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AN EXAMINATION OF BACKGROUND CHARACTERISTICS AND FORMAL AND INFORMAL EDUCATIONAL EXPERIENCES OF A SELECTED GROUP OF GENESEE INTERMEDIATE SCHOOL DISTRICT TWELFTH-GRADE STUDENTS AND THEIR COUNTERPARTS FROM JAPAN AND THE FEDERAL REPUBLIC OF GERMANY

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AN EXAMINATION OF BACKGROUND CHARACTERISTICS AND FORMAL AND INFORMAL EDUCATIONAL EXPERIENCES OF A SELECTED GROUP OF GENESEE INTERMEDIATE SCHOOL DISTRICT TWELFTH-GRADE STUDENTS AND THEIR COUNTERPARTS FROM JAPAN AND THE FEDERAL REPUBLIC OF GERMANY

By

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ABSTRACT

AN EXAMINATION OF BACKGROUND CHARACTERISTICS AND FORMAL AND INFORMAL EDUCATIONAL EXPERIENCES OF A SELECTED GROUP OF GENESEE INTERMEDIATE SCHOOL DISTRICT TWELFTH-GRADE STUDENTS AND THEIR COUNTERPARTS FROM JAPAN AND THE FEDERAL REPUBLIC OF GERMANY

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The purposes of this study were:

1. To examine and compare the structure, organization, and goals of education in the Genesee Intermediate School District (GISD) in the United States with the structure, organization, and goals of education in two other industrialized societies, Japan and the Federal Republic of Germany (FRG).

2. To examine and compare the achievement, characteristics, and educational experiences of a selected group of GISD twelfth-grade students.

3. To examine and compare the educational experiences of a selected group of GISD twelfth-grade students with those of their counterparts from two other industrialized societies.

4. To examine how selected GISD twelfth-grade students evaluate their high school experiences.

The study sample was drawn from 13 school districts in the GISD and from foreign exchange students from Japan and Germany. A total

sample of 443 students participated in the study. An instrument was developed to collect data, which were compiled and portions analyzed by chi-square. Background information on the three populations was compared and discussed.

Information was also obtained from individuals knowledgeable about education in the United States, Japan, and Germany. The interviews focused on the current status of education in those countries and possibilities for transferring aspects of educational programs and practices from one country to another. The data were categorized and summarized by descriptive content analysis.

Major results of this study suggested that:

1. There are a number of similarities as well as differences in the organization and structure of education in the three countries.

2. Screening, sorting, and selecting practices exist in all three countries, but such practices are more openly acknowledged in Japan and Germany than in the United States.

3. Many people seem to have inaccurate perceptions about the number of students in the countries studied who participate in extracurricular activities, work for pay, are involved in educationally focused out-of-class experiences, read for pleasure, and watch television.

The results of this exploratory study are intended to provide information that educators and others can use to make more valid cross-national comparisons.

To my parents, Geraldine and Fred Fortner, who have encouraged and inspired me to dream. They modeled for me the importance of hard work and of choosing worthwhile goals. Finally, they taught me to take pride in my successes and to accept setbacks as being momentary pauses on the road to further accomplishments.

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To those individuals in the Genesee Intermediate School District office who contributed to the success of this research I offer a sincere thank-you. This includes Dr. David E. Spathelf, superintendent, who saw the need for and gave his approval of this research; Rachael E Moreno, associate superintendent, for her interest, professional and moral support, sense of humor, and, most important, her friendship; Suzanne Birtwistle, my secretary, who prepared the comprehensive final draft and gave much beyond the call

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And last but surely not least, my love and thanks to my two wonderful children, Danyl and Christopher, who have assisted and been an inspiration to me as I sought to climb one more mountain. I hope that they will one day enjoy the satisfaction that comes from setting and achieving a major personal goal.

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CHAPTER I

THE PROBLEM

Introduction

Much has been written in the past several years about the state of education in the United States. The image being projected and promoted implies that American schools have "fallen from some former state of grace" (Hawley, 1985). Indeed, the reports lead one to believe that schools in the United States have plummeted from a pinnacle of pride in what they accomplished into a sea of despair, thereby necessitating major educational reform. The apparent proof of this distressing situation was provided by the results of cross-national comparative studies (1964 and 1985) of the achievement of students of various ages in a wide range of industrialized countries. Portions of the results have been reported, supported, and elaborated on in media headlines and statements such as the following:

> "U.S. STUDENTS TOP ONLY THIRD WORLD IN MATH--STUDY" (Flint Journal, March 11, 1986)
>
> "JAPAN IS OUTSMARTING US, ALL RIGHT" "What ought to concern Americans most is how much better Japanese children do in school than American kids" (Beck, 1986)

In this "shrinking" world of intense competition, it should not be surprising that items such as these would contribute to a feeling

that something is seriously wrong with the educational system in the United States. As this concern began to grow, the National Commission on Excellence in Education was created to examine the quality of American education and to make a report to the nation. This report, A Nation at Risk: The Imperative for Educational Reform (National Commission on Excellence in Education, 1983), became the basis for the educational reform movements of the 1980s. The report began by describing the scope of educational deterioration within a comparative framework, stating that:

> The educational foundations of our society are presently being eroded by a rising tide of mediocrity that threatens our very future as a nation and a people. What was unimaginable a generation ago has begun to occur--others are matching and surpassing our educational attainments. Our society and its educational institutions seem to have lost sight of the basic purpose of schooling, and of the high expectations and disciplined effort needed to attain them. (pp. 5-6)

The first evidence presented to demonstrate that the United States is indeed at risk was the findings of international comparisons completed more than a decade ago. On 19 academic tests, American students were never first or second; in fact, in comparison with students from other industrialized nations, American students were last on seven tests (National Commission on Excellence in Education, 1983). More recent studies have echoed the same message (Rohlen, 1983; Stevenson, 1986).

As the world becomes smaller through advances in technology and nations become more interdependent, the awareness of each other's capabilities is heightened. Nations are faced with the complex task of striving for a balance between cooperation and competition.

Education, as the basis for a successful industrialized society, is caught up in the struggle.

Leaders in industrialized nations, such as Japan's Prime Minister Nakasone and Illinois' Governor Thompson, are becoming increasingly aware of a need to strengthen their educational systems if they are to remain or become more competitive in a shrinking world of transnational corporations (Ranbom, 1985). Suggestions for changes in educational practices that are based solely on a need to become more competitive in the world may be inappropriate and short sighted. Japan's former Minister of Education, Michio Nagai (1983), expressed his concern about the emphasis on competition when he stated, "It is not an exaggeration to say that education designed to develop men who love learning and think for themselves has already been abandoned."

Also included in A Nation at Risk and media reports have been suggestions that America can improve its educational system by imitating what is being done in other countries such as the Federal Republic of Germany (hereafter referred to as Germany) and Japan. Suggestions in A Nation at Risk and elsewhere have been made to (a) increase the length of the school day and school year, (b) place more emphasis on mathematics and science, (c) assign more homework, and (d) offer fewer electives.

Some question whether one society's educational practices can be adopted and used effectively by another society. Noritake Kobayashi, a Keio University professor, asked, "Can an educational system based on one set of social values and aspirations be

transferred to another society with different values and aspirations and still produce good results?" (Ranbom, 1985, p. 20). In the same journal, Ranbom concluded, "A consensus . . . seems to be that both Japan and the United States must be selective in adopting features from the other's educational scheme. In many respects, the American and Japanese systems are antithetical, mirror images of one another designed with different goals in mind" (p. 20).

Others have arrived at the same conclusion as Kobayashi and Ranbom (Cogan, 1984; Husen, 1983; Shimahara, 1985). In an article entitled "Are Standards in U.S. Schools Really Lagging Behind Those in Other Countries?" Torsten Husen (1983), the major researcher on the International Assessment for the Evaluation of Educational Achievement project, stated, "Comparing the outcome of learning in different countries is in several respects an exercise in comparing the incomparable. School systems with differing objectives and curricula reflect differing national goals" (p. 455). Clearly, there are different points of view concerning the value and efficiency of evaluating schools in the United States in terms of how they compare with schools in other countries.

Need and Rationale for the Study

Many articles, books, reports, and research focusing on comparative education have been published during the past decade. Some researchers have expressed concern that comparisons are being made between schooling in the United States and in other industrialized nations. Hurn (1983) suggested that invidious

comparisons are being made in reports examining systems that differ in terms of objectives, values, and organization. The Council for Chief State School Officers, in its Position Paper and Recommendations for Action: International Dimensions of Education (1984), noted that research in international education is needed. The chief state school officers and others have pointed out the need for accurate and precise research on education in the United States, as well as in other industrialized societies (Boyer, 1983; Goodlad, 1984; Torney-Purta, 1985). Thus, if cross-national comparisons are to be made, data-gathering research should be based on inclusive, not exclusive, information about the state of education in the United States and in other countries.

It is in response to the concerns and recommendations described above that this study was conducted.

Purposes of the Study

The purposes of this study were:

1. To examine and compare the structure, organization, and goals of education in the Genesee Intermediate School District (GISD) in the United States with the structure, organization, and goals of education in two other industrialized societies (Japan and Germany).

2. To examine and compare the achievement, characteristics, and educational experiences (formal and informal) of a selected group of GISD twelfth-grade students.

3. To examine and compare the educational experiences (formal and informal) of a selected group of GISD twelfth-grade students with those of their counterparts from two other industrialized societies.

4. To examine how selected GISD twelfth-grade students evaluate their high school experiences.

The results of this exploratory study can be used by educators and others to make more valid cross-national comparisons. The results can also be used by appropriate school officials to assess the strengths and weaknesses of the educational experiences provided for students in their schools.

Research Questions

The following research questions were formulated to guide the gathering of data for this study.

1. What are some of the differences and similarities in education in the United States and in two other industrialized societies, Japan and Germany?

2. How does the formal educational program of selected twelfth-grade GISD students differ from that of their counterparts from Japan and Germany?

3. Do the number and variety of informal educational experiences of selected twelfth-grade GISD students differ from those of their counterparts from Japan and Germany?

4. Do selected twelfth-grade GISD students differ across academic-achievement groups and by gender with regard to their informal educational experiences?

5. Do selected twelfth-grade GISD students differ across districts with regard to their informal educational experiences?

6. Do selected twelfth-grade GISD students differ across academic-achievement groups in their evaluation of their high school experiences?

Limitations and Generalizability of the Findings

The findings of this study must be considered within the limits of the sample and procedures used in the investigation. The sample from which the data were drawn was limited to (a) selected twelfth-grade GISD students from 13 school districts and (b) selected foreign exchange students in central Michigan from Japan and Germany.

The interviewees were selected because of their knowledge about and professional expertise in some aspect of K-12 education in general, as well as education in one or more of the countries included in the study. The study was not intended to be definitive in nature, but was undertaken to obtain data that could be used by educators and others to make more valid cross-national comparisons.

The study findings may not be generalized to samples other than the ones examined in this study.

Definitions of Terms

The following terms are defined in the context in which they are used in this study.

Organization/structure of education--The grade-level patterns and organizational framework of formal educational institutions.

Goals of education--The stated philosophy and fundamental principles that are intended to guide education in the countries studied.

Sorting, screening, selecting, or sorting-out process--The process by which students are separated into various tracks, types of schools, or instructional programs based on test scores, teacher recommendations, or a combination of factors.

Intermediate school district--In Michigan, a school district in an "intermediary" position between the State Department of Education and local schools; serves as a support-service agency to K-12 districts for educational services and programs. The State Code specifies three major functions for intermediate school districts. Briefly, these include:

1. Serve as an extension of the State Department of Education for certain auditing, monitoring, and information-processing roles.

2. Provide service upon request to K-12 districts unable to provide such services because of size or limited resources or that can be more efficiently operated cooperatively and result in cost savings and/or improved services.

3. Operate cooperative or stand-alone programs such as vocational education and special education for targeted student populations within the K-12 school districts.

The goal of the GISD is to be responsive to the needs of the 21 K-12 districts and to share in a partnership to make education as meaningful as possible for young people, adults, and, for that matter, the community-at-large.

Informal high school information--Extracurricular activities and out-of-class accomplishments/experiences.

Formal high school information--Information such as number of students in the graduating class, class academic ranking, and types of courses offered and/or studied.

Extracurricular activities--Activities that are apart from the formal academic subjects studied (e.g., athletics, hobby clubs, school newspapers/magazines, subject-matter clubs, student government, vocational clubs).

Out-of-class experiences--Activities that provide opportunities for students to demonstrate and/or enhance special skills and abilities in areas of leadership, music, speech, art, writing, science, and athletics. Also included are experiences that will help students become more effective citizens (e.g., community service and work experiences).

Number of extracurricular activities and out-of-class experiences--The actual number of extracurricular activities or out-of-class experiences students in the sample participated in during

their high school years (GISD--4 years, Japan--3 years, Germany--4 years).

Variety of extracurricular activities or out-of-class experiences--The various types of extracurricular activities or out-of-class experiences participated in by students in the sample during their high school years.

High school experiences evaluated--Characteristics of the school programs, facilities, and practices that students were asked to assess (e.g., number and variety of courses offered, classroom instruction, and grading practices and policies).

Summary and Overview

In this chapter, an introduction to the study, the need and rationale for the research, purposes of the study, and research questions were presented. The limitations of the study and definitions of key terms were also given. Chapter II contains a review of literature related to the study. The following areas are covered: (a) similarities and differences in education in the three countries studied; (b) comparative education; and (c) a comparison of practices used in educating academically able students in the United States, Japan, and Germany. The study design and research methodology, data-collection procedures, and data-analysis techniques are explained in Chapter III. In Chapter IV, data gathered from Parts III and IV of the Student Questionnaire are examined, whereas the results of the interviews are the focus of

Chapter V. A summary of the study, conclusions, and recommendations for further research are presented in Chapter VI.

CHAPTER II

REVIEW OF THE LITERATURE

Introduction

Literature relevant to the study is discussed in Chapter II. The chapter is divided into three sections: (a) differences and similarities in education in the United States, Japan, and Germany; (b) comparative education; and (c) a comparison of practices employed in educating academically able students in the United States, Japan, and Germany.

Similarities and Differences in Education in the United States, Japan, and the Federal Republic of Germany

The literature reviewed for this section was selected to answer the following question: What are some of the differences and similarities in education in the United States and in two other industrialized societies, Japan and Germany? Before discussing the similarities and differences in education in the countries being studied, it is necessary to recognize that the topic of education is broad and complex. Therefore, comparative educators who are studying schooling in two or more countries need to limit the scope of their research if they intend to deal honestly with the task. Aspects of education that are considered in this section include governance and financing of education; organization and structure of

education; curricula; length of time courses are studied; required and elective courses; and the role of testing in the sorting-out, screening, and selecting process.

Governance and Financing of Education

The task of identifying and studying educational systems in different countries is a formidable one. For example, in Germany and the United States, the primary responsibility for education resides at the Land or state level of government, and there are few stated national goals. However, certain factors contribute to a high degree of uniformity with regard to the governance and financing of education across Germany (e.g., eligibility of students from any Land to attend universities in any Land, hence the need for uniformity in terms of examinations for the Abitur, which serves as the criterion for university study).

In many cases, however, goals are formulated and acted upon differently in various states of both countries. Indeed, the United States Constitution says nothing about education; thus, the states have that responsibility. Naumann and Kohler (1985) reported that, in Germany:

> In seven of the eleven states, educational goals are explicitly set forth in the state constitutions; the other four states mention such goals in their school legislation. Both general and specific goals are also defined in the comprehensive syllabi prepared by the state educational authorities. (p. 2034)

Eckstein (1985b) noted that, in the United States:

> Education is one of the major responsibilities devolving upon the state, which further delegates considerable responsibilities to the local units of government, counties, and local

> school districts (cities, towns, and local communities). . . . The United States has been largely successful in providing 12 years of free, comprehensive schooling for its young with the opportunity of further or higher education at low cost to students with the desire and ability to continue. The general goals of the education system are: to create unity out of diversity, to foster democratic ideals and practices, to assist individual development, to ameliorate social conditions, and to improve national progress. (p. 5360)

In contrast, in Japan the primary responsibility for education is at the national level, and there are widely agreed upon, explicit national goals. This appears to be a characteristic of education in Japan that is unlikely to change (Ryukyu Shimpo Newspaper, 1987). As reported in a Japanese Ministry of Education publication entitled Outline of Education in Japan (1985), the Fundamental Law of Education is a national statute. The intention of the statute was described in that publication as follows:

> The Fundamental Law of Education enacted in 1947 sets forth the basic national aims and principles of education in accordance with the spirit of the Constitution. The Law defines the central aim of education as "the full development of personality, striving for the rearing of people, sound in mind and body, who shall love truth and justice, esteem the value of the individual, imbued with an independent spirit, as builders of a peaceful state and society."
>
> To achieve this aim, the Law sets forth national principles of education such as equal opportunity of education, co-education, prohibition against partisan political or sectarian education; the Law prohibits "discrimination on account of race, creed, sex, social status, economic position or family origin." (p. 1)

Based on the preceding examples and what has been reported elsewhere (Cummings, 1980; Cummings, Beauchamp, Ichikawa, Kobayashi, & Ushiogi, 1986; Hurn, 1983; Husen, 1983), one can conclude that, in the three countries studied, similarities and differences exist with

regard to the primary responsibility and support for education. Some of these are as follows:

1. In the United States, as in Germany, the primary responsibility for education resides at the state level. However, unlike what is true in Germany and Japan, a considerable degree of responsibility and autonomy is evident at the local level.

2. In Japan, unlike the United States and Germany, the primary responsibility for education resides at the national level.

3. In Germany and Japan, appreciably more of the national income is devoted to education than it is in the United States. (See Table 2.1.)

Table 2.1.--Percentage of national income devoted to education in the United States, Japan, and Germany.

Country	Total Domestic Budget	Gross National Product
United States	8.0%	7.0%
Japan	11.1	5.6
Germany	16.0	5.2

SOURCES: United States: M. A. Eckstein, "United States: System of Education," in The International Encyclopedia of Education Research and Studies, Vol. 9, ed. T. Husen and T. N. Postlethwaite (New York: Pergamon Press, 1985), pp. 5362-5364; Germany: N. Naumann and H. Kohler, "Germany, Federal Republic of: System of Education," in The International Encyclopedia of Education Research and Studies, Vol. 4, ed. T. Husen and T. N. Postlethwaite (New York: Pergamon Press, 1985), p. 2038; Japan: Thomas P. Rohlen, Japan's High Schools (Berkeley: University of California Press, 1983), pp. 120-21.

4. In both the United States and Germany, more than 90% of the expenditures for education are provided at the state and local levels, whereas approximately 50% of the expenditures in the United States are made at the local level. In both countries, less than 10% of the financial support for education is provided at the national level. In contrast, in Japan, a significantly larger percentage of financial support (47.9%) is provided at the national level. More than 75% of the financial support for education in Germany and Japan is provided at the state and national levels, compared to 50% in the United States. (See Table 2.2.)

Table 2.2.--Responsibility for the financial support of education in the United States, Japan, and Germany (in percent).

Country	National	State	Local
United States	8.0%	42.0%	50.0%
Japan	47.9	28.0	24.0
Germany	8.7	72.4	18.9

SOURCES: United States: M. A. Eckstein, "United States: System of Education," in The International Encyclopedia of Education Research and Studies, Vol. 9, ed. T. Husen and T. N. Postlethwaite (New York: Pergamon Press, 1985), pp. 5362-5364; Germany: N. Naumann and H. Kohler, "Germany, Federal Republic of: System of Education," in The International Encyclopedia of Education Research and Studies, Vol. 4, ed. T. Husen and T. N. Postlethwaite (New York: Pergamon Press, 1985), p. 2038; Japan: Thomas P. Rohlen, Japan's High Schools (Berkeley: University of California Press, 1983), pp. 120-21.

5. In Japan and Germany, teachers' salaries are paid primarily by the prefectural/Land government. In Japan, the national

government provides subsidies to assist the prefectural government with teachers' salaries. In contrast, salaries for teachers in the United States are primarily a local responsibility. It is also interesting that in Germany (International Handbook of Education Systems, 1985) and Japan (Outline of Education in Japan, 1985), the Land or prefectural level is responsible for recruiting and appointing teachers (usually lifetime appointments), whereas in the United States recruitment and appointment occur at the local level (Boyer, 1983).

6. In Japan, unlike the United States, facilities are far more standardized and equal in quality across the country, and there are far fewer local school districts (Japan has fewer than 5,000, the United States more than 16,000). School teachers in Japan are expected to remain at a particular school from four to seven years. In the United States there are no such guidelines, but it is not unusual for teachers to remain in the same district and/or building for the major portion of their careers (Cummings, 1986).

7. The three countries also differ with regard to tuition paid and stipends received at the K-12 level. In the United States, education is free. In Japan, upper secondary school students (grades 10 through 12) pay tuition (43,800 yen per year, or approximately $25 per month in 1980 dollars). In Germany, students from age 18 can apply for and receive stipends to continue their schooling, based on need and family income.

The basic assumption underlying several of the educational reform reports of the 1980s has been that nations can learn about

educational practices from one another. Another assumption is that similarities and differences exist among the educational systems and practices in various countries. In the three nations studied, similarities and differences were noted in the governance and financing of education. However, as Cummings et al. (1986) noted, nations that attempt to borrow ideas and practices from one another may encounter considerable difficulty. Nevertheless, realizing that a different approach is working smoothly in another country can help a nation gain a new perspective of the characteristics and problems of its own educational system. Instead of revealing a model to imitate, examining the educational practices of other countries may provide a mirror with which a nation can reexamine its own educational system.

Organization and Structure of Education

The organization and structure of the elementary/primary and secondary educational systems in the United States, Japan, and Germany are shown in Figures 2.1, 2.2, and 2.3, respectively. The following similarities and differences exist among the three countries.

1. Compulsory education begins at age six (first grade) and extends through age 15 (end of ninth grade) in Germany and Japan. In the United States, compulsory schooling extends from age 6 through 16 (usually during tenth grade).

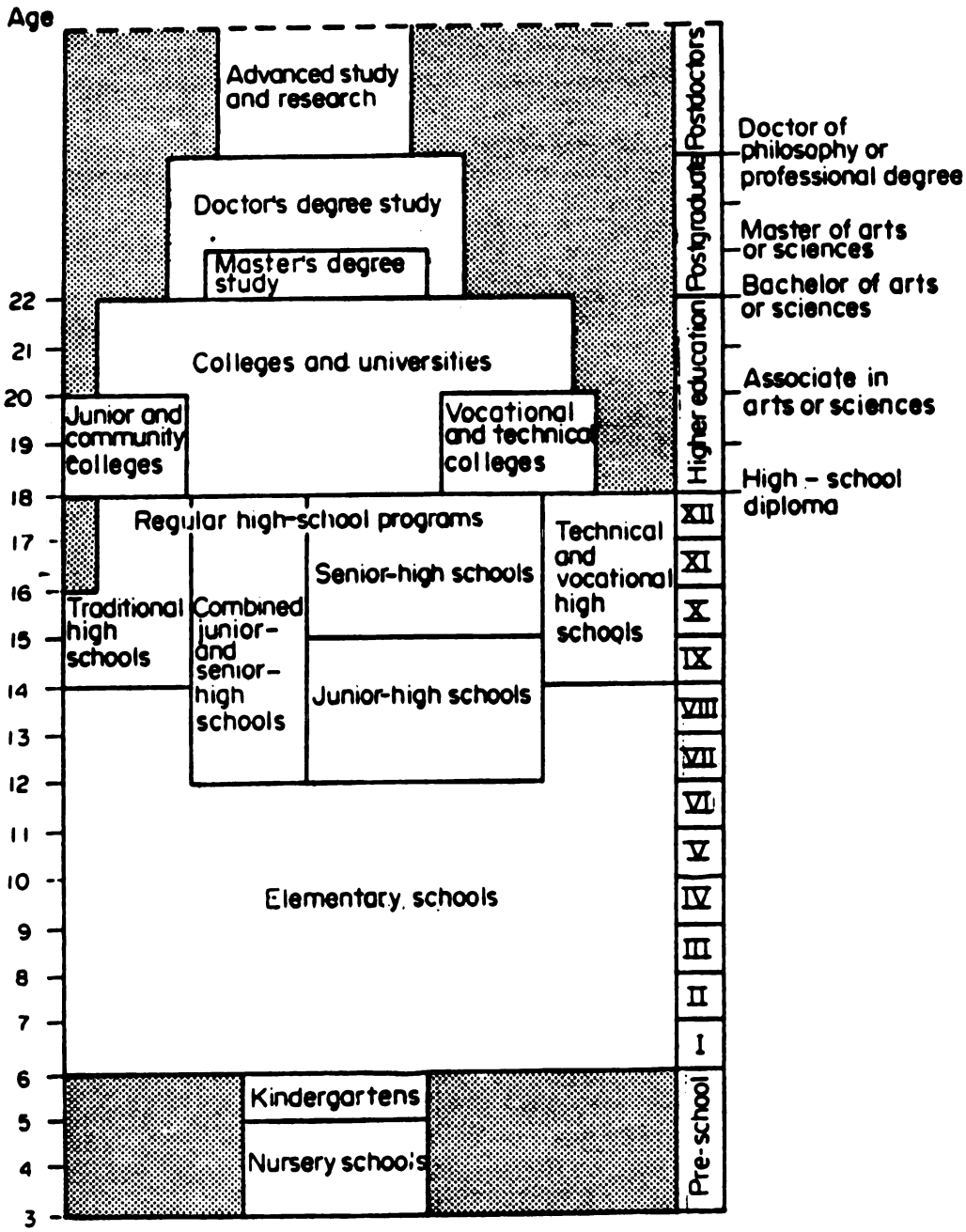

Figure 2.1.--System of education in the United States. From M. A. Eckstein, "United States: System of Education," in The International Encyclopedia of Education Research and Studies, vol. 9, ed. T. Husen and T. N. Postlethwaite (New York: Pergamon Press, 1985), p. 5361.

