continuously more difficult materials and content.

The key to dealing with change successfully is the capacity for effective learning. An individual who has competence and confidence in her or his learning skills will be more able to cope in a constructive way with the rapid transformation of our society.

Communication skills

Boyer stated, "The first curriculum priority is language" (27, p. 85). He includes every phase of communication and sees language as the key to clear thinking. Several other contemporary reports recommended literacy in the English language as the most important area of study. Communication skills are perceived as central to education reform, even in reports that contradict one another. They are seen to be essential to quality education for all students and are recommended to be required for young people across the entire school curriculum. The reports, however, are vague about the kind and quality of communication which ought to be taught in the schools. Beginning with A Nation at Risk in 1983, the requirement of four years of English is paramount in a majority of the recent education reform reports. However, the requirement of "four years of English" can mean programs of widely varying content. English/language arts is a discipline consisting of the communicative skills of reading, writing, speaking, listening, reasoning, and interpreting. The curriculum also consists of a variety of literature courses. Requiring four years of English will not mean a standard program for every student because of the wide range of courses available in this curricular discipline.

Technology

The potential impact of technology is so great that its repercussions on the curricula cannot be fully anticipated. The educational system has a new responsibility for educating the public about the role of technology in the lives of citizens and to prepare students to understand and use technological resources. All students must be prepared for the new information society in which they will live, and the major responsibility for this objective must lie with the high schools. A program of technology education strives to give every student an insight and understanding of the technological nature of the culture. It acquaints all persons with their technological environment made necessary because the American culture is distinctly characterized as technological.

The major problem facing educational technology today for schools of all sizes is the integration of technology into the classroom. One highly visible use of technology is the computer. Other applications in schools are tabletop robots, lasers, fiber optics, energy stations, and other high technology applications. Most school districts will not have the capability to offer in-depth instruction on any of these topics but exposure to the use and impact on society of technology is within the realm of school district curriculum offerings. Students should learn about technology, learn from technology, and learn with technology.

To a great extent, the development and use of technology in schools depends on individual interest and the financial limitations of a school district. Thus its application is inconsistent at best (108). These inequities illustrate the necessity for planning, even though that

planning may be difficult and time-consuming. As technologies advance, secondary education will be where experimentation and innovation take place. To ensure more educational opportunity for all students, planning for technology education and use of technology in the curriculum is essential.

Rural districts face the problem of providing equal opportunity in the area of technology as it is often difficult to enroll enough students to make elective course offerings effective. Costs can be prohibitive, and administrators must ensure that each form of technology chosen for their district is effectively used for the maximum amount of time by maximum number of students and staff. However, some aspects of technology are making it possible for small rural school districts to cooperate and to share low-incidence courses.

High technology is transforming the American economy from an industrial base to an information base (111). This transformation will require that workers in the future have a broad base of knowledge with an understanding of basic processes, as well as the ability to use technology in the workplace. Future workers will also need the skills of flexibility and adaptability as technology continues to change.

Time on task

One of the important determinants of achievement seems to be the way in which classrooms and schools manage the amount of time spent on productive instruction. Studies in recent years have demonstrated rather conclusively that increasing the amount of time students are instructed can have a significant and beneficial effect on student

achievement. A recent IASCD (Iowa Association for Supervision and Curriculum Development) publication stated that "the structuring of time is an organizational imperative for schools" (91). When the role of time is properly viewed, it is seen that time is not only an instructional variable, but it is also a valuable resource for most of the financial resources of a school are directed toward providing time for students to interact with teaching professionals. It is also a resource that educators can control.

Benjamin Franklin once said, "Lost time is never found again." This is very sobering as the concept of time in schools is considered. Justiz stated that the evidence presented to the National Commission on Excellence in Education showed that American students spend less time on schoolwork than do students in other nations (81). Nancy Karweit of Johns Hopkins University presented a background paper written for the Commission and stated that American schools lose 55 percent of the time allocated for learning in the secondary schools (83).

Interest in time as a variable is scarcely new with studies concerning it beginning in the 1920s until recent times. School time has been taken broadly to include years of schooling, days or hours per school year (Karweit [82], Levanto [94], Lindsay [98]) and time engaged in learning (Bell and Davidson [18], Karweit and Slavin [84]). These studies are useful in a general way, but are not well suited for predicting how specific changes in school time might affect student achievement. Many of the studies did find a statistically significant effect of engaged time on learning.

Time can be divided into five areas: (1) available time, (2) allocated time, (3) engaged time, (4) academic learning time, and (5) time management. Available time is the amount of time derived from the length of the school year and the length of the school day. Several reform commissions advocated increasing both, but this has been solidly rejected by the public. The Carnegie Report by Boyer concluded that lengthening instructional time is unnecessary and emphasized that schools only need to make better use of the time now available for instruction (27). Allocated time is the way time is portioned out of the available time. This correlates with engaged time which is the amount of allocated time that students are on the learning task. Academic time is engaged time coupled with the appropriateness of the learning task which is measured by the accuracy rate of the students. The fifth area, time management, is interrelated with each of the other four areas and is the province of both administrators and teachers.

Learning opportunities outside the conventional classroom

Not all students function well in the classroom as structured today. Alternate choices are many and are designed to respond to particular needs, desires, or interests not otherwise met in the average classroom. The format is distinctly different from that encountered by the majority of students. At the high school level there are many types of alternatives beginning with education under the direction of PL 94-142 for the various learning disabled students to learning centers, continuation schools, schools without walls, magnet schools, alternative schools, talented and gifted programs, or programs correlated with some

institution of higher education. Raywid stated that it was found that 63 percent of the respondents indicated that the difference between their program and the regular classroom lay in interpersonal relationships within the school, rather than in curricular distinctiveness (126). Many of these programs are preoccupied with realizing individual potential than with achievement in relation to group norms. These are programs targeted specifically for disruptive students, underachievers, students with high academic potential, dropouts, and other varieties of "at risk" students.

In Iowa several special populations are targeted for special support programs for the gifted and talented which have expanded since passage of Iowa Code, Chapter 442.31. There has been about 30 percent expansion since the 1980-1981 academic year with growth not limited to large districts. At least 53 alternative schools and programs offer services to dropouts and potential dropouts. Over 55,000 students are being served in some capacity through special programs or support services for disabled students. Jointly sponsored career/vocational programs between local school districts and area schools serve over 1,500 students in 73 districts (109). Some districts provide special programs emphasizing the visual and performing arts. All these programs are in addition to education provided under PL 94-142 for learning disabled students which every district provides in one form or another.

Career exploration

Goldhammer and Taylor stated in 1972 that what is needed in today's world is neither a new brand of academicism nor a new style of vocationalism, but a fusion of the two. The emerging conception which

may obliterate the false dichotomy between the academic and the vocational is that of careers education (61).

One of the major goals and objectives for career education is to provide exploratory programs as an integral part of a sequence of orientation and preparation to help students make meaningful occupational choices. Because an occupation is the most occupying of all human activities, it sets the tone of social relationships. Barlow stated that it is the major element influencing the standard of living, is a factor in determining family solidarity, and controls the quality and quantity of civic participation and responsibility (12).

Choice awareness is a behavioral system that enables individuals to understand the choices they make and to take more effective control of those choices. Adolescents face many important choices which will affect their lives. The choice of an occupation is a vital decision for which they need as much preparation and information as possible.

Vocational education

Recent studies and reports from commissions have given relatively little emphasis to the high school graduate who does not go on to a four-year institution even though these graduates play a central and critical role in the nation's economy. Very little has been written about vocational education even though in 1980 more than two-thirds of all high school students took at least one vocational education course and almost one-fourth of the students considered themselves to be following a vocational education curriculum, according to the National Center for Educational Statistics (112). For many students the high

school is the last stop in the educational process. Almost half of all 18-year-olds do not secure any education beyond high school. In a knowledge-based society, the future is dim if their high school education is poor. The majority of these students complete their high school education either in general education or some aspect of vocational education. The present trend toward increasing graduation requirements mainly in the areas of academics has already resulted in a decrease in electives, especially in the various areas of vocational education at the secondary school level (156). This trend is the reaction of many local systems toward the call for excellence in education.

No area of education is less well understood than vocational education. No area of education is more complex, and none has changed as substantially as vocational education has over the past two decades according to Bottoms and Copa (26). Vocational education programs fall into four major kinds as follows:

1. Awareness--programs through which the student becomes cognizant of personal attributes and attitudes and develops understandings of and appreciation for self, the workers, and the world of work.

2. Exploration--program through which the students broaden their knowledge of self, the world of work, and occupational clusters and investigate in depth selected job opportunities in several occupational areas of interest to them.

3. Preparation--programs through which students develop general employability and job specific skills.

4. Cooperative--program of vocational education for persons who,

through cooperative arrangements between the school and employers, receive required academic and related vocational instruction by alternation of study in school with a job in an occupation. Students may or may not receive financial compensation (76).

Preparation and cooperative programs are usually offered at the secondary level while exploratory courses are commonly offered in the middle school or junior high grades. In the 1982-1983 academic year there were 79 Iowa school districts offering four and five or more different vocational programs. The number of districts offering one, two, and three programs was 287. Seventy-eight districts offered no approved and reimbursed vocational programs (74). In the 1983-1984 academic year, 365 secondary school districts offered approved vocational education programs but 44 percent offered only one "wage-earning" vocational program, usually agriculture. By comparison, six percent of the schools provided five or more vocational programs. The Vocational Education Advisory Council in its annual report for the same year noted that vocational education is unequal in Iowa--much less available in small schools than large.

The 1984 Iowa Excellence in Education Task Force Report stated that "vocational and career education should be part of the high school, but should enrich the general academic education. The emphasis should shift away from job specific skills training to exploration, with the focus on developing transferable competencies and skills adaptable to a wide choice of occupations" (77, p. 21).

Implicitly or explicitly, the reports of the Eighties call for major changes in vocational education--in the student populations served, the curriculum and instruction provided, and the sites of such education. By proposing a common core curriculum with few, if any electives or options, the reformers are asserting that a sound general/liberal education is the best vocational/specialized education.

Summary

In a rapidly changing world, educating people for the status quo is to educate them for obsolescence. There is now wide agreement that the central mission of schooling is to develop lifelong learners--individuals who are motivated to continue learning and who have the basic skills to do so. Because curriculum provides the operational structure in which teaching and learning takes place, a consistency in curricular approach is important. In order to accomplish this, it is necessary that curricular content, form, and the process of decision making be considered simultaneously to determine the diversity of curricular offerings available in the state of Iowa.

The U.S. business community finds itself in difficulty because of delayed capital investments and declining productivity. Meeting the short-term needs of U.S. business and industry does not necessarily result in economic benefits either to the economy or to the individual. However, it is easier to criticize high schools than it is to criticize great corporations, and it is easier to press requirements on public

institutions than it is to repair labor market problems that arise in that diffuse entity called the private sector.

Educational reformers have seized this opportunity to advocate change in the secondary curriculum with legislators and other policy makers participating in the advocacy of change from the top. These changes are popular because they can be done quickly and cheaply. Reformers are ignoring the fact that educational requirements piled onto high schools cannot substitute for real economic and social incentives for study. It is the belief that if incentives to learn are not provided by the marketplace itself, then public authority itself should provide them.

Curriculum issues truly do reflect diversity in thinking about schooling. The emphasis on different beliefs is reflected in the variety of recommendations being advocated. The basic purpose of education has shifted to asking who should be responsible for developing and implementing educational decisions and what should happen in school districts. Curriculum is a management tool of strategic importance because it forces the system's resources to flow in specified directions to implement the overall policies of the district, state, and nation. The practical decisions about curriculum content, processes, and control must be addressed. Agreement on educational purposes may never be reached, but educators must make decisions to guide the learning offered through curriculum provided by their school districts. Improvement may come

when there is a consensus of what is important to teach and learn, and why, and how it can best be done.

CHAPTER III. METHODS

This study was instituted to determine the curricular requirements and offerings of the secondary schools in the state of Iowa as perceived and documented by the school district superintendents. The study sought (1) to determine what graduation requirements change has occurred since the 1982-1983 academic year and to compare trends in different sizes of school districts, (2) to examine the demographic profiles of superintendents to learn the educational and curricular backgrounds available to facilitate curriculum change, (3) to determine if curriculum changes in each district surveyed showed an increase in academic requirements with a reduction in elective courses, (4) to determine who has the responsibility for curriculum development in the surveyed districts, (5) to gather information concerning district goals pertaining to course changes and course content changes, and (6) to determine the status of district curricular elements as identified by eight standards listed in Iowa HF 686.

Construction of Instrument

A search of the literature did not reveal the existence of an instrument to measure the information sought in this study. Therefore, a questionnaire to collect data was developed by the researcher based on consultation with professional educators in the Educational Administration and Research and Evaluation Sections of Iowa State University. Portions of research models found in the literature (Sudman and Bradburn [148]; Kimpston and Anderson [88]; and Roberts and

Cawelti [127]) were utilized where applicable.

The Perceptions of the Secondary School Curriculum Questionnaire (Appendix A) consists of six parts. The questions in Part I ask for school district information. This information was not available in the form sought, does fluctuate, and was necessary to provide information for the variables of school size, population density, and assessed valuation per student. Information was collected from school districts on the population of the district, the largest city in the district, the number of students in the district, student enrollment in grades 9-12, and assessed valuation per pupil grades K-12.

Part II consists of seven questions designed to give information concerning superintendent demographics to determine the educational and curricular background for curriculum change. Information was collected from the superintendent as to his/her years of experience as an administrator, years of experience as a superintendent, the highest degree received, the number of years of classroom teaching and classroom teaching major, the number of graduate hours in curriculum, and feelings of qualification for developing curriculum. Question eight was an open question which is related to Part VI. No hypotheses were generated for this section as no attempt was sought to correlate these demographics with the stated variables. Since the superintendent is the professional educator who initiates change and is responsible for the allocation of resources and personnel for curriculum and curriculum change, it was deemed necessary to gather background information on superintendents in Iowa for this study.

