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IDENTIFYING AN UNDERLYING RATIONALE FOR THE DEVELOPMENT
OF THE AGE-GRADED ORGANIZATIONAL STRUCTURE WITHIN
AMERICAN PUBLIC EDUCATION

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RICHARD GEORGE OWENS

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**IDENTIFYING AN UNDERLYING RATIONALE FOR THE DEVELOPMENT OF
THE AGE-GRADED ORGANIZATIONAL STRUCTURE WITHIN AMERICAN
PUBLIC EDUCATION**

By

Richard George Owens

A DISSERTATION

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ABSTRACT

IDENTIFYING AN UNDERLYING RATIONALE FOR THE DEVELOPMENT OF THE AGE-GRADED ORGANIZATIONAL STRUCTURE WITHIN AMERICAN PUBLIC EDUCATION

By

Richard George Owens

The purpose of this study was to identify an underlying rationale for the development of the age-graded organizational structure within American Public Education. Identifying an underlying rationale through such a study would provide information regarding the apparent durability of that organizational structure. The age-graded structure has endured for almost one hundred and forty years with its underlying rationale apparently not having been viewed as an important element in the study of educational system development.

The method of inquiry utilized for this study was a search of the literature of education history. The primary sources of information regarding the underlying rationale turned out to be secondary sources found in the literature. These secondary sources - historians of education - as interpreters of events setting the stage for the development of the age-graded organizational structure, have

provided insights and interpretations of historical events in nineteenth-century America which produced an environment conducive to the creation of the age-graded innovation within American Public Education. The interpretations of educational historians have provided clues to the structure's rationale and seemingly inherent ability to survive even though American society has changed considerably since the time of the origination of the age-graded organizational structure within public education in this country.

The findings of this study have shown that the industrialization of nineteenth-century America, the influx of immigrants into the country and the increases in population in and around the new and developing manufacturing centers played an instrumental role in setting a tone which emphasized the need for an improved educational system. The emphasis of the common school reformers was that an improved educational system would solve the problems being created as a result of the rapid and drastic social and economic changes.

The literature provided information which led to an identifiable rationale for the age-graded organizational structure based on the concept of standardized and uniform efficiency. This rationale was basically a mirror-image of the rationale underlying the rapid and successful growth of American manufacturing.

The literature also provided information which shows that the rationale has not changed significantly from the time the age-graded organizational structure was developed in the middle of the nineteenth century. The strong emphasis on standardized and

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uniform efficiency, like that of the factory, has been carried through the years in the organizational structure which emphasizes standardization in the processes within American Public Education.

This dissertation is dedicated to all those who have asked questions about our system of public education and have attempted to find answers for some of those questions. This work is also dedicated to my Uncle, Dr. Richard Martin. He showed me, by his example, that getting experience in the real-world can be extremely helpful when attempting to figure things out in the world of education.

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PREFACE

GETTING STARTED

During the time in which the proposal for this study was being developed,, a wide variety of individuals, organizations, and government agencies were publishing educational reform reports. These reports seemed to be documenting that there was some validity to much public opinion: "Education in the public schools falls short of providing students with what has become known as 'excellence in education'" (Cross, 1987, p. 496). As I reviewed some of the major reports, and especially A Nation At Risk: The Full Account, I began to wonder why the reform reports did not seem to be examining the organizational structure within public education in relation to the suggested recommendations for improvement.

The reform reports, for the most part, did not seem to be suggesting that the age-graded organizational structure of public education might be a valuable resource area in which to look for some potential solutions to the identified problems within public education. The reports seemed to be concentrating more on the operational dynamics of the interaction between the system and the learner, the system's expectations of the learner, the system's expectations of the public, the importance of homework, the length of time in and/or out of school, and the basic requirements for

completion of the school program.

Alternative school advocates had been looking at organizational structure variations for years. I had never questioned the age-graded structure while a student nor while a teacher in the age-graded system. I began to wonder why I had never thought to question the structure. I have since talked with a wide variety of people about the age-graded structure, from professors in universities and colleges to average people on the street. I also did a small research questionnaire process with a group of teachers in one elementary school. This short questionnaire included questions about the origins of the age-graded structure and the people who influenced its development. The results appeared to indicate that there was not a great deal of general knowledge, within the group of teachers, about the origins of the age-graded organizational structure within public education in this country. The small survey results provided an informal and unofficial research base which aimed this study towards reviewing the education literature in hopes of discovering an underlying rationale for the age-graded structure and possibly some explanation for its longevity.

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CHAPTER I

INTRODUCTION

The public educational system in this country is actually a series of systems. This conglomerate system contains a wide variety of organizational variations. There is, however, one striking similarity within the majority of the smaller educational systems. This one striking similarity is the majority usage of the age-graded organizational structure, especially at the elementary level.

The organizational structure of the conglomerate system has not always been based on the age-graded structure. It was, in its early history, based on an ungraded structure. Approximately one hundred and forty years ago the system began changing from an ungraded structure to a fully age-graded structure (Martin, 1894, p. 192; Shearer, 1899, p. 20; Cowen, 1931, p. 29; Monroe, 1940, p. 257; Cubberley, 1947, p. 311, Goodlad and Anderson, 1963, p. 44; Krug, 1966, p. 72; Miller, 1967, p. 6; Tewksbury, 1967, p. 13). This change did not take place overnight and did not take place everywhere all at once. It did eventually spread to become a nation-wide reality. It does not, however, seem to have changed significantly from that point of reorganization to the present.

Even though there is wide variation on this structural model, schools organized on an age-graded structure are the primary

reality within public education in this country (Goodlad and Anderson, 1963, pp. 2-3; Tewksbury, 1967, pp. 12-13). For this reason, it would be beneficial to go back to the beginning of this reorganizational period and discover an underlying rationale for the change in the organizational structure which produced the first fully age-graded school in this country in 1848.

Purpose of the Study

The primary purpose of this study was to identify an underlying rationale for the development of the age-grade organizational structure within American Public Education. The specific objectives of this study were to find answers to the following questions:

1. What was taking place in the nineteenth century that made the development of the age-graded organizational structure possible?
2. Is there, in fact, an identifiable rationale for the development of the age-graded organizational structure?
3. Is there, in the rationale, and in the history of the age-graded organizational structure, information which supports its widespread acceptability and its longevity as a functional organizational structure?
4. What significant modifications, if any, have been made to the rationale which may have helped the age-graded structure remain as the primary organizational structure within American Public Education.

The results of this study may prove to be useful to educational decision-makers in their efforts to examine the present

system of public education in relation to its general effectiveness in meeting educational goals. Educational decision-makers may also find the results useful in considering potential future changes to the operational system of public education.

Significance of the Problem

To understand more fully the American Public Education system, and its organizational structure specifically, a rationale for the development of the age-graded structure needs to be identified. The reasons behind making such a significant alteration to a system, which had previously grouped learners according to their level of educational attainment rather than according to their chronological age, would have to be discovered.

Issues have been raised about the age-graded organizational structure and its general effectiveness in dealing with developmental differences among children. John Goodlad and Robert Anderson, in The Nongraded Elementary School, state that,

The realities of child development defy the rigorous ordering of children's abilities and attainments into conventional graded structure. For example, in the average first grade there is a spread of four years in pupil readiness to learn as suggested by mental age data. As the pupils progress through the grades, the span in readiness widens.

Furthermore, a single child does not progress all of a piece: he tends to spurt ahead more rapidly in some areas than in others. Consequently, a difference of one grade between his reading attainment and his arithmetic attainment at the end of the second grade classification may be extended to a three- or four-grade difference by the end of his fifth year in school. The presence of the graded structure may disguise or distort such realities but it can not remove them. In brief, ...a fifth-grade teacher, in spite of his designation, is not a teacher of fifth-

grade children. At a given time, he teaches third, fourth, fifth, sixth, seventh, eighth, and even ninth grades, as far as learner realities are concerned, even though all the pupils in his room may be labeled "fifth grade." Any attempt to deal with these children as fifth graders can only be Procrustean in its ultimate effects (Goodlad and Anderson, 1963, p. 3).

The authors go on to explain that:

Our central problem, then, emerges out of the conflict between long-established graded structure on one hand and increasing awareness of variation in children's abilities and attainments on the other. Our graded structure and parent-teacher-pupil expectations are long established; they represent a certain antique respectability (Goodlad and Anderson, 1963, p. 4).

Additionally, Goodlad and Anderson point out that:

An over-all plan of vertical school organization such as grading or nongrading is a gross, in contrast to a sensitive, educational technique. Grading facilitates the placement of subject matter, the orderly progression of masses of pupils through it, and the establishment of normative standards for comparing schools and students. Grading sets a certain tone, a way of thinking about and looking at school practices (Goodlad and Anderson, 1963, p. 213).

This point of view, when contrasted with the findings of the major educational reform reports would seem to establish an important difference which bears investigation. The major reform reports do not seem to suggest that the age-graded organizational structure might be a valuable area to examine for potential solutions to the identified problems within public education. An investigation into the organizational structure would seem to be especially significant in relation to one of the recommendations

found in A Nation At Risk: The Full Account. Recommendation C: Time, number 8 suggests that:

Placement and grouping of students, as well as promotion and graduation policies, should be guided by academic progress of students and their instructional needs, rather than by rigid adherence to age (National Commission On Excellence In Education, 1984, p. 76).

Limitations of the Study

The limitations of this study have been defined as follows:

1. The investigation has depended on secondary sources - education historians - for interpretations of the processes and systems established through the efforts of primary sources - nineteenth century common school reformers .
2. Information regarding an underlying rationale for the development of the age-graded organizational structure was based more on significant historical events occurring in nineteenth-century America than on specific information provided by the individuals responsible for the actual development of the structure within American Public Education. Stanley K. Schultz pointed out, in *The Culture Factory*, that "There is no adequate history of the evolution of graded schools" (Schultz, 1973, p. 343).

Assumptions

Three essential assumptions underlie this investigation:

1. Events taking place in nineteenth-century America created an environment which was conducive to the development of the age-graded organizational structure.
2. There is an identifiable underlying rationale for the age-graded organizational structure.
3. The identifiable rationale will provide information which supports the widespread acceptability and longevity of the age-graded organizational structure.

Organization of the Study

Chapter One has included statements which indicate the purpose of the study, the objectives of the study, the significance of the study, the possible limitations of the study, and the assumptions of the study. Chapter Two will present the research methodology utilized in this investigation. Chapter Three will present the findings of the review of the literature. Chapter Four will present conclusions drawn from the review of the literature and some recommendations which seem appropriate to the results of this study.

CHAPTER II

RESEARCH METHODOLOGY

The age-graded organizational structure within American public education seems to be more widely accepted than thoroughly understood within educational history. Searching the history of education literature proved to be both enlightening and disappointing, enlightening from the standpoint that there was, in fact, some mention of the topic and disappointing from the standpoint that there seemed to be more recognition of the topic from an open acceptance point of view than from a "this is the way it was developed and this is why it was developed" point of view. The sources for education history have a tendency to mention the existence of the age-graded structure, but seldom go much deeper than that. Other sources in the educational literature, ranging from curriculum to the study of nationalism within the educational movement, tend to do the same.

The search of the periodical indexes produced much the same results. Writings about a rationale for the age-graded structure were conspicuous in the literature only by their absence. The reasons behind the age-graded structure appear to be viewed as less important than the fact that the organizational structure does, in fact, exist.

Historical Explanations

Historical events of the period preceding the development of the age-graded organizational structure shed more light on the reasons behind the organizational structure than the writings of the creators of the age-graded structure itself. The historical events of the period of American history between 1800 and 1848 provided helpful information about the conditions within the country which may have been instrumental in the development of the age-graded organizational structure. It is pointed out in An Introduction To Education In American Society, that, "By 1825 the United States had achieved a certain amount of stability and the nation began to develop rapidly. Rails were being laid and factories built. Immigrants were pouring into the country and the population was increasing with concentration in the urban areas" (Callahan, 1960, p 125).

Sources of Information

This study has depended on secondary sources - education historians - for interpretations of the processes and systems established through the efforts of primary sources - the common school reformers - who effected changes on a system which they believed to be both inefficient and ineffective. These interpreters, as a result of previous and contemporary historians, have been able to view the system over time and have been able to place the development and growth of the system in a variety of perspectives which allow for a more thorough understanding of the possible reasons for the system's current organizational structure.

Primary information most often came from secondary sources - interpretive accounts by historians - and perhaps more importantly, from information contained in the notes and citations by these historians. These educational historians, who have more extensively researched and interpreted the events of education history, became the primary sources for the development of a rationale for the age-graded organizational structure within public education.

One reference notation in particular identified the relative importance which has been placed on the evolution of the age-graded structure. This notation, found in Stanley K. Schultz's The Culture Factory (1973), states that, "There is no adequate history of the evolution of graded schools" (p. 343). It was these reference notations and footnotes which ultimately produced the road maps by which the semblance of a possible rationale began to take shape.

Research Process

The search of the literature was done in direct relation to the research questions outlined in Chapter One. The search concentrated primarily on the State of Massachusetts and the city of Boston. This emphasis seemed most appropriate due to the fact that the Quincy Grammar School was established as a result of the efforts of the common school reformers in that state and city. The literature was first searched to identify historical events which may have facilitated the development of the age-graded organizational structure. The literature was next searched to identify a rationale for the development of that organizational structure. The

third step in the search was to identify evidence which supported the wide-spread acceptability and longevity of the age-graded organizational structure. Finally, the literature was searched to determine if there have been any significant modifications to the identified rationale.