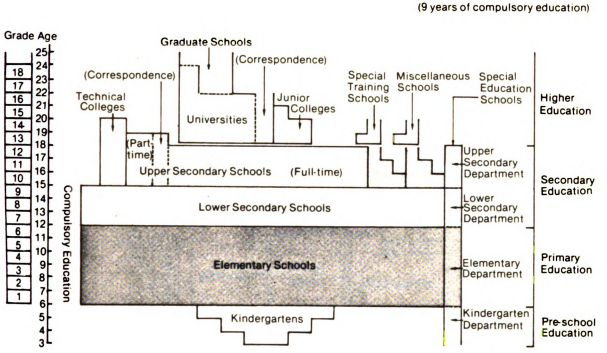

Figure 2.2.--System of education in Japan. From Makoto Aso and Ikuo Amano, Education and Japan's Modernization (Tokyo: The Japan Times, 1983), p. 111.

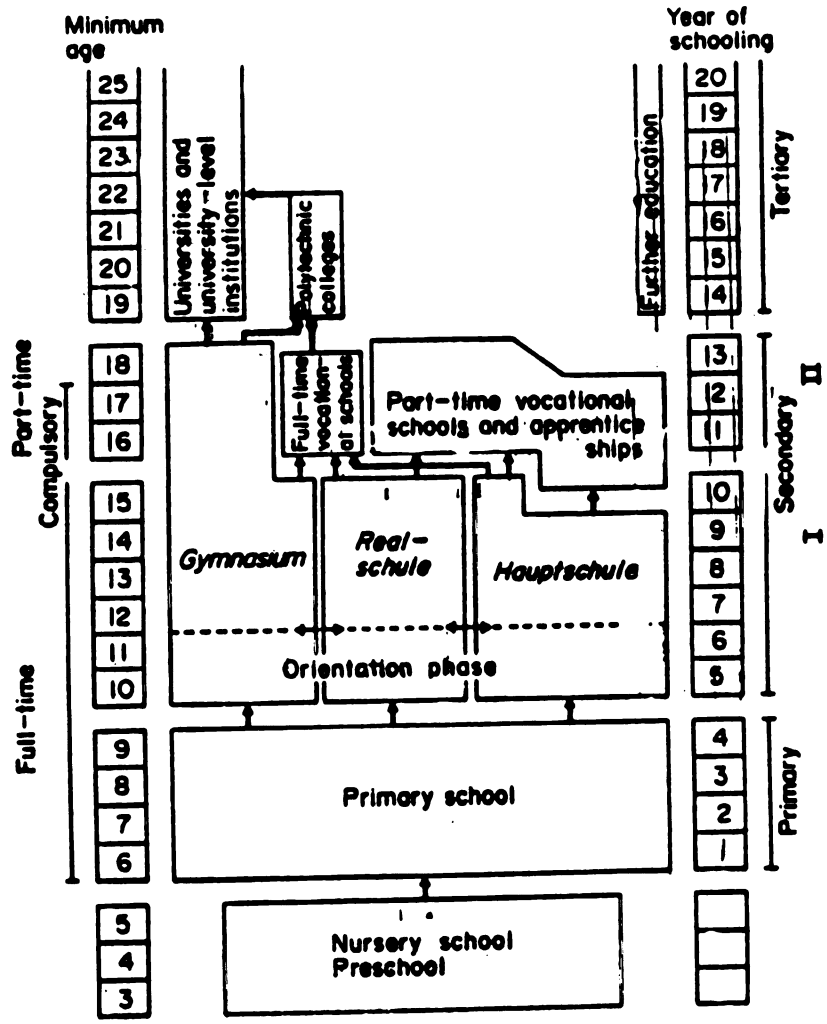

Figure 2.3.--System of education in Germany. From J. Naumann and H. Kohler, "Germany, Federal Republic of: System of Education," in The International Encyclopedia of Education Research and Studies, vol. 4, ed. T. Husen and T. N. Postlethwaite (New York: Pergamon Press, 1985), p. 2036.

2. The grade structural patterns of schools in the three countries are different. Eckstein (1985b) reported that in the United States,

> There are several structural patterns in use, depending on their location:
> a. kindergarten plus elementary grades 1-8, followed by four years of high school;
> b. kindergarten plus six grades of elementary school, followed by a three-year junior high school and three-year senior high school (sometimes combined into a six-year high school); and
> c. a relatively new development, kindergarten plus four or five grades of elementary school, a four-year middle school, and a four-year high school. All patterns lead to a high school graduation at about 17 or 18 years of age. (p. 5360)

The Japanese organizational plan is somewhat similar to the American pattern. In Japan, a majority of children age three to five years attend kindergarten (yo-chien) or nursery school; elementary school (sho-gakko) lasts six years, followed by three years of lower secondary school (chu-gakko) and three years of upper secondary school (koto-gakko). The first nine years of school are compulsory and free (Kanaya, 1985).

In Japan, the full-time upper secondary course of study takes three years to complete (Cowen & McLeon, 1983). Within the upper secondary schools, both general and specialized courses are offered; specialized courses are further classified as vocational and nonvocational. Vocational courses include agriculture, fishery, home economics, and nursing; nonvocational subjects include science, mathematics, music, and fine arts. Some schools provide only the general course, whereas others offer a variety of specialties; still others are specialized vocational schools that

offer training in one or more fields. There are three types of upper secondary schools: full time (three years), part time, and correspondence (four years or more).

Germany has a multi-track educational system. Naumann and Kohler (1985) described it as follows:

> In Berlin, the primary level consists of the first six grades; in the other states, of the first four grades, which are followed by a two-year orientation stage. In most states, the orientation stage is part of each of the three major types of secondary school, but in Hessia and Lower Saxony it is not school-type specific.
>
> The secondary level consists essentially of three types of school. Firstly, the Hauptschule . . . which has nine, in some cases 10 grades. . . . The majority of its graduates go on to part-time vocational schools and apprenticeships. Secondly, the Realschule, which has 10 grades . . . offers an academically more demanding curriculum. Its graduates enter apprenticeships or full-time vocational schools with the prospect of continuing later in polytechnic colleges. . . . Thirdly, there is the Gymnasium, predominantly academic in its orientation. There has been traditionally a strong emphasis on foreign language study in the Gymnasium. It is attended by more than 25% of the lower-secondary school age group of which some 80% obtain the certificate of graduation (Abitur) entitling them to continue their studies at university-level institutions or polytechnic colleges. (p. 2036)

Pupils who attend the Hauptschule traditionally are from lower socioeconomic groups, one-parent families, or are foreign workers' children. In general, they are less academically gifted than children who attend the other types of schools (Cowen & McLeon, 1983). Pupils who attend the Realschule traditionally are from lower-middle-class homes; their parents usually are craft and industrial workers. The Realschule offers a safe passage to white-collar jobs in middle management or technical-status occupations, an

alternative for those who do not aspire to the more intellectual rigors of Gymnasium courses and lengthy university study.

In addition to the Hauptschule, Realschule, and Gymnasium, Germany has experimental schools called Gesamtschule (comprehensive schools). Two basic types of comprehensive schools predominate: the integrated school and the additive or cooperative type. The integrated type provides a uniform teaching and organizational pattern for all pupils. The cooperative or additive type incorporates the Hauptschule, Realschule, and Gymnasium on the same site, sometimes under one head teacher; nevertheless, the three types of schools remain distinct.

As is evident from the preceding discussion, similarities and differences exist in the organization and structure of education among the three nations studied. Those who attempt to make valid cross-national comparisons in education should have a clear understanding of similarities and differences like the ones identified in this section. At the same time, it is important to remember that the structural and organizational characteristics of an educational system are not as important as the way a society thinks about education (Cummings et al., 1986). As Hurn (1983) noted, it is the basic values and beliefs of a society that serve as a framework for education in the society. This, in turn, determines what goals are to be given priority and the degree to which selected goals are achieved.

Curricula

Another aspect of education one might consider when making cross-national comparisons is curricula. More specifically, are there similarities and differences among the three countries studied with regard to subjects taught in elementary and secondary schools, the number of school hours devoted to each subject every year, and the selection and use of textbooks?

Japan. The subjects to be offered in elementary and lower secondary schools, as well as the standard number of school hours to be devoted to each subject annually, are prescribed in the "Enforcement Regulations for the School Education Law," an ordinance issued by the Ministry of Education, Science, and Culture (Japan, 1985). The same ordinance also specifies the subjects to be offered in upper secondary schools. The basic framework for school curricula, including the objective and standard content of teaching in each subject, is outlined in the national course of study issued by the Ministry of Education for each of the three schools: elementary, lower secondary, and upper secondary.

Table 2.3 shows the subjects that are required in all Japanese elementary schools for all students. Table 2.4 is a list of subjects to be taught in lower secondary schools, as well as the standard number of school hours to be devoted to each subject annually. Table 2.5 gives the credit requirements for upper secondary schools. Sample timetables for lower and upper secondary schools, showing weekly schedules for courses studied, are included in Appendix D.

Table 2.3.--Required subjects in Japanese elementary schools and standard number of teaching hours allotted to each subject.

Classification	Teaching Hours of Subjects[a]					
	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year
Japanese language	272	280	280	280	210	210
Social studies	68	70	105	105	105	105
Arithmetic	136	175	175	175	175	175
Science	68	70	105	105	105	105
Music	68	70	70	70	70	70
Drawing & handicrafts	68	70	70	70	70	70
Homemaking	--	--	--	--	70	70
Physical education	102	105	105	105	105	105
Moral education	34	35	35	35	35	35
Special activities	34	35	35	70	70	70
Total	850	910	980	1,015	1,015	1,015

SOURCE: Japan, Ministry of Education, Science, and Culture, Education in Japan: A Brief Outline. Tokyo: Ministry of Education, Science, and Culture, 1986), p. 7.

[a]One teaching hour represents 45 minutes.

Germany. As noted earlier, in Germany, the primary responsibility for education resides at the Land level of government. In each Land, the Minister of Culture is responsible for all aspects of education, including instruction, within the Land. Schools within the state are bound by ordinances developed at the state level. In the area of instruction, instruments used by the Minister to direct the school system include course schedules, which specify the subjects to be taught and the time allotment for each type of school and each grade. Course guidelines, which set

Table 2.4.--Standard number of school hours[a] devoted to each subject in Japan's lower secondary schools.

Subject	Teaching Hours		
	1st Year	2nd Year	3rd Year
Japanese language	175	140	140
Social studies	140	140	105
Mathematics	105	140	140
Science	105	105	140
Music	70	70	35
Fine arts	70	70	35
Health and physical education	105	105	105
Industrial arts and homemaking	70	70	105
Moral education	35	35	35
Special activities	70	70	70
Elective subjects, etc.[b,c]	105	105	140
Total	1,050	1,050	1,050

SOURCE: Japan, Ministry of Education, Science, and Culture, Education in Japan: A Brief Outline (Tokyo: Ministry of Education, Science, and Culture, 1986), p. 25.

[a]One school hour is 50 minutes.

[b]The number of teaching hours for elective subjects shall be allotted to more than one elective subject and to additional teaching in special activities.

[c]As for elective subjects, the standard teaching hours for music, fine arts, health and physical education, and industrial arts and homemaking shall be 35 in grade 3. The standard teaching hours of foreign languages shall be 105 in each grade, and teaching hours of other specially necessary subjects prescribed in the course of study for lower secondary schools shall be 35 in each grade.

Table 2.5.--Standard number of credits for each subject in upper secondary schools of Japan.

Subject Area	Subject[a]	Standard No. of Credits[b]
Japanese Language	Japanese Language I*	4
	Japanese Language II	4
	Japanese Language Expression	2
	Contemporary Japanese Language	3
	Classics	4
Social Studies	Contemporary Society*	4
	Japanese History	4
	World History	4
	Geography	4
	Ethics	2
	Politics and Economy	2
Mathematics	Mathematics I*	4
	Mathematics II	3
	Algebra and Geometry	3
	Basic Analysis	3
	Differential and Integral Calculus	3
Science	Science I*	4
	Science II	2
	Physics	4
	Chemistry	4
	Biology	4
	Earth Science	4
Health & Phys. Ed.	Physical Education*	7-9
	Health*	2
Art[c]	Music I	2
	Music II	2
	Music III	2
	Fine Arts I	2
	Fine Arts II	2
	Fine Arts III	2
	Crafts Production I	2
	Crafts Production II	2
	Crafts Production III	2
	Calligraphy I	2
	Calligraphy II	2
	Calligraphy III	2
Foreign Languages	English I	4
	English II	5
	English IIA	3
	English IIB	3
	English IIC	3
Home Economics	General Home Economics[d]	4

SOURCE: Japan, Ministry of Education, Science, and Culture, Education in Japan: A Brief Outline (Tokyo: Ministry of Education, Science, and Culture, 1986), p. 27.

[a]The subjects marked with * are those required for all students, irrespective of the type of course in which they are enrolled.

[b]Thirty-five school hours of lessons per school year are counted as one credit. One school hour lasts 50 minutes.

[c]In addition to the subjects marked with *, all students must acquire the following number of credits from the following art subjects:
ALTERNATIVE 1: 3 credits or more from one or more subjects chosen from among Music I, Fine Arts I, Crafts Production I and Calligraphy I.
ALTERNATIVE 2: 2 credits or more from one subject chosen from among Music I, Fine Arts I, Crafts Production I, and Calligraphy I, plus 1 credit or more from one subject chosen from among Music II, Fine Arts II, Crafts Production II and Calligraphy II.

[d]General Home Economics is required for girls only.

the goals and topics for each subject and give methodological suggestions, are based on these schedules (Nevermann & Richter, 1983).

In the 1960s, a German educational catastrophe was predicted. Schuppe (1969) suggested that:

> The German educational system remains fixed in a process of ferment, in a situation of crisis and change. Public discussion is animated: the school system, its basic structures created in the 19th century, since then hardly altered and in 1945 restored, despite some attempts at change--has not kept pace with developments; its reform is long overdue; the teaching organization is uneconomic, the curriculum out of date, the opportunities for education are unequal, the school learners know too little and even then not what they should, the number of failures is too large, the number of Abiturienten too small. (p. 125)

Schuppe further criticized the backwardness of the German educational system as compared to those of Sweden, the United States, and the communist countries. He noted that some critics thought Germany was being outstripped in the educational race. In response to such comments, attempts were made to eliminate sharp differences in the quality of education offered by the various types of secondary schools (Leschinsky, 1983). Table 2.6 reflects attempts that have been made to equalize the number of courses required in the various secondary schools in Germany. With regard to subjects taught at the primary level (grades K-4) and during the orientation stage (usually grades 5-6):

> Instruction focuses primarily on basic skills in reading, writing and arithmetic. It also provides a basic introduction to the natural and social sciences through courses in a subject area encompassing both fields. Relatively few hours a week are devoted to the additional subjects: music, art, crafts, and sports. (Hopf, 1983, p. 141)

Table 2.6.--Hours per week per subject in German Secondary I schools, 1977.

Subject	Grade 7			Grade 8			Grade 9			Grade 10		
	HS	RS	GY	HS	RS	GY	HS	RS	GY	HS[a]	RS	GY
Religion	2	2	2	2	2	2	2	2	2	2	2	2
German	4	4	4	4	4	4	4	4	4	6	4	4
First foreign language	4	4	4	4	4	4	4	4	4	6	4	4
Mathematics	4	4	4	4	4	4	4	4	4	6	4	4
History	2	2	2	2	2	2	2	2	2	-	2	2
Social studies	1	-	-	1	-	-	1	1	1	4	1	1
Geography	2	2	2	1	2	2	1	1	1	-	1	1
Physics	} 2	2	2	2	2	2	2	2	2	2	2	2
Chemistry								2	2	2	2	2
Biology	2	2	2	2	2	2	2	-	-	2	2	2
Vocational orientation	3	-	-	4	-	-	4	-	-	2	-	-
Music	2	2	2	2	2	2	2	2	2	-	} 2	} 2
Arts (including crafts)	-	2	2	-	2	2	-	2	2	-		
Physical education	3	3	3	3	3	3	3	3	3	2	3	3
Elective compulsory subjects[b]	3	5	5	3	5	5	3	4	4	-	4	4
Total hours	34	34	34	34	34	34	34	33	33	34	33	33

SOURCE: Achim Leschinsky, "Losing the Modernization Race: Reform and Decline of the Hauptschule," in Between Elite and Mass Education, Max Planck Institute for Human Development and Education (Albany: State University of New York Press, 1983), p. 168.

Key: HS = Hauptschule, RS = Realschule, GY = Gymnasium.

[a]The tenth year at the Hauptschule is voluntary.

[b]Hauptschule: arts, crafts and project groups; Gymnasium: a second foreign language.

The United States. Education in the United States is highly decentralized. Nevertheless, a typical pattern of courses is offered nationwide. Boyer (1983) reported that:

> Most students who graduate from an American high school today complete at least three years of English, two years of social studies, one year of math, plus one year of science, two years of physical education or health, plus a smattering of local requirements and five or more electives. . . . Forty-two states dictated one or more specific courses for high school graduation. Most frequently mandated was a social studies course, usually United States history (42 states), followed by English (39 states). Science (37 states) and mathematics (34 states) came in third and fourth, respectively. (pp. 72-73)

Goodlad (1984) reported that in the schools included in his research, at the elementary-school level the time allocation per week for instruction in each subject area was as shown in Table 2.7.

Table 2.7.--Average hours of weekly instruction averaged to various subjects in American elementary schools.

Subject	Early Elementary Average Hours	Upper Elementary Average Hours
English/language arts	8.46	7.41
Mathematics	4.65	5.12
Social studies	2.09	3.83
Science	1.65	2.93
Art	1.50	1.29
Music	1.08	1.35
Drama	0.10	0.07
Dance	0.29	0.17
Physical education	1.49	2.26

SOURCE: John I. Goodlad, A Place Called School: Prospects for the Future (New York: McGraw-Hill, 1984), p. 199.

A comparison of the three countries' curricula. Comparing the curricula in the United States, Japan, and Germany is no easy task because there is such a vast difference in practices. In comparing curricula in the secondary schools of Japan and the United States, Rohlen (1983) observed:

> A graduate of a Japanese academic high school has had essentially three full years of the five basic subjects (Japanese, Mathematics, Science, Social Studies and English). . . . In suburban American public high schools, oriented largely to higher education, the list of required courses today rarely includes more than one year of science, two of math, and two of a foreign language. In such schools, neither English nor social studies is required in all years. . . . Less than half of the average American high school student courses are now required. . . . A typical suburban American high school offers about 200 courses over two semesters, whereas a Japanese high school offers 25-30 for one year. (p. 157)

In his article "Japanese and U.S. Curricula Compared," Kobayashi (1986) agreed with Rohlen's statement. He noted:

> In any study of American school curricula, it is important to emphasize that the curricula not only change continually with time but also vary widely from school to school throughout the country. Curriculum standards are defined differently from state to state, and many states leave the establishment of all or some of the standards to local authorities. Furthermore, the curricula used by teachers may deviate widely from the official curricula. Thus, it is very difficult to generalize about the school curriculum in the United States. (p. 67)

An example of the differences that exist among various states in terms of minimum requirements for high school graduation is shown in Table D.1, Appendix D. Reflected in the table is the trend toward more state control over the curriculum and an increase in course requirements. This trend represents a reaction to the flood of generally unfavorable reports on the condition of American schools (Kobayashi, 1986).

From the literature concerning curricula in the three countries studied, it was also learned that:

1. In Germany in the 1960s and early 1970s, attempts were made to reform the curriculum so that the three types of secondary schools would have more similar course requirements. A major goal of the proposed reforms was to allow students more flexibility in moving from one type of school to another (Baumert & Raschert, 1983).

2. In the United States, there is a lack of consensus about the best way to respond to the educational-reform proposals of the 1980s. Some reports have suggested increasing the number of required secondary-level courses and establishing more rigid standards (National Commission on Excellence in Education, 1983). Others have recommended a curriculum that best serves a democratic society, in which educational goals are more egalitarian than elitist in nature (Adler, 1982; Boyer, 1983; Goodlad, 1984).

3. In Japan, a recent series of reform reports included recommendations for liberalizing the curriculum. This would include more electives, fewer required courses, and less stress on examinations (Japan, 1985).

Any discussion of similarities and differences in curricula among the three countries must take into consideration the various reform efforts that have been initiated in those nations. The primary focus of many of the reform proposals has been directed toward changing the curricula from a traditional emphasis on nonutilitarian subjects intended to serve a primarily elite

clientele to an emphasis on education that values egalitarianism, utilitarianism, and individualism (Hurn, 1983).

In contrast to various countries' efforts to democratize education, some educators argue for maintaining the traditional emphasis on standards and educational achievement where selectivity is demanded (Schuppe, 1969). Supporters of this view speak to the need for a curriculum with a liberal arts emphasis, where there is "single-minded concentration on maximizing achievement in mathematics, science, one's mother language, history, and foreign languages" (Hurn, 1983, p. 8).

In Germany and much of Western Europe, educational-reform efforts escalated during the late 1960s and 1970s. However, in an apparent reference to the reform movement in Europe, Husen (1985) described the achievements of the 1960s and 1970s in less-than-glowing terms. He noted:

> A couple of decades ago, hopes were running high about the ways in which schooling could improve the lives of individuals in already-affluent industrial societies. Secondary education had become universal, and higher education was open to ever-larger segments of the population. Equality of opportunity was expected to lead automatically to the equalization of life changes. . . . Diversified curricula was developed which would socialize young people . . . make them more tolerant of one another, make them better, more politically responsible members of a democratic society. (p. 400)

Husen concluded that many of the hoped-for changes had not occurred and that those who had hoped for better results were feeling frustrated. He suggested that these frustrations were the result of unrealistic expectations of reformers who were unable to distinguish between rhetoric and reality.

Clark (1985) agreed with Husen's assessment of the results of educational-reform efforts in Europe in the 1960s and 1970s. He reported:

> Even after major reforms, European nations have not yet made upper-secondary education all-inclusive. In one way or another, European countries have retained selective streaming [tracking] of students by establishing a secondary education sector that is intensely academic. (p. 392)

Based on statements by Husen and others (Hawley, 1985; Hurn, 1983; Kaestle, 1985), one might reasonably conclude that educational-reform efforts in Germany and elsewhere in Europe have waned in the 1980s.

In the 1980s, a variety of educational-reform proposals have been presented in the United States and Japan. It remains to be seen how many of the proposed reforms will be implemented and what effect they will have on education in those countries. Based on Germany's experience with such reforms, one could justifiably conclude that change is a slow process. It is unlikely that meaningful results will be achieved in a short time.

The Role of Testing in the Sorting-Out, Screening, and Selecting Process

Perhaps no subject concerning comparative education has aroused as much discussion and controversy as the sorting-out, screening, and selecting practices used in various countries. A review of the literature revealed that (a) there are extensive differences of opinion about the role of testing in the sorting-out process and (b) educational reforms initiated over the last quarter century in

various parts of the world have focused on developing educational programs that emphasize equal educational opportunities for the masses (Adler, 1982; Boyer, 1983; Husen, 1979; Max Planck Institute, 1983).