Part III consists of a chart asking for semester credit graduation requirements in specified categories for both the 1982-1983 academic year and the 1985-1986 academic year. Participants were also asked to indicate reasons for change, if any, utilizing a Likert type scale for selected reasons with numerical values as follows: 1-Little Impact; 2-Some Impact; 3-Moderate Impact; 4-Considerable Impact; and 5-Much Impact. Superintendents were asked to list the courses and programs added and dropped since the 1982-1983 academic year. If they had added staff members since the 1982-1983 academic year, they were asked to list the area and number of the faculty changes. A Likert type scale was used to determine the reasons for the addition of staff with numerical values as follows: 1-Little Emphasis; 2-Some Emphasis; 3-Moderate Emphasis; 4-Considerable Emphasis; and 5-Much Emphasis. If the staff numbers had decreased since the 1982-1983 academic year, they were asked to list them by area and number within that area. A Likert type scale was used to determine the reasons for the decrease in the number of staff members with numerical values as follows: 1-Little Emphasis; 2-Some Emphasis; 3-Moderate Emphasis; 4-Considerable Emphasis; and 5-Much Emphasis.

Part IV used ten areas for a curriculum decision-making inventory for analyzing key elements of a school district's curriculum development system: (1) the participants in the curriculum development processes, (2) the decisions they are involved in, and (3) the roles participants play. Participants were asked to rank the concerned individuals for each area with 1 representing the most responsible, 2 representing the next responsible, 3 the next responsible, and continuing for all involved in

the processes. The perceptions of Iowa superintendents were documented as to the responsibility for curriculum process in their districts for determining budget requirements for curriculum, determining curriculum areas in needs of revision or movement, determining who will participate in curriculum planning, determining who plans priority of school district goals, who has the responsibility for developing and selecting goals of subject matter, who has the responsibility for determining the sequence of learning in the K-12 curriculum, who has the responsibility for selecting content matter of courses, who has the responsibility for selecting textbooks and resources, and who has the responsibility for communicating with business, industry, labor, and higher education regarding their expectations for adequate student preparation. No attempt was made in this study to determine who should participate in these curriculum processes, but rather a determination was sought as to the actual involvement in the processes at this time.

Part V used ten areas to determine the status of curricular goals and changes in the curriculum. Participants were asked to indicate whether or not the district had either the process or were involved with changes and were then asked to indicate the degree of satisfaction with their status using a Likert type scale with numerical values as follows: 1-Little Satisfaction; 2-Some Satisfaction; 3-Moderate Satisfaction; 4-Considerable Satisfaction; and 5-Much Satisfaction. The ten areas included the district process for the formulation of short- and long-term goals in content changes of courses; district goals that address the competencies, capacities, and abilities for young people to have as

outcomes of their schooling experience; district goals that address the instructional, developmental, and initial experiences students will need to attain goals; the status of curriculum goals and content definition; consideration of major changes in content of courses; occurrence of major changes in courses; and implementation of major changes in content of courses.

Part VI consisted of topics which were selected from the mandated areas included in HF 686 passed by the Iowa legislature in 1985. Eight areas were selected because they related to curriculum. The new standards will be adopted not later than July 1, 1987, which gives school districts little time for planning if these areas were not already being given some consideration. This area dealt with the status of these areas under four categories: (1) not available, (2) under study, (3) integrated into courses, and (4) separate programs or courses. Participants were also asked to use a Likert type scale to indicate their satisfaction with their status in each of these areas utilizing a numerical scale as follows: (1) Little Satisfaction; (2) Some Satisfaction; (3) Moderate Satisfaction; (4) Considerable Satisfaction; and (5) Much Satisfaction. The curricular topics were on the objectives and assessment procedures for teaching higher order thinking skills, objectives and assessment procedures for teaching learning skills, objectives and assessment procedures for teaching communication skills, integration of the applications of current technologies into the general curriculum, learning opportunities for students whose needs are not met in the conventional classroom, career exploration activities, time on task, and vocational education experiences

in agriculture, business, distributive education, health, home economics, industrial arts and technical education.

Pilot Testing of Instrument

The instrument was sent to randomly selected superintendents in southern Minnesota school districts. These districts were felt to be similar to Iowa school districts in educational programming, size, rural/urban orientation, and student achievement. The survey was mailed in September, 1985, with a cover letter explaining the instrument and asking for data from their districts as well as a critique of the instrument. The survey form was revised after all the data had been analyzed before sending the questionnaire to Iowa superintendents.

Population

The sample studied consisted of the superintendents of schools for 225 school districts in the state of Iowa selected using a stratified random sampling procedure from the population of 436 public school districts in Iowa. The sample was obtained by dividing the population into three nonoverlapping groups (strata) and then selecting a simple random sample from each stratum so that there were 75 in each group. The groups were divided by student population from the 1984-1985 Annual Statistical Report To Iowa School Districts prepared by the Grant Wood Area Education Agency Research and Evaluation Program. The small schools were those with K-12 student populations under 500, the mid-size schools were from 500 to 1,000, and the large schools had over 1,000 students. Because of the prepondrance of small schools in the state of Iowa, the

proportion from this group was the least; mid-size and large schools had greater proportions. However, to ensure adequate representation from each size of school district, this variance was accepted to prevent oversampling of one size of district. The list of superintendents was obtained from the Iowa Education Directory 1985-1986 School Year published by the Iowa Department of Public Instruction.

Data Collection

After receiving approval from the Human Subjects Committee of Iowa State University for this survey, the instruments were sent to 75 superintendents in each of the three categories (small, mid-size, and large school districts) on October 16, 1985. A followup questionnaire was sent to nonresponding superintendents after a three-week period on November 8, 1985. After the second mailing, a 79 percent response was obtained with an evenly distributed response from all three categories (small districts = 61, mid-size district = 59, and large districts = 59).

The anonymity of the respondents was protected as much as possible. The only coding of the survey was a numbering of the questionnaire which was for the purpose of a follow-up mailing.

The survey did not ask for student achievement information as that was obtained from a published newspaper report in the Des Moines Sunday Register on December 4, 1983, which reported the results for the Iowa Tests of Educational Development for all schools for the 1982-1983 academic year.

Hypotheses

Hypotheses tested were in the area of change in graduation requirements since the 1982-1983 academic year. Hypotheses were also generated for faculty additions and deletions since the 1982-1983 academic year as well as stated motivations for these additions and deletions.

The following hypotheses were tested:

1. There will be no difference in change of total semester credits required for graduation since the 1982-1983 academic year based on student population in the district.

2. There will be no difference in change of total semester credits required for graduation since the 1982-1983 academic year based on assessed valuation per student in the district.

3. There will be no difference in change of total semester credits required for graduation since the 1982-1983 academic year based on student achievement.

4. There will be no difference in change of total semester credits required for graduation since the 1982-1983 academic year based on population density (rural/urban definition).

5. There will be no difference in number of total semester credits required for graduation based on student population in the district.

6. There will be no difference in number of total semester credits required for graduation based on assessed valuation per student in the district.

7. There will be no difference in number of total semester credits required for graduation based on student achievement.

8. There will be no difference in number of total semester credits required for graduation based on population density (rural/urban definition).

9. There will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on student population in the district.

10. There will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on assessed valuation per student in the district.

11. There will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on student achievement.

12. There will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on population density (rural/urban definition).

13. There will be no difference in number of required semester credits for graduation in the areas of English/language arts, social

studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on student population in the district.

14. There will be no difference in number of required semester credits for graduation in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on assessed valuation per student in the district.

15. There will be no difference in number of required semester credits for graduation in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on student achievement.

16. There will be no difference in number of required semester credits for graduation in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on population density (rural/urban definition).

17. There will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on size of student population in the district.

18. There will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on assessed valuation per student in the district.

19. There will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on student achievement.

20. There will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on population density (rural/urban definition).

21. There will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on student body population in the district.

22. There will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on assessed valuation per student of the district.

23. There will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on student achievement.

24. There will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on population density (rural/urban definition).

25. There will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on student body population of the district.

26. There will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on assessed valuation per student.

27. There will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on student achievement.

28. There will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on population density (rural/urban definition).

Statistical Procedures

Frequency tables and descriptive statistics of means and percentages were used to give a profile of the demographic characteristics of the districts and of the superintendents. Frequency tables were also used to indicate the distribution of responses to each survey item. In addition, descriptive statistics of means and percentages were used.

Hypotheses One through Four and Nine through Twelve which asked for change in graduation requirements were measured in a time-ordered study for both change in area and number of graduation requirements for Iowa secondary school students since 1982. Oneway Analysis of Variance (ANOVA) was used to study for differences in each change in each area using the variables of size of student body, assessed valuation per student, student achievement, and population density.

Hypotheses Five through Eight and Thirteen through Sixteen asked for difference in number of credits for each area and for the total number of semester credits. This was measured by Oneway Analysis of Variance (ANOVA) using the variables of size of student body, assessed valuation per student, student achievement, and population density.

Hypotheses Seventeen through Twenty asked for the perceptions of the superintendents as to the importance of several possible reasons for graduation requirement change since the 1982-1983 academic year using the variables of size of student population, assessed valuation per student, student achievement, and population density. These were analyzed using Oneway Analysis of Variance (ANOVA).

Hypotheses Twenty-One through Twenty-Four asked for ratings of stated motivations for faculty additions to the secondary school faculty. Hypotheses Twenty-Five through Twenty-Eight asked for ratings of stated motivations for faculty deletions to the secondary school faculty since the 1982-1983 academic year. All were analyzed by Analysis of Variance (ANOVA).

Course changes, program changes, and faculty changes were reported by frequency tables. Descriptive statistics were used including frequency counts, means, and percentages for responses to items under the subject headings of curriculum processes, curricular content, and curricular topics.

CHAPTER IV. RESULTS

Introduction

This chapter has been divided into three sections. The first section describes demographic characteristics of the superintendent sample and school districts surveyed. Section two presents data collected and analyzed to affirm or reject the hypotheses proposed in this study. Section three presents data showing the frequency of response to all items collected for survey purposes.

Much of the data presented are in the form of tables. Each table is accompanied by explanatory remarks followed by interpretive remarks and observations that might be worthy of attention. Some of the data have been presented as percentages and have been rounded off to the nearest tenth of a percent.

The Oneway Analysis of Variance (ANOVA) was used to test for significance between groups for the projected hypotheses. Where statistically significant differences were found, the Duncan's Multiple Range test and Scheffe's test were used to further isolate the differences. The Pearson product-moment correlation was also used to test if observed relationships between variables were statistically different from zero.

Population and District Demographics

Tables 1 through 6 identify demographic characteristics of district superintendents involved in this study. Separate tables were used for years of experience as an educational administrator and for years of experience as superintendent. The years of experience as superintendent

were also separated by size of student population in the district. Where information was available, statistics from this study were compared to past Iowa studies and national studies.

Tables 7 through 10 identify the demographic characteristics of the school districts surveyed--size of student population, student achievement, population density, and assessed valuation per student.

The information in Table 1 shows the years of experience as an educational administrator by frequency and percentage in each category. The mean of the years of experience as an educational administrator was 18.2. Those superintendents with over 30 years of experience may be considering retirement in the near future pointing to a turnover in 14 of the districts surveyed. The range of experience was from 2 years to 38 years.

Table 2 shows the years of experience as superintendent separated by size of student population of the district by frequency and percentage in each category. The mean of the years of experience as superintendent was 12.3 as compared to a 1984 national survey of superintendents where 10.4 years of experience was indicated (48). A large percentage of superintendents new to the position (under 5 years of experience) appear in the small school districts.

Superintendents were asked to indicate the highest educational degree obtained and the results are shown in Table 3. The majority of Iowa superintendents in this survey have at least a specialist degree (60.1 percent) and another 21.9 percent have a doctorate degree. Only 18.0 percent of the superintendents surveyed had only a master's degree, an

Table 1. Years of experience as educational administrator

Years	Frequency	Percent
2- 5	7	3.9
6-10	28	15.8
11-15	35	19.6
16-20	44	24.7
21-25	29	16.3
26-30	21	11.8
31-38	14	7.9

Table 2. Years of experience as superintendent

Years	Small District	Mid-Size District	Large District	Frequency	Percent
0- 5	30	8	5	43	24.7
6-10	10	10	14	34	19.1
11-15	8	25	12	45	25.3
16-20	8	7	10	25	14.0
21-25	3	5	6	14	7.9
26-30	2	3	8	13	7.3
31-35	0	1	2	3	1.7
Total	61	59	57	177	100.0

indication of the increased requirements for a superintendent's certificate in Iowa. The doctorate degree is indicated by few superintendents in the small and mid-sized districts; it is far more prevalent in the larger districts.

Table 4 shows a comparison of degrees attained by superintendents in this study, a 1955 study conducted by Richard Manatt on Iowa superintendents, and a 1984 national study of superintendents. There has been a large increase in the amount of education attained by Iowa superintendents in the last thirty years as shown when the Manatt study of 1955 is compared with this study. The doctorate degree percentage of the superintendents in this survey is not as prevalent as is shown in the 1984 national study, but the specialist degree far surpasses the national level, and the master's degree percentage is considerably under the national level.

Information gathered from this sample was compared to the entire superintendent population in Iowa as surveyed in 1955 in the area of classroom teaching experience areas. Social studies is still the major experience area followed by math-science as shown in Table 5. Physical education shows a decline in the sample studied while vocational education and English percentages maintained their position. The 1955 study indicated 34 superintendents in the other category which included foreign language, religion, psychology, and law. Elementary education was not listed in the 1955 study but is becoming a factor in 1985 due perhaps to the combination in small districts of the positions of superintendent and elementary principal. The 1985 order for teaching experience areas is: social studies, math-science, vocational education (51.9 percent of superintendents

Table 3. Highest educational degree attained by superintendents

Degree Level	Small District	Mid-Size District	Large District	Frequency	Percent
Master's	9	13	10	32	18.0
Specialist	45	40	22	107	60.1
Doctorate	6	6	27	39	21.9

Table 4. Comparison of educational degree attainment of superintendents

Degree	Iowa - 1955[a] Pct.	Iowa - 1985 No.	Iowa - 1985 Pct.	National - 1984[b] Pct.
Master's	73.7	32	17.9	28.0
Specialist		107	59.8	19.0
Doctorate	.1	39	21.8	50.0
Other	26.2	1	.6	1.0

[a]102, p. 38.