CHAPTER III

REVIEW OF THE LITERATURE

The information obtained from the search of the literature will be presented under the following topic headings: (1) The First Fully-Age-Graded School, (2) Acceptance of the Age-Graded Structure, (3) Age-Graded Antecedents, (4) Events Facilitating the Development of the Age-Graded School, (5) A Basis For A Rationale, (6) An Identified Rationale, (7) Acceptability of the Structure Based on the Identified Rationale, and (8) Modifications to the Rationale.

The First Fully Age-Graded School

The first fully age-graded school in this country is considered to be the Quincy Grammar School in Boston, Massachusetts (Martin, 1894, p. 192; Shearer, 1899, p. 20; Bunker, 1916, p. 25; Cowen, 1931, p. 29; Russell and Judd, 1940, p. 257; Monroe, 1940, p. 257; Cubberley, 1947, p. 311; Goodlad and Anderson, 1963, p. 44; Bayles and Hood, 1966, p. 130; Krug, 1966, p. 72; Miller, 1967, p. 6; Tewksbury, 1967, p. 13; Schultz, 1973, p. 123; Ignaz and Corsini, 1979, p. 25; Ignaz and Corsini, 1981, p. 4). The Quincy Grammar School was a significant change from any American school preceding it (Reisner, 1930, p. 368; Krug, 1966, p. 73).

1. It was large. Up to this time a grammar school with 400 pupils was considered very large. This building had 660 seats in its classrooms, exclusive of the hall.
2. It contained a separate schoolroom for each teacher, 12 in all, and, of course, recitation rooms were not needed.
3. It contained a hall large enough to seat comfortably all the pupils that could be accommodated in its school-rooms, and even more.
4. It contained a clothes room attached to each school-room.
5. It contained a separate desk and chair for each pupil, this being probably the first grammar schoolhouse, here or elsewhere, so far as I know, into which this feature was introduced.
6. It was four stories high - the first of its height - the hall covering the whole of the fourth floor. Each floor below carried four classrooms (Bunker, 1916, p. 29; Reisner, 1930, p. 368; Cubberley, 1947, p. 312).

The school building itself represented a new architectural design. The classroom arrangement represented a complete departure from earlier arrangements. The furniture in the school was a complete departure from what had previously existed in schools. The number of teachers working in the school was more than had ever worked in a single school before. The method of classifying pupils in the school was a significant modification of previous classification schemes. The new school was different in every way from anything that had preceded it in this country.

The Quincy Grammar School represents the cornerstone of an organizational structure which has had an enormous impact on the entire concept of public education in this country (Goodlad and Anderson, 1963, p. 48). It could be said that the impact of what took place in Boston with the development of the Quincy Grammar School can still be seen in the age-graded organizational structure of public

education today. The basic description of that school does not appear to be significantly different from a basic description of any elementary school in any town or city today, with the possible exception of the height of the building.

The Quincy Grammar School became the principal school design throughout the Boston system (Reisner, 1930, pp. 366-367; Eby, 1952, pp. 566-567). The design of the school and the organizational structure would be copied by other states and other cities (Krug, 1966, p. 74). That the school was a complete success can be seen in the historical sketch of the Quincy School done for the dedication of the new Quincy School in 1859 (the original school had been destroyed by fire in 1858).

The Quincy School was the first single-headed school successfully organized in Boston. The schoolhouse was the first constructed on the plan of a single room to a teacher. In six years after its organization, not a double-headed school was left in Boston, and now fourteen Grammar schoolhouses are built substantially on its plan, and another is in process of erection (McClusky; 1920; p. 143).

Schools in other parts of the United States adopting the architectural and organizational plan of the Quincy Grammar School showed that the innovation in education was effective. William T. Harris, in talking about the schools of St. Louis, stated that:

In the system of schools of St. Louis after the adoption of the Boston style of building, corporal punishment decreased from an average of five hundred cases per week for seven hundred pupils to three cases for that number. Judge of the benefit to the schools of the Central Plain of the United States from this architectural innovation of Boston. But another benefit of

almost equal magnitude arose from the close grading of classes which the new system produced (McClusky; 1920; p. 145-146).

Acceptance of the Age-Graded Structure

The current organizational structure within American public education system was designed in the nineteenth century. From where did the organizational foundation which makes up the current public education system come? Surprisingly, it does not appear that education historians have spent much time considering the whys and wherefores of the actual organizational structure within the American public educational system. Education historians seem to have merely accepted the age-graded organizational structure as the organizational way of doing things within the system of public education. This attitude of acceptance can be seen in statements by historian Ellwood P. Cubberley. He states that,

We merely evolved, as a result of something like a half-century of gradual educational development, the common and purely native American elementary school which we have known for so long. The primary classes, in part due to the pressure of numbers, gradually ceased to take pupils earlier than five, and later earlier than six, outside of New England, and the present eight-year elementary school (nine in New England), with a teacher for each grade, was evolved. . . . This evolution was fully accomplished by 1860 in all Northern States (Cubberley, 1947, pp. 312-314).

Cubberley later states that,

The first step was the division of the school into two schools, one more advanced than the other, such as lower and higher, primary and grammar. Another division was introduced when the Infant School was added beneath. The next step was the division of each school into classes. This began by the employment of assistant teachers, in England and America known

as "ushers," to help the "master," and the provision of small recitation rooms, off the main large school-room, to which the usher could take his class to hear recitations. The third and final step came with the erection of a new type of school building, with smaller and individual classrooms, or the subdivision of the larger schoolrooms. It was then possible to assign a teacher to each classroom, sort and grade the pupils by ages and advancement, outline the instruction by years, and the modern graded elementary school was at hand (Cubberley, 1948, pp. 756-758).

Prior to Cubberley's explanation of the evolution of the age-graded structure, the essential acceptance can be found in historical remarks about the structure. In The Grading of Schools, William J. Shearer states,

The first step toward the graded school was made possible when the number of pupils increased so that several could recite together in certain branches.

A second step still further simplified matters, by confining all to a definite course of study. This did away with aimless teaching and study, saved a great amount of useless repetition and much time for both teacher and pupils....An increase in the number of pupils makes possible a better classification.

A third step toward a proper plan of grading was taken when the number of pupils increased sufficiently to warrant the employment of two or more teachers. Then, for the first time, was possible a division of labor. The classification and grading of schools is but the application to education of the same law of division of labor that prevails in every successful business. It is not only the most economical way, but it is a prerequisite to satisfactory progress upon any line....The teacher's time and talents being concentrated upon certain work, it becomes easier by repetition, and, therefore, is likely to be performed more efficiently.

A fourth step toward the graded school was taken when the number of pupils attending the schools of a district increased so as to justify the employment of eight to ten teachers. This desired end was often reached by the union of schools, where such union was feasible. The course of study was then divided

into a series of ascending steps, each preparatory to the next higher. The teachers were assigned definite portions over which they were expected to take their pupils during the year. Under such conditions the pupils could be closely classified, and those about equal in ability and attainments could be instructed together (Shearer, 1899, pp. 17-19).

These three brief descriptions of the evolution of the age-graded organizational structure within the American system of public education appear to be quite typical of the historical reports in general (For example see also Martin, 1894, pp. 192-222; Reisner, 1930, pp. 365-369; Cowen, 1931; Burton, 1934, pp. 205-208; Monroe, 1940, pp. 255-260; Eby, 1952, pp. 564-568; Goodlad and Anderson, 1963, pp. 45-49; Bayles and Hood, 1966, pp. 129-153; Tewksbury, 1967, pp. 12-13).

Age-Graded School Antecedents

According to Frank Eby, in The Development of Modern Education.

At the beginning of the 19th century there existed a variety of schools to teach different things. The vast majority of these were one-teacher schools to teach reading and religion. In cities like Boston there were in addition more advanced schools of three kinds: (1) Latin grammar schools, (2) English grammar schools, and (3) writing schools in which expert penmanship and arithmetic were taught. Until well into the century these schools were ungraded and the curricula limited. Individual instruction was the rule everywhere, and dependence on the textbook was universal. In the Latin schools pupils were classified by their stage of advancement in reading Latin classics and in grammar, but in the English grammar schools and the writing schools grading had not yet been introduced (Eby, 1952, pp. 564-565).

William Shearer presents, in The Grading of Schools, a statement by J. C. Boykin which describes the ungraded system of the time. Boykin states that,

In the first part of this century the grading of elementary schools was a thing unknown in this country. Instruction was almost wholly individual. Whenever a pupil chose to present himself for admission into school, no matter at what time of the year, he was received. His studies were determined by the books he brought. His first lesson was apt to follow the the last one that his former teacher had given him. If he had been through Webster's "Blue-back" Speller twice, and had finished the last column of the tenth page, on the third round, the first column on the eleventh page would naturally be the first lesson that his new teacher would give him. If a class already formed had reached just that point he was put into that class. Otherwise he would probably form a new class. It was thus by no means uncommon to see a dozen or more classes in the same room studying the same book, but at a dozen or more stages of advancement in it; and, altogether, a teacher with a school of moderate size, containing pupils of all ages, sexes, and sizes might easily have fifty or sixty classes. Attend to them all? Certainly; but what attention! The little fellows received but little of it; especially those who had learned to read. Their lessons would be heard every few days. The teacher's pet classes were called to the recitation bench often; and his favorite subjects received nearly all his attention. The rest of the school whined away the time as best they might. They "did their sums" on their slates, or droned over their "blue-backs," until they were tired, and then turned their attention to each other and to mischief, opportunities for which frequently appeared in the open mouth or bare soles of a sleeping pupil; and such opportunities rarely went unimproved (Shearer, 1899, pp. 11-13).

It is also pointed out by Tewksbury, in Nongrading in the Elementary School, that prior to the middle 1800's:

...the predominant plan was the one-room school in which instruction was nongraded. In this early type school, there were

children of various ages in the one classroom, and achievement levels varied a great deal. Instruction was differentiated, that is, the teacher gave different assignments to different children. While one child or several pupils did certain work in a subject, others who were ready for more advanced study were assigned such work by the teacher. Thus a number of different levels were being studied simultaneously by pupils in the same classroom. Classes were often smaller than the typical class of thirty today (Tewksbury, 1967, pp. 12-13).

An advancement which preceded the fully-age-graded school was the monitorial school developed by Joseph Lancaster. However,

...prior to the monitorial schools, elementary-school practice had been essentially that of the one-room rural schools that are well within the memories of many adults living today. It was individualized instruction (even possibly programmed because each child has his book which he followed minutely), each child going as fast as he could and reporting (reciting) individually to the teacher. The teacher was a hearer of lessons; much of the remainder of his work, as with Icabod Crane in Irvings's The Legend of Sleepy Hollow, being whittling quill pens and hickory sticks (Bayles and Hood, 1966, p. 130).

The monitorial school, developed by Joseph Lancaster, was a step forward in the development of the age-graded structure in education. The Lancasterian system was the first organized system to utilize an approach to education where the master dealt only with a small group of pupils (Cubberley, 1947, pp. 131-132; Bayles and Hood, 1966, p. 130). The master taught the best pupils and then it was these pupils, called monitors, who worked directly with the rest of the pupils in the school. The efficiency within this system resulted from the large body of pupils being divided into small groups, under the direction of a monitor, with a set series of knowledge units to be acquired. Movement from a lower group to a

higher group was dependent on the pupil demonstrating acquisition of the required knowledge (Cubberley, 1947, p. 131-132; Monroe, 1971, pp. 366-367; Nasaw, 1979, p. 20). Small group recitation replaced individual recitation under the Lancasterian system of education. Monitor time for instruction greatly reduced actual instruction time and the cost of education was reduced enormously (Monroe, 1940, pp. 363-364). Under the monitorial system, Joseph Lancaster claimed that the per pupil cost of education was a mere \$1.06 per year. Andrew Bell claimed that his monitorial system kept the cost at \$1.00 per pupil per year (Goodlad and Anderson, 1963, p. 45-46). The reduced cost of the monitorial system gave support to the mass production mentality generating from the industrialization of the economy. The common school reformers and the general public could see that education for all children was distinctly possible when viewed with an eye towards factory type efficiency (Monroe, 1940, pp. 363-370; Cubberley, 1947, p. 134; Schultz, 1973, p. 104, 116 & 131; Tyack, 1974, p. 72; Katz, 1975, pp. 32-37; Kaestle, 1983, pp. 69-70).

The Boston School Committee knew of the organization and high degree of efficiency and success of the Lancasterian system of education. In 1828, the committee investigated the New York Lancasterian schools. The report submitted by the investigators told of a system that kept pupils interested and attentive by allowing no idleness. The committee was impressed with the methods and declared that,

...its effects on the habits, character, and intelligence of youth are highly beneficial; disposing their minds to industry, to

readiness for attention, and to subordination, thereby creating an early life of love of order, preparation for business (Spring, 1986, pp. 54-55).