In a sense, contradictory forces continue to be at work with regard to testing and sorting-out practices. In many ways and in many countries, the situation today is similar to what has been true for a number of years. Some form of testing has been the primary means used to sort out students at various stages during the educational process. At the same time, during the last 25 years many industrialized western societies have undertaken major attempts to move from testing practices based on elitism to those that are primarily egalitarian in nature. On this topic, Husen (1979) noted that:

> The school has increasingly assumed the role of an institution for sorting and sifting. Instead of being the Great Equalizer it has become the Great Sorting Machine. It confers distinctions in terms of marks, examinations, certificates, and diplomas. It makes differences at school entry even wider as the young people progress through the system. (p. 151)

Sorting-out, screening, and selecting practices occur in each of the three countries studied. However, the initial sorting out begins at different levels and in different ways in each of the countries.

Japan and Germany. Researchers and others who have studied and written about the Japanese educational system generally concur about what occurs in testing and the sorting-out process. Rohlen (1983) reported:

> Up until tenth grade, the Japanese populace is neither tracked nor sorted in any manner. Children of differing family backgrounds and abilities sit together, play together, and work together in urban schools that are very much the same the nation over. . . .
>
> All of this is reversed at the high school level, where entire schools are differentiated by the presumed ability of their students, where tracking is the essential ingredient in the over-all structure of schools, and where instead of offering equal education opportunities for all students, high school offerings are responsive to and limited by the specific abilities of their students. From lumping, the system shifts to splitting. (pp. 120-21)

He also noted:

1. At the point of high school entrance the entire age cohort is divided into three largely immutable classificatory distinctions: those leaving school, those entering vocational ranks, and those going to academic high schools.
2. At the end of high school, differentiation occurs once more. About half of the nation's young men are ranked at that time according to their potential university status.
3. Females do about as well as males in the high school entrance competition . . . but only one in five students at the top universities [is] female. (p. 308)

Within each Japanese school, a general egalitarianism prevails. This is distinctly different from the situation in American high schools.

Whereas Rohlen suggested that the sorting-out process formally begins at the end of lower secondary school (grade 9), Duke (1986) reached a somewhat different conclusion. He suggested that a strong emphasis on examination preparation permeates Japanese classrooms from first grade onward. He contended that preparation for examinations takes precedence over all other purposes and activities of the schools. The reason for this emphasis, he suggested, is that

> Parents desperately want their children to succeed in life by obtaining the best possible employment. They are prepared to sacrifice their family assets and personal style of life to

> enable their children to receive proper guidance in the monotonous routine of examination preparation for the next level of schooling. (p. 42)

In short, Duke (1986) and others (Cogan, 1984; Ranbom (1985) concluded that testing plays an extremely important role in the sorting-out process at all school levels in Japan, even though the first entrance examinations do not occur until the end of the compulsory years of schooling (grade 9).

Amano (1986) reported that historically in Japan there has been a strong desire for higher social status and that higher status could be achieved through educational credentials. He noted that a competitive entrance examination system, which was borrowed from Europe and adapted for use in Japan, has tended to be a permanent feature of Japanese education, and that it would be difficult to eliminate that system. Amano wrote:

> In Europe, students who score acceptably on national standardized exams given at the conclusion of one level of education are automatically guaranteed admittance to the next level. The emphasis, in other words, is not on entrance examinations. In Japan, however, individual schools began to use examinations to select which students could enter their halls. (p. 7)

Amano's statement appears to be accurate. However, there is a marked difference in the degree to which test results are used to determine eligibility for university study in Japan and Germany. In Germany, if students successfully complete the Abitur, they should be able to continue their education at a university. This assumes that spaces are available at the university level for all who pass the examinations. In contrast, in Japan the successful completion of the entrance examination at the end of the upper secondary level

simply provides universities with a pool of students who are qualified to enter their halls. The secondary schools and universities are not obliged to accept all of the students who pass their examinations.

In Germany over the past two decades, the enrollment in secondary schools that prepare students for study at the tertiary level has grown significantly (Naumann, 1983), and enrollments in higher education have increased four-fold. In the early 1970s, the applications for admission to higher education far exceeded the capacity in a number of fields. This led to the establishment of a quota system and a central placement office to distribute admission to various fields of study throughout Germany.

Thus, unlike what Amano (1986) reported, in Germany not all qualified students who pass the entrance examinations are automatically and immediately admitted to higher education, as they were in the past. In essence, this situation is similar to that in Japan. That is, successful completion of the examinations does not currently guarantee admission to higher education.

In Germany, the role of national or regional examinations in the sorting-out process is different from that in Japan (Amano, 1986) and the United States (Boyer, 1983). During the last decade, in response to reform efforts in Germany, attempts have been made to downplay the use of examinations as the primary or only factor on which sorting-out decisions are based (Max Planck Institute, 1983; Schuppe, 1969).

Although the primary responsibility for education, including curricula and examinations, varies from one state to another in Germany, a high degree of uniformity exists from one Land to another in the curricula and tests administered. Moreover, tests continue to play an important role in the sorting-out process at various levels--primary to secondary and secondary to tertiary (Holmes, 1983).

As noted earlier, the organizational structure of the educational system in Germany comprises three levels: primary (grades 1-4), secondary (grades 5-9, 10 or 13), and tertiary (grades 14-17 or 20). In regard to the levels of education at which the sorting-out process occurs, Naumann and Kohler (1985) stated:

> Whereas the system's major selection did occur at the orientation/transitional stage from primary to secondary education (usually grades 5-6), it has now moved to later stages and has become more diffused, with the transition from secondary to tertiary education also being an important screening point. . . . The normal entrance qualification to university studies is the certificate of graduation from the gymnasium, the abitur, which, in principle, entitles its holder to pursue any course of study at any university. (pp. 2036, 2038)

As Hopf (1983) observed, there are considerable differences in the ways various Lander deal with the transition from primary to secondary school. No consensus exists about the specific time at which the decision is made about which type of secondary school a child should enter. In most Lander, selection takes place at the end of fourth grade; in Berlin it occurs at the end of sixth grade. The selection process puts the child under great pressure to

achieve, especially in those Lander where examinations are employed or where the decision rests mainly with the teacher.

Further, although grades 5 and 6 are considered to be part of the secondary level, this phase is in reality an orientation stage (Hopf, 1983). It is at this stage that the initial sorting-out process occurs. Thus, unlike the situation in Japan, the sorting-out process begins during grades 5 and 6 and is based more equally on examinations, teachers' recommendations, and parental requests. In Japan, much more emphasis is placed on the examination results, less attention is given to teachers' recommendations, and virtually no consideration is given to parents' requests (Rohlen, 1983).

Taylor (1983) expressed an even harsher view of the singular emphasis given to the examination as the mechanism for sorting-out students in the educational process. He suggested that:

> In Japan there are now many high-powered kindergartens that have competitive entrance examinations. . . . At every step of the way the less bright are sluiced out of the elite channel by an unending series of tests. (p. 97)

The United States. The role of testing in sorting-out, screening, and selecting practices in the United States differs in many important ways from the situation in Japan and Germany. They are:

1. In the United States, testing does not play as important a role in the sorting-out, screening, and selecting process as it does in the other countries, in part because there are no comparable national or regional examinations (Boyer, 1983; Eckstein, 1985b; Hurn, 1983; Husen, 1983).

2. Acquiring a high school diploma does not always require a formal examination but rather attendance and a satisfactory record of academic achievement, as determined by the school, subject to state requirements. High school graduation is usually sufficient to ensure admission to state colleges, although in some regions a qualifying examination may be necessary. In the absence of a national public examination system and/or consistency among the examination systems of those states that do offer them, standards vary (Eckstein, 1985b).

3. Private and nonprofit organizations develop and administer examinations that some universities and colleges use as part of their entrance requirements (Boyer, 1983; Eckstein, 1985b). However, unlike the situation in Japan and Germany, test results play a supporting rather than a primary role in admission, except in the case of very prestigious universities.

4. Two types of tests that are administered in the United States apparently are not used in the other two countries. They are:

a. Minimum competency or basic-skills tests at either the state (20 states) or local district level (10 states) (Eckstein, 1985b). The test results, however, are not used to any meaningful degree in satisfying university entrance requirements.

b. The National Assessment of Educational Progress (NAPE), a testing program sponsored by the federal government, which periodically surveys randomly selected samples of students

from across the country in various subjects and grades to determine average achievement levels. Again, however, the results are not used to assist in screening, sorting-out, or selecting students for particular groups (Boyer, 1983).

5. Historically, much importance has been attached to the idea of equal educational opportunity for all students--the same quantity of education, the same number of years in school, the same quality of education (Adler, 1982). Thus, the idea of using national or regional examinations as a basis for providing separate schools and separate curricula for different socioeconomic classes, to distinguish between patrician and plebian classes of students, has not been popular in the United States (Hurn, 1983). In essence, as Adler suggested, the American society is purported to be educationally classless.

One might justifiably conclude, based on a review of the literature, that real differences exist in regard to the role of testing in the sorting-out, screening, and selecting process in the United States as compared to Japan and Germany. Moreover, it is difficult to imagine that any significant changes in these practices will occur in the United States in the foreseeable future.

Even though neither national nor regional examinations are used in the United States, much has been said about sorting-out, screening, and selecting practices in American schools. These practices are not primarily connected to formal tests, as in Japan

and Germany. According to Porter (1986), sorting-out, screening, and selecting are done in a much more devious manner. He stated:

> Within the United States, up until 1955, consistent with national and state policy, sorting, screening, and selecting practices were widespread. It was only because of Brown vs. Topeka that we have attempted to move from officially sanctioning such practices to an emphasis on equality and equity. Sorting, screening, and selecting practices are still pervasive, and we have not come to grips with the issue.
>
> The sorting-out process in the United States is different from what occurs in the Federal Republic of Germany and Japan. In those countries, it is state or national policy which supports the practice. Children are required to take an exam at designated levels, and, based in large part on the results, they are "split" or divided into different types of schools.
>
> Within the comprehensive high schools in the United States, we don't use tests to divide students. Rather, we use the different types of curriculum and 180 days (900 hours) requirement to sort out students. This practice is more devious and perhaps destructive because, I think, we wait too late for those who are in the lower half of the normal distribution curve to have a fair competitive opportunity to succeed.

Much has been written about tracking (a form of sorting-out) practices in American schools (Boyer, 1983; Goodlad, 1984; Oakes, 1986; Powell, Farrar, & Cohen, 1985). Numerous writers have claimed that much tracking occurs in schools nationwide. Many negative factors are associated with sorting-out practices. Most writers have agreed that such practices are incompatible with the ideal of what education in a democratic society should be (Adler, 1982; Goodlad, 1984; Powell et al., 1985).

Goodlad (1984) noted that, in the schools he investigated, (a) tracking occurred at all levels; (b) the growth in testing at the local level and in classrooms tended to provide measures of achievement differences among students, which were being used to provide a purported scientific basis for sorting-out students; and

(c) the level of the groups in which a child participated more regularly in the primary grades was highly predictive of track placement later: high, middle, or low.

Sorting-out practices and the role of testing in such practices in the three countries studied are complex issues. Making valid comparisons is not easy. Husen (1983) noted that several questions concerning the sorting-out process and testing need to be addressed if schools are to be reshaped for the next several decades. The questions he posed are:

1. At what age level should the inevitable selection for elite education take place?
2. How do we arrange for "second-chance" entry to furthergoing education in systems which at an early stage are selective?
3. How do we establish at the secondary level a system of plurality of excellence, that is to say, a variety of career paths in formal schooling leading to different types of high-level competence other than academic ability?
4. What changes in the reward system outside the educational sector are called for in order to achieve this and to alleviate the mounting credentialism? (p. 180)

Comparative Education

History and Description

The purposes of this section are to examine the history of and basic concepts underlying the field of comparative education and to explore the nature of the field as it exists today. Brickman (1960) pointed out that attempts to collect, classify, and disseminate comparable international data about education have been made since Plato's time. Comparative education, as a systematic study, is usually thought to have originated in the early nineteenth century.

Worldwide interest in comparative and international education expanded rapidly after the Second World War (Eckstein, 1985a).

Early in the twentieth century, comparativists tended to modify their views about the meaning and uses of comparative education. The narrow and utilitarian approach that characterized the work of nineteenth-century comparative educators was succeeded by a more comprehensive approach to schooling as a system to be studied within the larger context of its cultural setting (Eckstein, 1985a).

This change in direction may be attributed, in part, to comparativists' recognition of the fact that, in addition to what went on in the formal educational system, other institutions (e.g., the family, religious organizations, political bodies, and communication media) played an important role in the educational process. Thus, the work of comparative educators tended to become broader in scope and more sophisticated. From an earlier emphasis on qualitative studies that focused primarily on the schools themselves, more consideration is now being given to the relationships between education and other aspects of society. Comparative educators are acknowledging that what goes on outside the schools may be as important as, and perhaps even more important than, what occurs inside them (Noah, 1985).

As twentieth-century comparative educators have tended increasingly to study education within the context of the larger society, there has been a concomitant increase in international educational data collected and classified by international organizations, various national associations, selected professional

societies, and university centers (e.g., the International Bureau of Education in Geneva, the United Nations Educational Service and Cultural Organization, the Organization for Economic Cooperation and Development, and the Comparative and International Education Society). Comparativists tend to agree that "comparative education should contribute to a theoretical understanding of education and to the planned reform of national systems" (Holmes, 1985, p. 867).

Finally, there has been a continual increase in the number of national, regional, and world comparative education societies that serve to bring comparative educationalists together. As Holmes (1985) noted, comparative education has become a respected area of study because "individual members in the societies have contributed greatly to the literature of comparative education, engaged in international research projects, and have served as advisors, officers and consultants for international agencies" (p. 868).

Cross-National Comparisons: Issues and Concerns

As stated in Chapter I, The Nation at Risk (National Commission on Excellence in Education, 1983) and other educational reform reports of the 1980s have suggested the American educational system can be improved by imitating the practices employed in other countries, such as Japan and Germany. Torney-Purta (1985) wrote:

> Comparisons between the United States educational system and those of other countries have always been of interest in and of themselves and have been the source of fruitful ideas for educational innovation. . . . In recent years, cross-national comparisons, especially between achievement levels, have been widely cited in the media and the professional literature and

> often associated with a concern for educational productivity linked to economic productivity. . . . An unwarranted alarmist tone has often been taken in some publications. (p. 2)

A major concern with cross-national studies is that comparisons are made out of context (Torney-Purta, 1985). In this regard, Eckstein (1985a) observed:

> The earliest descriptions of foreign educational practices were generally piecemeal observations by curious and interested travelers. . . . In the nineteenth century, individuals were prompted to study aspects of schooling abroad by the conscious desire to inform their compatriots and improve practice in their own nations by foreign examples. A fundamental assumption was that selected features of school administration, staffing, instructional methods, and curriculum could be imported into another country or grafted onto its developing system. (pp. 855-56)

However, Sadler (cited by Holmes, 1985) warned of the dangers of indiscriminate educational borrowing. He suggested that some school practices depend on the specific milieu and might not be easily transferable to other social or political environments. Following these words of caution, though, Sadler did claim that "a practical value of studying other systems of education is that much can be learned about one's own system of education" (p. 866).

Present-day writers and researchers (Clark, 1984; Cogan, 1984; Noah, 1985; Shimahara, 1985) have tended to agree with Sadler's earlier assessment. They have suggested the need for caution in using comparative-education data and have shared a concern for the "uncritical acceptance of foreign practices" (Noah, 1985, p. 870). Holmes (1985) noted that comparative educators, concerned as they are with the potential of their subject to inform educators and improve education, have paid increased attention to the importance

of compatibility among the innovations to be imported and the entire complex of history, aspirations, and institutions of the receiving country.

With regard to comparing the educational system of Japan with that of the United States, Shimahara (1985) stated:

> The United States and Japan have vastly different social, cultural, and ecological histories. The great disparities between the two cultures should make educators wary of attempting to model one system of education on the other. . . . It is vital to keep in mind that Japanese education serves as a mirror to reflect education in the United States not as a prototype to be duplicated in every respect. Selective borrowing of the right elements of the Japanese system of education has the potential to enhance our own schools [United States]. Thoughtless repetition is to be avoided at all costs. (pp. 420-21)

Still other comparativists appear to have been highly skeptical about the validity and reliability of data collected for domestic purposes by national authorities who were not concerned with the use of such data in cross-national comparisons (Hurn, 1983; Husen, 1983). These comparative educators have been particularly concerned that inappropriate conclusions will be drawn, based on invalid data and questionable research and methodology. Husen wrote: "Comparing the outcomes of learning in different countries is in several respects an exercise in comparing the incomparable. School systems with differing objectives and curricula reflect differing national goals" (p. 455).

Hurn (1983) suggested that "contrasting American education with that of other countries is like comparing apples and oranges" (p. 7). He argued that concluding that American education is

inferior, based on what he termed "invidious comparisons" is inappropriate. He went on to say:

> [Researchers] compare systems that differ profoundly in objectives, values and organization. Selective illustrations of the weaknesses of American education compared with education in other industrialized societies may create the false impression that the road to effective reform lies in borrowing innovations or practices developed abroad. They simply cannot be shifted from one to another very different context. This does not mean that we can learn nothing from Japan or France or Britain; it does imply that intelligent discussion must start from an understanding of the unique features of the American system and how its weaknesses are (unfortunately, from the point of view of reformers) intimately bound up with its strengths. (pp. 7-8)

Noah (1985) identified the following major problems associated with comparative methodology:

1. Costs and difficulty of assembling data from foreign sources
2. Lack of comparability of data collected
3. Uncertainties with regard to the validity and reliability of data collected for domestic purposes by national authorities who were not concerned with the use of such data in cross-national comparisons
4. Problems associated with construction of valid scales along which national units may be arrayed
5. Ethnocentric bias in defining the topic to be investigated, establishing the bases for classifying data, drawing inferences and making policy recommendations. (p. 869)

As can be seen from both the historical and the modern perspectives, comparative educators and others have identified numerous problems, issues, and concerns regarding cross-national comparisons in education. Although "cross-national comparisons of education are necessary to understand our own and other cultures and to assess use of different educational practices" (Council of Chief State School Officers, 1985, p. 3), those who would use comparative data in their plans to reform education should be cautious in doing so.

Educational Programs and Practices for Academically Able Students in the United States, Japan, and Germany

Introduction

In this section, the writer considers the provisions that are made in the United States, Japan, and Germany for educating students who have potential for outstanding achievement or have already demonstrated unusual achievement.

Definition of Terms

A number of terms have been used to designate those students who are capable of and often have demonstrated high achievement. The most frequently used terms include "bright," "able," "exceptional," "superior," "rapid learner," "accelerated," "genius," "academically able," "gifted and talented," "mentally superior," "artistically exceptional," and "highly creative" (Passow, 1985, p. 2046).

Just as a number of terms have been used to describe individuals who have potential for outstanding achievement, there have been many definitions of gifted and talented, each of which is based in the literature and has its own supporters. The trend has been toward more liberal or inclusive definitions of gifted and talented (Passow, 1985). That is, whereas giftedness has traditionally been associated with superior intelligence and high academic attainment, the dominant conception of giftedness that has emerged today focuses on high achievement or potential for superior achievement in a variety of areas in addition to academics.

The definition of gifted and talented that serves as the basis and guide for current practice is the federally legislated one written by the United States Office of Education and officially announced in the Marland Report of 1972 (cited by Richert, 1982). It reads:

> Gifted and talented children are those who by virtue of outstanding abilities are capable of high performance. These children require differentiated educational programs and/or services beyond those normally provided by the regular school program in order to realize their (potential) contribution to self and society.
>
> Children capable of high performance include those who have demonstrated any of the following abilities or aptitudes, singly or in combination:
>
> 1. general intellectual ability
> 2. specific academic aptitude
> 3. creative or productive thinking
> 4. leadership ability
> 5. visual and performing arts aptitude. (p. 114)

Programs and Provisions for Academically Able Students

The United States. Included in A Nation at Risk (National Commission on Excellence in Education, 1983) were observations to the effect that "over half the population of gifted students do not match their tested ability with comparable achievement in school" and that "international comparisons of student achievement . . . reveal that on 19 academic tests American students were never first or second and, in comparisons with other industrialized nations, were last seven times" (p. 8). The National Commission on Excellence in Education, which was responsible for the report, strongly recommended that "the federal government, in cooperation

with state and local governments, should increase their efforts to meet the needs of key groups [special populations] of students including the gifted and talented" (p. 32).

Consistent with this recommendation, various types of support have been allocated at the federal level and in some states for programs for gifted and talented students. In Michigan in 1988, funding for gifted and talented programs (about $7.3 million) is modest in comparison with appropriations for special areas of interest, such as compensatory education ($30.9 million), special education ($161.5 million), and vocational education ($30 million) (Michigan, House Bill 4301, 1987). The appropriated funds are intended for use in developing, implementing, and maintaining comprehensive differentiated programs and/or services for gifted students. According to Marland (cited by Passow, 1985), differentiated programs for gifted students should have the following characteristics:

1. They should provide a differentiated curriculum that promotes higher cognitive processes;
2. instructional strategies that accommodate both curriculum content and the learning styles of gifted and talented children should be utilized; and
3. special grouping arrangements appropriate to particular children, that is special classes, honor classes, seminars, resource rooms, and the like should be used. (p. 2050)

Passow suggested that, in the United States, educational experiences for gifted students differ from the regular program in at least three ways:

1. in tempo or pace, coming at an earlier age or in less time than is usual;
2. in breadth or depth, providing for more profound and advanced learning; or

3. in kind, being of a substantively different nature from the normal experiences available. (pp. 2050-51)

Programs for gifted students can be classified into three categories: acceleration, grouping, and enrichment. Acceleration programs include any instructional or administrative arrangement that enables the student to complete a program in less time and/or at an earlier age than is usual.

Grouping refers to the practice of assigning gifted students to separate special groups for a designated number of minutes per day or for the entire school day or year. Groups may include special classes or sections, special schools or schools-within-schools, and special seminars or independent-study opportunities.

Enrichment involves selecting and organizing learning experiences appropriate to the nature and needs of gifted students and modifying or adjusting the curriculum and teaching methods for gifted children in heterogeneous classrooms.

Variations or combinations of these three types of programs exist throughout the United States. The Council of State Directors of Programs for the Gifted (1987) reported that 1,600,310 gifted students are currently served in activities such as those described above, which ostensibly were designed for students with the potential for outstanding achievement. Little information is available about the quality and number of programs for the gifted that are provided by local school districts throughout the United States. Tannenbaum (1986) reported that the Richardson Study (conducted by Cox, Daniel, & Boston in 1985), a survey of some

16,000 school districts of which only 10% responded, found only fragmentary enrichment provisions, not programs, in most schools that claimed to be serving the needs of the gifted.

Tannenbaum (1986) distinguished between programs and provisions for the gifted. He suggested that most schools claiming to have programs are really describing provisions that have been made to meet the needs of the academically able. He noted,

> A program is a comprehensive offering sequenced over a long period of time, usually designed as a requirement, and very much a major part of the total school curriculum. . . . A provision, on the other hand, is more fragmentary an ad hoc offering, relatively brief in duration, often designed by an individual teacher with special abilities rather than by a curriculum committee, and supplemental to the major offerings, not integral with them. (p. 214)

Finally, although much of the discussion and literature is favorable toward education for the academically able, little or no impartial information is available to support the idea that major improvements have occurred over the past three decades in the number of programs for the gifted or the quality of existing programs and provisions. Nevertheless, even though federal funds have decreased and the Office of the Gifted, which was established in the 1970s, has been closed for the 1980s, many state education agencies have increased their budgets for the gifted over the past ten years, and nearly every state has its own coordinator for gifted programs (Tannenbaum, 1986).

Japan. Programs and provisions for academically able students in Japan are quite different from similar offerings in the United States. Equal educational opportunities for all students,

particularly those in grades K-9, are strongly supported by educators and parents.

At the beginning of primary school and again at the end of the second and fourth grades, children are assigned to an available class in such a manner as to approximate mixed ability levels within each class and overall parity in ability among the classes (Cummings, 1986). Children stay with the same class until the next assignment level, when they are reassigned in such a way as to create a mixed-ability group. Similarly, in junior high schools, assignments are made so as to equalize the average ability level among homerooms of the same ability level. Ability grouping in Japan is never allowed. Rather, teachers form mixed-ability groups and depend on the fast learners of a group to coach the slower members. In contrast to American schools, Japanese public schools offer no accelerated programs of any kind (White, 1986).

Many researchers and scholars in Japan belong to organizations such as the International Society for Intelligence Education. They also conduct research and publish articles that focus on education for the gifted and talented. Yet such efforts seem not to have had much effect on the provision of special programs for gifted students.