[b]48, p. A9.

marking vocational education indicated that business education was the area), English, music/arts, elementary education, and physical education. The superintendents in this study had an average of 7.4 years of classroom teaching experience with a range of 2 to 25 years.

Table 6 shows that most superintendents in this study feel comfortable in providing leadership in the area of curriculum ($\overline{X}$=3.70). Forty-eight percent indicated that they had strong feelings of qualification in this area and another 15.6 percent indicated that they had very good feelings of qualification. Only 7.8 percent indicated feelings of minimum qualification. The range of graduate curriculum hours was 0 to 76 graduate hours. The average number of graduate hours in curriculum increased between the small ($\overline{X}$=16.42) and the large ($\overline{X}$=22.98) school districts.

In this study districts were grouped by level of pupil achievement. A district's pupil achievement was defined by the average percentile rank of its students on the 1982-1983 Iowa Tests of Educational Development (ITED) using Iowa norms. Since percentile ranks overexaggerate differences in achievement in the middle of the scale, it was decided to report average pupil achievement in terms of stanine scores. Stanine scores corresponding to various percentile ranks are shown in Table 8. Districts in stanines 1 and 2 and 8 and 9 were combined, respectively, for analysis due to small frequencies. The range of percentile rankings was from 1 to 98 with a mean of 54.77.

Districts were classified in either rural or urban districts by examining the population of the largest city in their district. Districts whose largest community center was 2,499 or less were classified as rural

Table 5. Classroom teaching experience areas of superintendents

Academic Major	Iowa - 1985 No.	Iowa - 1985 Pct.	Iowa - 1955[a] No.	Iowa - 1955[a] Pct.
Social Studies	65	36.3	316	38.8
Math-Science	52	29.1	218	26.8
Vocational Education	26	14.5	116	15.5
English	11	6.1	38	4.7
Music/Arts	11	6.1	10	1.2
Elementary Education	8	4.5	--	---
Physical Education	3	1.7	72	8.8
Other	3	1.7	34	4.1
Total	179	100.0	814	100.0

[a]102, p. 37.

Table 6. Superintendent graduate hours in curriculum and feeling of qualification for directing curriculum program K-12[a]

District Size	Graduate Hours in Curriculum	Feeling of Qualification
Small	16.42	3.65
Mid-Size	19.51	3.56
Large	22.98	3.88
All	19.66	3.70

[a]Range 1 = minimum qualification to Range 5 = very good qualification.

Table 7. Student population K-12 of surveyed districts

Size	Number of Returns	Percent
1001-14000	59	33.0
500- 1000	59	33.0
141- 499	61	34.0

Table 8. Iowa achievement as recorded by Iowa Tests of Educational Development percentage rankings from the 1982-1983 academic year

Stanine	Ranking	Number	Percent
1/2	1 - 12	12	7.5
3	13 - 25	13	8.2
4	26 - 39	21	13.2
5	40 - 61	47	29.6
6	62 - 77	26	16.4
7	78 - 89	20	12.6
8/9	90 - 98	20	12.6

while districts with communities 2,500 or larger within it were classified as urban (24). By this definition 59.2 percent of the responding districts were rural and 39.7 were urban. Table 9 shows the frequency and percentages for those responding to this survey.

Table 10 shows the responding districts by assessed valuation per pupil classification. Groups were formed by analyzing the data and dividing by $50,000 increments into seven classifications. The majority of the districts were in the middle classifications with 53.8 percent having valuations between $100,000 and $199,999 per pupil. When another $50,000 is added, the percentage increases to 69.4.

Table 9. Population density of school districts in survey

Type	Number	Percent
Rural	106	59.9
Urban	71	40.1

Table 10. Assessed valuation per pupil for districts in survey

Group	Valuation	Number of Districts	Percent
1	1- 49,999	18	10.8
2	50,000- 99,999	12	7.2
3	100,000-149,999	47	28.1
4	150,000-199,999	43	25.7
5	200,000-249,999	26	15.6
6	250,000-299,999	9	5.4
7	300,000 +	12	7.2

Correlations Between Variables

The Pearson product-moment correlation coefficient was calculated to determine the direction and significance of the correlations among the variables used in the study. As Table 11 shows, a significant positive correlation emerged between school size and population density as might be expected even though smaller districts are combining to form larger districts in rural areas. Negative correlations emerged between assessed valuation per pupil and school size and population density. The greater numbers of students in large districts is a factor in these correlations. Iowa achievement based on 1982-1983 ITED (Iowa Tests of Educational Development) rankings was not significantly related to any other variable.

Table 11. Correlations among variables

	District Size	ITED Iowa Achievement	Population Density	Assessed Valuation Per Pupil
District Size	1.00	0.09 p=0.14	0.79 p=0.00**	-0.44 p=0.00**
ITED Iowa Achievement	0.09 p=0.14	1.00	0.11 p=0.10	0.10 p=0.12
Population Density	0.79 p=0.00**	0.11 p=0.10	1.00	-0.28 p=0.00**
Assessed Valuation Per Pupil	-0.44 p=0.00**	0.10 p=0.12	-0.28 p=0.00**	1.00

**Significant at the .01 level, one-tailed test.

Analysis of Hypotheses

Results from this study indicated that 67 percent of the districts had changed graduation requirements while 33 percent had not. Table 12 shows change in graduation requirements for districts by size of student population. The range of change in graduation requirements was -2 to +10 semester credits. This change occurred without any modification in state mandated requirements as have developed in 35 other states in the nation since 1982. Documentation was made of any change, either increase or decrease; thus the data reflect all changes.

Table 12. Change in graduation requirements since the 1982-1983 academic year

District Size	No Change		Change	
	Number	Percent	Number	Percent
Small	19	31.7	41	68.3
Mid-Size	24	41.4	34	58.6
Large	15	25.9	43	74.1
All	58	33.0	118	67.0

Hypothesis one

The hypothesis that there will be no difference in change of total semester credits required for graduation since the 1982-1983 academic year based on student population in the district was tested using a single classification analysis of variance procedure. The analysis produced no significant differences ($F(2,167) = .9872$, $p < .37$). The means for the different student populations are shown in Table 13 and the results of the analysis of variance are shown in Table 14.

Table 13. Change in total semester credits required for graduation since the 1982-1983 academic year by student population

Size	Number	Mean	S.D.
Small	41	3.33	1.89
Mid-Size	34	3.59	2.07
Large	43	3.06	1.88
All	118	3.31	1.93

Table 14. Analysis of variance of change in total semester credits required for graduation since the 1982-1983 academic year by student population

Sources of Variation	df	Mean Squares	F-Value
Student Population of District	2	4.8167	.9872
Residual	167	4.8792	

Hypothesis two

A single classification analysis of variance procedure was used to test the hypothesis that there will be no significant difference in change of total semester credits required for graduation since the 1982-1983 academic year based on assessed valuation per student in the district. The analysis produced no significant differences ($F(6,152) = 1.0646$, $p < .39$). The means for the different levels of assessed valuation are shown in Table 15 and the results of the analysis of variance are shown in Table 16.

Table 15. Change in total semester credits required for graduation since the 1982-1983 academic year by assessed pupil valuations

Assessed Pupil Valuations	Number	Mean	S.D.
49,999 and below	17	2.00	2.33
50,000-99,999	12	1.42	1.83
100,000-149,999	46	2.07	1.98
150,000-199,999	39	1.31	2.12
200,000-249,999	25	1.12	1.54
250,000-299,999	9	2.56	1.95
300,000 +	11	1.64	1.13
All	159	1.67	1.93

Table 16. Analysis of variance of change in total semester credits required for graduation since the 1982-1983 academic year by assessed pupil valuation

Sources of Variation	df	Mean Squares	F-Value
Assessed Pupil Valuations	6	5.1208	1.0646
Residual	152	4.8099	

Hypothesis three

The hypothesis that there will be no significant difference in change of total semester credits required for graduation since the 1982-1983 academic year based on student achievement was tested using a single classification analysis of variance procedure. The analysis produced no significant differences ($F(6,143) = 1,7532$, $p < .11$). The Duncan procedure showed differences at the .05 level of Stanine 5 from Stanines 4 and 7. The means of the various achievement rankings are shown in Table 17 and the results of the analysis of variance are shown in Table 18.

Table 17. Change in total semester credits requirement for graduation since the 1982-1983 academic year by student achievement based on 1982-1983 Iowa Tests of Educational Development

Stanines	Achievement Rankings	Number	Mean	S.D.
1/2	1 - 12	12	1.83	1.99
3	13 - 25	13	1.77	1.50
4	26 - 39	19	2.68	1.93
5	40 - 61	44	1.25	1.49
6	62 - 77	26	1.58	2.15
7	78 - 89	17	2.71	1.99
8/9	90 - 98	19	1.32	1.56
All		150	1.75	1.84

Table 18. Analysis of variance of change in total semester credits requirement for graduation since the 1982-1983 academic year by student achievement based on 1982-1983 Iowa Tests of Educational Development

Sources of Variation	df	Mean Squares	F-Value
Student Achievement-- ITED Rankings	6	8.1366	1.7532
Residual	143	4.6409	

Hypothesis four

A single classification analysis of variance procedure was used to test the hypothesis that there is no significant difference in change of total semester credits required for graduation since the 1982-1983 academic year based on population density. The analysis produced no significant differences ($F(1,167) = 1.0399$, $p < .31$). The means for the change in

total semester credits are shown in Table 19 and the results of the analysis of variance are shown in Table 20.

Table 19. Change in total semester credits requirement for graduation since the 1982-1983 academic year by population density

Population	Number	Mean	S.D.
Rural	103	1.57	1.92
Urban	66	1.92	1.95
All	169	1.71	1.93

Table 20. Analysis of variance of change in total semester credits requirement for graduation since the 1982-1983 academic year by population density

Sources of Variation	df	Mean Squares	F-Value
Population Density	1	5.0839	1.0399
Residual	167	4.8899	

Hypothesis five

The hypothesis that there will be no difference in number of total semester credits required for graduation based on student population was tested using a single classification of analysis of variance procedure. The analysis produced no significant differences ($F(2,155) = 1.6762$, $p < .19$). The means for the total semester credits for graduation are shown in Table 21 and the results of the analysis of variance are shown in Table 22.

Table 21. Total semester credits requirement for graduation by student population

District Size	Number	Mean	S.D.
Small	54	38.85	2.98
Mid-Size	48	38.06	2.54
Large	56	37.68	4.17
All	158	38.20	3.36

Table 22. Analysis of variance for total semester credits for graduation by student population

Sources of Variation	df	Mean Squares	F-Value
Student Population of District	2	18.7826	1.6762
Residual	155	11.2055	

Hypothesis six

A single classification analysis of variance procedure was used to test the hypothesis that there were no significant differences in number of total semester credits required for graduation based on assessed valuation per student in the school district. The analysis produced no significant differences ($F(6,142) = 0.8193$, $p < .56$). The means for the total semester credits for graduation by assessed valuation per student are shown in Table 23 and the results of the analysis of variance are shown in Table 24.

Table 23. Total semester credits requirement for graduation by assessed valuation per student

Group Number	Assessed Valuation Per Pupil	Number	Mean	S.D.
1	1- 49,999	16	39.06	3.53
2	50,000- 99,999	10	38.50	1.72
3	100,000-149,999	44	38.07	3.45
4	150,000-199,999	35	37.46	3.35
5	200,000-249,999	24	38.46	3.27
6	250,000-299,999	9	38.33	1.87
7	300,000 +	11	38.24	3.33
All		149	38.24	3.23

Table 24. Analysis of variance for total semester credits for graduation by assessed valuation per pupil

Sources of Variation	df	Mean Squares	F-Value
Assessed Pupil Valuations	6	51.8867	0.8193
Residual	142	1498.7644	

Hypothesis seven

The hypothesis that there will be no difference in number of total semester credits required for graduation based on student achievement was tested using a single classification of analysis of variance procedure. Student achievement was based on the 1982-1983 percentage rankings of the Iowa Tests of Educational Development (ITED). Districts were classified into seven groups using stanine scores for each district and combining 1 and 2 and 8 and 9 using Iowa norms only. The analysis produced no

significant differences ($F(6,133) = .6172$, $p < .72$). The means for the total semester credits for graduation by student achievement are shown in Table 25 and the results of the analysis of variance are shown in Table 26.

Table 25. Total semester credits requirement for graduation by student achievement

Stanines	Achievement Rankings	Number	Mean	S.D.
1/2	1 - 12	12	38.67	2.57
3	13 - 25	11	39.00	2.05
4	26 - 39	19	38.42	2.27
5	40 - 61	41	37.83	2.88
6	62 - 77	24	38.42	4.37
7	78 - 89	16	39.25	3.73
8/9	90 - 98	17	37.53	4.42
All		140	38.30	3.33

Table 26. Analysis of variance for total semester credits for graduation by student achievement

Sources of Variation	df	Mean Squares	F-Value
Student Achievement-- ITED Rankings	6	6.9754	.6172
Residual	133	11.3016	

Hypothesis eight

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in number of total semester credits required for graduation based on population density (rural/urban definition). Rural districts in this study did have a

higher average total semester credits required for graduation than did urban districts. However, this difference was not statistically significant ($F(1,156) = 2.5723$, $p < .11$). The means for the total semester credits for graduation by population density are shown in Table 27 and the results of the analysis of variance are shown in Table 28.

Table 27. Total semester credits requirement for graduation by population density

Population Density	Number	Mean	S.D.
Rural	92	38.57	2.73
Urban	66	37.68	4.04
All	158	38.20	3.35

Table 28. Analysis of variance for total semester credits for graduation by population density

Sources of Variation	df	Mean Squares	F-Value
Population Density	1	28.7844	2.5723
Residual	156	11.1900	

Hypothesis nine

The hypothesis that there will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on student population in the district was tested

using the single classification of analysis of variance procedure for each curricular area. The hypothesis was rejected in the area of science at the .05 level of significance ($F(2,176) = 3.6745$, $p < .03$). Both the Scheffe and Duncan Procedures indicated that the large districts were significantly different from the mid-size districts at the .05 level. The analysis of variance produced no significant differences in any other areas. The means for the change in semester credits by area and the results of the analysis of variance are shown in Table 29.