The virtues of submission to authority, orderly behavior, and industriousness were considered to be necessary for functioning in the industrialized world of business. Efficiency within the school system would create organized systems by which pupils would pass through the educational factory. The increase in potential pupils was a direct result of the significant change within the American society from a rural/agrarian to a city/manufacturing economy. The wage-labor force in and near the new manufacturing centers was growing enormously. The monitorial system of Joseph Lancaster was considered an ideal way to deal with the problems of educating the children of the poor. The philanthropic societies and other interested social groups saw, in the monitorial system, a way to provide the poor with a required educational background and, perhaps, more importantly, a much needed system by which the moral character of the children could be trained in the appropriate manner. The mechanistic approach of the monitorial system was an acceptable alternative to dealing with the poverty and crime issues in the new urban environments (Monroe, 1940, p. 371; Davis, 1976, pp. 146-148; Nasaw, 1979, p. 22). The common school reformers could see that, even though the Lancasterian system had shown itself to be efficient and economical, another, more comprehensive, system was needed if the long-term benefits of an appropriately educated populace were going to have a positive impact on reducing poverty, crime, and immorality. A state funded and controlled

system would be a far more unified and comprehensive system of schools and would be a far better alternative for educating all children (Nasaw, 1979, pp. 22-37).

Bunker points out that

...primary schools in Boston, from the time of their establishment (1818), had been conducted on the "ungraded plan" - that is, the unit group taught by each teacher was a separate and independent organization, occupying a separate building, usually of one room. The course of instruction was divided into six steps or classes, but each teacher had all six classes in her room at the same time. She was fitting a class for the grammar school, teaching a class of A-B-C-darians, and carrying on the intermediate stages of the course, simultaneously. This arrangement was gradually changed by carrying down into the primary schools the "graded plan" of the grammar schools. This led to the promotion of pupils every six months from one primary teacher to another; which at that time, meant transferring from one primary building to another. The primary schools of a given attendance district came to have an organic connection with each other, which made it necessary that some one should be charged with the responsibility of supervising the group with respect to the admission of pupils, their proper classification, and their qualifications for promotion. This need became apparent about the time the shift from the "double-headed" to the "single-headed" plan of organization in the grammar schools took place (1848, Quincy School). The solution of the twofold problem was at once obvious - namely, to relieve the grammar-school master of his teaching duties, and require him to exercise the duties of a principal throughout his district, both in the grammar school and in the primary schools tributary to it. By this arrangement a higher degree of unity, harmony, and efficiency throughout the entire system was secured (Bunker, 1916, p. 30).

The ungraded school did not "measure up to the important requirement of the greatest good to the greatest number, in the

shortest time, at the least expense" (Shearer, 1899, p. 23). The common school reformers believed that,

...the absence of grading and uniform schoolbooks had greatly reduced the efficiency of the district schools. The reform movement's economic feasibility required that children move through the common school rapidly so as to free space and teacher time for more children. The reformers considered that widespread establishment of age-graded schools was one of their prime accomplishments (Church and Sedlak, 1976, p. 59).

Events Facilitating The Development Of The Age-Graded School

As has been stated previously, the fully age-graded school did not exist in this country prior to 1848. The dynamics of what was taking place within the larger society in nineteenth-century America, which precipitated the actual development of this innovative organizational structure, were critical elements in creating an environment in which that structure became both possible and essential.

To develop a better understanding of the evolution of the age-graded organizational structure, one must begin looking well in advance of the first age-graded school. The seeds of the evolution of the age-graded structure were sown when the new nation accepted an industrialized way of doing things (Martin, 1894, p. 189-190; Bunker, 1916, p. 17 & 19; Cubberley, 1947, p. 148-149; Bayles and Hood, 1966, p. 116; Hottleman, 1974, p. 92-93; Kaestle, 1983, p. 70). The movement to change the ways of education within the new nation became known as the common school movement. This movement took place roughly between 1830 and 1860 (McClusky, 1920, p. 36; Reisner, 1930, pp. 361-366; Russell and Judd, 1940, pp.

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31-32; Cubberley, 1947, pp. 150-167; Bayles and Hood, 1966, p. 115-119; Church and Sedlak, 1976, p. 70). The first half of the nineteenth century was a period of economic and social change in America. Industrialization, immigration, and urbanization combined to have a significant impact on established social concepts which had previously been built around an agricultural way of life (Martin, 1894, pp. 187-189; Reisner, 1930, p. 363; Monroe, 1940, pp. 222-227; Cubberley, 1947, pp. 144-149; Bayles and Hood, 1966, p. 116; Katz, 1971, p. 297; Church and Sedlak, 1976, p. 70; Kaestle and Vinovskis, 1980, p.115; Kaestle, 1983, pp. 23-24 & 63-64). It was believed that education could be a significant methodology by which the changes could be dealt with in an effective manner (Schultz, 1973, pp. 68-69; Katz, 1975, p. 30; Davis, 1976, p. 140-146; Dale, Esland and McDonald, 1976, p. 23; Nasaw, 1979, p. 36-38; Kaestle and Vinovskis, 1980; p. 116; Kaestle, 1983, p. 70-73; Spring, 1986, pp. 47-48).

Three significant historical events converged at the beginning of the nineteenth century to produce an environment conducive to the development of the age-graded organizational structure embodied in the Quincy Grammar School. The industrial revolution, the immigration of foreigners into the new nation, and urbanization intertwined to produce a collective reaction to a perceived social instability in parts of the new nation. According to many of the school reformers of the period this social instability was a serious threat to the nation (Cubberley, 1947, pp. 153-154; Schultz, 1973, pp. 8-12 and 66-69; Hottelmann, 1974, p. 6; Dale, Esland and

McDonald, 1976, p. 23). These threatening situations had been produced by historical events.

Frank Carlton, in Economic Influences upon Educational Progress in the United States, 1820 - 1850, pointed out that:

The immigration in the United States during the decade, 1820-1830, was 143,439; during the next decade, 599,125, and during the period 1840-1850, it increased to 1,713,251. From 1830 to 1837 the immigration increased nearly three and one-half times. A census of the city of Boston taken in 1845 stated that 37,289 or 32.9 per cent. of a total population of 114,366 consisted of foreigners and their children. Many foreign immigrants were finding homes in the North Atlantic States, and many of the home stock were migrating westward (Carlton; 1965; p. 34).

In 1790 there were but 5 cities of over 8,000 population - New York, Philadelphia, Boston, Baltimore, and Charleston. In 1840 the number of cities having 8,000 population or over was 44; in 1860 it was 141. Four out of every five of these were in the North; for, owing to greater ease of transportation, manufacturing had now come to be a dominant factor in the growth of cities, whereas before this concentration of population had been chiefly determined by commerce (Monroe, 1940, pp. 224-225).

According to Cubberley,

Up to 1807, the development of our country was almost wholly agricultural. This had meant a scattered and an isolated population, with few common ideas, common interests, or common needs. Nearly all the manufactured articles not made in homes or villages were made in Great Britain. The Embargo of 1807, laid by Congress on American shipping cut off articles of English manufacture and soon led to the rise of many "infant industries." The War of 1812, the troubles with Napoleon, and the general westward movement of the population, all tended for a time to build up manufacturing faster than agriculture. At the end of the struggle with Napoleon (1815) this country, due to the lack of any adequate protective tariff, was for a time flooded

with manufactured articles from Europe. Hard times set in until about 1820. This condition was corrected by the protective tariff, and following its enactment a great industrial development took place. The three decades from 1820 to 1850 were characterized by a rapid growth of cities, in which most of the new manufacturing plants were established (Cubberley, 1947, pp. 144-145).

That these three circumstances were having an important impact on nineteenth-century society can be seen in the early reaction of the State of Massachusetts, and the city of Boston, to the changes taking place in society even towards the end of the eighteenth century. The state constitution of Massachusetts, ratified in 1780, put great emphasis on the "necessity of schooling to promote social order in a society becoming increasingly urban" (Schultz, 1973, p. 8). The principal designer of the Massachusetts constitution was John Adams. Adams had, for many years, been a strong advocate of public schooling. "Adams believed that the chief purpose of education was to produce young men devoted to America and to its political, moral, and religious institutions. Accomplishing this task was especially important in Boston and other cities of the commonwealth. There, mob riots showed most clearly the forces of social disorder" (Schultz, 1973, p. 8). Adams strongly supported the idea that the state was responsible for providing public schooling to "inculcate all citizens with principles necessary for the maintenance of social order" (Schultz, 1973, p. 9).

The development of the age-graded structure during the middle-years of the nineteenth century was one of the results of an educational reform movement responding to a series of historical events which impacted significantly on nineteenth-century

American society. According to Frank T. Carlton, in Economic Influences upon Educational Progress in the United States, 1820-1850,

This period which was characterized by the development of the industrial town, marks the rise of the urban school. The city then assumed the educational leadership; development in education during the nineteenth century was chiefly directed and conditioned by the needs of urban life and by the changes in industrial methods (Carlton, 1965, p. 96).

In direct relation to increases in population, it is pointed out by Cremin, in American Education: The National Experience, 1783-1876, that

...the American population diversified as it increased (from just under 4 million in 1790 to almost 40 million in 1870), with immigrants arriving in large numbers from various regions of northwestern Europe, notably the British Isles, Germany, Alsace and Lorraine, Switzerland, and Scandinavia, and in smaller numbers from Africa via the West Indies and from China (Cremin, 1980, p. 7).

The growth of population in Massachusetts, and particularly the population in Boston, is also described by Frank T. Carlton in Economic Influences upon Educational Progress in the United States, 1820-1850. He states that,

The entire period (1820-1850) is characterized by the rapid growth of urban population, the development of manufacture, and a multiplicity of inventions. The population of Massachusetts increased during the two decades, 1800-1820, nearly 24 per cent.; during 1820-1840, over 40 per cent.; during 1830-1850, nearly 60 per cent.; but during the same periods the increase in the population of the city of Boston was approximately 73, 115, and 123 per cent. respectively (Carlton, 1965, p. 32).

In 1790 less than one-twentieth part of the total population of Massachusetts lived within the limits of the city of Boston; in 1820, about one-twelfth part, and 1840, about one-eighth part were inhabitants of that city. "Within ten miles of Boston there is now (1846) one quarter of the population of the state, amounting to more than 200,000, chiefly dependent on Boston as the center of business; in 1790 the number was less than a ninth part of the whole" (Carlton, 1965, p. 42).

Boston, and the State of Massachusetts, were setting the tone for educational change throughout nineteenth-century America (Reisner, 1930, p. 368). Massachusetts' influence on other states in the new nation has been demonstrated by the frequent use of the basic language from the state law of 1789 by other states in their school laws and city school regulations (Martin, 1894, p. xii-xiii). William T. Harris pointed out in George Martin's The Evolution of the Massachusetts Public School System, that the 1789 Massachusetts education law stated that,

Instructors of youth should exert their best endeavors to impress on the minds of children and youth the principles of piety and justice and a sacred regard for truth (Martin, 1894, Editor's Preface, p. xii-xiii).

The Massachusetts law provided a partial list of the potential virtues to be cultivated in pupils as a result of their attendance in school. The list included the following:

...love of country, humanity, and universal benevolence; sobriety, industry, and frugality; chastity, moderation, and temperance; and those other virtues which are the ornament of human society and the basis upon which a republican Constitution is founded (Martin, 1894, Editor's Preface, pp. xii-xiii).

Boston's concern for its system of schools is shown by a willingness on the part of the city to spend money for education even during times of financial difficulty for the city. During the 1780's there was a need for economy in public spending. The citizens of Boston approved the spending of the largest sums of money on highways, poor relief and public education (Schultz, 1973, p. 9-10).

The schools of Boston had, for many years, been considered to be superior. "Parents throughout New England sent their children for instruction in the Boston schools and in the numerous private academies and boarding schools of the city" (Schultz, 1973, p. 7). The city of Boston passed its own education law a few months after the state law had been passed. Boston's Education Act of 1789

...laid the foundation of the first comprehensive system of public schools in any American city. In reorganizing the loose system of schools already existing, the Act of 1789 dealt with male and female schooling; the types of schools to be provided; revisions in the curricula; the uniformity of instruction throughout the city; and the formation of a permanent school committee (Schultz, 1973, p. 14).

The Act also attempted to establish a system of schools, each school having its own function. Continuing the tradition of a classical education, the Act provided for at least one school to teach Greek and Latin. This was to "fully qualify" pupils for the universities. Separate reading and writing schools were to be located at the south, the center and the north end of town. These were to offer instruction in English grammar, spelling, writing, and arithmetic, including "vulgar and decimal fractions." Within the vague educational hierarchy of the times, these could be called secondary schools. No provisions existed for primary schools. Students entered the grammar schools at the age of seven and could remain until fourteen. Children under the age of seven either attended a private "dame's school," received training

as apprentices to a master, or learned from their parents at home. The formulators of the Act saw little reason to interfere with these arrangements (Schultz, 1973, p. 15).

Although experiencing mixed success, those responsible for the Education Act of 1789 had tried faithfully to create a uniform system of public education throughout the city. Certainly they had attempted to follow the letter and the spirit of the Massachusetts law recently enacted by the General Court. This law has instructed public schoolmen "to impress on the minds of children and youth committed to their care and instruction, the principles of piety, justice, and a sacred regard to truth, love of their country, humanity and universal benevolence, sobriety, industry, frugality, chastity, moderation and temperance, and those other virtues which are ornament of human society and the basis upon which the republican Constitution is structured (Schultz, 1973, p. 19).