In a publication entitled "Japan's Programs for Gifted and Talented Education," Chiba (1980) noted,

> In Japan, in the years after the end of the Second World War, education for gifted children had been almost put on taboo. Only to talk about it was met with a somewhat obstinate resistance, and the majority of educational views were against it. . . . After the defeat, under the name of democratic

> education, it was predominant to think that a kind of elite education intended to specifically treat a few selected students would lead to educational discrimination. . . .
> . . . Those concerned with education [today] have adhered to uniform education for all students. . . . Special education for intellectually gifted students has somehow met with deep-seated opposition. (p. 7)

Similarly, Stevenson (1985) reported that Japanese teachers prefer to address the whole unit and spend relatively little class time in working with a special group (e.g., gifted group) or individual students.

Cummings (1986) supported this conclusion and suggested that

> Japanese teachers think of themselves as addressing the average student; empirical data suggest that they spend the least amount of time with the top students in their classes. . . . Those students who fall behind and students that wish to get special attention attend after-school juku (cram courses). . . . Approximately one-quarter of Japanese sixth graders and two-fifths of the ninth graders attend juku. (p. 126)

In a sense, the juku represent the only opportunities available for academically able students at the elementary and lower secondary levels to receive special attention. Ranbom (1985) supported the idea that the juku fill a gap in the Japanese educational system: "The curriculum's inability to meet the needs of especially talented students or of weak students who need special help is another failing that tutors and juku help to rectify" (p. 27).

In part, this failure to meet the special needs of talented students is a result of the great respect that Japanese have for one of the basic aims of education in Japan, which is that "all people shall have the right to receive an equal education correspondent to their abilities, as provided for by law" (Outline of Education in Japan, 1985, p. 1).

To insure an optimum level of learning throughout the nation, while at the same time adhering to the principle of equal educational opportunity, the Japanese Education Ministry establishes national guidelines for elementary and secondary school curricula. All students follow essentially the same curricula in grades K-9; no separate arrangements are made for a special population of gifted students (Japan, 1986). The emphasis on providing equal opportunities for all students to learn is reflected in

> the pedagogy of a Japanese elementary school, which is based on the idea that all children are equal in potential, and that the excitement of learning can best be produced in a unity of equals. . . . The Japanese teacher wants to create and maintain a Kyoshitsu Okoku, or "classroom kingdom," of equals. (White, 1987, p. 115)

In addition, Shimahara (1985) noted that "Japanese schools generally emphasize effort rather than innate ability. . . . They de-emphasize and even ignore innate ability and I.Q. scores as criteria for measuring academic work" (p. 420). Cummings (1980) corroborated Shimahara's comments, stating that:

> Japanese teachers are less ready to concede that there are inherent differences in ability or even that the environments from which students come have indelible effects. Far more than their American counterparts, they assume that children are equal in endowment and that differences in performance stem from lack of effort on the part of the students. They further reason that inadequate effort stems from inadequate teaching. (p. 129)

With regard to programs and provisions for academically able students in Japan, little has been done in the public schools either to develop such programs or to provide for this student population. The inaction seems to stem from educators' beliefs that (a) "talent

will out" by itself, and special attention to identifying and nurturing giftedness and talent is not needed and (b) making provisions for education of the gifted and talented is basically undemocratic and contributes to inequity with respect to educational opportunity (Passow, 1985; White, 1987).

Germany. As Gold (1986) observed, "because universal education, particularly at the secondary level, has emerged at different times in different countries, interest in special programs for the gifted has also developed at different times" (p. 252). He reported that the Minister of Education in Hamburg observed that, in Germany following World War I, much effort was put into identifying and developing leaders in industry, technology, and the arts of war. Many of these leaders had distorted values, and a lack of humanitarianism led to disastrous outcomes. The Minister attributed the results of that effort, in part, to the excessive, unbalanced attention given to the "cult of achievement." This, he noted, gave leaders in postwar Germany pause in developing new programs stressing undirected achievement and efforts on behalf of the gifted. In Germany, such efforts are perceived by many to be elitist.

For example, Urban (1982) reported that many criticisms are still being voiced in Germany with regard to education that focuses on academically able students. In particular, he quoted Lauenstein, who stated that "the teachers' union in general rejects any seeming 'privileges for a nonexisting minority' and called discussions on special schools for gifted 'conservative twaddle'" (p. 5).

Special training for the intellectually gifted is generally viewed as undemocratic, and very little in the way of rhetoric or financial support is given to programs for special populations of gifted students. Heinbokel (1985) reported:

> In Germany the idea that intellectually gifted children, children with special talents in sports or music, need encouragement and help to develop their gifts is new to most people and hotly disputed in the media. The mistaken notion that really gifted children will pull through somehow and that they come from privileged families is not dead yet [and] information on giftedness is hard to come by. In fact, less than a dozen books and maybe 40 articles worth reading have been printed in German. . . .
>
> In spite of a small number of research projects financed by the federal government and a few groups of parents of gifted children, notably in Berlin, Hamburg, Frankfurt and Hanover, Germany still is a developing country as far as gifted children are concerned. . . . This lack of interest in gifted children by teachers on all levels seems to be typical for Germany. (pp. 65, 67)

Before the reforms of the 1970s in Germany and elsewhere in Western Europe, gifted students were traditionally separated into different channels or tracks at the end of their primary-grade education (Gallagher, 1984). Most students who would be classified as gifted were enrolled in the Gymnasium type of school rather than either the Realschule or Hauptschule. Pressure to modify the practice of sorting-out students based on testing and intelligence increased as Western Europeans became more sensitive after World War II to the issue of equitable opportunity, treatment, and resource distribution. The trend in Germany, as elsewhere in Europe (as reflected in the Plowden Report of 1967), was toward greater concern about egalitarian issues and opposition to separate schools or tracks for gifted students (Gallagher, 1984).

Something of a dichotomy exists within Germany concerning programs and provisions for academically able students. On the one hand, students are generally not differentiated according to ability but rather according to age. No provisions are made for enrichment, acceleration, or grouping of gifted students. Proposals for changing to a system based on subjects and ability have received little support. All students are required to take all subjects required in the school they attend, and promotion depends on their attaining the level established for the class in all subjects (Schuppe, 1969). On the other hand, the sorting-out process that occurs at the end of the primary years in reality separates academically gifted students from their peers. According to Husen (1979):

> The main argument in favor of selecting students early and putting them into separate institutions (Gymnasium, Realschule, Hauptschule) has been that such a system caters better for able students and on the whole, is conducive to the preservation of standards at all levels of ability. (pp. 83-84)

Observations and Conclusions

Concerning similarities and differences among the United States, Japan, and Germany with regard to programs and provisions for academically able or gifted students, the following observations are made.

1. In each of the three countries, many issues and problems remain in the development of programs and practices that focus primarily on academically able students. Such questions as the following need to be answered: Are special efforts needed, or might

one assume that "talent will out" without special help? Are efforts to make special provisions for the academically able students basically undemocratic, and do such efforts contribute heavily to inequity with respect to educational opportunity? Should the emphasis on education in a country focus primarily on a tiny minority or only the elite of a society, or should the primary effort be directed toward total equality of opportunity for all (excellence versus equality)? Since all societies have limited resources, how can one justify special allocations for the gifted population rather than other special populations?

2. In all three of the countries, there are advocacy groups for gifted education. However, only fragmentary enrichment provisions, not programs, exist for gifted students in the United States (Cox et al., 1985; Tannenbaum, 1986), and similar conclusions have been reached about Japan and Germany (Chiba, 1980; Heinbokel, 1985).

3. Although few programs and provisions for the gifted exist in the three countries, each nation's sorting-out, screening, and selecting or tracking practices in effect place academically advanced students in classes in which they receive preferential treatment.

Summary

This chapter contained a review of literature in the following three areas: (a) differences and similarities in education in the United States, Japan, and Germany; (b) comparative education; and

(c) a comparison of practices employed in educating academically able students in the United States, Japan, and Germany. Chapter III includes a discussion of the design and methodology of the current study.

CHAPTER III

DESIGN AND METHODOLOGY

Introduction

Chapter III contains an explanation of the methodology used in conducting the study. The first section contains a brief description of the Genesee Intermediate School Districts (GISD), from which the United States students who participated in the study were selected. Also included is a description of participating students of similar ages and grades from Japan and Germany. Procedures used in collecting the data are discussed, and the research instruments used in the study are described. The last section details the treatment of the data and the methods of reporting the findings.

The Student Populations

The primary student population for this study comprised twelfth-grade students in 13 local school districts within the GISD who had taken the American College Test (ACT). One-fifth of the qualifying population of each of the participating school districts completed the questionnaire used to collect data for this study. Three hundred ninety-two students from 13 school districts were involved. General background data that profiled the population in terms of age, place of birth, parents' background and education, and

global awareness were collected. Data were also gathered on the formal and informal educational experiences of the students. Similar types of data were gathered on students of a comparable age and grade from Japan and Germany.

The GISD Student Sample[1]

The total K-12 student enrollment for all of the 21 school districts in the GISD in the 1986-87 school year was 91,555. In the 13 school districts selected for the sample, the total K-12 student enrollment for that same school year was 41,729.

In all 21 of the GISD school districts, 5,661 students graduated from public schools in 1986-87; 340 graduated from nonpublic schools. In the 13 districts in the study sample, 3,006 students graduated. The senior classes ranged in size from 97 to 423. The average size of the graduating classes in the sample districts was 231. Most of the students in the 13 participating districts were Caucasians (32,887). The minority population, which included American Indian (1,095), Black (3,095), Asian or Pacific Basin (378), and Hispanic (404) students, totaled 4,972. These groups comprised from .9% to 7.4% of the total 1986-87 K-12 student population of these districts. All of the participating districts were either rural or suburban in nature.

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[1]All statistical information in the first two paragraphs of this section were taken from the GISD's Statistical Summary for 1986-87. Information in the third and fourth paragraphs was based on the 13 local school districts' high school handbooks.

The number of student instruction days in the 13 districts ranged from 180 to 182 per year. The total hours of instruction ranged from 960 to 1,086 per year.

The number of required courses for students in the GISD sample tended to be as follows:

Subject	Years
English	3-4
Science	2-3
Social Studies	2-3
Mathematics	2-3

Several of the districts were in the process of increasing the number of courses students would be required to study. This action was consistent with the Michigan State Board of Education's recommendations included in Better Education for Michigan Citizens: A Blueprint for Action (1984) and the National Commission on Excellence in Education's (1983) report, A Nation at Risk.

The Japanese and German Student Samples

The Japanese and German groups were composed of foreign exchange students who were visiting or attending schools in the central Michigan area during the 1986-87 school year. The majority of the Japanese students were from Shiga Prefecture. All of them were enrolled in a general academic program within their home schools, which was designed to prepare students for university-level work.

When they completed the questionnaire, all of the German students were Gymnasium enrollees. Their schools were located in Lower Saxony and North Rhine Westphalia. As noted in Chapter II, the Gymnasium is one of four types of secondary schools in Germany.

Gymnasiums are academically oriented; about 25% of the student population throughout Germany attends them. Of the students attending the Gymnasium, approximately 80% receive the certificate of graduation, known as the Abitur. Gymnasium graduates complete seven years of secondary schooling (grades 7 through 13) (Naumann & Kohler, 1985).

Background Information on the Student Samples

Parts I and II of the questionnaire provided the information for the following description of the three student samples. All 367 GISD students surveyed are considered here, whereas in Chapter IV the three groups are balanced (i.e., GISD n = 43, Japan n = 29, Germany n = 47) for comparison purposes.

Each of the groups included considerably more females than males. (See Table 3.1.) The data also showed that an overwhelming majority of the students had been born in the country where they were attending school. A relatively high number (12.7%) of the German students had been born outside Germany. (See Table 3.2.)

Table 3.1.--Distribution of students in the three samples by gender.

Gender	United States (n = 367)	Japan (n = 29)	Germany (n = 47)
Female	202	21	27
Male	165	8	20
Total	367	29	47

Table 3.2.--Distribution of students in the three samples by birthplace (in percent).

Country	United States (n = 367)	Japan (n = 29)	Germany (n = 47)
United States	98.7%	--	2.1%
Germany	--	--	87.2
Japan	--	100.0%	--
Europe	.5	--	--
Asia	.3	--	--
Other	.5	--	10.6

Note: Percentages do not total 100% due to rounding.

Most of the students in the GISD sample were Caucasians (86.9%). Minority students, which included American Indians, Blacks, Chicanos, Orientals, and others, constituted from .3% to 8.5% of the sample. These percentages are shown pictorially in Figure 3.1.

A majority of the GISD students' fathers (61.8%) and mothers (55.9%) had completed some type of higher education. Thirty-one percent of the Japanese students' fathers and slightly more than 17% of their mothers had completed some type of higher education. Thirty-five percent of the German students' fathers and approximately 23% of their mothers had completed some type of higher education. (See Table 3.3.)

Some of the GISD students' leisure time was spent reading for pleasure and watching television. As shown in Table 3.4, more than 55% of the students said they watched television between 1 and 10

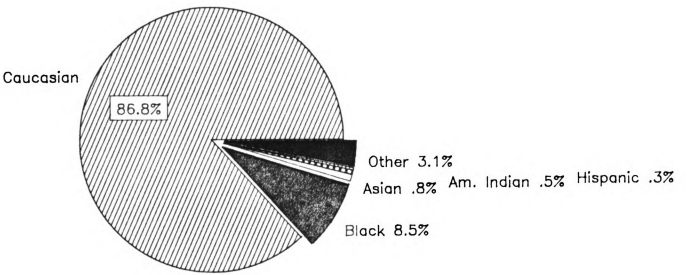

Figure 3.1.--Racial/ethnic composition of the 13 GISD high schools (in percent).

Table 3.3.--Distribution of students in the three samples by the highest level of formal education completed by their parents (in percent).

Level of Education	Father	Mother
United States		
None	.3%	--
Some grade school	.5	--
Grade school	2.1	.5%
Some high school	7.2	5.7
High school diploma	28.2	37.9
Business or trade school	8.3	6.0
Some college	20.2	20.8
Bachelor's degree	14.2	14.8
Some graduate or professional degree	2.3	4.7
Graduate or professional degree	16.8	9.6
Japan		
None	--	--
Some elementary school	--	--
Elementary school	--	--
Junior high school	10.3	17.2
Some high school	6.9	3.4
High school diploma	51.7	62.1
College--2-year college	6.9	13.8
Bachelor's degree	24.1	3.4
Some graduate or professional school	--	--
Graduate or professional degree	--	--
Germany		
None	2.3	--
Hauptschule	25.6	25.6
Realschule	23.3	37.2
Some high school	--	4.7
Abitur (completed secondary level-Gymnasium)	14.0	9.3
Some college	7.0	4.7
College degree	4.7	11.6
Number of years in college completed	4.7	2.3
Doctoral program	11.6	--
Other	7.0	4.7

Table 3.4.--Distribution of students in the three samples according to the time they devoted to television and reading (in percent).

	United States	Japan	Germany
Hours a Week of Television Viewing			
Less than 1	2.1%	3.4%	4.3%
1- 5	33.8	24.1	30.4
6-10	26.4	34.5	34.8
11-15	16.7	20.7	19.6
16-20	14.6	17.2	2.2
20+	6.2	--	8.7
Frequency of Reading a Newspaper			
Daily	32.4	86.2	33.3
5-6 times a week	10.0	6.9	11.1
3-4 times a week	23.1	3.4	22.2
1-2 times a week	21.1	--	20.0
Less than once a week	13.4	3.4	13.3
Whether Students Regularly Read Special-Interest Magazines			
Yes	68.4	89.3	71.1
No	31.6	10.7	28.9
Hours Students Read for Pleasure Each Week			
Less than 1	26.1	31.0	13.0
1- 5	54.7	41.4	39.1
6-10	12.5	10.3	23.9
11-15	4.3	13.8	15.2
16-20	1.8	3.4	4.3
20+	.5	--	4.3

hours during the course of a week. More than 50% of the students indicated they read for pleasure between one and five hours each week. Almost 70% of them said they regularly read special-interest magazines.

Fifty-five percent of the Japanese students said they watched television between 6 and 15 hours each week. More than 85% read a newspaper daily, and nearly 90% read special-interest magazines on a regular basis. Also, 41.4% of them indicated they read for pleasure between one and five hours each week (Table 3.4).

Like the Japanese students, nearly 35% of the German students watched 6 to 10 hours of television each week. One-third of the sample read a newspaper daily, and 71% said they regularly read special-interest magazines. Almost 40% of the German students said they read for pleasure 6 to 15 hours each week (Table 3.4).

All three student groups were asked to estimate the size of their high school class, their rank in that class, and their grade point average. It is interesting that about 30% of the German students were members of a high school class of fewer than 25 students. The largest percentage of German students (44.7%) indicated their class size was between 100 and 199 students. The greatest percentage of American (42.9%) and Japanese (65.5%) students estimated their class size to be between 200 and 399 students. None of the American or Japanese students were members of a class with fewer than 25 students. (See Table 3.5.)

Table 3.5.--Distribution of students in the three samples according to their estimates of the number of students in their high school class.

Number in Class	United States	Japan	Germany
Fewer than 25	--	--	29.8%
25- 99	5.1%	--	12.8
100-199	32.4	3.4%	44.7
200-399	42.9	65.5	12.8
400-599	18.0	31.0	--
600-899	1.3	--	--
900+	.3	--	--

Table 3.6 shows that a majority of students in all three samples ranked themselves in the top half of their high school class. As shown in Table 3.7, almost half of the Japanese group (48.3%) said their grade point average would be a 3.0, corroborating the notion that the Japanese see themselves as part of the mainstream--not standing out from the crowd (Duke, 1986).

Table 3.6.--Distribution of students in the three samples according to their class rankings (in percent).

Class Rank	United States	Japan	Germany
Top quarter	53.0%	25.0%	28.9%
Second quarter	29.4	46.4	46.7
Third quarter	16.4	17.9	24.4
Bottom quarter	1.0	10.7	--

Table 3.7.--Distribution of students in the three samples according to their grade point averages (in percent).

Grade Point Average						
High 7	6	5	4	3	2	Low 1
United States						
22.4%	37.5%	25.4%	11.1%	3.8%	--	.5%
Japan						
		3.4	44.8	48.3	--	--
Germany						
		17.0	44.7	36.2	2.1	--

All of the GISD students had taken the American College Test. Their composite scores on that test are shown in Table 3.8. Because only 60 of the 367 GISD students who completed the questionnaire had taken the Scholastic Aptitude Test, those scores were not considered in the data analyses for this study.

Table 3.8.--American College Test Composite scores of students in the GISD sample (in percent).

Composite Score			
1-15	16-20	21-25	26-36
16.5%	31.6%	33.7%	18.0%

The GISD students who participated in the study were classified into four academic-achievement groups, based on their grade point averages and American College Test scores. These groups were labeled the bottom, low, medium, and top academic-achievement groups. (The formula used in assigning students to academic-achievement groups is explained in Appendix E.) More females than males were identified in two of the four academic-achievement groups. Appreciably more females than males were in the bottom group, and more males than females were in the top group. (See Table 3.9.)

Table 3.9.--Distribution of GISD students by academic-achievement group and gender.

Gender	Academic-Achievement Group			
	Bottom	Low	Medium	Top
Male	26	46	52	52
Female	44	46	56	41
Unidentified	7	6	7	4
Total	77	98	115	97

Most of the American and Japanese students described themselves as being in a college-preparatory program. All of the German students surveyed were attending a Gymnasium and thus were all in a college-preparatory program. (See Table 3.10.)

Table 3.10.--Distribution of students in the three samples according to type of high school program (in percent).

Sample	Type of Program			
	Business	Vocational	College Preparatory	Other
American	9.5%	3.8%	81.7%	4.4%
Japanese	3.4	--	86.2	10.3
German	--	--	100.0	--

In the GISD sample, a majority of the students had studied English (77.2%) and mathematics (55.6%) for four years. About 16.7% had studied social studies and 34.8% had studied science for four years. Just 11.1% had studied a foreign language (Spanish, German, or French) for two years. Almost 70% of the GISD students surveyed had studied a foreign language for some period during their high school years (1/2 year to 3-1/2 years), but nearly 20% of them had studied no foreign languages during their high school years. Fewer than 7% had studied business or vocational courses for all four years. (See Table 3.11.)

Japanese students spend six years in elementary school, three in junior high, and three in senior high (Kanaya, 1985). The data

Table 3.11.--Subjects that students in the three groups studied in high school.

Subject	Number of Years									
	1.5	1	1.5	2	2.5	3	3.5	4	5	n/a
United States										
English	.3	--	.3	.5	.8	11.3	9.5	77.2		..3
Mathematics	.3	--	.8	3.8	3.8	26.2	9.2	55.6		.3
Social Studies	.3	2.1	6.4	28.5	14.9	23.6	7.7	16.7		--
Natural Science	.3	9.7	1.3	18.2	3.1	28.4	3.3	34.8		.8
Spanish	3.0	14.9	--	11.1	1.1	1.9	.3	2.4		64.1
German	1.4	.6	--	1.7	--	1.1	--	.8		91.9
French	2.2	9.5	1.1	11.7	1.1	6.0	.8	7.9		58.7
Business	7.3	22.1	5.5	19.0	2.1	8.1	1.6	6.8		26.8
Vocational	6.9	16.4	1.3	10.1	2.4	4.0	.8	6.1		48.8
Japan										
Japanese						100.0				
Mathematics		3.4		6.9		89.7				
Social Studies				3.4		96.6				
Natural Science				17.2		82.8				
German										100.0
English						96.6				3.4
French										100.0
Business		3.4								96.6
Vocational										100.0
Germany										
German			4.7		4.7		9.3	14.0	65.1	2.3
Mathematics			7.0				9.3	9.3	72.1	2.3
History/Geography			4.5		6.8	25.0	4.5	6.8	52.3	--
Natural Science			4.7			7.0	9.3	7.0	72.1	--
Latin	5.7		2.9	22.9	20.0	8.6		20.0	5.7	14.3
English		6.8					9.1	9.1	75.0	
French	2.4	2.4	2.4		12.2	19.5	7.3	7.3	39.0	7.3
Russian			8.7							91.3
Other language						14.3	7.1		7.1	71.4

Note: n/a = not available.

reported here concern the subjects the students surveyed had studied during ninth through twelfth grades. A vast majority of the students in the Japanese sample had studied all of the listed academic subjects for four years. This included Japanese (100%), mathematics (89.4%), social studies (96.6%), natural science (82.8%), and English (96.6%). English was the only foreign-language option available for the Japanese students in this sample. (See Table 3.11.)

Students in the German sample all attended a Gymnasium and will have completed a fifth year of study when they receive their high school diploma (Abitur). A majority of the German sample had studied German (65.1%), mathematics (72.1%), history/geography (52.3%), natural science (72.1%), and English (75%) for five years. Thirty-nine percent had studied French, 5.7% Latin, and 7.1% another foreign language for five years. Some of the students who had studied a foreign language for five years had studied more than one language for that period. Other students had studied one or more foreign languages for a shorter time (1/2 year to 4 years). The languages they studied included Latin (80.1%), English (25%), French (53.5%), Russian (8.7%), and others (21.4%). (See Table 3.11.)

Some of the participating GISD students were enrolled in advanced placement or honors courses. The percentage of students taking such classes ranged from a low of 11.3% for social studies to a high of 45.8% for English. (See Table 3.12.)

Table 3.12.--Percentage of students in GISD sample who were enrolled in advanced placement or honors courses.

Type of Course				
English	Mathematics	Social Studies	Natural Science	Foreign Language
45.8%	42.4%	11.3%	32.3%	14.1%

Research Questions

The following research questions were formulated to guide the collection of data for the study.

1. What are some of the differences and similarities in education in the United States and in two other industrialized societies, Japan and Germany?

2. How does the formal educational program of selected twelfth-grade GISD students differ from that of their counterparts from Japan and Germany?

3. Do the number and variety of informal educational experiences of selected twelfth-grade GISD students differ from those of their counterparts from Japan and Germany?

4. Do selected twelfth-grade GISD students differ across academic-achievement groups and by gender with regard to their informal educational experiences?

5. Do selected twelfth-grade GISD students differ across districts with regard to their informal educational experiences?

6. Do selected twelfth-grade GISD students differ across academic-achievement groups in their evaluation of their high school experiences?