Hypothesis ten

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computer education, consumer education, fine arts, or practical arts based on assessed valuation per student in the district. No significant differences were found in any of the areas. In addition, there was no significant difference in the number of semester credits in required subjects or in elective subjects. The means for the change in semester credits by levels of assessed valuation per student and the results of the analysis of variance are shown in Table 30.

Hypothesis eleven

The hypothesis that there will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics,

Table 29. Change in required semester credits for graduation since the 1982-1983 academic year by area and student population

Area	Means				F Ratio	F Prob.
	All	Small Dist.	Mid-Size Dist.	Large Dist.		
English/ Language Arts	0.37	0.38	0.36	0.37	0.01	.99
Social Studies	0.26	0.31	0.19	0.29	0.41	.66
Science	0.40	0.36	0.22	0.61	3.67*	.03
Mathematics	0.59	0.57	0.53	0.66	0.31	.73
Foreign Language	0.01	0.03	0.00	0.00	0.97	.38
Health	0.04	0.03	0.03	0.07	0.54	.58
Computers	0.16	0.15	0.10	0.22	0.59	.56
Consumer Educ.	0.04	0.05	0.03	0.03	0.12	.88
Fine Arts	0.01	-0.03	0.00	0.05	2.13	.12
Practical Arts	0.07	0.11	0.02	0.08	1.11	.33
Required Subjects	1.97	2.03	1.51	2.37	1.85	.16
Elective Subjects	-0.22	-0.11	-0.12	-0.43	0.35	.71

*Significant at the .05 level, N = 178.

Table 30. Change in required semester credits for graduation since the 1982-1983 academic year by area and assessed valuation per student[a]

Area	Means							F Ratio	F Prob.
	1[b]	2	3	4	5	6	7		
English/ Language Arts	0.22	0.25	0.30	0.33	0.19	0.55	0.92	1.70	.12
Social Studies	0.33	-0.08	0.30	0.09	0.04	0.67	0.58	1.93	.08
Science	0.44	0.50	0.55	0.23	0.19	0.67	0.17	1.39	.22
Mathematics	0.72	0.50	0.74	0.37	0.35	1.33	0.58	1.92	.08
Foreign Language[c]	0.05	0.00	0.00	0.00	0.00	0.00	0.00	1.40	.22
Health	0.05	0.00	0.02	0.07	0.08	0.11	0.00	0.60	.73
Computers	0.11	0.00	0.30	0.09	0.12	0.00	0.17	0.76	.60
Consumer Education	0.00	0.00	0.06	0.02	0.00	0.00	0.00	0.84	.54
Fine Arts[c]	0.00	0.08	0.04	0.00	0.00	0.00	0.00	0.97	.45
Practical Arts	0.11	0.17	0.11	0.09	0.00	0.00	0.08	0.81	.56
Required Subjects	2.29	1.58	2.33	1.43	0.88	3.33	2.58	1.64	.14
Elective Subjects	-0.35	-0.17	-0.33	-0.08	0.44	-0.89	-0.45	0.61	.72

[a]N = 159.

[b]Key - Assessed valuation per student levels
1 - 1-49,999
2 - 50,000-99,999
3 - 100,000-149,999
4 - 150,000-199,999
5 - 200,000-249,999
6 - 250,000-299,999
7 - 300,000 +

[c]Inadequate sample.

foreign language, health, computer education, consumer education, fine arts, or practical arts based on student achievement was tested using a single analysis of variance procedure. No significant differences were found in any of the areas. There was a significant difference at the .05 level in the area of required subjects ($F(6,147) = 2.6996$, $p < .02$). The means for the change in semester credits for districts grouped by student achievement and the results of the analysis of variance are shown in Table 31.

Hypothesis twelve

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in change of required semester credits for graduation since the 1982-1983 academic year in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computer education, consumer education, fine arts, or practical arts based on population density. The hypothesis was rejected in the area of science at the .05 level of significance ($F(1,175) = 4.9029$, $p < .03$). The analysis produced no significant differences in any other areas. There was significant difference at the .01 level in the area of required subjects ($F(1,169) = 10.8436$, $p < .01$). The means for the change in semester credits by area and the results of the analysis of variance are shown in Table 32.

Hypothesis thirteen

The hypothesis that there will be no difference in number of required semester credits for graduation in the areas of English/language arts,

Table 31. Change in required semester credits for graduation since the 1982-1983 academic year by area and Iowa student achievement measured by 1982-1983 ITED percentile rankings

Area	Means							F Ratio	F Prob.
	1/2[a]	3	4	5	6	7	8/9		
English/ Language Arts	0.17	0.38	0.62	0.34	0.23	0.45	0.30	0.87	.52
Social Studies	0.08	0.46	0.52	0.32	0.31	0.45	0.05	1.03	.41
Science	0.25	0.46	0.43	0.32	0.38	0.90	0.25	1.76	.11
Mathematics	0.42	0.69	1.00	0.36	0.42	0.95	0.45	2.06	.06
Foreign Language[b]	0.00	0.00	0.00	0.00	0.00	0.10	0.00	1.17	.33
Health	0.00	0.00	0.00	0.02	0.08	0.15	0.10	1.49	.18
Computers	0.17	0.00	0.05	0.23	0.23	0.15	0.15	0.41	.87
Consumer Education	0.08	0.08	0.00	0.04	0.00	0.05	0.00	1.50	.18
Fine Arts[b]	0.00	0.00	0.00	0.04	0.00	0.05	0.00	0.96	.45
Practical Arts	0.08	0.00	0.19	0.09	0.00	0.05	0.10	0.74	.62
Required Subjects	1.33	2.08	2.95	1.75	1.42	3.47	1.25	2.70*	.02
Elective Subjects	0.50	-0.31	-0.37	-0.43	0.15	-0.53	0.05	0.54	.78

[a]Key - Iowa achievement percent rankings from 1982-1983 ITED percentiles
1/2 - 1 - 12
3 - 13 - 25
4 - 26 - 39
5 - 40 - 61
6 - 62 - 77
7 - 78 - 89
8/9 - 90 - 98

[b]Inadequate sample.

*Significant at the .05 level, N = 154.

Table 32. Change in required semester credits for graduation since the 1982-1983 academic year by area and population density

Area	Means		F Ratio	F Prob.
	Rural	Urban		
English/ Language Arts	0.34	0.42	0.57	.45
Social Studies	0.25	0.30	0.17	.68
Science	0.29	0.56	4.90*	.03
Mathematics	0.54	0.68	0.90	.34
Foreign Language	0.02	0.00	0.67	.41
Health	0.03	0.07	1.75	.19
Computers	0.13	0.20	0.50	.48
Consumer Education	0.05	0.03	0.40	.53
Fine Arts	-0.02	0.04	3.15	.08
Practical Arts	0.08	0.07	0.01	.93
Required Subjects	1.73	2.32	10.84**	.01
Elective Subjects	-0.06	-0.47	2.38	.12

*Significant at the .05 level, N = 177.

**Significant at the .01 level, N = 171.

social studies, science, mathematics, foreign language, health, computer education, consumer education, fine arts, or practical arts based on student population in the district was tested using a single classification of analysis procedure. The hypothesis was rejected at the .05 level in the areas of English/language arts ($F(2,173) = 3.6143$, $p < .03$), and computer education ($F(2,27) = 3.9034$, $p < .03$). It was also rejected at the .01 level in the areas of science ($F(2,172) = 5.5403$, $p < .01$) and mathematics ($F(2,172) = 5.6100$, $p < .01$). Required subjects was also significant at the .01 level ($F(2,169) = 6.5393$, $p < .01$). It should be noted that some form of computer education was required in only 28 districts which makes a very small sample. There were marked differences in most areas between the small and large districts with the small districts requiring more semester credits in almost every area than the large districts. Despite these differences, the analysis produced no significant differences for the rest of the areas. The means for the different areas by student population size and the results of the analysis of variance are shown in Table 33.

Table 34 shows a comparison of the required semester credits from the Iowa school districts in this study and the 1984 averages for the United States from 46 states. The Iowa school districts in this study exceed the national average in social studies and science but were a semester under in language arts and slightly under for mathematics. Also included in the table are results of a 1983 Iowa study by Albrecht and Duea (4). All areas in this study showed gains over that study.

Table 33. Required semester credits for graduation, 1985-1986, by area and school district student population

Area	Means				F Ratio	F Prob.
	All	Small Dist.	Mid-Size Dist.	Large Dist.		
English/ Language Arts	6.91	7.08	6.98	6.65	3.51*	.03
Social Studies	5.86	6.00	5.91	5.72	1.03	.36
Science	3.86	4.00	4.03	3.54	5.54**	.01
Mathematics	3.90	4.10	4.05	3.54	5.61**	.01
Foreign Language[a]						
Health	1.20	1.22	1.13	1.25	0.12	.89
Computers	0.97	1.13	1.00	0.50	3.90*	.03
Consumer Education	1.14	1.00	1.33	1.00	0.64	.54
Fine Arts	2.00	3.33	1.67	1.50	1.20	.38
Practical Arts	1.71	1.92	1.50	1.33	0.97	.39
Required Subjects	23.47	24.57	23.84	22.00	6.54**	.01
Elective Subjects	14.86	14.38	14.48	15.71	1.81	.17

[a]Inadequate sample.

*Significant at the .05 level, N = 174, English/language arts; N = 28, Computers.

**Significant at the .01 level, N = 174.

Table 34. Comparison of required semester credits for graduation

Subjects	1985 Iowa Study	1983 Iowa Study[a]	1984 National Report[b]
Total	38.3		38.6
Language Arts	6.9	6.4	7.6
Social Studies	5.9	5.5	4.8
Mathematics	3.9	3.3	4.2
Science	3.9	3.4	3.8

[a]4, p. 211.

[b]85, p. 1.

Hypothesis fourteen

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in number of required semester credits for graduation in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computer education, consumer education, fine arts, or practical arts based on assessed valuation per student in the district. No significant differences were found for any area. The means for the required semester credits for graduation by area and by levels of assessed valuation per student are shown in Table 35.

Hypothesis fifteen

The hypothesis that there will be no difference in number of required semester credits for graduation in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computer education, consumer education, fine arts, or practical arts based on student achievement was tested using a single classification of analysis procedure. No significant differences were found for any area. The means for the required semester credits by area and by pupil achievement are shown in Table 36.

Hypothesis sixteen

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in number of required semester credits for graduation in the areas of English/language arts, social studies, science, mathematics, foreign language, health, computers, consumer education, fine arts, or practical arts based on population density. The

Table 35. Required semester credits for graduation, 1985-1986, by area and assessed valuation per student in school district[a]

Area	Means							F Ratio	F Prob.
	1[b]	2	3	4	5	6	7		
English/ Language Arts	7.28	6.45	6.66	7.00	6.77	7.00	7.33	2.10	.06
Social Studies	5.89	6.00	5.81	5.93	5.69	6.33	6.00	0.47	.83
Science	4.11	3.82	3.66	3.80	3.96	4.22	4.00	0.95	.46
Mathematics	4.11	3.64	3.79	3.78	3.88	4.22	4.33	0.89	.50
Foreign Language[c]	3.00	0.00	0.00	0.00	0.00	0.00	0.00		
Health	1.20	2.40	1.00	0.89	0.83	1.00	1.33	1.12	.37
Computers	1.00	0.50	1.13	1.00	1.33	0.00	0.96	2.04	.13
Consumer Education	1.00	1.00	1.00	2.50	1.00	0.00	1.00	1.94	.17
Fine Arts[c]	2.00	1.00	2.00	1.00	6.00	0.00	2.00		
Practical Arts	2.00	1.33	1.60	1.50	6.00	1.00	1.00	1.77	.17
Required Subjects	24.67	21.82	22.78	23.25	23.00	24.44	25.83	1.64	.14
Elective Subjects	13.94	17.30	15.48	14.63	15.43	13.89	14.09	1.09	.37

[a]N = 149.

[b]Key - Assessed valuation per student levels
1 - 1-49,999
2 - 50,000-99,999
3 - 100,000-149,999
4 - 150,000-199,999
5 - 200,000-249,999
6 - 250,000-299,999
7 - 300,000 +

[c]Inadequate sample.

Table 36. Required semester credits for graduation, 1985-1986, by area and Iowa student achievement measured by 1982-1983 ITED percentile rankings[a]

Area	Means							F Ratio	F Prob.
	1/2[b]	3	4	5	6	7	8/9		
English/ Language Arts	6.58	6.92	7.05	6.84	6.77	7.40	6.95	1.37	.23
Social Studies	5.58	6.17	6.05	6.09	5.62	6.00	5.70	1.04	.40
Science	3.67	4.08	3.75	3.78	3.73	4.15	3.90	0.80	.57
Mathematics	3.50	4.08	4.15	3.91	4.04	4.10	3.70	0.85	.53
Foreign Language[c]	0.00	0.00	0.00	0.00	0.00	2.00	0.00		
Health	1.50	1.33	0.75	1.20	2.40	0.88	1.00	1.12	.38
Computers	1.00	1.00	1.00	0.78	0.75	1.20	1.00	0.84	.56
Consumer Education	1.00	1.00	1.00	1.00	2.50	1.20	1.00	1.79	.18
Fine Arts[c]	0.00	0.00	0.00	2.33	0.00	1.50	0.00	0.56	.48
Practical Arts	1.33	2.00	1.50	1.50	6.00	1.50	1.80	0.79	.59
Required Subjects	24.00	24.75	22.80	23.48	22.00	24.95	23.42	1.34	.25
Elective Subjects	14.67	14.73	14.74	14.25	16.58	15.00	13.76	0.94	.47

[a]N = 140.

[b]Key - Iowa achievement percent rankings from 1982-1983 ITED percentiles
1/2 - 1 - 12
3 - 13 - 25
4 - 26 - 39
5 - 40 - 61
6 - 62 - 77
7 - 78 - 89
8/9 - 90 - 98

[c]Inadequate sample.

hypothesis was rejected at the .05 level in the areas of English/language arts ($F(1,172) = 4.9360$, $p < .03$) and computers ($F(1,26 = 5.8431$, $p < .02$). The hypothesis was rejected at the .01 level in the areas of science ($F(1,172) = 13.0686$, $p < .91$), mathematics ($F(1,171) = 11.0113$, $p < .01$), and required subjects ($(1,169) = 10.8436$, $p < .01$). No significant differences were found in the other areas. The means for the required semester credits by area and rural/urban definition and the results of the analysis of variance are shown in Table 37.