Boston's Education Act of 1789 was the first sign of foundation building for a comprehensive system of public schools anywhere in the new nation (Reisner, 1930, p. 378; Schultz, 1973, p. 11 & 14). The measures being taken were aimed primarily at dealing with a perceived instability not only within education, but also within the rapidly changing structure of society in Massachusetts, as well as other parts of the country.

According to Michael Katz,

For a complex variety of reasons, schools came to be perceived as the key agencies for uplifting the quality of city life by stemming the diffusion of the poverty, crime, and immorality that were thought to accompany urban industrial development. As Henry Barnard phrased the problem: "The condition and improvement of her manufacturing population, in connection with the education of the whole people, is at this time the great problem for New England to work out." Schools had to halt the degeneracy of the New England character and heal the developing class gulf within New England cities, where

existed "poverty, ignorance, profligacy, and irreligion, and a classification of society as broad and deep as ever divided the plebeian and patrician of Ancient Rome" (Katz, 1975, p. 30).

Boston's Education Act of 1789 established a permanent school committee that would be responsible for making educational decisions in Boston. The composition of the committee would represent the "philosophical, political, and moral interests". This committee was fully expected to engineer public morality and social order through the inculcation of appropriate values and behaviors under the auspices of education (Schultz, 1973, pp. 19-20).

In the Education Act of 1789 Boston officials believed they had created an instrument for fashioning public morality. Public schools would instill in youth the principles of piety, sobriety, frugality, and industry. Schools would inculcate deference to established authority (Schultz, 1973, p. 22).

Between 1800 and 1820 the population of Boston grew from 24,937 to 43,298. This increase in population included an increase in the number of poor people within the city. It was believed that the growing number of poor people were creating financial and moral problems for the city. It was further believed that these problems threatened the security and prosperity of the city (Schultz, 1973, pp. 24-25). The growing element of poverty and its associated element of crime would need to be controlled and contained. The public school was perceived, by many, as being the "most practical container" (Schultz, 1973, p. 25).

The formulators of Boston's Education Act of 1789 had seen no need for primary schools (Bunker, 1916, p. 2; Reisner, 1930, pp.

365-366; Cubberley, 1947, p. 138; Eby, 1952, p. 566; Katz, 1971, p. 324; Schultz, 1973, pp. 23-41). The growing population of the city eventually convinced influential people that public education would be able to solve some of the problems resulting from many pupils not being granted entrance into the grammar schools as a result of not having the required skills of reading and writing. In 1818 the Boston School Committee created the Primary School Committee to oversee the operation of a system of primary schools (Bunker, 1916, p. 30; Cubberley, 1947, pp. 137-138; Katz, 1971, p. 324; Schultz, 1973, pp. 23-41; Pulliam, 1976, pp. 61-62). By 1820, Boston's public taxation was paying for free public education for all children between the ages of four and fifteen. Educational opportunity in the rudiments was now available to all children. All children in the city were, however, not taking advantage of this opportunity (Schultz, 1973, p. 43-44). The public of Boston had been successful in their efforts to alter the negative impact of the grammar school entrance requirement which called for each pupil to be able to read and write. This requirement, which placed the responsibility for teaching these skills on the parents - to either teach their children to read and write or to be able to afford the necessary tutors to teach the skills. Many of the city's parents were unable to accomplish this either as a result of no interest, no abilities in this area, or not enough money. The parents wanted the educational system expanded to provide a level of schools within the Boston system where their children could learn these essential skills. The children were to be sent to the primary school to learn these skills, thereby being assured of entrance to the next level of education (Reisner, 1930, pp. 365-366;

Eby, 1952, p. 566; Goodlad and Anderson, 1963, p. 48; Schultz, 1973, p. 25; Pulliam, 1976, pp. 61-62).

The social instability was felt to be soluble through public schooling, and especially through schooling for the children of the lower-classes. Horace Mann proclaimed, "The Common School is the greatest discovery ever made by man....Other social organizations are curative and remedial; this is a preventive and an antidote" (Schultz, 1973, p. 48). By the 1840's, educators and school reformers in Boston and other New England states had reached agreement on the social role of the public school being one which promised social stability in a time of dramatic change (Cubberley, 1947, pp. 148-149; Greer, 1972, p. 55; Schultz, 1973, p. 68; Katz, 1975, p. 32; Davis, 1976, pp. 140-147; Spring, 1986, p. 109).

The social instability which was believed to be threatening the society of the reformers was a direct result of the industrialization of the new nation which, in turn, resulted in a significant increase in immigration and further resulted in an increase in urbanization. The changes taking place within education were facilitated by reactions to the pressures of these three interrelated historical events (Martin, 1894, pp. 187-189; Reisner, 1930, p. 363; Monroe, 1940, pp. 222-227; Cubberley, 1947, pp. 144-149; Bayles and Hood, 1966, p. 116; Katz, 1971, p. 297; Church and Sedlak, 1976, p. 70; Kaestle and Vinovskis, 1980, p. 115; Kaestle, 1983, pp. 23-24 & 63-64).

The pressures of industrialization intertwined with immigration and urbanization to produce an educational need. Educational reformers of the time were emphasizing the need to develop a

consciously guided process by which immigrants could be assimilated into the American way of life. The common school would be the mechanism for this assimilation process. Calvin Stowe, in 1836, stated,

It is altogether essential to our national strength and peace that the foreigners should cease to be Europeans and become Americans (Davis, 1976, p. 146). The school-house is that crucible (of social amalgamation), and the schoolmaster is the only alchemist who can bring free gold out of the crude and discordant materials (Davis, 1976, p. 146).

The reformers believed that the common school could protect ...society against the giant vices which now invade and torment it; - against intemperance, avarice, war, slavery, bigotry, the woes of want and wickedness of waste... (Nasaw, 1979, p. 38).

The events of history provided the common school movement with several distinct aspects which differentiated it from all preceding educational developments. The first aspect was the emphasis on educating all the children in a common school. The reformers believed and presented the case that if all children regardless of their religious, social, and ethnic background were educated together, the tension between groups would be reduced. Political conflict would also be reduced as a result of all children receiving a common social and political ideology through their common schooling. The reformers aimed to solve the political and social problems of the nation through the common schooling of the nation's children (Spring, 1986, p. 71).

The second aspect of the common school movement was the emphasis of the reformers on the common school becoming a vehicle

by which governmental social, economic, and political policies were passed on to the nation's citizens. According to the reformers, the common school would be the vehicle through which society's problems would be eliminated (Spring, 1986, p. 71).

The third aspect of the common school movement was its resulting creation of state agencies for the control of education at the local level. The reformers emphasized the need for centralized control in order to effectively carry out governmental social, economic, and political policies. Standardization of policy implementation could not be achieved, the reformers believed, when each school district functioned without some form of centralized control and guidance (Katz, 1975, pp. 33-35; Spring, 1986, p. 71-72).

These three distinct aspects of the common school movement were not part of a revolution against previous educational thought, but they were markedly different from the previous direction of education in the new nation. The common school reformers wanted to create an articulated, highly organized system through which the problems of society (as they saw them) could be solved, and, thereby, maintain social stability within a rapidly changing environment (Spring, 1986, p. 72).

The essential beliefs of the common school reformers were that schooling could solve the problems of society by eliminating three primary elements of the problem: 1) poverty, 2) crime, and 3) the tensions between social classes (Kaestle, 1983, p. 64). To accomplish these things, the common school reformers were attempting to organize a system of schools which would do the following: 1) educate all children in a common schoolhouse, 2)

utilize schooling as an instrument of government social, political, and economic policies, and 3) be controlled by state agencies rather than local agencies (Cubberley, 1947, pp. 356-358; Wiggin, 1962, pp. 148-149; Schultz, 1973, pp. 113-114; Katz, 1975, pp. 33-35; Spring, 1986, p. 71-72). The independent natures of the schools were keeping alive some of the social class differences that the reformers believed were causing part of the social instability (Katz, 1975, pp. 33-34; Spring, 1986, pp. 56-57).

There was strong political disagreement regarding the concept of government controlled schools. The two political parties - the Whigs and the Democrats - were in opposition to each other on the question of who should be controlling the schools. Most Whigs were in favor of centralized government control of the schools. The Democrats, however, were resistant to expanding the power of government and stressed the need for democratic local control of the schools (McClusky, 1920, pp. 132-135; Katz, 1971, p. 305-309). The key figures in the common school movement stressed that there was a distinct need to organize a centralized and cohesive system of schools. The common school reformers believed this could not be done under the concept of democratic local control (Reisner, 1930, pp. 364-365; Bayles and Hood, 1966, p. 135; Katz, 1971, pp. 313-314; Schultz, 1973, pp. 19-21). The need for a common school system to impart the same basic information and knowledge to all children required a centrally controlled system of schools . Democratic local control would not insure uniformity. It would merely perpetuate the same basic differences between schools and

educational programs as currently existed (Bayles and Hood, 1966, pp. 135-136; Schultz, 1973, pp. 66-67; Katz, 1975, pp. 33-34).

The common school reformers were interested, for the most part, in accomplishing three primary goals. The first of their goals was to establish free elementary education for all children in a common school system. The second goal was to develop a system which would produce a trained corps of teachers. The third goal was to centralize control of the educational system under the authority of the state. An integral part of the centralized control issue was the development of a graded system of schools. This graded system would facilitate a system of standardization in instruction and thereby produce a level of uniformity that would allow for great efficiency within education (Martin, 1894, p. 222; Reisner, 1930, pp. 360-361; Wiggin, 1962, p. 149; Goodlad and Anderson, 1963, pp. 45-47; Bayles and Hood, 1966, pp. 129-130; Katz, 1971, pp. 315-316; Greer, 1972, p. 72; Schultz, 1973, pp. 107-108 and 116-131; Duke, 1975, p. 26; Davis, 1976, pp. 146-147).

Horace Mann and the other common school reformers were working within a series of historical events which were assisting them in their efforts to create a cohesive and unified system of common schools. The events of history assisting them were the industrialization of America, the influx of immigrants, the emigration of native-born Americans from rural areas to the manufacturing centers, the Pestalozzian educational philosophy within the Prussian educational system and its graded structure generating considerable attention in this country, the efficiency and successful reduction in educational cost of the Lancasterian system, the

willingness of the public to support a common school for all children, and the political support of the Whigs in government, who wished "to establish centralized, efficient agencies that would superintend the moral development of the nation in much the same way that the economic institutions they advocated would superintend the development of the flourishing industrial economy" (Church and Sedlak; 1976; p 70).

The common school reformers were very much aware of the inefficiency of the one-room schoolhouse approach to educating large numbers of pupils. The evidence of inefficiency was to be found everywhere within the ungraded school system in nineteenth-century America. The number of children needing to be properly educated was increasing greatly. The success of the monitorial system had shown that education could be delivered to large numbers of children efficiently and cheaply (Monroe, 1940, pp. 363-364; Cubberley, 1947, p. 134).

The growing emphasis on efficient organization within the expanding industrial society found support within the ranks of educational reformers. The interest in efficient educational institutions was partially spurred by reports about the highly efficient educational institutions in Europe, and especially in Prussia. The schools of Prussia first gained the attention of American educational reformers with the publication of a report written by the Frenchman, Victor Cousin, in 1831 and later translated into English, in 1835. This report created great interest in the organization of the Prussian school system. Following the publication of Cousin's report in the United States, the interest in school

organization and in traveling to Europe to view these highly organized schools, first hand, increased dramatically. Even prior to Cousin's report, there was interest in what existed in Prussia. In 1818, John Griscom, a physician and educator in New York, traveled to Prussia and returned with praise for the organization of the school system with its required attendance for all children, the classifying of children by ages, and its government support for schools. Griscom reported his findings and observations in A Year In Europe. 1818-1819. Following the publication of Cousin's report, Calvin E. Stowe traveled to Prussia and reported back approvingly on what he had observed (Bunker, 1916, p. 24; Monroe, 1918, pp. 691-692; McClusky, 1920, p. 38). Stowe's report, The Prussian System of Public Instruction, was published in 1836 - the year before Mann became Secretary of the Massachusetts Board of Education. Stowe's journey to Prussia was at the request of the Ohio legislature and his report, published by that body, was copied and distributed to every school in Ohio. Stowe's report emphasized the requirement of universal attendance by all children, the compulsory state support of the schools, the professional training of the teachers, professional supervision within the system of schools, and the expanded and enriched curriculum. Armed with the information from these reports, Horace Mann left for his personal tour of Europe's schools in 1843. Later that same year, Mann's Seventh Annual Report to the Massachusetts Board of Education presented his findings while in Europe, including his impressions of the Prussian system of schools (Bunker, 1916, pp. 19-36; Monroe, 1918, pp. 691-694; McClusky, 1920, pp. 38-46 and pp. 132-145; Reisner, 1930, pp. 360-362;

Cowen, 1931, p. 28; Burton, 1934, pp. 205-206; Russell and Judd, 1940, pp. 31-32; Monroe, 1940, pp. 255-257; Cubberley, 1947, pp. 356-363; Eby, 1952, pp. 564-565; Wiggin, 1962, pp. 127-141; Bayles and Hood, 1966, pp. 120-122; Krug, 1966, p. 73; Martin, 1972, pp. 30-32; Schultz, 1973, pp. 126-128; Church and Sedlak, 1976, pp. 95-99; Pulliam, 1976, p. 71; Barlow, 1977, pp. 165-166; Kaestle, 1983, pp. 72-73; Spring, 1986, pp. 134-135). Mann emphasized his beliefs regarding the Prussian system's superiority to the system which currently existed in Massachusetts, and, especially, in Boston. In his Seventh Annual Report, Mann states that,

The first element of superiority in a Prussian school, and one whose influence extends throughout the whole subsequent course of instruction, consists in the proper classification of the scholars. In all places where the numbers are sufficiently large to allow it the children are divided according to ages and attainments, and a single teacher has the charge only of a single class or of as small a number of classes as is practicable. I have before adverted to the construction of the school-houses by which, as far as possible, a room is assigned to each class. Let us suppose a teacher to have the charge of but one class, and to have talent and resources sufficient properly to engage and occupy its attention, and we suppose a perfect school. But how greatly are the teacher's duties increased and his difficulties multiplied if he have four, five, or half a dozen classes under his personal inspection. While attending to the recitation of one his mind is constantly called off to attend the studies and the conduct of all the others. For this very few teachers amongst us have the requisite capacity, and hence the idleness and the disorder that reign in so many of our schools, excepting in cases where the debasing motive of fear puts the children in irons. All these difficulties are at once avoided by a suitable classification, by such a classification as enables the teacher to address his instructions at the same time to all the children who are before him....There is no obstacle whatever, save prescription, and that vis inertiae [sic] of mind which continues in the beaten track because it has not vigor enough to turn aside

from it, to the introduction at once of this mode of dividing and classifying scholars in all our large towns (Bunker, 1916, p. 25).