Hypotheses

The following null hypotheses were formulated to analyze the data gathered to answer the research questions. Data on GISD students' participation in extracurricular activities and out-of-class experiences were analyzed and compared to similar data on selected students from Japan and Germany. In addition, GISD students' evaluations of various aspects of their schools were analyzed. In Chapter IV, subhypotheses of the major hypotheses are stated to reflect these comparisons.

Hypothesis 1: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan and Germany in terms of the number of high school extracurricular activities in which they participate.

Hypothesis 2: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan and Germany in terms of the variety of high school extracurricular activities in which they participate.

Hypothesis 3: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan and Germany in terms of the number of out-of-class experiences in which they participate.

Hypothesis 4: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan and Germany in terms of the variety of out-of-class experiences in which they participate.

Hypothesis 5: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the number of extracurricular activities in which they participate.

Hypothesis 6: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the variety of extracurricular activities in which they participate.

Hypothesis 7: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the number of out-of-class experiences in which they participate.

Hypothesis 8: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the variety of out-of-class experiences in which they participate.

Hypothesis 9: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of classroom instruction.

Hypothesis 10: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of the number and variety of course offerings.

Hypothesis 11: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of grading practices and policies.

Hypothesis 12: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of the number and kinds of tests given.

Hypothesis 13: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of guidance services provided by the school as a whole.

Hypothesis 14: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of school rules, regulations, and policies.

Hypothesis 15: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of libraries or learning centers.

Hypothesis 16: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of laboratory facilities.

Hypothesis 17: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of provisions for students needing special assistance in improving skills in reading, mathematics, and so on.

Hypothesis 18: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of provisions for academically outstanding students.

Hypothesis 19: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of the adequacy of programs in career education and planning.

Study Design

Data for the research were gathered by means of written questionnaires and personal interviews. The first section of the questionnaire elicited background information on the three student samples. The second section of the instrument was designed to gather information on these students' extracurricular activities and out-of-class experiences. (See Appendix B for a copy of the questionnaire.) That information is discussed in Chapter IV, as are data related specifically to the GISD sample.

The researcher also sought information about the organization, structure, and goals of education in the United States, Japan, and Germany. In addition, she sought information about educational issues and trends in the three countries and the possibility of one country's adopting the educational practices of another nation. This information was gathered by means of interviews with experts on educational practices in the three countries. (See Appendix B for a

copy of the interview schedule and Appendix C for a list of the interviewees.)

Instrumentation

Selected items from two instruments were combined into one questionnaire, the Student Background Questionnaire, which was used in conducting this research. (See Appendix B.) The first instrument was the Student Profile Section of the American College Test. Items selected from this instrument were intended to elicit information about students' general background, educational plans, interests and goals,and formal and informal high school experiences. Items selected from the second instrument, entitled Measures for Global Understanding, pertained to students' global awareness.

The researcher developed and validated the instrument as follows:

1. Individuals who were knowledgeable about the languages and educational systems of the respective countries studied reviewed the instrument and made suggestions for revisions.

2. A reviewed draft of the instrument was field tested with American, Japanese, and German students who were not part of the study sample.

3. Appropriate changes were made, based on the field test. The refined questionnaire was used in the actual research.

Fifteen questions were formulated to serve as a guide in conducting the interviews. The researcher developed and validated three versions of the interview (see Appendix B) following

procedures similar to those used in constructing the questionnaire. Steps 2 and 3 were modified as follows:

2. A reviewed draft of the instrument was field tested with representatives from the United States, Japan, and Germany.

3. Appropriate changes were made, based on the field test.

Data-Gathering Procedures

Students completed the Student Background Questionnaire under the researcher's supervision. Each group of students completed the questionnaire in a single 50-minute period. Identical procedures were followed in administering the questionnaire to all groups. The researcher read the directions to the students as they followed along on their printed copies. After each set of directions was read, students could ask questions to clarify anything they did not understand. Interpreters helped the researcher answer Japanese and German students' questions. Both Japanese and German students answered the questions with reference to their experiences at home.

All questionnaires were numbered for identification purposes. Participants' names were omitted to ensure confidentiality. Students were informed that, as had been stated in the researcher's letters to them, all responses would be kept confidential and that they could leave any questions unanswered if they wished.

The researcher conducted personal interviews, following the questions in the Interview Guide. Before the interview, letters were sent to individuals who were knowledgeable about educational practices in one or more of the countries under investigation. In

this letter, the researcher described the study and requested their participation in the interviews. She made follow-up telephone calls to these individuals to ascertain whether they would be willing to cooperate. When there was a positive response, arrangements were made for the interview. The interviews were tape recorded; they lasted 60 to 90 minutes. (Names of the interviewees may be found in Appendix C.)

The information gathered from the interviews was transcribed and analyzed. The results are discussed in Chapter V.

Data-Analysis Procedures

Data for questionnaire Items 37 through 117 were analyzed by means of the chi-square procedure to determine whether statistically significant differences existed among or between groups on particular variables. The level of significance was set at .05 for all items analyzed using the chi-square technique. The results of these analyses are contained in Chapter IV. Data concerning the proportions of GISD students who participated in extracurricular activities and out-of-class experiences across individual districts were also analyzed. These data are presented in Chapter IV.

Data obtained from interviews were categorized and summarized by descriptive content analysis. This information is examined in Chapter V. Some of the discussion in Chapter II was based on information obtained from the interviews.

Summary

This chapter contained a discussion of the samples from which the data were gathered. The participants were selected twelfth-grade GISD students and students of a similar age and grade from Japan and Germany. The research questions and null hypotheses were stated. The methodology used in conducting the study was explained, as were the test instruments and the data-collection and data-analysis procedures. Chapter IV contains the findings of the analysis of data gathered by means of the Student Background Questionnaire.

CHAPTER IV

PRESENTATION AND ANALYSIS OF THE DATA

Introduction

The purposes of this study were:

1. To examine and compare the structure, organization, and goals of education in the Genesee Intermediate School District (GISD) in the United States with the structure, organization, and goals of education in two other industrialized societies (Japan and Germany).

2. To examine and compare the achievement, characteristics, and educational experiences (formal and informal) of a selected group of GISD twelfth-grade students.

3. To examine and compare the educational experiences (formal and informal) of a selected group of GISD twelfth-grade students with those of their counterparts from two other industrialized societies.

4. To examine how selected GISD twelfth-grade students evaluate their high school experiences.

A supplementary purpose was to acquire data that educators and others could use to make more valid cross-national comparisons of educational practices in three industrialized societies (schools in the GISD in the United States, Japan, and Germany).

Selected students from the three countries were asked to complete a questionnaire that the researcher developed to gather general background information on their educational plans, interests, and goals; formal and informal high school educational experiences; and knowledge about global issues and the interdependent nature of the world. Selected items from two instruments were used in developing the questionnaire used to collect the data for this study. (See Appendix B.)

Students' responses to the questionnaire were compared by country and across local school districts within the GISD. In addition, GISD students' responses were compared by gender and academic-achievement group. The GISD, Japanese, and German students' responses were analyzed to determine whether statistically significant differences existed between groups on selected variables. GISD students were also compared by gender and academic-achievement group to determine whether statistically significant differences existed between or among groups on certain variables.

The procedures used in collecting and analyzing the data were described in Chapter III. The hypotheses were analyzed by means of chi-square tests, using the Statistical Package for the Social Sciences (SPSS) at the Michigan Department of Education. The results of the statistical analysis as they relate to the various hypotheses and subhypotheses are presented in the next section of this chapter. The findings for Research Question 5 are discussed in the third section. Included is information about the number and

variety of extracurricular activities and out-of-class experiences in which students across 13 districts within the GISD participated.

Comparative Data: Null Hypotheses

Number of High School Extracurricular Activities in Which Students From the Three Countries Participated

The first major null hypothesis stated:

Ho_1: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan and Germany in terms of the number of high school extracurricular activities in which they participate.

Given a list of extracurricular activities, students in each group were asked to identify all of those in which they participated. Chi-square tests were used to determine whether statistically significant differences existed between groups with regard to the number of activities in which they participated. In the following pages, each subhypothesis is presented individually, followed by a presentation and an interpretation of the results for that hypothesis.

GISD students and Japanese students.

Ho_{1a}: There is no statistically significant difference between GISD twelfth-grade students and Japanese twelfth-grade students with regard to the number of high school extracurricular activities in which they participate.

A chi-square value of 41.27 indicated there was a statistically significant difference between the GISD students and the Japanese students with regard to the number of high school extracurricular activities in which they participated (Table 4.1). Hence, the null hypothesis was rejected ($p < .05$).

GISD students and German students.

Ho_{1b}: There is no statistically significant difference between GISD twelfth-grade students and German twelfth-grade students with regard to the number of high school extracurricular activities in which they participate.

A chi-square value of 4.85 indicated there was no statistically significant difference between the GISD students and the German students with regard to the number of high school extracurricular activities in which they participated (Table 4.1). Thus, the null hypothesis was not rejected ($p > .05$).

Summary. The distribution of GISD, Japanese, and German students according to the number of extracurricular activities in which they participated is shown in Table 4.1. The percentage of GISD students participating in such activities ranged from a high of 51.2% for 4 or more activities to a low of 16.3% for 0-1 activity. Japanese students' participation ranged from a high of 93.1% for 0-1 activity to a low of 0% for 2-3 activities. German students' responses (rank) paralleled those of the Japanese students. Their participation ranged from a high of 39.1% for 0-1 activity to a low of 26.1% for 2-3 activities.

Table 4.1.--Distribution of students from the three groups according to the number of extracurricular activities in which they participated.

Number of Activities	GISD (n=43)		Japan (n=29)		Germany (n=47)	
	%	Rank	%	Rank	%	Rank
0-1	16.3	3	93.1	1	39.1	1
2-3	32.6	2	0.0	3	26.1	3
4+	51.2	1	6.9	2	34.8	2

Variety of High School Extracurricular Activities in Which Students From the Three Countries Participated

Ho_2: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan Germany and in terms of the variety of high school extracurricular activities in which they participate.

Given a list of extracurricular activities, students were asked to identify all of those in which they participated. Chi-square tests were used to determine whether statistically significant differences existed between groups with regard to the variety of activities in which they participated.

GISD students and Japanese students.

Ho_{2a}: There is no statistically significant difference between GISD twelfth-grade students and Japanese twelfth-grade students with regard to the variety of high school extracurricular activities in which they participate.

Nine out of 12 chi-square values indicated there was no statistically significant difference between GISD students and Japanese students with regard to the variety of high school

extracurricular activities in which they participated. Thus, the null hypothesis was not rejected ($p > .05$) (see Table 4.2).

Table 4.2.--Results of comparisons between GISD students and Japanese students with regard to the variety of high school extracurricular activities in which they participated (GISD n = 43; Japan n = 29).

	Item Number	Chi-Square Value	Signif.
37	Instrumental music	.30	NSD
38	Vocal music	.24	NSD
39	Student government	4.62*	SD
40	Publications	3.08	NSD
41	Debate	0.00	NSD
42	Departmental clubs	.74	NSD
43	Dramatics, theater, radio-TV	2.92	NSD
44	Intramural athletics	0.00	NSD
45	Varsity athletics	14.12*	SD
46	Political organizations	.08	NSD
47	Special-interest groups	2.87	NSD
48	School/community service org.	33.51*	SD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

GISD students and German students.

Ho_{2b}: There is no statistically significant difference between GISD twelfth-grade students and German twelfth-grade students with regard to the variety of high school extracurricular activities in which they participate.

Nine out of 12 chi-square values indicated there was no statistically significant difference between the GISD students and the German students with regard to the variety of high school extracurricular activities in which they participated. Thus, the null hypothesis was not rejected ($p > .05$) (see Table 4.3).

Table 4.3.--Results of comparisons between GISD students and German students with regard to the variety of extracurricular activities in which they participated (GISD n = 43; Germany n = 47).

Item Number		Chi-Square Value	Signif.
37	Instrumental music	2.02	NSD
38	Vocal music	.28	NSD
39	Student government	.01	NSD
40	Publications	0.00	NSD
41	Debate	.75	NSD
42	Departmental clubs	.44	NSD
43	Dramatics, theater, radio-TV	1.40	NSD
44	Intramural athletics	.68	NSD
45	Varsity athletics	7.18*	SD
46	Political organizations	0.00	NSD
47	Special-interest groups	3.73*	SD
48	School/community service org.	32.74*	SD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

Summary. The varieties of extracurricular activities in which the sample students participated are reported in Table 4.4. The percentages and rankings are given for 12 extracurricular activities: instrumental music, vocal music, student government, publications, debate, departmental clubs, dramatics, intramural athletics, varsity athletics, political organizations, special-interest groups, and community service organizations. GISD students' participation ranged from a high of 76.7% for school or community service organizations to a low of 2.4% for debate. Japanese students' participation ranged from a high of 17.2% for both instrumental music and varsity sports to a low of 0% for

intramural athletics. German students' participation ranged from a high of 48.8% for special-interest groups to a low of 9.1% for debate and political organizations.

Table 4.4.--Distribution of students from the three groups according to the variety of extracurricular activities in which they participated.

Variety of Activities	GISD (n=43)		Japan (n=29)		Germany (n=47)	
	%	Rank	%	Rank	%	Rank
Instrumental music	25.6	5.3	17.2	1.5	42.2	2
Vocal music	9.3	11	3.4	8.25	15.2	7
Student government	25.6	5.3	3.4	8.25	28.9	5
Publications	20.9	8.5	3.4	8.25	20.0	6
Debate	2.4	12	3.4	8.25	9.1	11.5
Departmental clubs	20.9	8.5	10.3	3	13.3	8.5
Theater	25.6	5.3	6.9	5.5	13.3	8.5
Intramural athletics	41.9	3	0.0	12	31.1	4
Varsity sports	65.1	2	17.2	1.5	34.1	3
Political organizations	11.9	10	6.9	5.5	9.1	11.5
Special-interest groups	26.2	4	7.1	4	48.8	1
Service organizations	76.7	1	3.6	7	12.2	10

Number of Out-of-Class Experiences in Which Students From the Three Countries Participated

The third major hypothesis stated:

Ho_3: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan and Germany in terms of the number of out-of-class experiences in which they participate.

Given a list of out-of-class experiences (Questionnaire Items 49 through 106), students in each group were asked to identify all of those in which they participated. Chi-square tests were used

to determine whether statistically significant differences existed between groups with regard to the number of experiences in which they participated.

GISD students and Japanese students.

Ho_{3a}: There is no statistically significant difference between GISD twelfth-grade students and Japanese twelfth-grade students with regard to the number of out-of-class experiences in which they participate.

A chi-square value of 26.58 indicated there was a statistically significant difference between GISD students and Japanese students with regard to the number of out-of-class experiences in which they participated. Hence, the null hypothesis was rejected ($p > .05$).

GISD students and German students.

Ho_{3b}: There is no statistically significant difference between GISD twelfth-grade students and German twelfth-grade students with regard to the number of out-of-class experiences in which they participate.

A chi-square value of 21.28 indicated there was a statistically significant difference between the GISD students and the German students with regard to the number of out-of-class experiences in which they participated. Hence, the null hypothesis was rejected ($p < .05$).

Summary. The number of out-of-class experiences in which the GISD, Japanese, and German students participated is reported in Table 4.5. GISD students' participation in such experiences ranged from a high of 44.2% for 6-14 and 15 or more experiences to a low of 11.6% for 0-5 experiences. Japanese students' participation ranged from a high of 69% for 0-5 experiences to a low of 6.9% for 15 or

more experiences. German students' participation paralleled that of the Japanese students; the percentages ranged from a high of 50% for 0-5 out-of-class experiences to a low of 8.7% for 15 or more experiences.

Table 4.5.--Distribution of students from the three groups according to the number of out-of-class experiences in which they participated.

Number of Experiences	GISD (n=43)		Japan (n=29)		Germany (n=47)	
	%	Rank	%	Rank	%	Rank
0- 5	11.6	3	69.0	1	50.0	1
6-14	44.2	1.5	24.1	2	41.3	2
15+	44.2	1.5	6.9	3	8.7	3

Variety of Out-of-Class Experiences in Which Students From the Three Countries Participated

The fourth major hypothesis stated:

Ho_4: There is no statistically significant difference between GISD twelfth graders and their counterparts from Japan and Germany in terms of the variety of out-of-class experiences in which they participate.

Given a list of 57 out-of-class experiences, students were asked to identify all of those in which they participated. Chi-square tests were used to determine whether statistically significant differences existed between groups with regard to the variety of out-of-class experiences in which they participated.

GISD students and Japanese students.

Ho_{4a}: There is no statistically significant difference between GISD twelfth-grade students and Japanese twelfth-grade students with regard to the variety of out-of-class experiences in which they participate.

The chi-square values indicated there was no statistically significant difference between groups for the majority of out-of-class experiences in which they participated. Thus, the null hypothesis was not rejected ($p > .05$). The chi-square value for each out-of-class experience is listed in Table 4.6.

GISD students and German students.

Ho_{4b}: There is no statistically significant difference between GISD twelfth-grade students and German twelfth-grade students with regard to the variety of out-of-class experiences in which they participate.

The chi-square values indicated there was no statistically significant difference between groups for the majority of out-of-class experiences in which they participated. Thus, the null hypothesis was not rejected ($p > .05$). The chi-square value for each out-of-class experience is shown in Table 4.7.

The variety of out-of-class experiences in which GISD, Japanese, and German students participated is shown in Table 4.8. In the Music and Speech categories, no significant differences were found on any of the items listed between the GISD and Japanese groups or the GISD and German groups. The category in which the most statistically significant differences were found between the GISD and Japanese groups and the GISD and German groups was Leadership. A statistical analysis of the Athletics category was not conducted because in Japan and Germany the relationship between

Table 4.6.--Results of comparisons between GISD students and Japanese students with regard to the variety of out-of-class experiences in which they participated (GISD n = 43; Japan n = 29).

Category & Item Number	Chi-Square Value	Signif.
Leadership		
49	5.72*	SD
50	10.18*	SD
51	7.22*	SD
52	.64	NSD
53	5.13*	SD
54	13.40	SD
Music		
55	0.00	NSD
56	0.64	NSD
57	1.38	NSD
58	0.08	NSD
59	0.00	NSD
60	0.48	NSD
Speech		
61	0.00	NSD
62	0.07	NSD
63	2.26	NSD
64	1.36	NSD
65	0.20	NSD
66	0.00	NSD
Art		
67	4.33*	SD
68	1.17	NSD
69	0.00	NSD
70	0.00	NSD
71	0.00	NSD
72	0.21	NSD
73	0.01	NSD
Writing		
74	0.74	NSD
75	1.69	NSD
76	1.87	NSD
77	0.00	NSD
78	0.00	NSD
79	0.00	NSD
80	1.15	NSD

Table 4.6.--Continued.

Category & Item Number	Chi-Square Value	Signif.
Science		
81	7.81*	SD
82	--	--
83	2.38	NSD
84	0.00	NSD
85	--	--
86	1.15	NSD
Athletics		
87		
88		
89		
90		
91		
92		
Community Service		
93		
94		
95	2.90	NSD
96	0.00	NSD
97	1.22	NSD
98	0.64	NSD
99	3.83*	SD
Work Experience		
100	1.83	NSD
101	0.00	NSD
102	0.78	NSD
103	--	--
104	2.65	NSD
105	6.31*	SD
106	6.89*	SD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

Table 4.7.--Results of comparisons between GISD students and German students with regard to the variety of out-of-class experiences in which they participated (GISD n = 43; Germany n = 47).

Category & Item Number	Chi-Square Value	Signif.
Leadership		
49	6.04*	SD
50	8.02*	SD
51	3.80	NSD
52	1.83	NSD
53	4.52*	SD
54	29.06*	SD
Music		
55	0.28	NSD
56	0.00	NSD
57	0.19	NSD
58	0.08	NSD
59	0.03	NSD
60	2.54	NSD
Speech		
61	0.00	NSD
62	1.83	NSD
63	0.18	NSD
64	1.74	NSD
65	0.00	NSD
66	1.48	NSD
Art		
67	5.01*	SD
68	5.72*	SD
69	0.11	NSD
70	2.57	NSD
71	1.03	NSD
72	0.00	NSD
73	0.00	NSD
Writing		
74	0.02	NSD
75	0.91	NSD
76	6.17*	SD
77	0.95	NSD
78	0.00	NSD
79	0.56	NSD
80	0.17	NSD

Table 4.7.--Continued.

Category & Item Number	Chi-Square Value	Signif.
Science		
81	9.32*	SD
82	--	--
83	3.21	NSD
84	0.00	NSD
85	0.00	NSD
86	4.84*	SD
Athletics		
87		
88		
89		
90		
91		
92		
Community Service		
93		
94		
95	5.35*	SD
96	1.99	NSD
97	5.50*	SD
98	0.22	NSD
99	3.74*	SD
Work Experience		
100	3.99*	SD
101	0.00	NSD
102	1.45	NSD
103	3.67	NSD
104	0.66	NSD
105	2.08	NSD
106	3.40	NSD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

Table 4.8.--Distribution of students from the three groups according to the variety of out-of-class experiences in which they participated.

Category and Item Number	GISD (n=43) %	GISD Rank	Japan (n=29) %	Japan Rank	Germany (n=47) %	Germany Rank
Leadership						
49	34.9	4	7.1	3	10.9	4
50	39.5	2	3.4	4.3	11.1	3
51	32.6	5	3.4	4.3	13.0	2
52	11.6	6	3.4	4.3	2.2	5.5
53	37.2	3	10.3	1.5	15.2	1
54	55.8	1	10.3	1.5	2.2	5.5
Music						
55	9.3	6	10.3	4	15.2	3
56	11.6	5	3.4	5	13.3	4
57	32.6	2	17.2	2	26.1	2
58	51.2	1	44.8	1	56.5	1
59	18.6	4	na	-	na	5
Speech						
61	2.3	6	0.0	3.3	2.2	4.5
62	11.6	3	6.9	1.5	2.2	4.5
63	23.3	1.5	6.9	1.5	17.4	2
64	9.3	4	0.0	3.3	21.7	1
65	4.7	5	0.0	3.3	4.3	3
66	23.3	1.5	na	-	na	-
Art						
67	34.9	1	10.3	1.3	60.9	1
68	23.3	2	10.3	1.3	50.0	2
69	4.7	4.25	6.9	4.3	8.7	5
70	4.7	4.25	6.9	4.3	17.8	3
71	4.7	4.25	6.9	4.3	13.0	4
72	4.7	4.25	10.3	1.3	6.7	6
73	7.0	3	3.4	7	6.5	7
Writing						
74	20.9	3	10.3	2.5	17.4	2
75	25.6	2	10.3	2.5	15.2	3
76	46.5	1	27.6	1	19.6	1
77	9.3	5	6.9	4	2.2	5.5
78	2.3	7	3.6	5	2.2	5.5
79	4.7	6	3.4	6.5	0.0	7
80	14.0	4	3.4	6.5	8.9	4

Table 4.8.--Continued.

Category and Item Number	GISD (n=43) %	GISD Rank	Japan (n=29) %	Japan Rank	Germany (n=47) %	Germany Rank
Science						
81	27.9	1	0.0	4.5	2.3	2
82	0.0	5.5	na	-	na	-
83	18.6	2	3.4	1.3	4.3	1
84	2.3	4	3.4	1.3	0.0	4.5
85	0.0	5.5	0.0	4.5	2.2	3
86	14.0	3	3.4	1.3	0.0	4.5
Athletics						
87	65.1	1	na	-	na	-
88	58.1	4	na	-	na	-
89	34.9	5	na	-	na	-
90	27.9	6	na	-	na	-
91	62.8	2.5	na	-	na	-
92	62.8	2.5	na	-	na	-
Community Service						
93	14.0	5.5	na	-	na	-
94	14.0	5.5	na	-	na	-
95	30.2	3	10.3	3	8.7	3
96	32.6	2	31.0	1	17.4	1
97	39.5	1	24.1	2	15.2	2
98	11.6	7	3.4	4.5	6.5	4.5
99	23.3	4	3.4	4.5	6.5	4.5
Work Experience						
100	69.0	1	50.0	1	45.7	1
101	34.9	3	34.5	2	32.6	2
102	41.9	2	28.6	3	20.0	4
103	7.0	7	na	-	25.8	3
104	14.0	6	0.0	5.5	6.5	7
105	30.2	4	3.4	4	15.2	5
106	25.6	5	0.0	5.5	8.7	6

athletics and school is not comparable to that in the United States. Although the GISD and German groups differed significantly on three of the five items in the Community Service category, the GISD and

Japanese groups differed significantly on only one of the items in that category.

Number of Extracurricular Activities in Which GISD Students Participated, by Academic-Achievement Group and Gender

The fifth major hypothesis stated:

Ho_5: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the number of extracurricular activities in which they participate.