Table 37. Required semester credits for graduation, 1985-1986, by area and population density

Area	Means		F Ratio	F Prob.
	Rural	Urban		
English/ Language Arts	7.03	6.71	4.94*	.03
Social Studies	5.96	5.75	1.55	.22
Science	4.06	3.57	13.07**	.01
Mathematics	4.10	3.59	11.06**	.01
Foreign Language[a]	3.00	0.00		
Health	1.05	1.30	0.72	.40
Computers	1.10	0.57	5.84*	.02
Consumer Education	0.80	1.00	0.65	.43
Fine Arts	2.60	1.67	0.62	.46
Practical Arts	1.75	1.63	0.90	.35
Required Subjects	24.26	22.24	10.84**	.01
Elective Subjects	14.46	15.47	2.38	.12

[a]Inadequate sample.

*Significant at the .05 level, N = 173 - English/language arts, 27 - computers.

**Significant at the .01 level, N = 171 - mathematics, 170 - required subjects.

Hypothesis seventeen

The hypothesis that there will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on the size of student population in the districts was tested using a single classification of analysis procedure. No significant differences were found. Assessment of need by administration was given the highest ranking by all respondents. Neither the national reports nor the Iowa FINE Report was indicated as a strong factor in the decision to change graduation requirements. The means of the responses to the stated reasons based on a scale of 1 indicating little impact to 5 indicating much impact and the results of the analysis of variance are shown in Table 38.

Table 38. Stated reasons by superintendents for graduation requirement change since the 1982-1983 academic year by school district student population[a]

Reason	Means			F Ratio	F Prob.
	Small Dist.	Mid-Size Dist.	Large Dist.		
National Reports	2.50	2.27	2.88	1.93	.15
Iowa FINE Report	2.51	2.37	2.41	0.14	.87
Assessment of Need by Administration	4.33	4.35	4.40	0.12	.89
Assessment of Need by Curr. Comm.	3.00	3.52	3.50	1.76	.18
Assessment of Need by Board of Educ.	3.23	3.52	3.26	0.68	.51
Assessment of Need by Faculty	3.61	3.77	3.93	0.98	.38

[a]N = 109.

Hypothesis eighteen

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on assessed valuation per student in the district. The hypothesis was rejected at the .05 level for assessment of need by administration ($F(6,99) = 2.2831$, $p < .04$). The analysis produced no significant differences for any of the other areas. Assessment of need by administration was also given the highest ranking by all respondents. The means of the responses to the stated reasons based on a scale of 1 indicating little impact to 5 indicating much impact and the results of the analysis of variance are shown in Table 39.

Hypothesis nineteen

The hypothesis that there will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on student achievement as measured by the 1982-1983 Iowa Tests of Educational Development was tested using a single classification of analysis procedure. The analysis produced no significant differences. Assessment of need by administration followed by assessment of need by faculty was chosen by most respondents. The means of the responses to the stated reasons based on a scale of 1 indicating little impact to 5 indicating much impact and the results of the analysis of variance are shown in Table 40.

Table 39. Stated reasons by superintendents for graduation requirement change since the 1982-1983 academic year by assessed valuation per pupil

Reason	Means							F Ratio	F Prob.
	1[a]	2	3	4	5	6	7		
National Reports	2.25	3.14	2.57	2.86	3.22	2.43	1.75	1.33	.25
Iowa FINE Report	2.64	3.33	2.40	2.46	3.00	2.25	1.88	1.28	.28
Assessment of need by Administration	4.64	3.83	4.15	4.61	4.22	4.63	4.13	2.28*	.04
Assessment of need by Curr. Committee	3.27	3.83	3.50	3.44	3.44	2.71	3.22	0.50	.81
Assessment of need by Board of Educ.	3.10	3.33	3.13	3.41	3.80	3.13	3.13	0.66	.68
Assessment of need by Faculty	3.40	3.80	3.88	3.75	3.70	3.50	4.25	0.64	.70

[a]Key - Assessed valuation per student levels
1 - 1-49,999
2 - 50,000-99,999
3 - 100,000-149,999
4 - 150,000-199,999
5 - 200,000-249,999
6 - 250,000-299,999
7 - 300,000 +

*Significant at the .05 level, N = 95.

Table 40. Stated reasons by superintendents for graduation requirement change since the 1982-1983 academic year by Iowa student achievement measured by 1982-1983 ITED percentile rankings[a]

Reason	Means							F Ratio	F Prob.
	1/2[b]	3	4	5	6	7	8/9		
National Reports	2.43	3.00	2.47	2.52	2.88	3.15	2.08	0.93	.48
Iowa FINE Report	2.14	3.00	2.29	2.45	2.41	3.00	2.17	0.95	.46
Assessment of Need by Administration	3.88	4.78	4.44	4.35	4.21	4.64	4.36	1.44	.21
Assessment of Need by Curr. Committee	2.43	4.00	3.13	3.54	3.29	3.50	3.41	1.23	.30
Assessment of Need by Board of Educ.	3.13	3.33	3.67	3.14	3.53	3.43	3.35	0.56	.76
Assessment of Need by Faculty	3.78	3.67	3.33	3.68	3.94	4.00	4.18	0.99	.44

[a]N = 106.

[b]Key - Iowa achievement percent rankings from 1982-1983 ITED percentiles
1/2 - 1 - 12
3 - 13 - 25
4 - 26 - 39
5 - 40 - 61
6 - 62 - 77
7 - 78 - 89
8/9 - 90 - 98

Hypothesis twenty

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in the perceptions of superintendents as to stated motivations for graduation requirement change since the 1982-1983 academic year based on population density. The hypothesis was rejected at the .05 level for assessment of need by faculty ($F(1,108) = 3.8182$, $p < .05$). The analysis produced no significant differences for the other stated reasons. Assessment of need by administration was given the highest ranking by all respondents with national reports and the Iowa FINE report given very little support by either rural or urban superintendents. The means of the responses to the stated reasons based on a scale of 1 indicating little impact to 5 indicating much impact and the results of the analysis of variance are shown in Table 41.

Table 41. Stated reasons by superintendents for graduation requirement change since the 1982-1983 academic year by population density

Reason	Means		F Ratio	F Prob.
	Rural	Urban		
National Reports	2.40	2.83	2.66	.11
Iowa FINE Report	2.44	2.45	0.00	.96
Assessment of need by Administration	4.31	4.44	0.87	.35
Assessment of need by Curr. Committee	3.19	3.46	1.08	.30
Assessment of need by Board of Educ.	3.30	3.31	0.00	.96
Assessment of need by Faculty	3.60	3.98	3.82*	.05

*Significant at the .05 level, N = 109.

Hypothesis twenty-one

The hypothesis that there will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on student body population in the districts was tested using a single classification of analysis procedure. The hypothesis was rejected in the area of increase in number of course offerings at the .05 level ($F(2,57) = 8.3524$, $p < .03$). The hypothesis was also rejected in the area of administrative decision at the .01 level ($F(2,61) = 9.1436$, $p < .01$). The analysis produced no significant differences in the other areas. A total of 11 FTE (Full Time Equivalent) teachers were added in 17 small schools indicating part-time positions. Sixteen FTE teachers were added in mid-size schools and 40 teachers were added in 36 large schools. The means of responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 42.

Hypothesis twenty-two

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on assessed valuation per student of the district. The hypothesis was rejected in the area of increase in number of students at the .01 level ($F(6,51) = 7.6126$, $p < .01$), and administrative decision at the .01 level ($F(6,52) = 6.6307$, $p < .01$). The analysis produced no significant differences in the other areas. Districts with assessed

Table 42. Stated motivations for faculty additions to the secondary staff since the 1982-1983 academic year by student population

Reason	Means: Small Dist.	Means: Mid-Size Dist.	Means: Large Dist.	F Ratio	F Prob.
Increase in graduation requirements	2.29	2.14	2.40	0.14	.87
Increase in number of course offerings	3.63	2.43	2.43	3.65*	.03
Increase in number of students	1.94	2.62	3.09	2.55	.09
Student course choices	3.31	2.63	3.44	1.45	.24
Administrative decision	4.29	3.88	3.06	4.76**	.01
Board of education decision	3.94	3.59	3.00	2.62	.08

*Significant at the .05 level, N = 59.

**Significant at the .01 level, N = 63.

valuations per student between 100,000 and 199,999 added 49 percent of the added faculty, 43 FTE (Full Time Equivalent) or 1.10 teacher per district. The means of responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 43.

Hypothesis twenty-three

The hypothesis that there will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on student achievement was tested using a single classification of analysis procedure. The hypothesis was rejected in the area of increase in graduation requirements at the .05 level ($F(6,46) = 2.3841$, $p < .04$). The analysis produced no significant differences in any of the other areas. Sixty-one districts added 51 FTE (Full Time Equivalent) faculty positions for less than a full-time position in each district. The means of responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 44.

Hypothesis twenty-four

A single classification analysis of variance procedure was used to test the hypothesis that there will be no difference in stated motivations for faculty additions to the secondary school since the 1982-1983 academic year based on population density. The hypothesis was rejected in the area of administrative decision at the .05 level ($F(1,62) = 5.1035$, $p < .03$). The analysis produced no significant differences in any of the

Table 43. Stated motivations for faculty additions to the secondary staff since the 1982-1983 academic year by assessed valuation per pupil

Reason	Means							F Ratio	F Prob.
	1[a]	2	3	4	5	6	7		
Increase in graduation requirements	2.86	1.75	1.75	2.93	2.25	1.67	3.75	2.07	.07
Increase in number of course offerings	3.71	1.75	2.38	3.20	3.25	3.33	3.33	1.59	.17
Increase in number of students	3.14	3.11	2.24	3.73	1.50	1.00	1.00	3.16**	.01
Student course choices	2.57	3.63	3.06	3.21	3.71	3.00	3.75	0.49	.81
Administrative decision	3.00	1.88	3.79	3.43	4.25	5.00	4.75	3.88**	.01
Board of education decision	2.25	2.89	3.33	3.53	4.00	4.67	3.33	1.48	.20

[a]Key - Assessed valuation per student levels
1 - 1-49,999
2 - 50,000-99,999
3 - 100,000-149,999
4 - 150,000-199,999
5 - 200,000-249,999
6 - 250,000-299,999
7 - 300,000 +

**Significant at the .01 level, N = 57 for increase in number of students, 58 for administrative decision.

Table 44. Stated motivations for faculty additions to the secondary staff since the 1982-1983 academic year by Iowa student achievement measured by 1982-1983 ITED percentile ranks

Reason	Means							F Ratio	F Prob.
	1/2[a]	3	4	5	6	7	8/9		
Increase in graduation requirements	1.75	3.50	1.31	2.82	2.67	2.80	2.13	2.38*	.04
Increase in number of course offerings	2.67	2.20	2.46	2.83	2.67	2.60	3.38	0.38	.89
Increase in number of students	2.50	2.25	2.54	2.00	3.50	2.80	3.25	0.80	.58
Student course choices	3.67	4.00	2.54	2.91	2.75	3.17	4.13	1.31	.27
Administrative decision	4.50	4.00	4.08	3.77	3.33	3.67	3.13	0.70	.65
Board of education decision	4.00	3.20	3.58	3.78	3.43	3.86	3.33	0.26	.95

[a]Key - Iowa achievement percent rankings from 1982-1983 ITED percentiles
1/2 - 1 - 12
3 - 13 - 25
4 - 26 - 39
5 - 40 - 61
6 - 62 - 77
7 - 78 - 89
8/9 - 90 - 98

*Significant at the .05 level, N = 52.

other areas. Thirty-two rural school districts added 19 FTE (Full Time Equivalent) teachers indicating the addition of part-time positions. Forty-one urban school districts added 21 FTE teachers also indicating part-time positions. The means of the responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 45.

Table 45. Stated motivations for faculty additions to the secondary staff since the 1982-1983 academic year by population density

Reasons	Means		F Ratio	F Prob.
	Rural	Urban		
Increase in graduation requirements	2.15	2.44	0.57	.45
Increase in number of course offerings	3.15	2.42	3.24	.08
Increase in number of students	2.23	3.03	3.35	.07
Student course choices	3.07	3.31	0.34	.56
Administrative decision	4.03	3.23	5.10*	.03
Board of education decision	3.75	3.08	3.48	.07

*Significant at the .05 level, N = 63.

Hypothesis twenty-five

The hypothesis that there will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on student body population of the district was tested using a single classification of analysis procedure. The analysis produced no

significant differences in any of the stated motivations. The item marked by most respondents as the most important was in the area of student decrease (4.27) followed by finances (3.78) and administrative decision (3.42). The means of the responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 46.

Table 46. Stated motivations for faculty decreases to the secondary staff since the 1982-1983 academic year by student population[a]

Reason	Means: Small Dist.	Means: Mid-Size Dist.	Means: Large Dist.	F Ratio	F Prob.
Graduation requirements change	1.22	1.58	1.49	0.60	.55
Course offerings decrease	1.67	1.69	1.63	0.01	.99
Student decrease	4.56	4.17	4.15	0.92	.40
Student course choices	2.86	2.76	3.49	1.68	.19
Administrative decision	3.45	3.50	3.37	0.06	.94
Board of education decision	3.18	3.53	2.89	1.04	.36
Finances	4.08	3.96	3.49	1.33	.27

[a]N = 88.

Hypothesis twenty-six

A single classification of analysis of variance procedure was used to test the hypothesis that there will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on assessed valuation per student. The analysis produced no

significant differences in any of the stated motivations. Student decreases accounted for the greatest overall motivation (4.23) followed by finances (3.74) and administrative decision (3.39). This is a logical progression as the Iowa state funding formula is based partly on the number of students enrolled. The means of the responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 47.