It was this Seventh Annual Report which is said to have caused the greatest public awakening to the common school movement. Mann's report of his findings was reacted to by the schoolmasters of Boston as though it had been a personal attack on their competencies and abilities. A group of Boston's schoolmasters combined their efforts and produced a 144 page book attacking Mann and his report. Mann responded with a 176 page publication in rebuttal to the Boston schoolmasters. The schoolmasters responded to Mann's rebuttal, and Mann again responded to the schoolmasters. The schoolmasters had been unable to refute effectively Mann's ideas and ultimately dropped the debate. Through these public written debates, more than the Seventh Annual Report itself, the public became more aware of some of the issues regarding the organizational operation of Boston's schools (McClusky, 1920, p. 135; Cubberley, 1947, pp. 361-363).

The public was becoming more aware that educational improvement was possible and that there existed a model by which educational improvement could be approached systematically. The Prussian model called for more cohesiveness in control through a centralized approach to system building. The people of Boston were familiar with a form of centralized control as a result of the Boston School Committee's establishment in 1789. The public had been successful in getting what they wanted from the Boston School Committee in 1818 and had seen their city's school system expanded

to include the primary schools (Goodlad and Anderson, 1963, p. 48; Schultz, 1973, pp. 23-41).

During the years just preceding 1843 and the publication of Mann's Seventh Annual Report, an emphasis on the grading of schools, as a way to develop a more complete and cohesive system, was becoming an important issue. Henry Barnard, in Connecticut, and Calvin Stowe, in Ohio, have been identified as leading characters in the gathering and dissemination of information regarding the grading of schools. Stowe had been sent to study the Prussian system of schools in 1836 by the Ohio legislature. His report to this body had been copied and sent to all the schools in Ohio. Ohio was also the home of the Western Literary Institute and Samuel Lewis, the Ohio Superintendent of Schools, belonged to this organization. Lewis was instrumental in bringing attention to Stowe's report and in having it presented to the seventh annual meeting of the Western Literary Institute in 1838. Horace Mann was aware of Stowe's positive reaction to the Prussian state-controlled system of schools. The information in Stowe's report was later presented and discussed at the Common School Convention in Hartford, Connecticut in 1839. Attending this convention were such prominent school reform figures as Calvin Stowe from Ohio, George B. Emerson from Massachusetts, and Henry Barnard from Connecticut. Barnard used his Connecticut Common School Journal to further discuss the grading of schools as a form of educational improvement in November, 1839. Barnard also included a discussion of graded schools in his report to the Connecticut Board of Education. Mann's trip to Europe in 1843 and his subsequent report to the

Massachusetts Board of Education strengthened the emphasis on improving education through centralized control of the school system and the grading of the schools (McClusky, 1920, pp. 38-46 and 134-139; Wiggin, 1962, pp. 145-148). This centralized control would create a truly public system of education for all children and, thereby, enable education to become a stabilizing factor in a society which was becoming, by the reformer's standards, increasingly unstable. Mann and the other common school reformers continued their efforts at creating the common school and an organizational system that would provide a comprehensive and cohesive system of schools that they believed would accomplish the stabilization of society. In their minds, the proper classification of pupils was becoming a critical element in the reorganization of the schools. Grading would, they believed, make teachers more effective and would reduce the size of currently overcrowded classrooms. The over-crowding and individual recitation procedures utilized within these classroom environments were not producing the efficient educational processes that the reformers felt would be produced under a graded and centrally coordinated approach to education

The nineteenth-century educational reformers appear to have been dramatically impressed with the Prussian system of schools. They were impressed with the idea of state control and were additionally impressed with the manner in which pupils were classified within the system of schools (Barlow, 1977, pp. 165-166). The educational reformers in nineteenth-century America wanted one school system for all children. They wanted a system of schools that would efficiently provide an education for all children

in the society regardless of their social and economic standing. The society in which these reformers were working was one in which efficiency and low cost production was becoming an extremely important quality. The industrial revolution was creating a highly efficient system by which manufactured goods were flooding the marketplace. The United States was becoming a manufacturing powerhouse. Manufacturing centers were increasing and efficient productivity was becoming a sign of the times. Common school reformers wanted educational institutions which would fall neatly into the same efficiency-of-productivity scheme of things.

The general system of schools in Boston, and the rest of the nation, had been ungraded - the one-room-school approach. The pressure of industrialization and its associated immigration, emigration, and urbanization, had created a population situation in the cities which resulted in more and more children needing to attend school. The system then in use, the ungraded system, tried to accommodate large numbers of children of various ages and levels of ability in one large classroom under the direction of a single teacher. This unsystematic, and highly inefficient, approach was far from the efficient approach to production which had become so successful within the large-scale manufacturing environment in Boston, and the rest of New England. The manufacturing emphasis was changing from small to large operations and from skilled craftsmen to economical mass production with an emphasis on the division of labor so that each worker produced only a small part of the finished product. The chief educational reformers in America were particularly interested in creating a system which would reduce the

inefficiency of individualized instruction (Brubacher, 1931, p. 86; Cubberley, 1947, pp. 148-149; Goodlad and Anderson, 1963, p. 204, Tyack, 1974, p. 72; Nasaw, 1979, p. 36; Tyack and Hansot, 1982, p. 6; Kaestle, 1983, p. 65).

The final development of the first fully age-graded school took shape in the efforts of two key educational figures in Boston - George B. Emerson and John D. Philbrick. A totally new concept within the educational system of Boston was born out of their efforts and agreement with Horace Mann and the other common school reformers. Emerson had been at the Common School Convention in Hartford, Connecticut in 1839, along with Mann. He had described the efforts Boston had been making in creating graded schools - the schools were graded according to levels - which did not specifically classify students. When Mann and the Boston schoolmasters had finished their public controversy over Mann's Seventh Annual Report, the Boston School Committee was not in a position to ignore the operational issues that had come to public attention. The School Committee would have to become even more involved in seriously looking at the issues and finding ways to improve the organization and operation of the schools of Boston:

George B. Emerson was appointed chairman of the annual visiting committee of the the public schools of Boston for 1847 and 1848. His report on the condition of the school system dispels any idea that one may have as to the existence of a system of grading within those schools which was to blossom into the rigidly graded, one-teacher-to-a-class, one-class-to-a-compartment, plan that he set up the next year (1848) in the Quincy Grammar School (McClusky; 1920; p 139).

Emerson expounded on his plan in a speech he gave at the dedication of a new schoolhouse in Somerville in the same year:

What I desire to aim at in this plan is this, that, as far as is possible, all who are at the same point in their studies and progress, should be together, under the guidance of one teacher and they only should be present, for illustrations on the blackboard and all other direct instruction may be given to a whole school at once, as well as to a single scholar, and if any others than the class are present, they are an interruption to the teacher and are themselves interrupted by him. . . .

If all in the same apartment were of one class, and under one teacher, and with the same lessons to learn, much more might be done, and better done, and in a shorter time. Under such an arrangement, the difficulties of government would be nearly annihilated, short sessions would take the place of long sessions, and time would thus be gained for healthful exercise and recreation in the open air.

Another advantage would be that the desire for advancement from one grade of school to another would be a healthful stimulus to exertion, and might take the place of personal rivalry - the most pernicious evil, which now exists in schools.

Another advantage would be, that the progress of a child from beginning to the end of his course would likely be onward (McClusky; 1920; p 144).

The grammar schools in Boston, at that time, were classified as reading and writing schools. Each school, generally located in the same building, had its own headmaster. The reading and writing schools were called two-headed because there were, in fact, two headmasters in the same building. Part of Emerson's 1847 report dealt directly with this two-headed organizational situation:

Another evil of the system of two equal heads, is the inequality and unfairness of its operation.

.....

The arrangement of the children in classes would be more just and more satisfactory if made by one master than it can be if made by two. For it must often happen that one master will place high in the first class a pupil whom the other master would leave low in the second class. This must of necessity take place, so long as the opinion of one of the masters is formed from his knowledge of one part of the mind and character of the pupil, while the opinion of the other is formed from his knowledge of another part of the mind and character. This must inevitably happen, and inevitably lead to injustice towards the pupil. . . . Every pupil under the two-headed system, is now subjected to considerable inconvenience from the necessity of conveying his books from school-room to school-room. . . . All this inconvenience and injury would be saved under one system, as each pupil might have one desk, which would be his for months together. . . . There is no necessary connection between the different branches now taught in the writing school.

The most defective part of our system is, as has been already stated, that which affects the condition of children in the lowest classes in the grammar school - those recently promoted from the primary schools. . . . To many of the children it is a serious misfortune to be promoted, as it is equivocally called, from the primary schools, where they are doing well, to the grammar, where they do nothing.

All parts of the system should be strictly and exactly subordinated. The studies in each part should be arranged with reference to those of every other part. Each lower department should be preparatory to that above it, and every child should be advanced according to his attainments. Especially should the evil be avoided of allowing a few bright children to remain, to be made a show of, at the head of an inferior school or class, when the effect is to delay their real progress, and to draw off the attention of the teacher from the many who particularly need his care, to the few who will most contribute to his reputation.

There is, therefore, one other defect to be noticed and it is one which apparently admits of but one certain remedy. It is the want of connection between the various parts of what we call our system, but which in consequence of this want loses its chief claim to be considered a system (McClusky; 1920; pp 139-140).

The report submitted by Emerson provided the details of the problems existing in the current system of schools in Boston. He later described the single-headed system which he believed would solve these problems. It was this single-headed system which was put into operation in the Quincy Grammar School in 1848, under the direction of John D. Philbrick as the school's headmaster.

The common school reforms, as evidenced in the Quincy Grammar School were setting a new educational standard. The beliefs of Horace Mann, Henry Barnard, Calvin Stowe, and the other reformers were being born out in reality.

A Basis For A Rationale

The common school reformers were convinced that the reasons behind the schools not solving the problems of society was not the fault of the educational institutions, but the fault of those who were currently responsible for the day-to-day operations of those loosely organized schools. Educational institutions had been allowed to become inefficient agencies that were having no impact at all on civilization (Nasaw, 1979, p. 38). Within industrialization the school reformers found a design by which they believed an improved system of education could be built. The reformers had in their immediate grasp a successful organizational model which was unquestionably working extremely well within Boston and all of New England. Boston had become the New England capital of the American manufacturing system. That system "was the innovative combination of the separate processes of production with the use of interchangeable parts - that revolutionized American industry"

(Schultz, 1973, p. 103). The new factory system had proven to be enormously successful. The methods used in the organization of the industrial enterprises were believed to be directly applicable to the educational system in its attempts to successfully assimilate the growing numbers of foreign immigrants and native-born American emigrants from rural areas into the new urban ways of life (Martin, 1894, p. 188; Schultz, 1973, pp. 103-106, p. 116 & p. 130-131; Hottelmann, 1974, p. 93; Tyack, 1974, p. 72; Katz, 1974, pp. 32-36; Rooke, 1975, p. 26; Davis, 1976, pp. 147-150; Tyack and Hansot, 1982, pp. 6-7; Kaestle, 1983, p. 72; Spring, 1986, p. 54-55 & pp. 133-134).