Given a list of extracurricular activities, students were asked to identify all of those in which they participated. Chi-square tests were used to determine whether statistically significant differences existed among academic-achievement groups and between males and females with regard to the number of extracurricular activities in which they participated.

GISD students across academic-achievement groups.

Ho_{5a}: GISD twelfth-graders in different academic-achievement groups do not differ significantly with regard to the number of extracurricular activities in which they participate.

A chi-square value of 17.18 indicated there was a statistically significant difference among academic-achievement groups with regard to the number of extracurricular activities in which they participated. Therefore, the null hypothesis was rejected ($p < .05$).

HO_{5b}: Male and female GISD twelfth-graders do not differ significantly with regard to the number of extracurricular activities in which they participate.

A chi-square value of 3.81 indicated there was no statistically significant difference between GISD males and females with regard to the number of extracurricular activities in which they participated. Hence, the null hypothesis was not rejected ($p > .05$).

Summary. The number of extracurricular activities in which GISD students participated was calculated by academic-achievement group (Table 4.9) and by gender (Table 4.10). The percentage of students who participated in four or more extracurricular activities ranged from a high of 57.7% for the top achievement group to a low of 32.5% for the bottom group. Conversely, the percentage of students who participated in zero or one activity ranged from a high of 20.8% for the bottom group to a low of 11.3% for the top group.

Table 4.9.--Number of extracurricular activities in which GISD students participated, by academic-achievement group.

Number of Activities	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
0-1	20.8	3	20.4	3	16.7	3	11.3	3
2-3	46.8	1	43.9	1	48.2	1	30.9	2
4+	32.5	2	35.7	2	35.1	2	57.7	1

Percentages of participation by males and females differed by fewer than eight percentage points. The greatest difference between males and females was for those who participated in four or more activities (see Table 4.10).

Table 4.10.--Number of extracurricular activities in which GISD students participated, by gender.

Number of Activities	Male (n = 165)		Female (n = 201)	
	%	Rank	%	Rank
0-1	20.6	3	13.9	3
2-3	43.0	1	41.8	2
4+	36.4	2	44.3	1

Variety of Extracurricular Activities in Which GISD Students Participated, by Academic-Achievement Group and Gender

The sixth major hypothesis stated:

Ho_6: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the variety of extracurricular activities in which they participate.

Given a list of extracurricular activities, students were asked to identify all of those in which they participated. Chi-square tests were used to determine whether statistically significant differences existed among academic-achievement groups and between males and females with regard to the variety of extracurricular activities in which they participated.

GISD students across academic-achievement groups.

Ho_{6a}: GISD twelfth-graders in different academic-achievement groups do not differ significantly with regard to the variety of extracurricular activities in which they participate.

Eleven out of 12 chi-square values indicated there was no statistically significant difference among academic-achievement groups with regard to the variety of high school extracurricular activities in which they participated. Thus, the null hypothesis was not rejected ($p > .05$) (see Table 4.11).

Table 4.11.--Results of comparisons of GISD students across academic-achievement groups with regard to the variety of extracurricular activities in which they participated (n = 385).

	Activity	Chi-Square Value	Signif.
37	Instrumental music	6.33	NSD
38	Vocal music	2.42	NSD
39	Student government	6.99	NSD
40	Publications	2.93	NSD
41	Debate	4.57	NSD
42	Departmental clubs	4.99	NSD
43	Dramatics, theater, radio/tv	6.89	NSD
44	Intramural athletics	3.67	NSD
45	Varsity athletics	3.00	NSD
46	Political organizations	1.23	NSD
47	Special-interest groups	2.84	NSD
48	School/community service org.	35.99*	SD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

Summary. A significantly larger percentage of students in the top academic-achievement group than in the other three groups

participated in service organizations (see Table 4.12.) The range across academic-achievement groups was as follows: top--78.4%, medium--58.4%, low--45.9%, and bottom--36.4%. However, students in each of the academic-achievement groups ranked Service Organizations, Intramural Athletics, and Varsity Sports as the top three extracurricular activities. The two types of activities ranked lowest by students in all four groups were Debate and Political Organizations. The only type of activity in which more than 50% of the students in each academic-achievement group participated was Varsity Sports.

Table 4.12.--Variety of extracurricular activities in which GISD students participated, by academic-achievement group.

	Activity	Academic-Achievement Group							
		Bottom (n = 77)		Low (n = 98)		Medium (n = 115)		Top (n = 140)	
		%	Rank	%	Rank	%	Rank	%	Rank
37	Instru. music	19.5	8	19.4	8.5	32.5	4.5	25.8	8
38	Vocal music	22.1	6	17.3	10	19.3	7.5	13.4	10
39	Student gov't.	24.7	4.5	28.6	5	19.3	7.5	35.1	5
40	Publications	20.8	7	26.5	6	18.6	9	26.8	7
41	Debate	9.1	11.5	4.1	12	2.6	12	4.2	12
42	Depart. clubs	11.7	10	19.4	8.5	21.9	6	24.7	9
43	Theater	16.9	9	22.7	7	17.7	10	30.9	6
44	Intramural ath.	42.9	2	35.7	3	34.2	3	45.4	3
45	Varsity sports	62.3	1	63.5	1	55.8	2	67.0	2
46	Political org.	9.1	11.5	10.2	11	6.1	11	8.3	11
47	Special-int. groups	24.7	4.5	30.6	4	32.5	4.5	36.5	4
48	Service org.	36.4	3	45.9	2	58.4	1	78.4	1

GISD students by gender.

Ho_{6b}: Male and female GISD twelfth-graders do not differ significantly with regard to the variety of extracurricular activities in which they participate.

Six out of 12 chi-square values indicated there was no statistically significant difference between males and females with regard to the variety of extracurricular activities in which they participated. Six of the 12 values indicated a statistically significant difference between groups. Therefore, the null hypothesis was neither rejected nor not rejected at the .05 level (see Table 4.13).

Table 4.13.--Results of comparisons of GISD students by gender with regard to the variety of extracurricular activities in which they participated (n = 366).

	Activity	Chi-Square Value	Signif.
37	Instrumental music	.14	NSD
38	Vocal music	8.82*	SD
39	Student government	5.27*	SD
40	Publications	2.17	NSD
41	Debate	.17	NSD
42	Departmental clubs	.80	NSD
43	Theater	5.46*	SD
44	Intramural athletics	14.12*	SD
45	Varsity athletics	11.64*	SD
46	Political organizations	.13	NSD
47	Special-interest groups	.02	NSD
48	School/community service org.	21.04*	SD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

Summary. A significantly larger percentage of females than males participated in Vocal Music, Student Government, Theater, and School/Community Service Organizations. In contrast, a significantly larger percentage of males than females participated in Intramural and Varsity Athletics. The proportions of males and females who participated in the remaining activities were about the same (see Table 4.14).

Table 4.14.--Variety of extracurricular activities in which GISD students participated, by gender.

	Activity	Male (n = 165)		Female (n = 201)	
		%	Rank	%	Rank
37	Instrumental music	23.6	5	25.9	8
38	Vocal music	10.9	10	23.4	9
39	Student government	20.6	6	31.8	3
40	Publications	19.4	7	26.5	7
41	Debate	5.5	12	4.0	12
42	Departmental clubs	17.6	8	21.9	10
43	Theater	17.1	9	28.0	6
44	Intramural athletics	49.1	2	29.4	5
45	Varsity athletics	71.3	1	53.3	2
46	Political organizations	7.9	11	9.5	11
47	Special-interest groups	29.7	4	31.0	4
48	School/community service org.	43.0	3	67.5	1

Number of Out-of-Class Experiences in Which GISD Students Participated, by Academic-Achievement Group and Gender

The seventh major hypothesis stated:

Ho_7: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the number of out-of-class experiences in which they participate.

Given a list of out-of-class experiences, students were asked to identify all of those in which they participated. Chi-square tests were used to determine whether statistically significant differences existed among academic-achievement groups and between males and females with regard to the number of out-of-class experiences in which they participated.

GISD students across academic-achievement groups.

HO_{7a}: GISD twelfth-graders in different academic-achievement groups do not differ significantly with regard to the number of out-of-class experiences in which they participate.

A chi-square value of 12.74 indicated there was a statistically significant difference among academic-achievement groups with regard to the number of out-of-class experiences in which they participated. Therefore, the null hypothesis was rejected ($p < .05$).

GISD students by gender.

Ho_{7b}: Male and female GISD twelfth-graders do not differ significantly with regard to the number of out-of-class experiences in which they participate.

A chi-square value of 2.44 indicated there was no statistically significant difference between GISD males and females with regard to

the number of out-of-class experiences in which they participated. Hence, the null hypothesis was not rejected ($p > .05$).

Summary. The number of out-of-class activities in which GISD students participated is reported by academic-achievement group in Table 4.15 and by gender in Table 4.16. Participation in four or more out-of-class experiences ranged from a high of 42.3% for the top group to a low of 20.8% for the bottom group. Conversely, participation in zero or one out-of-class experience ranged from a high of 16.7% for the medium group to a low of 9.3% for the top group. The greatest percentage of students in all four academic-achievement groups participated in 6 to 14 out-of-class experiences. Males and females differed by fewer than six percentage points in the number of out-of-class experiences in which they participated.

Table 4.15.--Number of out-of-class experiences in which GISD students participated, by gender.

Number of Experiences	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
0- 5	14.3	3	16.3	3	16.7	3	9.3	3
6-14	64.9	1	56.1	1	57.9	1	48.5	1
15+	20.8	2	27.6	2	25.4	2	42.3	2

Table 4.16.--Number of out-of-class experiences in which GISD students participated, by academic-achievement group.

Number of Experiences	Male (n = 165)		Female (n = 201)	
	%	Rank	%	Rank
0- 5	17.0	3	11.9	3
6-14	56.4	1	56.2	1
15+	26.7	2	31.8	2

Variety of Out-of-Class Experiences in Which GISD Students Participated, by Academic-Achievement Group and Gender

The eighth major hypothesis stated:

Ho_8: GISD twelfth graders do not differ significantly across academic-achievement groups or by gender in terms of the variety of out-of-class experiences in which they participate.

Given a list of out-of-class experiences, students were asked to identify all of those in which they participated. Chi-square tests were used to determine whether statistically significant differences existed among academic-achievement groups and between males and females with regard to the variety of out-of-class experiences in which they participated.

GISD students across academic-achievement groups.

Ho_{8a}: GISD twelfth-graders in different academic-achievement groups do not differ significantly with regard to the variety of out-of-class experiences in which they participate.

The tabulations of chi-square values indicated there was no statistically significant difference among the academic-achievement

groups on the majority of out-of-class experiences in which they participated (see Table 4.17). Hence, the null hypothesis was not rejected ($p > .05$).

Summary. A significantly larger percentage of students in the bottom academic-achievement group than in the other three groups participated in three of the seven Art category experiences (Items 68-70) (see Table 4.18). A significantly larger percentage of students in the top academic-achievement group than in any of the other three groups were elected to one or more student offices (Item 53). A significantly larger percentage of students in the two top groups than in the lower two groups played musical instruments. In the Writing category, from 26% to 45.4% of the students had produced an original but unpublished piece of creative writing on their own (not as a part of a course) (Item 76).

Consistently, in all of the out-of-class experience categories (all items), the top academic-achievement group had a higher percentage of students participating than did any other group. In the Work Experience category, a large percentage of students in all four academic-achievement groups held a regular part-time job. The percentage range across academic-achievement groups was as follows: top--67.7%, medium--77.0%, low--81.6%, and bottom--82.7%.

Table 4.17.--Results of comparisons of GISD students by academic-achievement group with regard to the variety of out-of-class experiences in which they participated (n = 386).

Category & Item Number	Chi-Square Value	Signif.
Leadership		
49	4.79	NSD
50	2.55	NSD
51	6.29	NSD
52	1.47	NSD
53	16.49*	SD
54	6.54	NSD
Music		
55	4.46	NSD
56	3.23	NSD
57	3.94	NSD
58	13.84*	SD
59	1.86	NSD
60	3.57	NSD
Speech		
61	4.58	NSD
62	5.54	NSD
63	2.71	NSD
64	4.94	NSD
65	2.96	NSD
66	4.98	NSD
Art		
67	3.52	NSD
68	12.73*	SD
69	9.60*	SD
70	12.78*	SD
71	1.66	NSD
72	5.27	NSD
73	4.03	NSD
Writing		
74	2.54	NSD
75	11.00*	SD
76	8.22*	SD
77	8.88*	SD
78	3.37	NSD
79	4.67	NSD
80	5.85	NSD

Table 4.17.--Continued.

Category & Item Number	Chi-Square Value	Signif.
Science		
81	8.82*	SD
82	1.64	NSD
83	3.03	NSD
84	.77	NSD
85	1.91	NSD
86	16.15*	SD
Athletics		
87	4.13	NSD
88	2.43	NSD
89	7.88*	SD
90	7.55	NSD
91	4.77	NSD
92	14.39*	SD
Community Service		
93	1.07	NSD
94	3.84	NSD
95	10.37*	SD
96	8.89*	SD
97	12.51*	SD
98	4.26	NSD
99	5.50	NSD
Work Experience		
100	7.22	NSD
101	.33	NSD
102	1.90	NSD
103	2.59	NSD
104	10.27*	SD
105	2.69	NSD
106	5.75	NSD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

Table 4.18.--Variety of out-of-class experiences in which GISD students participated, by academic-achievement group.

Category & Item Number	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 115)		Top (n = 98)	
	%	Rank	%	Rank	%	Rank	%	Rank
Leadership								
49	20.8	3	26.5	3	20.2	4	32.0	3.5
50	32.5	2	28.6	2	23.0	2.5	30.9	5
51	16.9	4	20.4	4	23.0	2.5	32.0	3.5
52	7.8	6	11.2	6	12.3	6	13.4	6
53	15.6	5	18.6	5	15.8	5	36.1	2
54	36.4	1	41.2	1	43.9	1	54.6	1
Music								
55	2.6	6	7.3	6	10.6	6	9.3	6
56	14.3	4	10.6	5	19.5	4	14.4	5
57	23.4	1	26.8	2	33.6	2	35.1	2
58	20.8	2	31.6	1	43.9	1	43.3	1
59	11.7	5	13.4	4	17.5	5	17.5	4
60	15.6	3	19.6	3	26.5	3	20.6	3
Speech								
61		6	4.1	6	1.8	6	1.0	6
62	1.3	5	9.2	3	9.7	4	8.2	5
63	23.4	1	18.4	1	21.1	1	27.8	1
64	5.2	4	6.1	5	10.5	3	13.4	3
65	13.0	2	7.1	4	7.0	5	11.3	4
66	11.7	3	15.3	2	15.8	2	23.7	2
Art								
67	44.2	1	35.1	1	32.5	1	32.0	1
68	38.8	2	16.3	2	14.9	2	16.5	2
69	11.7	4	4.1	3.5	2.6	7	3.1	4
70	14.3	3	4.1	3.5	5.3	4.3	2.1	5.3
71	3.9	6	3.1	5	5.3	4.3	2.1	5.3
72	6.5	5	1.0	7	5.3	4.3	2.1	5.3
73	1.3	7	2.0	6	6.1	3	4.1	3
Writing								
74	18.2	2	21.4	2.5	17.5	3	25.8	3
75	7.8	3	21.4	2.5	21.1	2	27.8	2
76	26.0	1	38.8	1	443.9	1	45.4	1
77	1.3	5	8.2	4.5	5.3	5	12.4	4.5

Table 4.18.--Continued.

Category & Item Number	Academic-Achievement Group: Bottom (n = 77) %	Rank	Low (n = 98) %	Rank	Medium (n = 114) %	Rank	Top (n = 97) %	Rank
Writing (cont'd)								
78		6.5	4.1	6	4.4	6	4.1	6.5
79		6.5	1.0	7	1.8	7	4.1	6.5
80	2.6	4	8.2	4.5	7.0	4	12.4	4.5
Science								
81	10.4	1	10.2	1	17.5	1	23.7	1
82	1.3	3	1.0	5.5	1.8	5		6
83	2.6	2	6.2	2	4.4	2	8.2	3
84		4.3	1.0	5.5	.9	6	1.0	5
85		4.3	2.0	3.5	2.6	4	2.1	4
86		4.3	2.0	3.5	3.5	3	11.3	2
Athletics								
87	63.6	1	64.3	1	54.4	1	67.0	1
88	56.0	2	59.2	2	51.8	3	61.9	4
89	26.7	5	37.8	5	21.9	5	35.1	5
90	22.1	6	22.4	6	18.4	6	34.0	6
91	51.9	3	53.1	3	48.2	4	62.9	3
92	36.4	4	49.0	4	52.6	2	64.9	2
Community Service								
93	14.3	4	10.2	4	10.6	6	13.4	5.5
94	13.0	5	6.1	7	14.0	4	10.3	7
95	19.5	1	13.3	3	17.5	3	30.9	3
96	16.9	3	23.5	1	31.6	1	35.1	2
97	18.2	2	19.4	2	29.8	2	38.1	1
98	6.5	7	7.1	6	13.2	5	13.4	5.5
99	10.4	6	9.2	5	9.6	7	18.6	4
Work Experience								
100	82.7	1	81.6	1	77.0	1	67.7	1
101	41.6	2.5	41.8	3	40.4	3	38.1	3
102	41.6	2.5	42.9	2	43.0	2	50.5	2
103	23.4	5	19.4	6	16.7	6	14.4	7
104	6.5	7	8.2	7	12.3	7	20.6	6
105	26.0	4	34.7	4	31.6	4	37.1	4
106	14.3	6	19.6	5	21.1	5	28.9	5

GISD students by gender.

Ho_{8b}: Male and female GISD twelfth-graders do not differ significantly with regard to the variety of out-of-class experiences in which they participate.

The tabulations of chi-square values indicated there was no statistically significant difference between males and females on the majority of out-of-class experiences in which they participated. Hence, the null hypothesis was not rejected ($p > .05$) (see Table 4.19).

Summary. In the Leadership category, a significantly larger percentage of females than males were elected or appointed to a school office (Items 49, 50, and 53) (see Table 4.20). In the Speech category, significantly more females than males had read for a part in a high school play (Item 66). In the Writing category, a significantly larger number of females than males had worked on the staff of the school newspaper or yearbook (Item 74) and had written an original but unpublished piece of creative writing (Item 76).

A greater percentage of males than females participated in four of the six items (Items 81, 83, 84, and 86) in the Science category. A significantly larger percentage of males than females had performed an independent scientific experiment, not as part of a course (Item 81).

A significantly larger percentage of males than females participated in five of the six items in the Athletic category, whereas in two out of seven items in the Community Service category, a significantly larger percentage of females than males had

Table 4.19.--Results of comparisons of GISD students by gender with regard to the variety of out-of-class experiences in which they participated (n = 366).

Category & Item Number	Chi-Square Value	Signif.
Leadership		
49	14.97*	SD
50	13.44*	SD
51	.95	NSD
52	.13	NSD
53	12.09*	SD
54	3.51	NSD
Music		
55	3.59	NSD
56	.00	NSD
57	.22	NSD
58	.00	NSD
59	.04	NSD
60	.00	NSD
Speech		
61	.07	NSD
62	.00	NSD
63	.71	NSD
64	.66	NSD
65	.18	NSD
66	5.60*	SD
Art		
67	3.40	NSD
68	1.94	NSD
69	.86	NSD
70	.63	NSD
71	.08	NSD
72	.60	NSD
73	2.24	NSD
Writing		
74	4.68*	SD
75	.01	NSD
76	5.21*	SD
77	3.02	NSD
78	.04	NSD
79	3.23	NSD
80	.00	NSD

Table 4.19.--Continued.

Category & Item Number	Chi-Square Value	Signif.
Science		
81	12.63*	SD
82	.09	NSD
83	.23	NSD
84	.03	NSD
85	.00	NSD
86	.17	NSD
Athletics		
87	14.96*	SD
88	10.16*	SD
89	.23	NSD
90	25.04*	SD
91	25.85*	SD
92	16.45*	SD
Community Service		
93	1.08	NSD
94	1.41	NSD
95	15.88*	SD
96	1.40	NSD
97	9.31*	SD
98	.43	NSD
99	.89	NSD
Work Experience		
100	2.01	NSD
101	.51	NSD
102	5.97*	SD
103	6.96*	SD
104	15.26*	SD
105	2.36	NSD
106	.24	NSD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

Table 4.20.--Variety of out-of-class experiences in which GISD students participated, by gender.

Category & Item Number	Male (n = 165) %	Male Rank	Female (n = 201) %	Female Rank
Leadership				
49	15.2	4	33.3	3
50	19.4	3	37.5	2
51	20.6	2	25.5	5
52	12.7	6	10.9	6
53	12.8	5	28.4	4
54	38.4	1	48.8	1
Music				
55	11.6	6	5.5	6
56	15.3	4	16.2	4
57	28.7	2	31.5	2
58	36.2	1	37.0	1
59	14.6	5	15.9	5
60	20.7	3	21.0	3
Speech				
61	2.4	6	1.5	6
62	7.9	4.5	7.5	5
63	20.6	1	24.9	1
64	7.9	4.5	10.9	3
65	10.3	3	8.5	4
66	11.5	2	21.4	2
Art				
67	29.7	1	39.5	1
68	15.2	2	21.4	2
69	6.1	3	3.5	5.5
70	4.9	5	7.5	3
71	2.4	6.5	3.5	5.5
72	2.4	6.5	4.5	4
73	5.5	4	2.0	7
Writing				
74	15.2	3	24.9	2
75	20.0	2	20.9	3
76	33.9	1	46.3	1
77	10.3	4	5.0	5
78	3.0	7	5.0	5
79	3.6	6	.5	7
80	8.5	5	8.0	4

Table 4.20.--Continued.

Category & Item Number	Male (n = 165) %	Male (n = 165) Rank	Female (n = 201) %	Female (n = 201) Rank
Science				
81	23.6	1	9.5	1
82	.6	6	1.5	5
83	6.7	2	5.0	2
84	1.2	5	.5	6
85	1.8	4	2.0	4
86	5.5	3	4.0	3
Athletics				
87	7.21	1	51.7	1
88	65.5	3	48.2	2
89	31.5	6	28.6	5
90	36.4	5	13.4	6
91	68.5	2	41.3	4
92	63.6	4	41.8	3
Community Service				
93	14.0	3	10.0	6
94	8.5	7	12.9	5
95	10.9	5	28.4	3
96	24.2	1	30.3	2
97	18.2	2	32.8	1
98	12.1	4	9.5	7
99	9.7	6	13.4	4
Work Experience				
100	80.9	1	74.0	1
101	43.0	3	38.8	2.5
102	52.1	2	38.8	2.5
103	12.1	7	23.4	5
104	20.0	6	6.0	7
105	37.0	4	28.9	4
106	22.6	5	19.9	6

participated. Altogether, a greater percentage of females than males participated in five of the seven items in this category.

In six of the seven items in the Work Experience category, the percentage of males who participated exceeded the percentage of females. On two of the items there was a significant difference in the percentage of males over females. Conversely, a significantly greater percentage of females participated in the cooperative work program while in high school.

Descriptive Overview of Hypotheses 9 Through 19

The remaining 11 major hypotheses were based on Part IV (Evaluation of High School Experience) of the student questionnaire (Items 107 through 117). GISD twelfth graders were asked to rate 11 aspects of their high schools using the following scale:

1 = Satisfied, no change necessary
2 = No strong feelings one way or the other
3 = Dissatisfied, improvement is needed
4 = No experience with this aspect of the school

Chi-square tests were used to determine whether statistically significant differences existed among the four academic-achievement groups with regard to each of the 11 evaluative items. In the following pages, each major hypothesis is presented, followed by a presentation and an interpretation of the results for that hypothesis.

The ninth major hypothesis stated:

Ho_9: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of classroom instruction.

A chi-square value of 9.38 indicated there was no statistically significant difference among the academic-achievement groups in how they evaluated classroom instruction. Thus, the null hypothesis was not rejected ($p > .05$). The evaluations of classroom instruction by each academic-achievement group are shown in Table 4.21. A rank ordering of each group's responses is also included.

Table 4.21.--Evaluations of classroom instruction, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	4.5	1	47.4	1	35.1	2	43.3	1
No strong feeling	34.2	2	33.7	2	43.0	1	26.8	3
Dissatisfied	19.7	3	18.9	3	21.9	3	29.9	2
No experience	.0	4	.0	4	.0	4	.0	4

The tenth major hypothesis stated:

Ho_{10}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of the number and variety of course offerings.