Hypothesis twenty-seven

The hypothesis that there will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on student achievement was tested using a single classification of analysis procedure. The analysis produced no significant differences in any of the stated motivations. The respondents marked student decreases (4.35) as the greatest overall motivation followed by finances (3.83) and administrative decision (3.43). The means of the responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 48.

Hypothesis twenty-eight

A single classification of analysis of variance procedure was used to test the hypothesis that there will be no difference in stated motivations for faculty deletions to the secondary school since the 1982-1983 academic year based on population density. The analysis produced no significant differences in any of the stated motivations. Student decreases showed

Table 47. Stated motivations for faculty decreases to the secondary staff since the 1982-1983 academic year by assessed valuation per student[a]

Reason	Means							F Ratio	F Prob.
	1[b]	2	3	4	5	6	7		
Graduation requirements change	1.83	1.33	1.37	1.50	1.14	1.00	1.60	0.40	.88
Course offerings decrease	1.67	1.67	1.89	1.23	1.57	1.67	1.40	0.36	.90
Student decrease	4.33	3.67	4.00	4.71	4.64	3.40	4.00	1.37	.24
Student course choices	3.22	4.00	3.52	2.86	2.89	2.60	2.50	0.81	.56
Administrative decision	4.14	3.33	3.43	3.63	3.00	3.40	2.20	1.13	.36
Board of education decision	3.71	2.83	3.05	3.06	3.00	3.25	2.67	0.29	.94
Finances	4.50	2.67	3.67	3.47	4.07	4.00	3.86	1.03	.43

[a]N = 81.

[b]Key - Assessed valuation per student levels
1 - 1-49,999
2 - 50,000-99,999
3 - 100,000-149,999
4 - 150,000-199,999
5 - 200,000-249,999
6 - 250,000-299,999
7 - 300,000 +

Table 48. Stated motivations for faculty decreases to the secondary staff since the 1982-1983 academic year by Iowa student achievement measured by 1982-1983 ITED percentile ranks[a]

Reason	Means							F Ratio	F Prob.
	1/2[b]	3	4	5	6	7	8/9		
Graduation requirements change	1.00	2.33	1.14	1.25	1.47	1.50	1.44	0.75	.61
Course offerings decrease	3.00	3.00	1.75	1.38	1.69	1.00	1.89	1.24	.30
Student decrease	5.00	4.50	4.44	3.90	4.63	4.60	4.15	1.05	.40
Student course choices	2.50	4.00	2.33	2.75	3.25	3.78	3.70	1.25	.29
Administrative decision	3.75	4.33	4.00	3.35	3.00	3.13	3.64	0.84	.54
Board of education decision	3.75	4.00	3.25	2.83	2.87	3.25	3.09	0.47	.83
Finances	3.60	3.50	4.56	3.76	3.27	4.31	3.82	0.95	.47

[a]N = 78.

[b]Key - Iowa achievement percent rankings from 1982-1983 ITED percentiles
1/2 - 1 - 12
3 - 13 - 25
4 - 26 - 39
5 - 40 - 61
6 - 62 - 77
7 - 78 - 89
8/9 - 90 - 98

the greatest overall importance (4.28) followed by finances (3.77) and administrative decision (3.42). The means of the responses to the stated motivations based on a scale of 1 indicating little emphasis to 5 indicating much emphasis and the results of the analysis of variance are shown in Table 49.

Table 49. Stated motivations for faculty decreases to the secondary staff since the 1982-1983 academic year by population density[a]

Reason	Means		F Ratio	F Prob.
	Rural	Urban		
Graduation requirements change	1.32	1.50	0.51	.48
Course offerings decrease	1.76	1.53	0.54	.47
Student decrease	4.48	4.07	2.33	.13
Student course choices	2.97	3.35	1.00	.32
Administrative decision	3.53	3.32	0.43	.51
Board of education decision	3.31	2.90	1.38	.24
Finances	4.04	3.48	2.98	.09

[a]N = 87.

Survey Item Data

Superintendents were asked to supply data on faculty added or deleted by area and number since the 1982-1983 academic year, courses and programs added or dropped for the same period, curriculum processes, district curriculum goals, curricular content changes, and eight curricular topics

addressed by Iowa HF 686. The data are reported in the form of tables by frequency, percentages, or rankings.

Staff changes since 1982-1983 academic year

Table 50 shows staff additions as reported by superintendents since 1982. The information is given by area and FTE (Full Time Equivalent) teachers and is separated by school district student population size. The area with the greatest increase was education for the learning disabled (30.5 FTE) followed by foreign language (19.97 FTE) and mathematics (17.53 FTE).

Staff decreases are shown in Table 51 as reported by superintendents since the 1982-1983 academic year. The information is separated by school district student population size and divided by areas with the data given by the number of districts reporting and by FTE (Full Time Equivalent) teachers. The area experiencing the largest decrease in personnel was practical arts (51.4 FTE) followed by social studies (28.92 FTE) and English/language arts (22.23 FTE).

Course changes since 1982-1983 academic year

Courses added to the educational programming of districts since the 1982-1983 academic year are shown in Table 52. The data are given by frequency only divided by size of student population. The major areas are further divided by major components of that area. Where courses were indicated to be advanced or basic, they are listed also. The area in which the most courses were added was computer education. No attempt was made to differentiate between courses in this area as course titles varied widely.

Table 50. Secondary staff additions since the 1982-1983 academic year by district student population

Area	Total FTE	Small No.	Small FTE	Mid-Size No.	Mid-Size FTE	Large No.	Large FTE
English/Lang. Arts	13.30	3	1.30	4	3.00	12	9.00
Social Studies	8.00	1	0.50	0	0	8	7.50
Science	7.50	1	1.00	2	1.50	6	5.00
Mathematics	17.53	2	1.70	5	3.33	14	12.50
Foreign Lang.	19.97	2	0.70	3	1.17	26	18.10
Fine Arts	1.58	4	0.88	2	0.70	0	0
Practical Arts	7.70	8	6.00	2	0.70	1	1.00
Phys. Education	1.20	2	1.20	0	0	0	0
Education: learning disabled	30.50	2	2.00	13	11.00	18	17.50
Computer Educ.	2.30	3	1.30	0	0	1	1.00
Other	2.50	2	1.00	0	0	2	1.50

Table 51. Secondary staff decreases since the 1982-1983 academic year by district student population

Area	Total FTE	Small No.	Small FTE	Mid-Size No.	Mid-Size FTE	Large No.	Large FTE
English/Lang. Arts	22.23	4	2.63	9	7.10	14	12.50
Social Studies	28.92	7	5.00	7	5.22	21	18.70
Science	5.63	2	0.63	1	1.00	4	4.00
Mathematics	9.40	1	0.50	5	3.40	6	5.50
Foreign Lang.	1.80	1	0.50	0	0	2	1.30
Fine Arts	12.73	8	3.40	5	2.00	10	7.33
Practical Arts	51.40	16	6.18	11	5.02	48	40.20
Phys. Education	13.95	4	2.50	6	5.00	9	6.45
Education: learning disabled	11.25	1	1.00	3	2.25	10	8.00
Other	15.73	6	3.33	7	4.40	10	8.00

Table 52. Courses added to district educational programming since the 1982-1983 academic year

Area	Frequencies by District		
	Small	Mid-Size	Large
English/Language Arts			
Reading	3	0	4
Writing	5	7	5
Speech	3	3	6
Literature	3	4	9
Advanced	4	5	3
Basic	4	3	5
Social Studies			
History	4	4	10
Economics	1	2	4
Sociology	4	4	14
Psychology	2	0	2
Geography	2	4	0
Government	2	1	0
Advanced	0	0	2
Basic	0	4	0
Science			
Biology	4	8	2
Chemistry	4	4	4
Physics	1	1	0
Advanced	10	9	8
Basic	1	11	13
Mathematics			
Algebra	4	7	3
Geometry	1	0	2
Advanced	2	3	10
Basic	8	6	14
Foreign Language	18	10	14
Fine Arts	6	7	9
Practical Arts	57	31	49
Computer Education	62	47	47
Programs Added			
Computer Education	8	0	0
Vocational Business	3	0	0
Voc. Home Economics	3	0	0
Alternative Education	1	0	9

Table 53. Courses dropped in district educational programming since the 1982-1983 academic year

Area	Frequencies by District		
	Small	Mid-Size	Large
English/Language Arts			
Reading	1	1	4
Writing	0	5	0
Speech	3	1	0
Literature	0	0	2
Advanced	0	1	0
Basic	2	1	4
Social Studies			
History	0	1	4
Economics	0	1	0
Sociology	3	2	8
Psychology	4	2	0
Government	0	1	0
Advanced	0	1	0
Science			
Chemistry	1	0	0
Advanced	3	0	2
Basic	0	1	3
Mathematics			
Basic	4	0	3
Foreign Language	1	3	5
Fine Arts	1	0	3
Practical Arts	11	6	46
Programs Dropped			
Vocational Agriculture	1	1	1
Industrial Arts	0	3	5
French	0	1	0

Table 53 shows the courses and programs dropped from the educational programming of the school districts surveyed since the 1982-1983 academic year. The major areas are divided by components of that area and further divided by size of student population. The data are given by frequency only. Where advanced and basic courses were identified, they are shown in the table. Fewer courses were dropped than added. The practical arts area showed the most courses dropped especially in the large districts. This area also showed a large number of courses added but a substantial drop in the number of teachers available to teach these courses. This would lead one to surmise that teachers in this area have greatly increased the number of preparations they must make. Another area which might be experiencing a realignment of courses and staff is the English/language arts area where a large number of courses were added but few dropped. That area also showed a moderate increase in added staff but a larger number of staff deletions.

Curriculum process

There is no clear understanding or agreement concerning curriculum decision making. This study did not address that issue but endeavored to determine the person or personnel involved in making the curriculum decisions at this time. Table 54A shows the status of curriculum processes in the districts surveyed as perceived by 176 district superintendents. Results are shown by overall rankings for each item. Table 54B furnishes the means for each group for the process areas. Parents, community members, and students are not shown to be involved in the process in any meaningful

Table 54A. Total group rank of curriculum processes

Curriculum Processes	Board	Supt.	Curr. Comm.	Curr. Dir.	Prin.	Tot Fac.	Ind. Tchr	Prnt.	Comm.	Stu.
Determining budget requirements for curriculum	3	1	6	4	2	7	5	10	8	9
Determining curriculum areas in need of revision/improvement	7	3	2	4	1	6	5	9	10	8
Determining who will participate in curriculum planning	7	2	4	3	1	5	6	8	10	9
Determining who plans priority of school district goals	2	1	6	5	3	4	8	9	7	10
Developing/selecting goals of subject matter	7	5	3	6	2	4	1	8	10	9
Determining the sequence of learning in the K-12 curriculum	7	6	2	3	1	4	5	8	9	10
Selecting content matter of courses	7	6	2	5	3	4	1	9	10	8
Selecting sequence for content taught	7	6	2	5	3	4	1	9	10	8
Selecting textbooks and resources	7	6	2	5	3	4	1	8	10	9
Communicating with business, industry, labor, and higher education regarding their expectations for adequate student preparation	5	1	7	4	2	6	3	8	9	10

Table 54B. Curriculum processes mean rankings by superintendents

Curriculum Processes	Board	Supt.	Curr. Comm.	Curr. Dir.	Prin.	Tot Fac.	Ind. Tchr	Prnt.	Comm.	Stu.
Determining budget requirements for curriculum	3.03	1.39	4.08	3.91	2.32	4.42	4.03	8.72	7.16	7.34
Determining curriculum areas in need of revision/improvement	4.67	2.74	2.57	2.97	1.63	3.61	3.33	6.06	7.10	6.01
Determining who will participate in curriculum planning	3.92	2.10	3.46	2.90	1.68	3.54	3.89	6.51	7.27	6.79
Determining who plans priority of school district goals	2.12	1.48	4.82	4.63	2.66	4.18	5.62	5.63	5.46	6.69
Developing/selecting goals of subject matter	4.91	3.28	2.40	3.49	2.29	2.89	2.09	5.92	6.71	6.26
Determining the sequence of learning in the K-12 curriculum	4.70	3.15	2.02	2.65	1.98	2.73	3.05	6.49	7.21	6.79
Selecting content matter of courses	5.46	3.85	2.10	3.47	2.41	2.83	1.67	6.50	6.95	5.92
Selecting sequence for content taught	5.68	3.76	1.89	3.47	2.33	2.67	1.75	6.44	7.46	6.43
Selecting textbooks and resources	5.17	3.71	1.82	3.09	2.26	2.71	1.77	6.36	7.57	6.95
Communicating with business, industry, labor, and higher education regarding their expectations for adequate student preparation	3.65	1.64	4.12	3.35	1.98	3.85	2.61	5.97	6.19	7.12

manner. The principal is shown to be very involved in most processes. In only two areas, budget requirements and determining the planning of priority of school district goals is the board of education shown to have much influence. The superintendent is responsible for several areas dealing with overall planning and communication, while individual teachers and curriculum committees have much responsibility in curriculum areas concerning subject and content matter as well as textbook and resource selection. In a study by Kimpson and Anderson (88) for Minnesota schools in 1982 the findings were similar for those involved in curriculum processes.

Curriculum goals and content

Table 55 shows the status of district curriculum goals and curricular content for the districts surveyed. A large number of the districts had defined curriculum goals and content and formulated long term goals in course changes. Fewer districts indicated major changes in courses although in 104 districts it was being considered and in 103 districts major changes in content were being implemented.

Superintendent satisfaction for these topics is shown in Table 56. The rating of 5 would indicate much satisfaction, 4 considerable satisfaction and 3 moderate satisfaction, and so on. The highest ratings were in the areas of major changes in courses (3.65) and major changes in consideration of course content (3.59). The least satisfaction was expressed in the areas of goals for initial school experience (2.99) and goals for outcomes of school experience (3.14).