The reformers believed that the educational system could be fashioned on the factory model. They worked diligently to design a blueprint for the system which would produce the same efficient operation in the school that had been established in the factory (Schultz, 1973, p. 104-151; Tyack and Hansot, 1982, pp. 6-7). The public and private statements of these educators and reformers regularly implied that the product of the educational system would be the child, fully educated in the values and behaviors required for their roles in the newly industrialized society. The reformers were impressed with the organizational potential of this efficient and economical approach to organizing the work-place. They saw, in this organizational system, an application for the organization of the educational institutions. The factory system had changed the limited, and expensive, production processes of individual skilled craftsmen to the mass production processes of divided labor. The efficient and economical factory processes could be applied to

schools and result in an efficient and economical system by which education could produce the kind of citizens required for the newly industrialized way of life (Martin, 1894, pp. 221-222; Reisner, 1930, pp. 370-371; Schultz, 1973, pp. 130-131; Hottleman, 1974, pp. 92-93; Tyack, 1974, pp. 72-76; Duke, 1975, p. 26; Katz, 1975, pp. 32-36; Davis, 1976, pp. 147-150; Nasaw, 1979, pp. 35-37; Tyack and Hansot, 1982, pp. 6-7; Kaestle, 1983, pp. 69-70; Goodlad, 1983, p. 466; Spring, 1986, pp. 54-55).

The efficiency of the factory was becoming a standard for nineteenth-century educational endeavors, especially in urban schools. The utilization of the Lancasterian system by social and religious organizations emphasized, through charity schools, the need to educate the children of the lower- and working-classes (Davis, 1976, p. 146-147; Nasaw, 1979, p. 21). Prior to the development and utilization of the Lancasterian system education had been an expensive process. It previously required an individualized approach to instruction. The Lancasterian system demonstrated that large numbers of children could be educated relatively quickly and for very little money (Monroe, 1940, pp. 363-364; Cubberley, 1947, p. 134; Monroe, 1971, pp. 364-368).

The economics of education in the middle of the nineteenth century changed the role of women in education dramatically. The quest for efficiency and reduced cost proved to be an important factor in the development of a unified educational system (Reisner, 1930, pp. 384-388; Church and Sedlak, 1976, pp. 78-79). The profession of teaching, once dominated by men, was beginning to shift to one in which the dominant gender would be female. Male

dominance would be concentrated in the supervisory roles within the profession of teaching. There were two interrelated social beliefs at work regarding the concept of male supervisory dominance. First, there was wide-spread belief that women were, by nature, subordinate to men. In the nineteenth century, it was natural that as the school system modeled the factory system, men would manage and supervise, and the women would teach the pupils. Second, one of the primary themes which ran through the Pestalozzian philosophy being adopted by the common school reformers was that having women teach young children was natural since women were prone to emotional activities, like teaching, and men were prone to rational activities, like management and supervision. "From the perspectives of nineteenth-century society, the rational male should govern the school and provide limits and order to the emotional nature of the female school teacher" (Spring, 1986, p. 137).

Women had been employed as teachers primarily for the youngest of school children. Women were usually employed to teach during the summer sessions, when the younger children attended school in greater numbers than the older students. The creation of the primary school system in Boston, which spread throughout the New England states, increased the employment opportunities in education for women. As the common school movement gained support and general popularity, the utilization of women became more and more attractive, especially in relation to schools for younger children. In 1833, Samuel Burnside spoke before the American Institute of Instruction and said that, "in the village of Worchester, Massachusetts, six out of eight permanent schools were

ably taught by ladies, and he recommended that all primary schools should be taught by members of that sex" (Reisner, 1930, p. 384-385). Burnside presented a strong case for the moral advantage of using women as primary school teachers. Additionally, Burnside also stressed that women worked for far less money than did men. An important economic aspect of the common school movement was becoming an essential selling point. In 1838, Henry Barnard based a great deal of his personal campaign to improve the schools of Connecticut on the employment of women as teachers. Barnard felt women were particularly suited for this teaching responsibility. Barnard felt that elementary teaching

...required in the teacher a rare union of qualities, seldom found in one in a hundred of the male sex, and to be looked for with the greatest chance of success among females, in whose hearts, love, hope and patience have first kept school (Reisner, 1930, pp. 385-386).

It is hardly a matter of wonder that with women teachers possessing such manifest moral and professional superiority over men and being employable at a fraction of the cost of men, they should be preferred (Reisner, 1930, p. 388).

The fact that female teachers were working for far less than male teachers can be seen in a report of the United States Commissioner of Education in 1868. This report contained statistics from 42 cities throughout the United States which showed that in these cities, there were 901 male teachers and 8220 female teachers. The average male teacher's salary per year was \$1702.55. The average female teacher's salary per year was \$542.45. The

economics of efficiency in education was obviously working (Reisner, 1930, p. 388).

Gerald A. Ponder points out in "Schooling and Control: Some Interpretations of the Changing Social Function of Curriculum" that:

While the Lancastrian schools indicate the long-standing appeal of the idea of efficiency, that doctrine asserted its greatest influence in the late nineteenth century and early twentieth centuries. The efficiency movement in these decades developed as an artifact of an increasingly urbanized, industrialized, and centralized society, and it was led by persons in search of ways to control and order the new threats posed by a society in transition. Throughout the nineteenth century, school reformers had sought to systematize the apparent chaos they saw. Creating and conserving an American character meant unifying the people, and to unify the people, "public education must itself be unified and efficient." Unification and efficiency meant standardization - of textbooks, the curriculum, teacher training, and the grading of classes (Davis, 1976, p. 147).

Ponder further states that:

At least in rhetoric, if not in fact, a great deal of standardization in the school program had been accomplished by the last quarter of the nineteenth century, as indicated by the "Statement of the Theory of Education in the United States of America as approved by Many Leading Educators." The school program described in this statement emphasized homogeneity, efficiency, and obedience to authority. It stated that, since the "peculiarities" of American society weaken the family's hold over its children, a system of public education was necessary to develop the discipline and morals required by the "modern industrial community." Further, education had to coincide with the "commercial tone" of this industrialized community by placing "great stress" on "military precision ...punctuality, regularity, attention, and silence as habits necessary through life for successful combination with one's fellow men in an industrial and commercial civilization" (Davis; 1976; pp. 147-148).

The common school reformers, impressed with the organization of the Prussian schools and with the efficiency of the newly industrialized manufacturing processes in this country, worked diligently to create a system of schools which mirrored the organized efficiency of the business world. The age-graded structure provided the educational system with that mirror image. In 1908, Frank Tracy Carlton wrote in Economic Influences upon Educational Progress in the United States, 1820 - 1850 that:

Today when industry is quickening her pulses, the demand for efficient tax-supported schools is growing insistent. Manual training and laboratory work were not placed in the curriculum until subdivision of labor and the factory system made such additions imperative. The demand for tax-supported schools became strong and vigorous after the growth of the industrial class and the development of the modern city with its heterogeneous population. The evidence...shows that the tax-supported, state-maintained public school is essentially an outgrowth of industrial evolution (Carlton; 1965; pp. 141-142 - reprinted in 1965 - originally published in 1908).

An Identified Rationale

William Shearer stated that the age-graded school satisfied the requirement of "the greatest good to the greatest number, in the shortest time, at the least expense" (Shearer, 1899, p. 23). This concept of the processes of education, when compared with the general concept of efficiency, provides an excellent rationale for what the age-graded organizational structure represented in the nineteenth century and currently represents from a system standpoint. A precise definition of efficiency, is the "accomplishment of or ability to accomplish a job with a minimum expenditure of time

and effort" (from The Random House Dictionary of the English Language, 1967). Included in the concept of efficiency is the concept of efficient, which according to the same source, is "performing or functioning in the best possible and least wasteful manner". The common school reformers appear to have been almost obsessed with the concept of efficiency. They were witnessing the creation of a new level of efficiency in the world of manufacturing. The situation in education, as they saw it, was not organized and was, they believed, grossly inefficient. The new manufacturing organizational methods were available to the reformers in their efforts to establish a workable system within education. The quest for efficiency in manufacturing provided the reformers with a rationale for the creation of a system that would, they believed, satisfy the requirements of assimilating, indoctrinating, and educating future citizens of the new industrialized American society. The common school reformers designed a foundation for an educational system which they believed did, in fact, measure up. The efficiency rationale for the age-graded organizational structure, as evidenced in the organization of the Quincy Grammar School, established a system which allowed for the processing of great numbers of children through an educational environment based on uniformity and standardization. A system rationale based on the concept of providing the best possible education to the greatest number of children, in the shortest period of time, at the least expense, made excellent sense in the middle of the nineteenth century.

The reformers believed, as well, that this new and highly efficient system in education would solve the problems of poverty, crime, and tension between classes. This effort on the part of the common school reformers produced an educational system foundation which, in comparison with what had preceded it, would provide a sound educational base for all children. The reformers believed that the welfare and future survival of the new nation required an absolutely efficient process of getting all the citizens involved in the processes of making the nation work. Education, they believed, was the vehicle by which the nation's people would arrive at their appropriate destiny. (Martin, 1894, pp. 221-222; Reisner, 1930, pp. 370-371; Goodlad and Anderson, 1963, p. 204; Davis, 1976, pp. 18-19, p. 140, p. 142-143, pp. 146-147 & pp. 148-149)

Acceptability Of The Structure Based On The Identified Rationale

The basic acceptability of the age-graded organizational structure within public education might be considered somewhat obvious. The structure has been in existence for almost one hundred and forty years. However, the reasons for that acceptance, while also somewhat obvious, seem also to have been accepted more than understood. The rationale of efficiency, based on the manufacturing model of standardization and uniformity, which produced the age-graded organizational structure in the middle of the nineteenth century, is still an essential part of American industry. It is therefore, understandable that it would be a strong force within public education. The manner in which that strength developed can be seen in the reports of those educational historians who have

contributed to the body of knowledge which explains American Public Education.

George H. Martin pointed out, in 1894, that the graded school

...has been worked on factory principles, with children as raw materials to be worked up according to uniform patterns, by uniform processes, to a uniform standard (Martin, 1894, p. 222).

William J. Shearer pointed out in 1899 that:

...the graded school merely applies the law of the division of labor to education, and is, therefore, advantageous for many reasons. Far better than the ungraded school, it measures up to the important requirement of the greatest good to the greatest number, in the shortest time, at the least expense (Shearer; 1899; p. 23).

Shearer also pointed out that,

The classification and grading of schools is but the application to education of the same law of division of labor that prevails in every successful business. It is not only the most economical way, but it is a prerequisite to satisfactory progress upon any line....The teacher's time and talents being concentrated upon certain work, it becomes easier by repetition, and, therefore, is likely to be done more efficiently (Shearer, 1899, p. 18).

The growth of the centralized state-supported school system throughout the nation can be attributed to the creation of, as Cremin puts it,

...a growing number of amateurs, semiprofessionals, and professionals associated with schooling who in the very nature of their enterprise became partisans of more schooling. By the 1840's and 1850's, many of them were well known to one another. James G. Carter and Horace Mann in Massachusetts; Henry Barnard in Connecticut; J. Orville Taylor in New York;

Charles Fenton Mercer and Henry Ruffner in Virginia; Calvin Wiley in North Carolina; Caleb Mills in Indiana; Calvin Stowe, Albert Picket, Samuel Lewis, and Catharine Beecher in Ohio; Ninian Edwards and John Mason Peck in Illinois; John D. Pierce and Isaac Crary in Michigan; Robert Breckenridge in Kentucky; William F. Perry in Alabama; John Swet in California; and George Atkinson in Oregon. They organized into associations like the American Institute of Instruction, the Western Literary Institute and College of Professional Teachers, and, more nationally, the American Lyceum, and enlisted as many recruits as they could attract, not only from the teaching profession, but also from politics and public life. They published and edited numerous periodicals like the *American Journal of Education* (1826-1830, William Russel, ed.) and its successor, the *American Annals of Education* (1830-1839, W. C. Woodbridge, ed. [1831-1838]), the *Common School Assistant* (1836-1840, J. Orville Taylor, ed.), the *Common School Advocate* (1837-1841, E. D. Mansfield, L. Harding, and Alexander McGuffey, eds.), the *Journal of Education* (1838-1840, John D. Pierce, ed.), the *Connecticut Common School Journal* (1838-1842, Henry Barnard, ed.), the *Common School Journal* (1839-1852, Horace Mann and William B. Fowle, eds.), and the *American Journal of Education* (1855-1881, Henry Barnard, ed.), along with the various state common school journals that began to serve the burgeoning teaching profession. They were the prime movers at the public school conventions that assembled in the several states and that often facilitated the coalescing of opinion that eventuated in legislation; they organized the coalitions that enacted legislation; and they frequently ended up the political leaders and professional managers of the public school systems that resulted. In effect, they spearheaded the public school movement, articulating its ideals, publicizing its goals, and instructing one another in its political techniques; indeed, in the absence of a national ministry of education, it was their articulating, publicizing, and mutual instruction in politics that accounted for the spread of public education across the country (Cremin; 1980; pp. 175-176).

This kind of close association between the architects and supporters of a centralized, state-supported, age-graded system of schools could not help but spread the word of efficiency. By virtue

of their efforts the concepts of organizational efficiency within education became the hallmarks by which educational systems spread throughout the country.