A chi-square value of 6.51 indicated there was no statistically significant difference among the academic achievement groups in how they evaluated the number and variety of course offerings. Thus, the null hypothesis was not rejected ($p > .05$). The evaluations of the number and variety of course offerings by each academic-

achievement group are shown in Table 4.22. A rank ordering of each group's responses is also included.

Table 4.22.--Evaluations of number and variety of course offerings, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	37.7	2	42.9	1	43.9	1	41.2	1
No strong feeling	15.6	3	15.3	3	20.2	3	25.8	3
Dissatisfied	48.8	1	41.8	2	36.0	2	33.0	2
No experience	.0	4	.0	4	.0	4	.0	4

The eleventh major hypothesis stated:

Ho_{11}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of grading practices and policies.

A chi-square value of 3.67 indicated there was no statistically significant difference among academic-achievement groups in how they evaluated grading practices and policies. Therefore, the null hypothesis was not rejected ($p > .05$). The evaluations of grading practices and policies by each academic-achievement group are shown in Table 4.23. A rank ordering of each group's responses is also included.

Table 4.23.--Evaluations of grading practices and policies, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	39.0	1	50.0	1	42.1	1	46.4	1
No strong feeling	37.7	2	34.4	2	35.1	2	36.1	2
Dissatisfied	23.4	3	15.6	3	22.8	3	17.5	3
No experience	.0	4	.0	4	.0	4	.0	4

The twelfth major hypothesis stated:

Ho_{12}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of the number and kinds of tests given.

A chi-square value of 2.51 indicated there was no statistically significant difference among academic-achievement groups in how they evaluated the number and kinds of tests given. Thus, the null hypothesis was not rejected ($p > .05$). The evaluations of the number and kinds of tests given by each academic-achievement group are shown in Table 4.24. A rank ordering of the groups' responses is also given.

The thirteenth major hypothesis stated:

HO_{13}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of guidance services provided by the school as a whole.

A chi-square value of 9.77 indicated there was no statistically significant difference among academic-achievement groups in how they

evaluated guidance services provided by the school as a whole. Thus, the null hypothesis was not rejected ($p > .05$). The various groups' evaluations of guidance services provided by the school are shown in Table 4.25. A rank ordering of each group's responses is included.

Table 4.24.--Evaluations of the number and kinds of tests given, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	46.1	1	43.9	1	46.5	1	48.5	1
No strong feeling	42.1	2	42.9	2	44.7	2	44.3	2
Dissatisfied	11.8	3	13.3	3	8.8	3	7.2	3
No experience	.0	4	.0	4	.0	4	.0	4

Table 4.25.--Evaluations of guidance services provided by the school, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	50.6	1	64.6	1	50.5	1	44.7	1
No strong feeling	22.1	3	20.8	2	27.0	2	27.7	2.5
Dissatisfied	27.3	2	14.6	3	22.5	3	27.7	2.5
No experience	.0	4	.0	4	.0	4	.0	4

The fourteenth major hypothesis stated:

Ho_{14}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of school rules, regulations, and policies.

A chi-square value of 5.84 indicated there was no statistically significant difference among academic-achievement groups in how they evaluated school rules, regulations, and policies. Thus, the null hypothesis was not rejected ($p > .05$). The four groups' evaluations of school rules, regulations, and policies are displayed in Table 4.26. A rank ordering of the groups' responses is included.

Table 4.26.--Evaluations of school rules, regulations, and policies, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	24.7	2	30.2	2	20.4	3	21.3	3
No strong feeling	23.4	3	19.8	3	26.5	2	31.9	2
Dissatisfied	51.9	1	50.0	1	53.1	1	46.8	1
No experience	.0	4	.0	4	.0	4	.0	4

The fifteenth major hypothesis stated:

Ho_{15}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of libraries or learning centers.

A chi-square value of 1.83 indicated there was no statistically significant difference among academic-achievement groups in how they evaluated their libraries or learning centers. Thus, the null hypothesis was not rejected ($p > .05$). The evaluations of libraries or learning centers by each academic-achievement group are shown in Table 4.27. A rank ordering of the groups' responses is included.

Table 4.27.--Evaluations of libraries and learning centers, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	53.3	1	52.6	1	50.9	1	46.9	1
No strong feeling	30.7	2	34.0	2	32.1	2	33.3	2
Dissatisfied	16.0	3	13.4	3	17.0	3	19.8	3
No experience	.0	4	.0	4	.0	4	.0	4

The sixteenth major hypothesis stated:

Ho_{16}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of laboratory facilities.

A chi-square value of 10.24 indicated there was no statistically significant difference among academic-achievement groups in how they evaluated their laboratory facilities. Thus, the null hypothesis was not rejected ($p > .05$). Evaluations of laboratory facilities by each academic-achievement group are shown

in Table 4.28. A rank ordering of each group's responses is included.

Table 4.28.--Evaluations of laboratory facilities, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	24.3	3	26.1	3	39.3	1	33.7	2
No strong feeling	28.4	2	29.3	2	32.1	2	31.5	3
Dissatisfied	47.3	1	44.6	1	28.6	3	34.8	1
No experience	.0	4	.0	4	.0	4	.0	4

The seventeenth major hypothesis stated:

Ho_{17}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of provisions for students needing special assistance in improving skills in reading, mathematics, and so on.

A chi-square value of 25.21 indicated there was a statistically significant difference among academic-achievement groups in how they evaluated provisions for students needing special assistance in improving skills in reading, math, and so on. Hence, the null hypothesis was rejected ($p < .05$). The various academic-achievement groups' evaluations of this item are shown in Table 4.29, along with a rank ordering of their responses.

Table 4.29.--Evaluations of provisions for students needing special assistance in improving skills, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	28.6	2	27.6	2	19.3	3	12.4	3
No strong feeling	24.7	3	23.5	3	21.9	2	19.6	2
Dissatisfied	15.6	4	10.2	4	7.0	4	5.2	4
No experience	31.2	1	38.8	1	51.8	1	62.9	1

The eighteenth major hypothesis stated:

Ho_{18}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of provisions for academically outstanding students.

A chi-square value of 21.65 indicated there was a statistically significant difference among academic-achievement groups in how they evaluated provisions for academically outstanding students. Therefore, the null hypothesis was rejected ($p < .05$). Evaluations of this item by the four academic-achievement groups are contained in Table 4.30. The table includes a rank ordering of the groups' responses.

Ho_{19}: There is no statistically significant difference among GISD twelfth graders in different academic-achievement groups in terms of their evaluation of the adequacy of programs in career education and planning.

A chi-square value of 9.03 indicated there was no statistically significant difference among academic-achievement groups in how they

evaluated the adequacy of programs in career education and planning. Thus, the null hypothesis was not rejected ($p > .05$). The evaluations of this item by the four academic-achievement groups are shown in Table 4.31, as is a rank ordering of each group's responses.

Table 4.30.--Evaluations of provisions for academically outstanding students, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	41.6	1	38.8	1	37.2	1	37.5	1
No strong feeling	31.2	2	25.5	2	24.8	2	18.8	3
Dissatisfied	9.1	4	20.4	3	23.0	3	36.5	2
No experience	18.2	3	15.3	4	15.0	4	7.3	4

Table 4.31.--Evaluations of adequacy of programs in career education, by academic-achievement group.

Evaluation	Academic-Achievement Group							
	Bottom (n = 77)		Low (n = 98)		Medium (n = 114)		Top (n = 97)	
	%	Rank	%	Rank	%	Rank	%	Rank
Satisfied	44.2	1	42.9	1	37.7	1	30.9	2
No strong feeling	35.1	2	32.7	2	32.5	2	39.2	1
Dissatisfied	18.2	3	20.4	3	22.8	3	19.6	3
No experience	2.6	4	4.1	4	7.0	4	10.3	4

Summary. On 9 of the 11 evaluation items (Items 107 through 117), no significant difference was found among the four academic-achievement groups in how they evaluated selected aspects of their high schools (see Table 4.32). On 8 of the 11 items, more than 50% of the students were either satisfied with or had no strong feeling about the aspects of the high school being evaluated. Just about 59% of the students in the bottom group responded to the item regarding classroom instruction. Of that number, only 38.7% indicated they were satisfied with or held no strong feeling one way or the other about classroom instruction. However, 19.7% said they were dissatisfied with classroom instruction. Almost 30% of the top academic-achievement group (n = 97), all of whom responded to this item, were dissatisfied with classroom instruction.

Table 4.32.--Results of comparisons of GISD students by academic-achievement group with regard to the evaluation items (n = 386).

Hypothesis	Chi-Square Value	Signif.
Ho_9	9.38	NSD
Ho_{10}	6.51	NSD
Ho_{11}	3.67	NSD
Ho_{12}	2.51	NSD
Ho_{13}	9.77	NSD
Ho_{14}	5.84	NSD
Ho_{15}	1.88	NSD
Ho_{16}	10.24	NSD
Ho_{17}	25.21*	SD
Ho_{18}	21.65*	SD
Ho_{19}	9.03	NSD

Note. NSD = no significant difference; SD = significant difference.

*Significant at the .05 level.

With regard to the evaluation of school rules, regulations, and policies, 53% of the students in the top academic-achievement group were either satisfied or had no strong feeling one way or the other. However, more than 50% of the students in each of the other three groups were dissatisfied with this item.

On 2 of the 11 evaluation items (Hypotheses 17 and 18), a statistically significant difference was found among the academic-achievement groups. More than 50% of the students in the medium (n = 114) and top (n = 97) groups indicated they had no experience with the school's provisions for students needing special assistance in improving skills in reading, mathematics, and so on. Only 31.2% of the bottom group (n = 77) and 38.8% of the low group (n = 98) responded that way. More than 56% of the bottom and low academic-achievement groups combined said they were satisfied with the provisions for those needing special assistance, whereas 25% of them indicated they were dissatisfied.

A statistically significant difference among the four groups was also found when students rated provisions for academically outstanding students. More than 36% of the top group said they were dissatisfied, as compared with 9% of the bottom group. However, more than 50% of all four groups indicated they were either satisfied with or had no strong feeling one way or the other about the provisions in their schools for academically outstanding students.

It is interesting that more than one-third of the students in each of the groups were dissatisfied with the number and variety of course offerings in their high schools. In both the bottom and top groups, more than one-fourth of the students were dissatisfied with the guidance services provided by their schools. In contrast, more than 70% of the students in each of the four groups were either satisfied or had no strong feeling one way or the other concerning this item. In all but the top group, more than 50% of the students were satisfied with the guidance services in their schools.

Findings for Research Question 5: GISD Sample

Introduction

In this section, information about the informal educational experiences of the GISD twelfth graders who participated in the study is compared across the 13 school districts they represented. Research Question 5 served as the basis for the discussion. It asked: Do selected twelfth-grade GISD students differ across districts with regard to their informal educational experiences? In the following pages, each subquestion is presented individually, followed by a presentation and discussion of the results for that subquestion.

Number of Extracurricular Activities

5.1. Do GISD twelfth graders differ across districts with regard to the number of extracurricular activities in which they participate?

Table 4.33 shows the number of extracurricular activities in which GISD students from the 13 local school districts participated. In 7 of the 13 districts, the largest percentage of students participated in four or more extracurricular activities. In five of the six remaining districts, the largest percentage of students participated in two to three activities.

Table 4.33.--Number of extracurricular activities in which GISD students from 13 local school districts participated (in percent).

School District	Number of Students	Number of Extracurricular Activities		
		0-1	2-3	4+
A	55	18.2%	47.3%	34.5%
B	27	22.2	33.3	44.4
C	28	17.9	25.0	57.1
D	38	5.3	55.3	39.5
E	28	7.1	32.1	60.7
F	25	12.0	40.0	48.0
G	25	12.0	24.0	64.0
H	26	11.5	53.8	34.6
I	26	23.1	65.4	11.5
J	27	25.9	33.3	40.7
K	18	16.7	38.9	44.4
L	32	18.8	53.1	28.1
M	35	34.3	34.3	31.4

Variety of Extracurricular Activities

5.2. Do GISD twelfth graders differ across districts with regard to the variety of extracurricular activities in which they participate?

The variety of activities in which students in each of the 13 local school districts participated is reported in Table 4.34. The

Table 4 34.--Variety of extracurricular activities in which GISD students from 13 local school districts participated (in percent).

Extracurricular Activity	District												
	A (n=55)	B (n=27)	C (n=28)	D (n=38)	E (n=28)	F (n=25)	G (n=25)	H (n=26)	I (n=26)	J (n=27)	K (n=18)	L (n=32)	M (n=35)
Instrumental music	14.5	29.6	25.0	23.7	17.9	20.0	16.0	30.8	23.1	44.4	22.2	34.4	29.4
Vocal music	9.1	29.6	25.0	47.4	14.3	16.0	24.0	11.5	11.5	7.4	11.1	6.3	14.7
Student government	23.6	22.2	28.6	15.8	21.4	28.0	28.0	26.9	15.4	22.2	33.3	25.0	55.9
Publications	18.5	11.1	50.0	10.5	35.7	12.0	40.0	19.2	7.7	14.8	55.6	28.1	17.6
Debate	3.6	7.4	--	2.6	10.7	--	--	4.0	7.7	--	5.6	--	17.6
Departmental clubs	45.5	11.1	3.6	15.8	10.7	32.0	44.0	19.2	26.9	18.5	5.6	--	5.9
Theater	16.7	38.5	14.3	39.5	53.6	40.0	24.0	15.4	11.5	18.5	11.1	6.3	5.9
Intramural athletics	29.1	33.3	32.1	55.3	60.7	44.0	32.0	38.5	19.2	51.9	55.6	40.6	26.5
Varsity athletics	38.9	63.0	78.6	59.5	85.7	76.0	68.0	69.2	53.8	51.9	77.8	61.3	52.9
Political organizations	3.6	7.4	7.1	7.9	--	12.0	8.0	12.0	7.7	11.1	11.1	6.3	17.6
Special interest groups	40.0	25.9	57.1	28.9	42.9	40.0	56.0	12.0	19.2	22.2	33.3	18.8	11.8
School/community service	68.5	51.9	67.9	50.0	60.7	56.0	44.0	57.7	50.0	55.6	44.4	59.4	44.1

activities in which GISD students participated most widely were Varsity Athletics and School/Community Service. In 12 of the 13 school districts, more than 50% of the students participated in Varsity Athletics; in 10 of the districts, more than 50% of the students participated in School/Community Service. In a majority of the districts, more than 25% of the students were involved in Special Interest Groups and Student Government.

The least participated in activity was Debate. In five of the school districts, none of the students indicated they were involved in this activity. Moreover, the proportion of student participants in six of the remaining eight districts was under 10%.

Number of Out-of-Class Experiences

5.3. Do GISD twelfth graders differ across districts with regard to the number of out-of-class experiences in which they participate?

Table 4.35 shows the number of out-of-class experiences in which GISD twelfth graders from the 13 local school districts participated. In 11 of the 13 school districts, the largest percentage of students, ranging from 50% to 68.4%, participated in 6 to 14 out-of-class experiences. In the two remaining districts, the largest percentage of students, 50%, participated in 15 or more out-of-class experiences.

Variety of Out-of-Class Experiences

5.4. Do GISD twelfth graders differ across districts with regard to the variety of out-of-class experiences in which they participate?

Table 4.35.--Number of out-of-class experiences in which GISD students from 13 local school districts participated (in percent).

School District	Number of Students	Variety of Out-of-Class Experiences		
		0-1	2-3	4+
A	55	20.0%	61.8%	18.2%
B	27	22.2	59.3	18.5
C	28	21.4	28.6	50.0
D	38	7.9	68.4	23.7
E	28	17.9	60.7	21.4
F	25	8.0	60.0	32.0
G	25	12.0	56.0	32.0
H	26	7.7	42.3	50.0
I	26	11.5	65.4	23.1
J	27	14.8	44.4	40.7
K	18	16.7	50.0	33.3
L	32	9.4	59.4	31.3
M	35	17.1	60.0	22.9

The variety of out-of-class experiences in which GISD students in each of the 13 local school districts participated is shown in Table 4.36. Of the 11 categories of out-of-class experiences, one category, Work Experience, contained a single item in which the greatest proportion of students participated. Across all 13 school districts, more than 60% of the students held a regular part-time job (Item 100).

In the Athletics category, 50% or more of the students in a majority of the school districts participated in two types of experiences. More than 50% of the students in 12 of the districts participated in one or more varsity team events. In addition, more

Table 4.36.--Variety of out-of-class experiences in which GISD students from 13 local school districts participated (in percent).

Category & Item Number	District A (n=55)	B (n=27)	C (n=28)	D (n=38)	E (n=28)	F (n=25)	G (n=25)	H (n=26)	I (n=26)	J (n=27)	K (n=18)	L (n=32)	M (n=35)
Leadership													
49	14.5	25.9	28.6	21.1	28.6	36.0	20.0	34.6	--	14.8	27.8	28.1	47.1
50	20.4	25.9	28.6	23.7	25.0	44.0	36.0	19.2	19.2	18.5	27.8	40.6	41.2
51	13.0	22.2	35.7	7.9	32.1	28.0	20.0	30.8	38.5	33.3	11.1	31.3	11.8
52	3.6	3.7	3.6	13.2	7.1	8.0	24.0	15.4	23.1	14.8	11.1	18.8	8.8
53	7.3	18.5	35.7	15.8	21.4	36.0	16.0	26.9	3.8	14.8	33.3	32.3	32.4
54	32.7	40.7	53.6	44.7	50.0	32.0	28.0	50.0	53.8	55.6	33.3	41.9	58.8
Music													
55	7.4	--	3.6	5.3	7.1	12.0	12.0	7.7	19.2	14.8	5.6	3.2	6.1
56	18.5	23.1	21.4	13.5	10.7	12.0	16.0	19.2	15.4	18.5	11.1	9.7	6.1
57	16.7	51.9	35.7	50.0	17.9	36.0	24.0	34.6	26.9	33.3	22.2	25.8	23.5
58	27.3	40.7	28.6	44.7	28.6	24.0	37.5	42.3	38.5	59.3	22.2	45.2	30.3
59	7.3	11.1	10.7	18.4	7.1	16.0	16.7	15.4	23.1	29.6	11.1	21.9	14.7
60	7.4	37.0	10.7	34.2	14.3	20.0	25.0	15.4	26.9	29.6	16.7	25.0	17.6
Speech													
61	3.6	--	--	--	--	12.0	--	7.7	--	--	--	--	--
62	5.5	--	--	5.3	14.3	16.0	--	8.0	15.4	--	22.2	18.8	--
63	14.5	14.8	10.7	39.5	46.4	24.0	12.0	26.9	23.1	11.1	5.6	21.9	32.4
64	18.2	3.7	7.1	5.3	10.7	8.0	8.0	7.7	3.8	14.8	11.1	9.4	8.8
65	3.6	--	--	10.5	10.7	12.0	20.0	15.4	3.8	22.2	5.6	12.5	8.8
66	20.0	14.8	21.4	21.1	42.9	20.0	24.0	23.1	7.7	3.7	5.6	6.3	8.8
Art													
67	36.4	18.5	39.3	36.8	14.3	44.0	24.0	50.0	30.8	40.7	44.4	46.9	36.4
68	18.2	18.5	10.7	10.5	7.1	12.0	20.0	42.3	15.4	22.2	27.8	28.1	23.5
69	1.8	3.7	3.6	--	--	4.2	8.0	3.8	7.7	3.7	5.6	15.6	8.8
70	3.6	3.7	3.6	--	3.6	8.3	--	15.4	7.7	7.4	--	9.4	14.7
71	7.3	7.4	7.1	--	7.1	4.0	4.0	3.8	--	--	--	3.1	--
72	1.8	3.7	7.1	--	3.6	8.0	4.0	3.8	3.8	--	--	9.4	2.9
73	3.6	--	10.7	2.6	3.6	4.0	--	7.7	3.8	3.7	--	3.1	2.9

Table 4.36.--Continued.

Category & Item Number	District A (n=55)	B (n=27)	C (n=28)	D (n=38)	E (n=28)	F (n=25)	G (n=25)	H (n=26)	I (n=26)	J (n=27)	K (n=18)	L (n=32)	M (n=35)
Writing													
74	14.5	11.1	50.0	5.3	32.1	12.0	36.0	11.5	7.7	14.8	55.6	18.8	20.6
75	10.9	--	50.0	44.7	32.1	12.0	12.0	15.4	15.4	7.4	50.0	9.4	11.8
76	34.5	22.2	50.0	52.6	50.0	52.0	56.0	42.3	42.3	22.2	22.2	28.1	38.2
77	3.6	--	7.1	7.9	39.3	12.0	--	3.8	7.7	3.7	11.1	--	--
78	1.8	--	3.6	2.6	10.7	16.0	--	3.8	--	--	--	3.1	2.9
79	1.8	--	--	2.6	3.6	8.0	--	3.8	--	3.7	--	--	--
80	--	--	21.4	26.3	7.1	12.0	8.0	7.7	7.7	--	16.7	--	--
Science													
81	16.4	11.1	10.7	23.7	10.7	24.0	20.0	46.2	11.5	7.4	11.1	9.4	5.9
82	--	--	--	2.6	--	4.0	--	3.8	3.8	--	--	--	--
83	3.6	3.7	--	2.6	3.6	20.0	4.0	12.0	00	7.4	5.6	--	11.8
84	--	--	--	--	3.6	4.0	--	3.8	--	--	--	--	--
85	1.8	--	--	--	--	4.0	--	--	--	14.8	5.6	--	--
86	7.3	3.7	3.6	2.6	7.1	8.0	4.0	11.5	--	7.4	--	--	2.9
Athletics													
87	41.8	66.7	82.1	55.3	75.0	72.0	68.0	65.4	53.8	51.9	77.8	59.4	61.8
88	36.4	63.0	78.6	63.2	67.9	68.0	56.0	65.4	42.3	48.1	66.7	59.4	46.9
89	14.5	25.9	39.3	28.9	14.3	52.0	16.0	53.8	23.1	40.7	33.3	40.6	24.2
90	18.2	18.5	17.9	31.6	28.6	28.0	8.0	46.2	15.4	22.2	33.3	28.1	23.5
91	52.7	44.4	42.9	57.9	60.7	68.0	44.0	69.2	46.2	59.3	72.2	59.4	38.2
92	57.7	48.1	53.6	65.8	53.6	60.0	48.0	34.6	42.3	63.0	66.7	56.3	32.4
Community Service													
93	7.3	7.4	11.1	10.5	10.7	16.0	12.0	15.4	11.5	18.5	5.6	18.8	11.8
94	10.9	7.4	7.1	7.9	14.3	4.0	4.0	19.2	19.2	18.5	5.6	6.3	14.7
95	43.6	7.4	21.4	10.5	17.9	24.0	4.0	30.8	7.7	22.2	5.6	25.0	14.7
96	32.7	22.2	39.3	15.8	42.9	16.0	24.0	30.8	23.1	40.7	27.8	15.6	23.5
97	38.2	22.2	28.6	21.1	32.1	20.0	36.0	34.6	23.1	22.2	11.1	31.3	14.7
98	10.9	11.1	10.7	7.0	--	12.0	12.0	23.1	11.5	14.8	5.6	9.4	5.9
99	5.5	14.8	21.4	5.3	7.1	16.0	16.0	19.2	11.5	11.1	5.6	15.6	11.8
Work Experience													
100	80.0	70.4	60.7	81.6	74.1	66.7	88.0	88.0	84.6	81.5	77.8	78.1	69.7
101	38.2	37.0	53.6	34.2	50.0	36.0	56.0	46.2	38.5	33.3	50.0	28.1	41.2
102	32.7	25.9	32.1	55.3	39.3	60.0	44.0	50.0	57.7	48.1	44.4	65.6	32.4
103	18.2	11.1	17.9	15.8	7.1	12.0	24.0	23.1	23.1	18.5	11.1	3.1	44.1
104	10.9	7.4	7.1	7.9	17.9	12.0	8.0	11.5	11.5	29.6	22.2	18.8	2.9
105	25.5	22.2	46.4	31.6	21.4	36.0	32.0	50.0	38.5	48.1	38.9	28.1	20.6
106	21.8	--	32.1	23.7	17.9	20.0	8.0	26.9	15.4	40.7	17.6	28.1	17.6

than 50% of the students in nine of the districts had earned a varsity letter in one or more sports.

For three of six out-of-class experiences in the Science category, there was no student participation in a majority of the 13 districts. In five out of six types of Science experiences, the proportion of students who participated across districts was lower than the proportion of students who participated in other types of experiences.