Table 55. District curriculum goals and curricular content

Goals/Content	Have		Have Not	
	No.	Percent	No.	Percent
Formulation of short-term goals in course changes	131	75.3	43	24.7
Formulation of long-term goals in course changes	141	81.0	33	19.0
Formulation of short-term goals in content changes	114	65.5	60	34.5
Formulation of long-term goals in content changes	109	63.4	63	36.6
Goals as outcomes of school experience	127	73.8	45	26.2
Goals as initial school experience	120	69.8	52	30.2
Definition of curriculum goals and content	150	87.7	21	12.3
Major changes in courses	112	62.6	59	34.5
Major changes in content of courses being considered	104	60.1	69	39.9
Major changes in content of courses being implemented	103	59.5	70	40.5

Table 56. Superintendent satisfaction with district curriculum goals and curricular content

Goals/Content	Means			
	Small Dist.	Mid-Size Dist.	Large Dist.	Composite
Formulation of short-term goals in course changes	3.21	3.27	3.49	3.33
Formulation of long-term goals in course changes	3.12	3.42	3.65	3.40
Formulation of short-term goals in content changes	2.93	3.04	3.50	3.18
Formulation of long-term goals in content changes	2.95	3.11	3.45	3.18
Goals for outcomes of school experience	3.00	3.26	3.18	3.14
Goals for initial school experience	2.79	3.02	3.13	2.99
Definition of curriculum goals and content	3.21	3.58	3.54	3.45
Major changes in courses	3.52	3.70	3.70	3.65
Major changes in content of courses being considered	3.42	3.61	3.71	3.59
Major changes in content of courses being implemented	3.45	3.63	3.64	3.58

Related curricular topics

The status of the surveyed curricular topics associated with Iowa HF 686 is shown in Table 57. Systematic, developmental instruction in thinking skills was either not available or under study in 47.5 percent of the districts. Learning opportunities outside the classroom were available in 85.5 percent of the districts. This study did not explore the type or depth of these experiences. Career exploration likewise was highly available (89.4 percent), but again the type or depth was not surveyed.

Time on task, not a curricular topic as such but with implications for the amount of learning possible, was not being addressed in 45.7 percent of the districts.

Vocational education availability was strong in the areas of home economics (85 percent) and business (77.4 percent) but weak in distributive education (31.8 percent) and technical education (33 percent).

Table 58 shows superintendent satisfaction with the selected curricular topics with 1 indicating little satisfaction to 5 indicating much satisfaction. No area received a composite ranking of considerable or much satisfaction. In the vocational area business (3.85), home economics (3.84) and agriculture (3.81) received the highest rankings. In other areas learning opportunities outside the classroom (3.69) and career education (3.62) were the most satisfactory with thinking skills (2.81) and time on task (2.98) receiving the least satisfaction.

Table 57. Status of related curricular topics under Iowa HF 686

Topic	Not Available		Under Study		Integrated Into Courses		Separate Programs/Courses	
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Thinking Skills	30	16.8	55	30.7	83	46.4	6	3.4
Learning Skills	16	8.9	28	15.6	120	67.0	8	4.5
Communication Skills	7	3.9	16	8.9	126	70.4	26	14.5
Technology Education	12	6.7	21	11.7	124	69.3	17	9.5
Learning Opportunities Outside the Classroom	10	5.6	10	5.6	70	39.1	83	46.4
Career Exploration	2	1.1	8	4.5	117	65.4	43	24.0
Time on Task	35	19.6	52	29.1	69	38.5	1	0.6
Vocational Education								
Agriculture	48	26.8	3	1.7	25	14.0	92	51.4
Business	29	16.2	6	3.4	42	23.5	90	53.9
Distributive Education	96	53.6	3	1.7	19	10.6	23	21.2
Health	80	44.7	4	2.2	43	24.0	22	12.3
Home Economics	20	11.2	3	1.7	42	23.5	104	61.5
Industrial Arts	38	21.2	4	2.2	39	21.8	87	48.6
Technical Education	85	47.5	9	5.0	29	16.2	30	16.8

Table 58. Superintendent satisfaction with selected curricular topics

Topic	Means			
	Small Dist.	Mid-Size Dist.	Large Dist.	Composite
Thinking Skills	2.71	2.87	2.84	2.81
Learning Skills	3.00	3.13	3.38	3.18
Communication Skills	3.27	3.34	3.64	3.42
Technology Education	3.29	3.29	3.36	3.31
Learning Opportunities Outside the Classroom	3.67	3.71	3.69	3.69
Career Exploration	3.53	3.59	3.75	3.62
Time on Task	2.88	2.86	3.18	2.98
Vocational Education				
Agriculture	3.86	3.91	3.64	3.81
Business	3.71	3.92	3.88	3.85
Distributive Education	3.13	3.52	3.56	3.41
Health	3.11	3.50	3.15	3.25
Home Economics	3.84	3.90	3.78	3.84
Industrial Arts	3.51	3.61	3.60	3.58
Technical Education	2.84	3.09	3.24	3.07

Summary

The results of this study indicate that Iowa school districts are relatively homogeneous with respect to curriculum items surveyed. Graduation requirements were increased in two-thirds of the districts with a general increase in both the academic areas and in total requirements. No significant differences were found for any of the stated variables.

When specific curriculum areas were addressed, science was the only area which had significant change when the size of student population was used as a variable. While all sizes of districts showed an increase in this area, the large districts reported an increase substantially greater than either the small or mid-size districts. Computer education had been added in most districts surveyed and was required in several districts. The graduation requirements in the small and mid-size districts were comparable but the large districts had fewer requirements in most areas.

Faculty additions and deletions varied considerably according to district needs. Positions were added and deleted on a part-time basis. The one factor affecting these decisions was a decrease in students for most districts. More courses were added than dropped with fewer numbers of faculty to teach them. There appears to have been a realignment in staff employed with the practical arts faculty experiencing the largest losses, and education for the learning disabled and foreign language gaining the most faculty.

Student achievement as measured by Iowa Tests of Educational Development was not associated with any particular district size nor

with any other variable used. However, the large school districts had more comprehensive programs especially in the vocational areas than did the small and mid-size districts.

Despite the absence of extensive state-mandated requirements, Iowa school districts appear to be increasing graduation requirements as in the rest of the nation and requirements are approaching average national levels.

CHAPTER V. SUMMARY, CONCLUSIONS, RECOMMENDATIONS

Summary

This study surveyed a stratified random sample of public school superintendents in Iowa to elicit perceptions and data on the secondary school curriculum in their school districts. Superintendents were asked for information concerning change in graduation requirements, courses, and personnel occuring since the 1982-1983 academic year; for present graduation requirements in their districts; and for information on the status of curriculum goals and processes and selected curricular topics mandated by the 1985 Iowa legislature.

The mailing consisted of 225 questionnaires and resulted in 179 returns, a 79 percent response which comprised 40 percent of the public school districts in the state of Iowa with an evenly distributed response from each of the three selected sizes of districts based on student population. The administrators in this study indicated that they were experienced in the position of superintendent (75.3 percent had six or more years of experience) and had advanced degrees (82 percent had either a specialist or doctoral degree). The academic background had not changed substantially in the last thirty years as 65.4 percent indicated a background in social studies, science, or mathematics which compared to a 1955 Iowa study by Manatt (102) that showed 65.6 percent for social studies, science and mathematics. The majority of the superintendents in this study believed they had adequate skills to direct curriculum programs and curriculum change (63.6 percent had either strong or very good feelings

of qualification and only 7.8 percent indicated feelings of little or no qualification).

Twenty-eight hypotheses were tested at the .05 level of significance. Eight hypotheses examined change in graduation requirements for total semester credits and for specific curriculum areas. Eight hypotheses were tested concerning required total semester credits and required semester credits in specific areas. Tests were conducted on four hypotheses on stated motivations for graduation requirement change. The last eight hypotheses were examined for stated motivations for faculty additions and deletions since the 1982-1983 academic year.

Results

The findings of this study are listed specifically in the hypotheses in Chapter Four and in tables showing the results of the data collection for survey purposes. The results of this study were:

1. Graduation requirements had been changed in 67 percent of the districts surveyed since the 1982-1983 academic year. There was a general increase in graduation requirements both in academic areas and in total requirements.

2. No significant difference was found in the change of total semester credits requirement for graduation when districts were grouped by any of the following variables: student population, student achievement, population density, or assessed valuation per student.

3. No significant difference was found in the total required semester credits requirement for graduation when districts were grouped by any of the following variables: student population, student achievement, population

density, or assessed valuation per student. However, small rural districts did require more total required semester credits than the other stated groups of districts.

4. There were two areas in which significant differences were found in changes in required subject areas. Science requirements received more change and were increased in the large urban districts. Urban districts also added more required subjects than rural districts although rural districts still required more semester credits in subject areas. Districts whose percentile rankings on the Iowa Tests of Educational Development (ITED) fell into the 26-39 and 78-89 range differed significantly from all other categories in adding more required subjects.

5. There were several subject areas which had significant differences in graduation requirements when districts were grouped by student population. In the areas of science, mathematics, computer education, and total required subjects, the small and mid-size districts had significantly higher requirements than did the large districts. The small and mid-size districts approach the 1984 national levels as reported by Keefe (85).

6. There were no significant differences in required subject areas when districts were grouped by either assessed valuation per student or student achievement.

7. When variables of rural and urban districts were used (population density), several areas of significant differences in required subject areas appeared with rural districts requiring more semester credits in each area: English/language arts, science, mathematics, and computer education. There was also a significant difference in the total number of required

semester credits. Once again, the rural districts reported higher requirements than did the urban districts.

8. When perceptions of superintendents for reasons for graduation change were reported, only one significant difference appeared for any of the variables. A significant difference was found when districts were grouped by assessed valuation per student in the area of assessment of need by the administration. Even though there were no other significant differences for stated reasons for graduation requirement change, the weights given to the reasons were consistent. Assessment of need by administration was given the most weight by all respondents followed by assessment of need by the faculty. Either assessment of need by the board of education or assessment of need by curriculum committees was the third choice by superintendents.

9. Stated motivations for faculty additions since the 1982-1983 academic year showed a significant difference for increase in graduation requirements change when districts were grouped by student achievement. When districts were grouped by student population, significant differences were found for increase in course offerings and administrative decision. Increase in the number of students was cited significantly when districts were grouped by assessed valuation per student. Administrative decision showed a significant difference when districts were grouped by population density with rural districts producing the highest ranking. In all areas surveyed for stated motivations for faculty additions, the highest ranking was given to administrative decision, followed by board of education decision and student course choices by all respondents.

10. Stated motivations for faculty decreases since the 1982-1983

academic year indicated no significant differences for any of the stated variables. There was consistency when the rankings of the motivations were studied. The most prevalent motivation in all areas was student decrease followed by finances and administrative decision. One might surmise that the Iowa funding formula was a factor once the decrease in students was ascertained.

Survey Questions

Demographic statistics on superintendents revealed a two-year advantage in experience as compared to superintendents nationwide. Over the past thirty years superintendents have become holders of advanced degrees with 82 percent holding degrees beyond the master's degree as opposed to a 1955 study (102) which showed that 73.7 percent of the superintendents had master's degrees only. Nationwide, 50 percent of the superintendents in 1984 (85) held a doctorate degree while 21.8 percent of Iowa superintendents in this study had a doctorate degree. Most superintendents had graduate hours in curriculum with an average of 19.66 graduate hours leading to strong and very good feelings of qualification for directing the K-12 curriculum program.

The principal emerged as the overall instructional leader of the district. Superintendents had the leadership role in budget and school district goals as well as communication with the various publics. Individual teachers and curriculum committees were shown as determining subject and content matter of the curriculum.

The majority of districts had both short-term and long-term goals in curriculum, courses, and content. Superintendents expressed moderate satisfaction with most items in curriculum goals and curricular content,

with the least satisfaction expressed for goals for initial school experiences (2.99--1 little satisfaction to 5 much satisfaction) and the most satisfaction for major changes in courses (3.65--1 little satisfaction to 5 much satisfaction).

The responses on the status of related curricular topics under Iowa HF 686 indicated that 47.5 percent had not yet implemented thinking skills in their curriculum nor was time on task being addressed by 45.7 percent of them. The superintendents expressed the least satisfaction with thinking skills (2.81--1 little satisfaction to 5 much satisfaction) and time on task (2.98). Learning opportunities outside the classroom gained the most approval (3.69) followed by career exploration (3.62). The vocational areas least available were distributive education (55.3 percent), technical education (52.5 percent), and health (46.9 percent). The most prevalent vocational education programs available were in home economics (85 percent), business (77.4 percent), and industrial arts (70.4 percent). The most satisfaction was expressed for business (3.85) and home economics (3.84) in the vocational area. The least satisfaction in the vocational area was reported in technical education (3.07) and health (3.25).

Conclusions and Discussion

The state of Iowa requires few state-mandated courses for graduation from high school, and Iowa school boards are free to set their own requirements. Although 48 states in the nation have considered changes in state-mandated courses for graduation since the 1982-1983 academic year, the state of Iowa has not done so. Despite the lack of direction from the

state level, graduation requirements had been changed in two-thirds of the districts surveyed since the 1982-1983 academic year, but no significant differences were found in the change of total semester credits nor in the total required semester credits as reported by the superintendents for any of the variables.

There were significant changes in science requirements with the larger districts in urban areas reporting the most change and a general increase in requirements for this area. Urban districts added more required areas than rural districts but still did not approach the rural district level.

A survey of the staff changes at the secondary level since the 1982-1983 academic year indicated that the practical arts area experienced the most decrease followed by social studies and English/language arts. The largest increases for secondary staff in the same period were education for the learning disabled followed by foreign language and mathematics. Despite the increased emphasis on science, staff additions were nominal in this area indicating that employed staff was utilized. English/language arts indicated sizable additions as well as deletions in staff. The wide range of this discipline indicates that perhaps a realignment in the type of courses offered occurred.

A study of the change in course offerings since the 1982-1983 academic year shows that more courses were added than dropped. The most frequently added courses were in the area of computer education. It was interesting to note that staff additions in this area were few indicating that present staff was utilized for this purpose. Both advanced and basic courses were added to academic areas. While graduation requirements were increased,

a less stringent offering is seemingly being made to the noncollege-bound student. The college-bound student is also being offered in-depth courses to give him/her better preparation for college course work.