It is pointed out in The Culture Factory that:

By the 1850's public discussion about educational policy illustrated the complete acceptance of the industrial model by education. In 1852, Nathan Bishop, the first superintendent of Boston schools, reaffirmed the principle of the graded school by explicitly drawing upon the example of the factory system. "The proper size of a School House in a large city, where the population is dense must be determined by the number of pupils required in one building in order to make the best classification. The best classification is nothing more than a wise application of the principle of the division of labor, which has done so much to advance and to perfect the various branches of industry." Children, Bishop implied, were the interchangeable parts of a factory system of production, while the schools were the factories themselves. Both educational policy and expediency required "organizing our System throughout on one uniform plan, thus bringing the whole into harmony with the great practical principles on which the best-managed business-enterprises are carried forward." Just as the products of industrialization added to the comforts of life, so children, educated in uniform graded schools, would contribute to the comfort and safety of American society. At a time when social instability and a lack of respect for authority seemed the hallmark of urban life and the leading characteristic of the younger generation, Bishop affirmed that the new organized schools would "inspire the young with a sentiment of respect for law, and should teach them by precept to yield a cordial obedience to the regulations of Schools, the ordinances of the City, and the laws of the Commonwealth and of the nation."

There was little doubt in the minds of educational reformers that the Uniformity System or the American System of Manufacturing could be adapted to the system of public education with the same beneficial results for citizenship as it had for material prosperity. The graded school was to be one of the chief tools used in the process of manufacturing good Americans.

By 1860, all of Boston's primary and grammar schools operated on a graded system (Schultz, 1973, pp. 130-131).

It has been shown that nineteenth-century educational reformers, as well as those directly responsible for the operation of the schools, had quite emphatically accepted the factory model for improved educational operation. Raymond Callahan, in Education and the Cult of Efficiency, points out that:

The procedure for bringing about a more businesslike organization and operation of the schools was fairly well standardized from 1900 to 1925. It consisted of making unfavorable comparisons between the schools and business enterprise, of applying business-industrial criteria (e.g., economy and efficiency) to education, and of suggesting that business and industrial practices be adopted by educators. Evidence of business influence appeared...in 1905 at the annual meeting of the National Education Association; a symposium was held on the question "What Are at Present the Most Promising Subjects for Such Investigations as the National Council of Education Should Undertake." Significantly, the first topic was a "Comparison of Modern Business Methods with Educational Methods," and the first speaker, George H. Martin, secretary of the State Board of Education in Massachusetts, told his audience, "the contrast between modern business methods and the most modern methods in education is so great as to suggest some searching questions. In the comparison, educational processes seem unscientific, crude, and wasteful."

By 1907, there were indications that aspects of the business ideology had been accepted and were being applied by educators themselves. In that year, William C. Bagley, one of the leaders in American education for the next three decades, published a textbook on education entitled *Classroom Management*, which was saturated with business terminology. Bagley stated, for example, that the problem of classroom management was primarily a "problem of economy: it seeks to determine in what manner the working unit of the school plant may be made to return the largest dividend upon the material investment of time, energy, and money. From this point of view, classroom management may be looked upon as a 'business' problem." In this

book, which was written for teachers in training and which went through more than thirty reprintings between 1907 and 1927, Bagley, in stressing the need for "unquestioned obedience" as the "first rule of efficient service," said the situation was "entirely analogous to that in any other organization or system - the army, the navy, governmental, great business enterprises (or small business enterprises, for that matter)" (Callahan; 1962; p. 6-7).

Callahan further explains that:

Although much of the pressure was applied through the journals and through the appearance of businessmen before educational meetings, it also came very directly through school boards, which were dominated increasingly by businessmen. Before 1900, most city school boards had been large, unwieldy organizations governed to some extent by politics. Gradually they were reorganized...This meant not only a reduction in membership (in Boston from twenty-four to five) but, in the spirit of municipal reform, a change in composition over to businessmen who were to run the schools along business lines. Thus the superintendent of schools was hired and fired by and responsible to a small group of businessmen. All these changes were to have important and far-reaching consequences for the schools and especially for the administrators. The self-image of these men began to change. All through the nineteenth century leading administrators such as Horace Mann, Henry Barnard, and William T. Harris had conceived of themselves as scholars and statesmen and, in professional terms, the equal of the lawyer or the clergyman. After 1900, especially after 1910, they tended to identify themselves with the successful business executive. That this business orientation was a prerequisite for success and tenure on the job was clear, and the schoolmen knew it. As early as 1900, for example, the President of the National Education Association prophesied that "the real educational leaders of the age whose influence will be permanent are those who have the business capacity to appreciate and comprehend the business problems which are always a part of the educational problem" (Callahan; 1962; pp. 7-8).

Callahan points out also that:

Between 1915 and 1929 thousands of men had received professional training at the master's degree level and had gone into important educational positions all over the country. More important, hundreds had received their doctor's degrees in educational administration and had gone into even more important positions as superintendents of large cities, as officials in state departments of education, and most important of all as professors of education in teachers colleges and universities where they taught teachers and other student administrators and directed research studies even for the doctor's degree.

In order to document this great diffusion, career studies were made of forty-three individuals who received their doctor's degrees in educational administration between 1910 and 1933....By far the greater majority of the forty-three became associated with some institution of higher learning at one time or another. Thirty-nine of these men held positions as professors of education in colleges or universities, thirty-three on a full time basis and the others part time or in summer school. In administrative posts, five became chairmen of a department of education, nine became deans of schools or colleges of education, two were college or university vice-presidents, while one was an acting president and three were presidents. Within individual school districts, eighteen of these men held administrative positions and seven became superintendents. Twelve had at least one administrative post on the state level. Six of the forty-three men held positions in the U. S. Office of Education and four were on national, government-sponsored committees studying educational problems. Three held positions in the National Education Association. Eleven held educational research posts (outside of governmental positions) and one worked in an educational capacity for the Russell Sage Foundation. There were seven who held some type of editorial post with an educational journal or other professional publication, some of these holding more than one such position. Four engaged in "private practice" as educational consultants.

In addition to the direct influence these men had upon their students and upon the school systems in which they worked some of them wrote books through which the business-managerial conception of administration was conveyed to the new generation of administrators. One of the most prominent of these men was Fred Engelhardt....Fred Engelhardt had finished his doctoral work in administration at Teachers College in 1925 and had written

his thesis on forecasting school population, in the course of which he adapted the Bell Telephone Company's technique for predicting population trends in education. Shortly after he received his doctorate, he became professor of educational administration at the huge state University of Minnesota. In 1931 his book *Public School Organization and Administration* was published - a book in which the keynote was sounded in these opening lines of the preface: "The characteristic which distinguishes a successful enterprise from others is management. Businessmen hold that the success of a corporation is dependent nine parts on management and one part on all other factors, including luck, a maxim equally applicable to a public-school system." ...the entire volume was devoted to the legal, financial, organizational, and mechanical aspects of education (Callahan, 1962, pp. 248-250).

Modifications To The Rationale

It might be safe to make an assumption at this point that the age-graded structure, in light of its longevity, has been based, for the most part, on a very simple rationale that has not required much in the way of modification. The essential simplicity of a rationale which emphasizes "the greatest good to the greatest number, in the shortest time, at the least expense" would make modification a rather difficult task.

John Goodlad reported, in "A Study of Schooling: Some Findings and Hypotheses", that:

Our findings reveal that schools differ in their ambiance. But in the how and what of teaching, a school is a school is a school. Why?

Teachers teach as they were taught. They employ the techniques and materials modeled during their 16 or more years they were students in schools. Relatively late in this learning through modeling, they experienced a modicum of professional preparation to teach - presented largely in the same telling mode

to which they had become accustomed. Probably the most significant part of this professional preparation was the student teaching, during which the neophyte practiced under supervision what he or she had previously observed teaching to be. The future teacher probably talked and read about alternative teaching practices (such as those advocated by John Dewey) but had no opportunity to practice them. Moreover, as part of the early socialization into teaching, he or she probably came to realize that a job would depend more on the mark received for student teaching than on the mark for a course in educational philosophy or psychology.

Professional education is intended to immerse the neophyte in the state of the art and science of teaching and simultaneously to separate him or her from the myths and anachronisms of conventional practice. Teacher education appears to be organized and conducted to assure precisely the opposite (Goodlad, 1983, p. 469).

Goodlad adds that:

Teacher education programs fail to separate teachers from what they have come to perceive teaching to be. Their formal and informal experiences as teachers and the messages they receive from the internal and external context of schooling all conspire to reinforce the status quo. The cards are stacked against innovation.

The irony is that every statement of goals for schooling - whether those we extracted from official state documents, those formulated by legislative committees trying to define basic education, or those put together by parent or teacher groups - is broad and comprehensive in its implications for classroom practice. Yet pedagogy and curricula are geared, it appears, to only a small fraction of these goals - to the lowest common denominators. Schools and those who work in them are not chastised for perpetuating this discrepancy. Rather they are reinforced for doing so and run a serious risk of censure if they try to do otherwise (Goodlad, 1983, p. 470).

In "The Carnegie Report - A call for Redesigning The Schools", an article published in 1986, Marc Tucker and David Mandel point out that:

Much has changed as a result of the education reform movement of the past three years. States and local school boards have raised standards for students and teachers alike, substantially raised teacher salaries in many locales, created career ladders, and instituted merit pay plans. But little has changed in the ways schools operate -- how time is spent, how decisions are made, how professional educators relate to each other and to their charges (Tucker and Mandel, 1986, p. 24).

The public education system in this country has undergone a great deal of scrutiny in the last several years as a wide variety of individuals, organizations, and government agencies have investigated the problems within education. The results of these investigations have been the reform reports which provide a variety of paths towards improvement of the educational system. It seems unremarkable that A Nation At Risk contains under the title "Call to Action", the following:

From the late 1800s through the mid-20th century, American schools provided the educated workforce needed to seal the success of the Industrial Revolution and to provide the margin of victory in two world wars. In the early part of this century and continuing to this very day, our schools have absorbed vast waves of immigrants and educated them and their children to productive citizenship National Commission On Excellence In Education, 1984, p. 81).

The emphasis seems to be that what worked in the past will continue to work in the future. The recommendations contained in the reform report continue to emphasize the uniformity and

standardization of the age-graded organizational structure. The rationale of efficiency based on the simple concept of "the greatest good to the greatest number, in the shortest time, at the least expense" continues within American Public Education.

Summary

The common school reformers were attempting to build a system of schools which would provide free education for all children, be tax-supported, controlled by state government agencies, and still be economically operated. There were several basic elements within their campaign which fell neatly into place as they worked to develop support for the centralized system of schools. Industrialization, immigration, and urbanization had created an environment in which the previous system of unconnected schools was not felt to be dealing effectively with the problems of poverty, crime, class tension, and immorality. The schools were disorganized and not in a position to combat the societal instability which was developing. There was no logical path by which all children could learn the appropriate values and modes of behavior required in the newly industrialized nation. There was no unification of schools into a logical progression from lower to higher that would carry all children from beginning to end. Educational opportunity was widespread, but, since there was no comprehensive and cohesive system yet in existence that met all of the reformers needs, only those who could afford the tutors or the private schools had a complete educational path available to them. The need for a single unified and highly organized system of education was obvious. The

manufacturing processes of the new industrialized nation required disciplined and educated workers who would be willing to fulfill their roles. The mass production model worked well when the workers followed the rules and were willing to defer to the established authority. The reformers saw the same potential mass production requirements and benefits as being directly applicable to the processes of education. The number of students had been growing and had created overcrowded classrooms. The pauper school had successfully utilized the Lancasterian system of one master and many monitors. Pupils had been divided into small work groups for group recitation purposes. The cost of educating the poor had been reduced considerably. The economics of education was again improved by the influx of women into the profession of teaching. The knowledge of the Prussian system of education greatly assisted the reformers in designing a system which would meet the needs as they saw them. The elements of efficiency were at hand. All that was needed was the actual organizational structure within the schools themselves. The age-graded organizational structure would be the final piece of the puzzle. The Quincy Grammar School provided the final puzzle piece.

The Quincy Grammar School introduced the fully age-graded organizational structure to this country. A preliminary form of this structure had already been shown to be extremely efficient when utilized within the Lancasterian system. Dividing children according to specified knowledge units, and utilizing single teachers for each group had been the forerunner of the fully age-graded structure. The Lancasterian system did not satisfy the common school reformers'

desire to build a comprehensive, cohesive, and centralized system. There were significant problems within the system due to its dealing primarily with children classified as poor. Middle- and upper-class children were not attending the Lancasterian schools. The reformers knew that, based on what they had seen, and/or read about, in the Prussian system, grouping children according to age and attainments was a far more efficient way to structure the schools. The inefficiency of the ungraded structure, with its demand for individual recitations could be tolerated when the number of pupils in the school was small. However, as the number of pupils in school began to increase, over-crowded classrooms were becoming routine. The overcrowding was obviously not making individualized instruction any more efficient. The reformers were convinced that the system which the Prussians were using, and they believed the Prussian system to be superior, was applicable to education in the United States.

Mann and the other reformers believed that the proper classification of pupils was a key element in the building of an educational system that would efficiently move each student through a standardized and uniform educational production process in logical steps, and would, thereby, produce an educated individual who would be ready and willing to fulfill his role in society.

The underlying rationale behind the efforts which produced the age-graded organizational structure seems to be the simple rationale of standardized, uniform production efficiency. This rationale is best summed up as being, "the greatest good to the greatest number, in the shortest time, at the least expense"(Shearer,

1899, p. 23), which results in "children being worked up according to uniform patterns, by uniform processes, to a uniform standard" (Martin, 1894, p. 222). When viewed from the perspective of nineteenth-century educational reformers, this rationale was, more than likely, seen to be a requirement to improve the systems of education. It produced an organized, cohesive, and uniform system of education which, for all intents and purposes, continues to be based on the same rationale of efficiency-of-production.