While the practical arts area showed dramatic losses in faculty, the area also showed a large number of courses added and, except in large districts, few dropped. This would indicate a more varied program of practical arts taught by fewer faculty members making multiple preparations necessary by those faculty members. The other areas show this to a lesser degree; the students are being offered a more varied program but the faculty is having to prepare for more divergent courses.

The principal emerged as the instructional leader in curriculum followed by the individual teachers and curriculum committees. The findings of this study replicate the findings of a similar study in Minnesota in 1982 (88). Despite the rhetoric for the desirability of including the community, parents, and students in curriculum planning, this study gave little indication of influence by any of these groups. The board of education also was not seen to have any substantial impact on the curriculum offerings of the district.

The majority of the districts stated that they had goals for both short and long term for both course and content changes. However, a substantial number also indicated that they did not. The satisfaction of those who had stated goals indicated only a moderate satisfaction with them.

Iowa HF 686 brings new impetus to certain areas of the curriculum. While the full extent of these changes is not yet formulated, superintendents are aware of the status of the selected areas in their districts. Thinking

skills emerged as the area in which most school districts were deficient as 47.7 percent reported it was not available or under study. Structured procedures for increasing time on task have not been addressed in 48.7 percent of the districts. Career exploration (89.4 percent), learning opportunities outside the classroom (85.5 percent), and communication skills (84.9 percent) were the areas which the districts had in separate courses or as a part of programs most frequently. The larger districts offered more vocational areas than did small districts. To offer a larger variety of vocational programs the smaller districts will have to use innovative approaches or to offer programs in conjunction with another district. Most vocational areas received a rating of considerable satisfaction except technical education which received a rating of moderate satisfaction.

Superintendents were asked what assistance they would need to implement changes in these areas. Forty-one districts indicated that they would need no assistance, but forty-four districts indicated that finances were a problem. Fifty-seven districts indicated that they could use curriculum direction and assistance from outside agencies. The most popular sources of assistance were area education agencies followed by Department of Public Instruction consultants and workshops. Regional inservice for both faculty and administration was a prevailing choice. Twenty-nine districts indicated that specific curriculum mandated by the state would be helpful.

Recommendations for Additional Research

The following recommendations for further research are based on the findings of this study and the researcher's experiences.

1. The involvement of the principal in curriculum processes in this

and other studies has been shown to be substantial. Future studies should focus on the adequacy of preparation programs in terms of preparing principals for leadership in curriculum and instruction.

2. Future research should explore the attention given to the desired outcomes of high school graduation. Although graduation requirements are being increased nationwide, many of the recommendations have been in the form of requiring more courses in certain areas. Little attention has been given to the desired competencies to be developed from taking these courses.

3. Much concern has been expressed by educators and the public alike about the dropout rate of students from high school. Curricular choices had been expanded in the 1970s in an attempt to offer students a choice in educational programming so that they would remain to graduate. This study indicates a narrowing of course choices in Iowa schools corresponding to the national trend. It is recommended that future studies define the relationship between the dropout rate of high school students and the narrowing of course choices for students.

4. The need to revise curriculum so that it is both educationally productive and financially realistic is imperative in the present political and economic climate. The absence of concise, prescriptive guidelines for curricular decisions as well as the diversity of school districts hinders educational administrators as they attempt to provide coherence and rationality to decisions made concerning curriculum. It is recommended that future studies assess reactions from curriculum personnel to examples of curricular decision-making to generate the development of models for curricular decisions.

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APPENDIX A.

QUESTIONNAIRE

PERCEPTIONS OF THE SECONDARY SCHOOL CURRICULUM

I. SCHOOL DISTRICT INFORMATION

1. Estimation of the total population of your school district _____
2. Population of the largest city/town in your district _____
3. Number of students in your school district (K-12) _____
4. Student enrollment in Grades 9-12 _____
5. Assessed valuation per pupil _____

II. DEMOGRAPHIC INFORMATION - SUPERINTENDENT

1. Number of years of total experience in educational administration _____
2. Number of years of experience as superintendent _____
3. Highest degree received (Use ✓ to indicate highest category)

Masters Degree	Specialist Degree - 6th Year	Doctorate

4. Number of years of experience in classroom teaching _____
5. Classroom teaching experience was centered primarily in: Check one (✓)

( ) Social Studies	( ) English
( ) Math-Science	( ) Elementary Education
( ) Physical Education	( ) Music-Arts
( ) Vocational Education	( ) Other - Please identify _____

6. Number of estimated graduate hours in curriculum _____
7. Circle the number on the scale below which will give an indication of your perception of your qualifications in the area of developing a district-wide school curriculum with 1 indicating minimum qualification and 5 indicating very good qualifications.

1 2 3 4 5

8. At this time what assistance do you feel would be beneficial in helping your district meet expected school standards being developed under HF686 School Standards Bill? (Department of Public Instruction has been mandated to provide new standards for school districts before July 1, 1987, with implementation by school districts on or before July 1, 1989.) _____

_____

_____

III. GRADUATION REQUIREMENTS

Directions: Please indicate the number of semester credits required in each category for the indicated academic years.

	1982-1983	1985-1986
English/language arts		
Social Studies		
Science		
Mathematics		
Physical education		
Foreign language		
Health		
Computers		
Consumer education		
Fine arts		
Practical arts		
Other (Please list)		
Required		
Electives		
Total		

1. Place a ✓ if there has been no change in graduation requirements since the 1982-1983 academic year. If change has occurred, indicate the influence that each of the following had in the decisions with 1 indicating little impact and 5 indicating much impact.

_____ No Change

National Reports of Curriculum Deficiencies	1	2	3	4	5
First in the Nation in Education (FINE) Report (Iowa)	1	2	3	4	5
Assessment of need by administration	1	2	3	4	5
Assessment of need by curriculum committee/s	1	2	3	4	5
Assessment of need by board of education	1	2	3	4	5
Assessment of need by faculty	1	2	3	4	5

2. The following courses were added to the secondary school curriculum since the 1982-1983 academic year. (List by course title) (If none, place 0 in the first blank.)

_____ _____ _____

_____ _____ _____

3. The following courses were dropped from the secondary school curriculum since the 1982-1983 academic year. (List by course title) (If none, place 0 in the first blank.)

_____ _____ _____

_____ _____ _____

4. The following programs were added to the secondary school curriculum since the 1982-1983 academic year. (List) (If none, place 0 in the first blank.)

_____ _____ _____

5. The following programs were dropped from the secondary school curriculum since the 1982-1983 academic year. (List) (If none, place 0 in the first blank.)

_____ _____ _____

6. Additional staff members have been added to the secondary school faculty since the 1982-1983 academic year. List area and number.

AREA	NUMBER
_____	_____
_____	_____
_____	_____

7. The addition of faculty members may have occurred for the following reasons: (Indicate the influence of each of the following by circling 1 for little emphasis up to 5 for much emphasis.)

	Little				Much
Increase in graduation requirements	1	2	3	4	5
Increase in number of course offerings	1	2	3	4	5
Increase in number of students	1	2	3	4	5
Student course choices	1	2	3	4	5
Administrative decision	1	2	3	4	5
Board of education decision	1	2	3	4	5
Other (List) _____	1	2	3	4	5

8. If the number of staff members on the secondary school faculty has been decreased since the 1982-1983 academic year, list the areas and number

AREA	NUMBER
_____	_____
_____	_____
_____	_____

9. Changes resulting in the decrease of faculty on the secondary school level may have occurred for the following reasons: (Indicate the influence of each of the following by circling 1 for little emphasis up to 5 for much emphasis.)

	Little				Much
Change in graduation requirements	1	2	3	4	5
Decrease in number of course offerings	1	2	3	4	5
Decrease in number of students	1	2	3	4	5
Student course choices	1	2	3	4	5
Administrative decision	1	2	3	4	5
Board of education decision	1	2	3	4	5
Finances	1	2	3	4	5
Other (List) _____	1	2	3	4	5

IV. CURRICULUM PROCESSES

Rank the individuals or bodies most responsible for the following curriculum processes with 1 representing the most responsible, 2 representing the next responsible, 3 the next and continuing for all involved in the processes.

	Board	Superintendent	Curric. Committee	Curric. Director	Principal	Total Faculty	Individual Teachers	Parents	Community	Students	Other (Identify)
1. Determining budget requirements for curriculum											
2. Determining curriculum areas in need of revision/improvement											
3. Determining who will participate in curriculum planning											
4. Determining who plans priority of school district goals											
5. Developing/selecting goals of subject matter											
6. Determining the sequence of learning in the K-12 curriculum											
7. Selecting content matter of courses											
8. Selecting sequence for content taught											
9. Selecting textbooks and resources											
10. Communicating with business, industry, labor, and higher education regarding their expectations for adequate student preparation											

V. DISTRICT CURRICULUM GOALS AND CURRICULAR CONTENT

Directions: Circle either Yes or No in the following questions and then indicate your satisfaction with the status of each by circling 1 for little satisfaction up to 5 for much satisfaction.

			Degree of Satisfaction				
			Little				Much
1.	Do you have a district process for the formulation of short-term goals in course changes?	Yes No	1	2	3	4	5
2.	Do you have a district process for the formulation of long-term goals in course changes?	Yes No	1	2	3	4	5
3.	Do you have a district process for the formulation of short-term goals in content changes in courses?	Yes No	1	2	3	4	5
4.	Do you have a district process for the formulation of long-term goals in content changes in courses?	Yes No	1	2	3	4	5
5.	Do you have district goals that address the competencies, capacities, and abilities for young people to have as outcomes of their school experience?	Yes No	1	2	3	4	5
6.	Do you have district goals that address the instructional, developmental, and initial experiences students will need to attain goals?	Yes No	1	2	3	4	5
7.	Are curriculum goals and content defined?	Yes No	1	2	3	4	5
8.	Have major changes in courses occurred?	Yes No	1	2	3	4	5
9.	Are major changes in content of courses being considered?	Yes No	1	2	3	4	5
10.	Are major changes in content of courses being implemented?	Yes No	1	2	3	4	5

VI. RELATED CURRICULAR TOPICS

Part of this study is to determine progress toward certain curricular goals. Please answer the following questions giving your present status. Indicate one primary status with a ✓ under one of the categories and then indicate your degree of satisfaction by circling a number with 1 representing little satisfaction up to 5 indicating much satisfaction.

	Not Available	Under Study	Integrated Into Courses	Separate Programs/Courses	Degree of Satisfaction Little				Much
Objectives and assessment procedures for teaching higher order thinking skills					1	2	3	4	5
Objectives and assessment procedures for teaching learning skills					1	2	3	4	5
Objectives and assessment procedures for teaching communications skills					1	2	3	4	5
Integration of the applications of current technologies into the general curriculum					1	2	3	4	5
Learning opportunities for students whose needs are not met in the conventional classroom					1	2	3	4	5
Career exploration activities					1	2	3	4	5
Voc. Educ.-Agriculture					1	2	3	4	5
Voc. Educ.-Business					1	2	3	4	5
Voc. Educ.-Distrib.Educ.					1	2	3	4	5
Voc. Educ.-Health					1	2	3	4	5
Voc. Educ.-Home Econ.					1	2	3	4	5
Voc. Educ.-Ind. Arts					1	2	3	4	5
Voc. Educ.-Technical					1	2	3	4	5
Time on Task					1	2	3	4	5

APPENDIX B.

LETTER SENT TO SUPERINTENDENTS

College of Education
Educational Administration
N229 Quadrangle
Ames, Iowa 50011
Telephone 515-294-5450

IOWA STATE UNIVERSITY

October 16, 1985

Dear Superintendent:

The leadership of district school superintendents is vital to the curricular goals for students. His/her concept of what constitutes a viable program for youth in the secondary school is an important factor in their education. I am conducting research to determine the perceptions of district school superintendents of the secondary school curriculum and gathering data on curriculum and staff changes since the 1982-1983 academic year. It will require approximately 20 minutes of your time to complete the enclosed questionnaire. Data obtained from this study will be provided to the Iowa Association of School Administrators.

The secondary school curriculum, for the purposes of this study, will consist of those courses and programs which are used for the completion of a high school diploma and eliminates those courses and programs which are not considered a part of the program leading to graduation.

Your cooperation in furnishing the requested information is very important to the success of this research. Your responses will be grouped with others in your category without being individually identified. All district and personal information will be kept confidential. The code on the questionnaire is to afford a method of identifying non-respondents and yet insure confidentiality to each respondent.

An addressed stamped envelope is enclosed for returning the completed questionnaire. It will be appreciated if you will complete and return the instrument within three days.

Thank you for your cooperation, assistance, and interest.

Sincerely,

Leora Schuelka

Leora Schuelka, Graduate Student
Iowa State University
811 Quinn Street
Aplington, Iowa 50604

Ross A. Engel

Dr. Ross Engel, Major Professor
College of Education
Iowa State University
Ames, Iowa 50011

Enclosures

APPENDIX C.

FOLLOW-UP LETTER

College of Education
Educational Administration
N229 Quadrangle
Ames, Iowa 50011
Telephone 515-294-5450

IOWA STATE UNIVERSITY

November 8, 1985

Dear Superintendent:

Three weeks ago you should have received a questionnaire concerning perceptions of the secondary school curriculum by Iowa superintendents. You may not have received it; therefore, a copy of this survey instrument is enclosed. The response to this questionnaire has been excellent, but the research will be more accurate if all contacted superintendents provide the requested information.

I understand that your busy schedule may have prevented you from responding. However, your perceptions and data, along with the perceptions and data from other school districts, are very important in determining curriculum in secondary schools. The purpose of this research is to present to curriculum planners throughout the state information from administrators who have the responsibility for educating students in public school districts in the state of Iowa.

Your participation will help to present an accurate picture of secondary educational programs in Iowa schools. Responses will be grouped with others without being individually identified. The code on the questionnaire is to afford a method of identifying nonrespondents.

An addressed, stamped envelope is enclosed for returning the completed questionnaire. Please return it at your earliest opportunity.

Thank you for contributing to the success of this research.

Sincerely,

Leora Schuelka

Leora Schuelka, Graduate Student
Iowa State University
811 Quinn Street
Aplington, Iowa 50604

Ross A. Engel

Dr. Ross Engel, Major Professor
College of Education
Iowa State University
Ames, Iowa 50011

Enclosures