CHAPTER IV

CONCLUSIONS AND RECOMMENDATIONS

The purpose of this study was to identify an underlying rationale for the development of the age-graded organizational structure within American Public Education as a result of reviewing the literature of education history. This chapter will present the conclusions drawn from that search and some recommendations which seem to follow from the results of this study. The conclusions will be presented as responses to the research questions presented in Chapter One. The recommendations are based on those responses.

Conclusions

Research Question Number 1:

What was taking place in the nineteenth century that made the development of the age-graded organizational structure possible?

The findings resulting from the search of the literature present, through various interpretations, American society in the nineteenth century as being affected by several significant historical events; the industrialization of America, the increase in immigration into the country, and the increase of population in and

around manufacturing centers. These events were not found to be specifically causal factors in the development of the age-graded organizational structure. They were, however, found to have been instrumental in setting a tone within nineteenth-century America which emphasized the concept of a common education for all children being a potential solution to the problems which these events were creating.

The common school reformers, reacting to a perceived instability within society, were pressing for increased availability of education for all children, as well as more centralized control of the educational institutions. Their belief seemed to be that universal, common education within an organized and cohesive system of educational institutions would greatly assist in solving society's problems.

The reformers saw schools of all types and all levels being under-utilized especially by those who, they believed, needed the proper education the most. The system of schools was, for the most part, disorganized and catering to wealthier citizens than to the majority of the populace. The autonomy and independence within the wide variety of schools would not, the reformers believed, help solve the problems as they perceived them. The growing knowledge, within the ranks of the common school reformers, about the Prussian system of education assisted the reformers' efforts to change the processes of education in this country. The success of the Lancasterian monitorial schools also assisted the reformers' efforts. The Lancasterian schools had shown that the education of large numbers of children was not only possible, but that it could be

accomplished cheaply when done in accordance with a strict division of labor concept. The growing success of the division of labor concept within the newly industrialized system of manufacturing can also be seen to have greatly assisted the efforts of the reformers to standardize and organize a uniform and cohesive system of public educational institutions.

Research Question Number 2:

Is there, in fact, an identifiable rationale for the development of the age-graded organizational structure?

That the reformers emphasized organization, centralization, and efficiency as the ways to develop effective educational institutions is completely understandable. They were witnessing a massive change in the economic productivity of American society as a direct result of manufacturing enterprises becoming standardized, organized, centralized, and efficient. The logic of producing the same situation within education, and thereby, improving the social conditions, as a result of a systematic common education for all children, appears to make sense. A rationale based on standardization and uniformity, when non-standardization and non-uniformity was previously all that was available, can not be looked upon as undesirable. The system of educational institutions which resulted from this rationale of efficiency, though years in the making, was a significant improvement over the highly disorganized, inefficient, loosely coordinated, educational institutions which preceded them.

The rationale of standardized and uniform efficiency dictated that the work to be done by each individual would be separated into specific segments to be completed within specific time frames. As Shearer stated, the age-graded organizational structure met the requirement of "the greatest good to the greatest number, in the shortest time, at the least expense."

Research Question Number 3:

Is there, in the rationale, and in the history of the age-graded organizational structure, information which supports its widespread acceptability and its longevity as a functional organizational structure?

The age-graded organizational structure remains, for the most part, the standard by which students acquire the knowledge required for completion of the public school program. The common school reformers, interested in improving the schools through a system based on standardized and uniform efficiency of operation, designed a system which was capable of processing large numbers of children quickly and cheaply.

In line with the common school reformer's efforts to consolidate and centralize the educational system, and thereby, improve education's overall efficiency, Daniel Duke, points out that the resulting educational institutions can be seen to fall neatly into

...six basic qualities of a bureaucracy as outlined by Max Weber:

1. Division of labor and specialization of tasks.
2. Hierarchical authority structure.
3. Formal system of rules and regulations governing official decisions.

4. Separate administrative and productive staffs.
5. Impersonal, universalistic orientation to clients.
6. Career employment for bureaucratic officials.

That public schools conform to these traits is attested to by most researchers. In a typical reference, Ronald Corwin's A Sociology of Education, the author writes:

"Authority tends to be organized along hierarchical lines in public schools. In large systems there are several levels of authority, perhaps including a department head, assistant principals, system-wide supervisors, and other assistants to the superintendent, school board members, lay advisory committees, and county and state supervisory agencies. Officials at each level face the dual problem of satisfying their subordinates and their superiors.

In the conventional public school, the teacher's role is that of a 'functionary.' Sloan Wayland argues that the teacher is a 'replaceable unit in a rationally organized system, and most of the significant aspects of work are determined for him.' Rising teacher militancy and union activity are resulting in more power for teachers as a group; yet individual teachers still function largely at the discretion of the school administration. That students, in turn, are accorded so little responsibility by teachers is due partly to the fact that they themselves are delegated so little.

Citizens are not any better off than teachers. The power they exercise is largely negative. They can reject board members, bonds, and budgets, but rarely can they exert a positive or innovative influence over the school system. Parent-teacher organizations and citizens' advisory groups seem to exist more for the efficient dissemination of information from above than the generation of pressure for educational improvement from below" (Duke, 1976, p. 35-36).

It can be stated at this point that the actual widespread acceptability and longevity of the age-graded organizational structure itself is one of the best testimonials to the age-graded organizational structure. The system of public schools developed on the age-graded structure and based on standardized and uniform

efficiency, mirroring the general success of industry, has accomplished what it set out to accomplish - to process large numbers of children through a series of educational institutions in a short period of time at the least expense. Prior to this organizational structure, education for the majority was concentrated on primarily providing no more than the rudiments of reading and writing.

Research Question Number 4:

What significant modifications, if any, have been made to the rationale which may have helped the age-graded structure remain as the primary organizational structure within American Public Education?

It would appear that there have been no significant modifications to the original underlying rationale for the age-graded organizational structure within public education in this country. It would also appear that this is based on the extreme simplicity of the rationale itself. The rationale, whether developed during the creation of the age-graded structure itself or added on after the fact, presents itself well in regard to what the system apparently aimed to provide in the way of a public educational system. The literature shows that there have been movements to modify the system's organizational structure since before the end of the nineteenth century. However, in light of the fact that the age-graded organizational structure is still the predominant form within public education, the original rationale appears to be as strong now as it was in the nineteenth century.

There has been a wide variety of change in such things as required classes, non-required classes, enriched learning opportunities , and in a wide variety of additional programs for students. However, for all intents and purposes, the process of moving pupils through a series of highly defined learning periods, which last approximately one school year, with the general expectation that all pupils will learn basically the same amount of material in basically the same amount of time is still the dominant feature of the age-graded organizational structure within American public education.

The nongraded and alternative school enthusiasts have gained considerable ground over the years, and have shown that the age-graded structure is not necessarily a requirement for success. Yet, the large system of public education has not changed drastically from the form that was designed in mid-nineteenth-century America. The rationale of standardized and uniform efficiency still applies and maintains the essential public educational institution as a functional reality.

Recommendations

The recommendations presented in this section are based on the findings of this study and are provided as an appropriate next step in the process of investigating the age-graded organizational structure within American Public Education. The recommendations are as follows:

1. Changes taking place within the world of business and industry, or manufacturing, appear to have been instrumental in the

development of the age-graded organizational structure. It would appear also that the world of business and industry in this part of the twentieth century is facing the potential need for significant change. Additional research into the dynamics of the relationship between change in education and change in the world of business and industry might be in order. Peters and Waterman, in their book In Search of Excellence, have provided the world of business and industry with significant research results regarding excellence in the management of American corporations. Some of the results of the research done which produced their findings may very well be applicable to public education. An example of their findings is as follows:

Weick suggests that organizations learn v-e-r-y slowly. They pay obsessive attention to habitual internal cues, long after their practical value has lost all meaning. Important strategic business assumptions (e.g., control versus a risk-taking bias) are buried deep in the minutiae of management systems and other habitual routines whose origins have long been obscured by time.

Weick supposes that the inflexibility stems from the mechanical pictures of organizations we carry in our heads; he says, for instance: "Chronic use of the military metaphor leads people repeatedly to overlook a different kind of organization, one, that values improvisation rather than forecasting, dwells on opportunities rather than constraints, discovers new actions rather than defends past actions, values arguments more highly than serenity and encourages doubt and contradiction rather than belief" (Peters and Waterman, 1982, pp. 6-7).

The authors also point out that,

The problem in America is that our fascination with the tools of management obscures our apparent ignorance of the art. Our tools are biased toward measurement and analysis. We can measure the costs. But with these tools alone we can't really

elaborate on the value of...going that extra mile for the ordinary customer (Peters and Waterman, 1982, p. xxiv).

This would seem to be especially appropriate in light of what Frank T. Carlton stated, in 1908:

If generalization is warranted by the data before us, the conclusion is warranted that, in modern times, the trend of educational advance is determined by economic evolution. On the one hand, the student of educational problems, who is striving to improve the work of the public schools, must study the trend in industrial and social evolution; and on the other hand, the political economist and social scientist must consider the economic and social significance of uniform advance in educational and industrial evolution (Carlton, 1965, p. 145).

If there is, in fact, a close linkage between the dynamics of change within business and industry and education, then it may be worthwhile to develop a strategy for attempting to identify some of the specifics concerning that linkage. This area of investigation may provide valuable information regarding organizational changes within business and industry, which seem to emphasize the limitations of the conventional bureaucratic organizational structure in direct relation to how these changes may, or may not, be applicable to education.

2. It would appear that efforts to modify significantly the age-graded organizational structure have been generally unsuccessful except on a small scale. The belief that change in organizational structure within public education is needed is not new. It has been supported almost as long as the age-graded structure itself. William J. Shearer identified, in 1899, a rationale behind modifying the age-graded organizational structure.

Though the graded school has many advantages, we should not close our eyes to the fact that it is open to the serious charge that it does not properly provide for the individual differences of the pupils; that it is not sufficiently pliant to accommodate itself to the pupils, but demands that the pupils accommodate themselves to it; and that grading, which was intended to serve the children, has now become the cruel master (Shearer; 1899; p. 23-24).

Shearer further points out that:

In a late issue of The Educational Review, Dr. Prince, Secretary of the Massachusetts Board of Education, speaks as follows on this subject:

"There is no question of school organization at present more important than that of a proper adjustment of conditions to the needs of individual pupils. The assumption upon which most courses of study seem to be based, that just so much ground must be gone over with equal thoroughness by all pupils in the same time, is the greatest bane of our public school system" (Shearer; 1899; p. 95).

These reactions to the age-graded organizational structure have been carried into our current educational arena by a wide variety of individuals and organizations. Additional research into the dynamics of the relationship between learner needs and educational system needs would seem to be in order. Research, which investigates the possible reasons for the failure of educational approaches based on other than age-graded organizational structure to achieve widespread national acceptance, may provide further understanding regarding the general level of success of the age-graded organizational structure.

3. The concept of standardized and uniform efficiency which seems to have produced the age-graded organizational structure has recently been examined within the world of business and industry. In the The Bigness Complex, Walter Adams states that:

Efficiency is a multifaceted concept. There is operating efficiency. Here the question is whether giant corporations are producing mousetraps at the lowest possible cost. Then there is innovation efficiency. Are corporate giants in constant quest for a better mousetrap? Finally, there is social efficiency. Perhaps mousetraps should not be produced at all. Perhaps rodent control should be effectuated through superior pesticides or a greater investment in feline capital (Quoted in "A Case Against Bigness"; MSU Today; Vol. 6 No. 2; Winter, 1987; p. 10).

Research into the types, or levels, of efficiency which might be most productive in public education would also seem to be in order. This area of research might provide information that would bridge the apparent gap between the schools of thought regarding the benefits of the age-graded structure and the benefits of the nongraded or alternative structure in public education. The apparent shift, within business and industry, toward examining the concept of large-scale organizational efficiency may offer educational decision-makers some additional information regarding the manner in which high levels of efficiency may be maintained while, at the same time, place further emphasis on the overall effectiveness of accomplishing educational goals and objectives.

4. This study has focused on the development of the age-graded organizational structure within public education in the United States. The age-graded structure become, however, an

almost universally accepted model throughout the world. A series of comparative studies might be conducted to explore the possible rationales for the adoption of this organizational structure model in other countries.

5. The age-graded organizational structure, while widely accepted, is not actually a pure form. There are, as stated in Chapter One, a wide variety of variations within this model. The variations developed to accommodate specific populations of learners - physically impaired, special education, and gifted (to name a few) - might have developed for reasons which do not allow for utilization of the age-grading model. A study which examines the variety of organizational structures developed to meet the needs of these other learner populations might be in order. Examining the rationales for adaptations to the age-graded structure by these other structural models might shed additional light on potential change opportunities within the age-graded structure itself.

Summary

The purpose of this study was to identify an underlying rationale for the development of the age-graded organizational structure within American Public Education. The literature of education history has provided information regarding events taking place in the nineteenth century which seem to have been instrumental in the development of that structure. The literature has also provided information which helped develop an identifiable rationale for the creation of the age-graded organizational structure. That

rationale still appears to be the basis for the predominant organizational structure within public education in this country.

Recommendations for further research have been offered to encourage further investigation into the organizational structure which places learners into school programs based primarily on their chronological age.

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