It is interesting that students in each of the school districts participated in two types of out-of-class experiences in the Writing category. More than 40% of the students in a majority of the 13 districts indicated they had produced an original but unpublished piece of creative writing on their own (not as part of a course). A number of students across all districts indicated they had worked on the staff of either a school newspaper or yearbook. The range was from 5.3% to 50%.

In the Leadership category, more than 40% of the students in nine of the school districts indicated they had received an award or special recognition for leadership. In eight of the districts, 25% or more of the respondents said they had been appointed to a student office and had actively campaigned to elect themselves or other students to school offices.

Chapter Summary

The three hypotheses constructed to compare the GISD, Japanese, and German students' responses revealed some statistically

significant differences between groups. However, in some areas no significant differences were found. For example, whereas no significant differences were found for the majority of the extracurricular activities and out-of-class experiences in which each group participated, a statistically significant difference was found between GISD and Japanese students with regard to the number of extracurricular activities in which they participated. A statistically significant difference was also found between GISD and Japanese students and GISD and German students with regard to the number of out-of-class experiences in which they participated.

When GISD students were compared across academic-achievement groups, significant differences were found with regard to the number of extracurricular activities and out-of-class experiences in which they participated. Significant differences were also found among academic-achievement groups with regard to how they evaluated selected aspects of their schools. In one instance, students differed significantly in how they rated provisions of their schools for students who needed special assistance in improving certain skills (e.g., reading and mathematics). A significant difference was also found in how students rated provisions for academically outstanding students in their high schools.

No statistically significant differences were found between males and females with regard to the number and variety of extracurricular activities and out-of-class experiences in which they participated. However, differences were noted on various

individual items. For example, 31.8% of the females (n = 201) said they had participated in Student Government, as compared with 20.6% of the males (n = 165).

Chapter V contains a discussion of interview results concerning education in the United States, Japan, and the Federal Republic of Germany. A summary of the study, conclusions, and recommendations for further research are included in Chapter VI.

CHAPTER V

ANALYSIS OF DATA PERTAINING TO INTERVIEWS

In addition to the data gathered through the student questionnaires, information was also obtained from interviews with individuals who were knowledgeable about education in the United States, Japan, and Germany. The main focus of the interviews was on issues and trends concerning the state of education in the three countries studied and possibilities for transferring appropriate aspects of educational programs and practices from one country to another. The data were categorized and summarized by descriptive content analysis, and the results are presented in this chapter. The interview guide and a complete list of the distinguished individuals who agreed to share their knowledge and expertise, based on study, research, and their professional positions, are included in Appendices B and C, respectively.

Interviewees were asked questions that focused primarily on their own country. In some instances, interviewees possessed extensive knowledge and expertise about more than one country (e.g., Schnitzler, Shimahara, Leestma, Weiland, and Chono). In general, however, interviewees had limited knowledge and perceptions about countries other than their own. Some knew about the other educational systems in only a general, often biased way.

As is often the case in cross-cultural research, those who study societies other than their own inevitably view the other culture through the screen of their own cultural values and perceptions. For example, several of the American interviewees thought the German educational system is (a) highly centralized at the national level; (b) one in which tests are the primary mechanism used to sort, screen, and select students at an early age; and (c) one in which there is little flexibility or opportunity at the secondary level for students to move from one type of school to another (e.g., Hauptschule, Realschule, or Gymnasium). Some also thought that German students spend significantly more time in school (length of school day and school year) and completing homework assignments than do their American counterparts.

In contrast, many of the German interviewees thought differences existed from one Land to another in terms of quality of education and types of schools. Although they thought there was reasonably strong state centralization and control, they were reluctant to think of the German government as exercising as much control as is the case in Japan. Some even questioned whether there is actually more uniformity and tracking of students in Germany than there is in the United States.

The Americans and Japanese also shared some thoughts about each other's educational system. American interviewees frequently spoke of the egalitarianism of the American system and the less egalitarian nature of the German and Japanese systems of education. All of the Japanese interviewees were inclined to agree that during

the compulsory years of schooling (grades 1 through 9) their system does a much better job of providing equal educational opportunities, in both quantity and quality, for all students than what occurs in the United States.

Most of the German interviewees were reluctant to respond at length to questions concerning education in Japan, and the Japanese were hesitant to answer questions that focused on Germany. All of the Germans and a majority of the Japanese who were interviewed had studied about and visited schools in America and a number of other countries. Four out of the 12 American interviewees had never visited another country.

1. Do you think the philosophy which underlies the educational system in your country is significantly different from that which underlies the educational system in the two other countries?

There were differences of opinion among representatives of the three countries in response to the question of whether the educational philosophies differed in their respective countries. All of the American interviewees thought the philosophy of education in the United States differed from the philosophies that exist in the other two countries.

John Porter (President, Eastern Michigan University) emphatically stated,

> There is definitely a difference in the philosophy which underlies education in Japan, Germany and the United States. In Japan and Germany it is the culture which drives the educational system. In the Japanese culture education is perceived much differently than it is in America. . . . Fifty years ago the United States had a philosophy of education which

> was similar to the philosophy which exists in Japan today. It may be that 50 years from today the Japanese will have a philosophy similar to that which exists in the United States today.

Porter seemed to be suggesting what was frequently stated in the literature concerning the value placed on education in Japan (Rohlen, 1983; Shimahara, 1985; White, 1987). In the Japanese society, a higher value is placed on education than it is in the United States. What takes place within the schools and education in general is highly prized in Japan, according to many who have studied and written about Japan.

Porter supported this point of view. He suggested that both the German and Japanese populations are more homogeneous than that of the United States. Thus, it is easy for Japan and Germany to support the type of philosophy that underlies their educational system. That is, the highly homogeneous nature of their society enables them to reach accord more easily in terms of national uniformity than what might occur in a highly pluralistic society like the United States.

Porter was also convinced that changes would occur in the educational philosophies of all three countries. However, he suggested that the change would be most striking in the United States. He stated,

> In the United States there will be, over the next decade, greater and greater demands for more uniformity in student performance and nationwide standards of excellence. In Japan and Germany the uniformity is already in place. In America it is only now becoming a prominent issue, and there is a basic struggle between those educators who wish to move more rapidly than we are now moving and those who would either not move at all towards greater uniformity, or move slowly.

> Quite frankly, if they thought they could get away with it, a significant number of those in favor of greater national uniformity and standards would do so. However, the social milieu of America isn't ready for it yet because of the social context and historical value placed on local autonomy.

Porter went on to suggest that in some suburban school districts in Michigan there is the same degree of uniformity and level of achievement as one would find in Japan or Germany. However, he indicated that in other types of school districts (e.g., urban and rural) the degree of uniformity and student achievement varies greatly from one district to another and is quite different from the situation in suburban districts.

In response to questions concerning the American philosophy of education, Rachael Moreno (Associate Superintendent, Genesee Intermediate School District) said there is little likelihood of any changes occurring. She noted, however, that even though the American system is thought to be highly decentralized, a high degree of uniformity exists across the country. In discussing what she believed to be some of the weaknesses of the American system, Moreno noted,

> The current system makes the general population rote learners, memorizers of facts . . . somewhat like breakfast cereals, change the labels and they are all pretty much the same. One can go anywhere in this country and 12 years of public education achieves basically the same thing, the same civics class, government class. . . . I don't see too many changes in the near future--maybe long range. When one looks at public education in this country, one sees that most of the leadership succeeded in schools based on this kind of philosophy. In my opinion, we don't have the intellectual leadership in education in this country as they do in Germany and Japan. There are some, such as the current Secretary of Education [William Bennett]; however, they are the exceptions. We tend to have personalities, ex-coaches, ex-good guys. Thus the possibilities of significant changes are limited.

Answering the same questions concerning philosophy, Nobuo Shimahara (Assistant Dean, Graduate School of Education, Rutgers University) talked about educational practices and priorities in Japan, which are based on assumptions that are different from those in the United States. He suggested that:

1. There is more importance placed on education in Japan than in the United States.
2. There is less emphasis on the importance of ability and greater emphasis on motivation and effort [a belief that everyone can achieve if he/she works hard enough].

Shimahara continued by citing what he saw as two weaknesses in educational practices in the United States:

1. United States schools individualize [differentiate] and group [track] students beginning in the first grade, a practice which in the long term has a negative effect on the students and our economy.
2. The quality of education which is provided for average and below-average students in the United States is poorer than what is provided for above-average students.

In Shimahara's opinion, there are many more average and below-average students than there are above-average learners. The average and below-average students will continue to be the ones who primarily constitute the blue-collar workforce in the future. Thus, it seems reasonable to conclude that a high priority should be placed on providing quality education for average and below-average students. According to Shimahara, such efforts will help average and below-average students develop a sense of purpose and acquire the knowledge and skills needed in the American labor force. The results will also enable the United States to be economically competitive in the global community.

In addition, Shimahara thought that the focus of education should be on the average and below-average students because the above-average students are capable of "making it on their own." Thus, to him, programs that favor an elite will be of limited value in the future.

When asked if he thought there were likely to be changes, Shimahara said he was not very optimistic as "we seem to put old wine into new bottles." Although there frequently is talk of innovation and change in education, in reality all that changes are the labels attached to the same old practices. When asked if he thought education should change, Shimahara replied, "Yes."

In answering this question, several of the other interviewees tended to refer to differences in the overall educational systems rather than to philosophies. For example, it was suggested that (a) German and Japanese schools are more rigid and demanding than American schools; (b) there are more elective offerings in American schools; (c) schools in Germany and Japan favor upper-level (elite) students, whereas schools in the United States are more egalitarian; and (d) education in the United States is designed primarily to provide students with the knowledge and skills that will enable them to function effectively in society, and less emphasis is placed on education that fosters higher-level thinking skills and creativity.

Finally, Theodore Sizer's (Chairman, Education Department, Brown University) comments on this question were similar to the responses of many other interviewees. He began by saying he did not

think there is a single American educational philosophy; if there were, he would be very nervous. For example, he said,

> The function of the school in some school districts is one, out of necessity, of preparing students to fight the war of life; to learn to survive. In other districts the function of education is to expand the human scope.

These two functions, he concluded, "certainly have substantially different consequences."

Sizer further noted that the question of philosophy is very complicated. In referring to two of the official reports on education (National Commission on Excellence in Education, A Nation at Risk, 1983; Japan, Summary of Second Report on Educational Reform, 1986), he made the following statements:

> The recommendations in A Nation at Risk are reported as if the Excellence Commission of 1983 spoke for large numbers of Americans--it doesn't. That's why I get very nervous. American education is _____; Japanese education is _____. You fill that in with a published statement. My experience is that most published statements in regard to public and private schools are meant to confuse. You read the published statements of purpose, then look at what the school does, and you find enormous inconsistencies--some of them unintended, some of them simply by indirection.

Sizer was skeptical about how many teachers in a particular school ever look at the school's published statement of purpose. He noted that there are terrible dangers in making any kind of culturally biased, simplistic statements with regard to education in one's own or other countries. He concluded by suggesting that:

> To say that all Japanese are interested in the kind of community where the emphasis is on group cohesiveness and America is more individualistic is, at a very general level, probably true. However, it's much too general to serve as a guide for educational policy.

All of the German interviewees believed that the philosophy of education in Germany is different from the educational philosophy in the United States. They, too, tended to respond in terms of the differences in the educational systems, rather than in terms of philosophy.

For example, Wolfgang Schnitzler, a German foreign curriculum consultant with the New York State Department of Education, suggested that the purpose of schooling in Germany has traditionally been to provide instruction that encourages students to value knowledge for its own sake and to cultivate a desire to learn. This has been particularly true with regard to the Gymnasium. In contrast, he pointed out that schooling in the United States has concentrated on acquiring knowledge for the purpose of attaining a high grade point average, which would enable students to enter college or obtain a good job.

Some of the German teachers who were interviewed indicated that their society strongly accepts and supports the idea of sorting-out students and of having different types of schools for students of different abilities and backgrounds. They further stated that the idea of sorting-out on one level of thinking in the United States is unacceptable. However, they said they had observed that a similar practice of sorting-out or tracking occurs more subtly in the United States. This type of sorting-out, they thought, tends to be a generally accepted practice in many schools in the United States.

Another difference they observed is that German schools primarily offer only required courses, whereas American schools tend

to have an appreciable number of elective offerings. None of the German interviewees thought there would be any changes in the foreseeable future in the philosophy and practices described above.

The Japanese interviewees tended to differ in how they responded to the question concerning educational philosophy. They also were inclined to talk about characteristics of educational systems rather than philosophies per se. For example, some of the differences they mentioned were as follows:

1. Individuality is stressed in classrooms in the United States, whereas group cohesiveness, conformity, and cooperation are stressed in Japanese classrooms.

2. Equal educational opportunity for all students is emphasized in Japan during the compulsory education years more so than in the United States.

3. The expectation for children in Japan is that all youths can be successful and achieve if they work hard, whereas in the United States the emphasis is on ability.

4. In Japanese classrooms, there is a strong sense of cooperation, whereas in American classrooms there appears to be an emphasis on competition among students.

One of the strengths of Japanese schools identified by the Japanese respondents was the large number of required courses in high school. In their judgment, decisions regarding what courses to take should not be left to the high school students themselves. In terms of whether changes in education are likely to occur in the

foreseeable future in Japan, none of the interviewees thought such changes would occur to any significant degree.

2. What is your opinion in regard to a highly centralized educational system and a highly decentralized educational system?

Most of the American interviewees viewed the decentralized nature of the educational system in the United States as a positive factor because:

1. Theoretically, more people are involved in educational decision making in a decentralized system, and that is a good state of affairs.

2. Schools are better able to serve the communities in which they exist if educational decisions are made primarily at the local level (local autonomy).

3. In a highly decentralized system, there are purportedly more opportunities to be creative in terms of teaching methodology, types of programs and courses offered, and curriculum innovation.

Porter agreed that one of the strengths of a highly decentralized system is that "it allows for local control and for people to collectively participate in setting goals and making decisions. However, he noted that "without stronger standards than we now have, there will continue to be a great variance in terms of student achievement from one type of community to another [suburban, urban, rural] and one group to another [socioeconomic, ethnic, racial]." He said his position in regard to state and national standards is changing and that he now favors stronger national

standards than he did earlier. Moreover, he also thought there would be changes in the foreseeable future in regard to the decentralized system of education in the United States. He believed there would be stronger state and national standards and control.

Richard Halik, the superintendent of a large urban school district in Michigan, reported that "where one sits in the hierarchy--teacher, administrator, board of education member at the local or state level--determines how much one favors strong centralization or decentralization." As the superintendent of a large local school district, he tended to favor strong centralized standards that would apply to all schools within the district. On the other hand, as a local school superintendent, he opposed strong national or state standards.

Some of the American respondents thought the degree of decentralization in the United States is prohibitive. Ernest Boyer, President of the Carnegie Foundation, suggested that because American education is decentralized, Americans are ambivalent about whether their investment is paying off. It is not known corporately what the schools are accomplishing. Boyer claimed:

> The educational system in the United States will become more strongly centralized in the future because financing and testing will demand it; the decentralized system has proved to be unsatisfactory in the minds of many because it lacks clarity of goals and yardsticks to use in measuring outcomes.

Other interviewees agreed with Boyer's assessment and suggested that there is little consensus in the United States about what schools should accomplish for all students. This failure to reach agreement leads to poor educational programs for many students.

Robert Skinner, a high school social studies teacher, stated that in a highly decentralized system there is little accountability at either the state or national level. Based on his more than 20 years of teaching, he believed that:

> Even within the local district itself there is a minimum of accountability in regard to what goes on in classrooms. Whether or not a teacher does a good or bad job is infrequently noted by administrators and others. The critical factor in the minds of supervisors is the need for teachers to maintain a classroom where there is no trouble which will attract the attention of administrators, school board members, or parents.

To Harold Stevenson, Professor of Child Development and Social Policy at the University of Michigan, a highly decentralized system poses a problem for teachers because they must spend more time preparing lessons and materials than do their counterparts in a highly centralized system, such as that which exists in Japan.

All of the German interviewees tended to agree that, in Germany, standardization, control, curricula, syllabi, and testing are all determined at the Land level. They also reported that the Lander attempt to cooperate in terms of common syllabi and testing to make it possible for students to enter universities in Lander other than their own. Thus, they said, there is a reasonably high degree of standardization throughout the country.

Many of the interviewees were quick to point out that variations and differences exist from one Land to another. However, in comparison with the situation in the United States, they agreed that there is significantly more uniformity across all Lander than there is across states in the United States.

Some thought that state-level centralization has several advantages. For example, teachers are hired and paid by the state, and their salaries are equalized across communities. Also, teaching assignments are made at the state level and continue for a lifetime.

None of the German interviewees thought any important changes would occur in the near future with regard to centralization in Germany. They gave several reasons for their position, including the facts that (a) people are comfortable with what they have; and (b) the idea of centralization is very much a part of the tradition of the society, and attempts to effect changes are not easy.

All of the Japanese interviewees thought education in Japan was highly centralized at the national level. The advantages they saw were:

1. Facilities and resources are equal across the country (equal education in both quantity and quality in both the mountains and the cities).

2. Long-range policy decisions can be more easily made and implemented.

3. Textbooks are consistent throughout the country.

4. Standardized testing serves as a strong motivator for students to study.

Some of the weaknesses the Japanese respondents mentioned with regard to a strong centralized system were as follows:

1. Centralized systems are very rigid, and change does not come quickly.

2. In a centralized system, unhealthy competition among teachers is promoted.

3. There is less flexibility in what is taught and in teaching methodology in a highly centralized system.

All of the Japanese interviewees believed the American educational system would benefit by becoming more strongly centralized (at least at the state level) than it is now. Some thought the Japanese system should become less centralized. Comments regarding whether there would soon be significant changes in Japan in terms of centralization ranged from NEVER to a few minor changes (class size and a small increase in prefectural options and responsibilities). When asked to explain their answer, the respondents indicated that the majority of people in Japan are basically satisfied with their educational system, including the degree of centralization. Some of the interviewees expressed the hope that something would be done to encourage the development of more individuality and creativity on the part of Japanese students.

3. What are the strengths and weaknesses of the organization and grade structure of schools in one or more of the three countries?

All of the interviewees agreed that the grade structure and organization of the secondary schools in the three countries differed (as discussed in Chapter II). Respondents from Germany indicated that, on the whole, they have a secondary system that works well in their country. A single concern they mentioned was the lack of opportunity for interaction among students from

different types of secondary schools (Gymnasium, Realschule, and Hauptschule students). As the teachers pointed out, Hauptschule students go on to various types of apprenticeships once they complete ninth grade. Realschule students continue on to technical schools, higher-level skilled jobs, or the upper levels of a Gymnasium. Gymnasium students often are preparing for university study and eventual careers in professions such as medicine, law, and engineering. Walter Biedermann (philosophy and foreign language teacher) asked, "When will these students ever develop an understanding about the type of life of those different from themselves and the ability to successfully interact with people from different social and economic backgrounds than their own?"

The comprehensive secondary school, or Gesamtschule, was created in an attempt to consolidate the three types of schools under one roof. According to the interviewees, even though there are currently only a small number of the comprehensive-type secondary schools in existence, this attempt to change the grade structure/organization of the secondary schools has by and large been unsuccessful. The German experts interviewed indicated they did not think there would be any major changes in the organization and structure of the educational system in Germany in the foreseeable future. Most of the interviewees agreed that some of the changes that have occurred during the last 20 years have been maintained in some Lander. However, attempts to make major changes have succeeded in only a few Lander.

In regard to strengths and weaknesses of the organization and structure of schools in Germany, most of the German interviewees believed the existing organization and structure are the best (and therefore the strongest) for their country. They noted that the changes that have been instituted during the last ten years have eliminated any basic weaknesses in the system.

Individuals who commented on the current lower-secondary and upper-secondary-level grade structure in Japanese schools were not as unanimous in their replies concerning whether there would be major changes in the near future. Some thought that if a change was made from a 6-3-3 grade-level pattern to a 6-6 pattern, the examination pressure on students would be less strenuous. The high school entrance examination as it now exists would be eliminated. Others thought the present system must remain intact because the examinations provide students with a strong incentive to study. Thus, opinions were divided about the strengths and weaknesses of the present organization and grade structure of the Japanese system.

When Japanese interviewees were asked if they thought a change would occur, some replied in the affirmative because that was one of the recommendations of the Second Report on Educational Reform (April 1986). Others thought that if change did occur, it would be very slow in coming. Some of the Japanese interviewees insisted there would be no change.

A majority of the experts on education in the United States thought that organizational patterns would continue to vary from

school district to school district (16,000 districts nationwide). As some interviewees pointed out, deciding on the grade structure of a school is one of the advantages of local autonomy. Two interviewees thought the grade structure of a school is irrelevant--that what really counts is what goes on in the individual classrooms. What the teacher does or does not do is the critical factor with regard to educational outcome, irrespective of grade structure.

Several of the interviewees thought that the extensive variance in terms of organization and grade structure from one state to another is a weakness because it penalizes students who move from one school to another. Others believed such variations allow for innovation and less restrictive lock-step types of programs.

When asked if a change was likely, one person emphatically stated, "No, too many people have too much to lose. It's a political thing." Conversely, one superintendent thought that education in the United States is gradually becoming more centralized, and as this happens, it will affect the grade structure and organization of the schools.

4. <u>The practice of separating students into different types of schools (e.g., academic, vocational, technical, and comprehensive) primarily occurs at different levels in the three countries. How would you describe the situation in one or more of the three countries?</u>

The consensus of the 32 individuals interviewed was that in all three countries students are separated and sorted out into different types of schools (Germany and Japan) or educational tracks (United

States). Respondents also agreed that the sorting-out process is initiated at different levels in each country. A majority of the interviewees thought that some type of sorting-out process was appropriate and necessary. As the individuals commented on the strengths and weaknesses of the particular process used in their country, it was evident that they basically accepted the reality of what occurs and thought (a) their form of sorting-out was best for them, (b) some modifications were necessary, and/or (c) any type of significant change or reform would be slow in coming.

The German educators indicated that the strength of their process of sorting-out students for the various types of high schools was that "it works." They also noted that certain weaknesses needed to be addressed. As Hans Korb stated, "Nine or ten years of age is an awfully young age for one to have to make or have made for you, by teachers and parents, your educational career decision." To correct that problem, a two-year observation phase (grades 5 and 6) has been instituted in Germany. At the end of that time, it is decided to which type of school the students will be assigned. Biederman, one of the interviewees, thought it would be good if, at the secondary level, there could be more flexibility so that students could move more easily from one type of secondary school to another. The point was also made that, theoretically, the need to transfer from one school to another could be met through a comprehensive type of secondary school, which contains all three types of traditional secondary schools and where changes from one type of school to another can be easily accomplished.

The mechanism for sorting-out students for the various types of upper secondary schools in Japan is the high school entrance examination. The examination is given to students at the end of ninth grade, and the results determine which type of school a student may attend. The weakness of this process, according to the Japanese educators, is that too much emphasis is placed on one examination and that the method is much too rigid. The strength of this method was seen to be the motivation the examination provides for students to study.

Most interviewees agreed that if significant changes do occur (50% of them thought it unlikely that such changes would occur), they will not come about in the near future. Even a Japanese Ministry of Education representative said it would take about ten years to activate any of the changes recommended in his government's Second Report on Educational Reform. Moreover, he believed that only those recommended changes that are noncontroversial will be considered.

With regard to the types of changes they thought should occur, interviewees suggested:

1. The high school years should be made compulsory, and much less emphasis should be placed on the high school entrance examination.

2. The high schools should be more comprehensive and broad-based, with a general type of curriculum.

3. More academic-type courses should be offered in the vocational and technical secondary schools.

In the United States, upon completion of eighth or ninth grade, students usually move automatically into a comprehensive-type high school. However, as various interviewees indicated, American students are also sorted out. As Porter commented, "even though we describe our high schools as comprehensive schools where students should be able to move easily from one type of program (or track) to another, in reality students are locked into particular programs." Moreno also thought that comprehensive high schools in the United States are not what they seem. She noted that American students are separated essentially as they are in Germany and Japan. Moreno was also inclined to believe that the United States probably does not provide as high a quality of vocational training as do Japan and Germany.

Porter and Moreno were asked whether they viewed the situation in the United States as a positive or negative one and if they thought that situation was likely to change. Moreno said she thought the situation was a "minus" and was unlikely to change. She did not think a major change would occur because when quality types of technical courses such as computers or robotics are offered, they are often listed as electives or identified as part of gifted/ talented programs. Thus, the courses are unavailable to the general student population or are provided as electives.

Porter, on the other hand, indicated that for those students who succeed in the United States, in part, because of the tracking mechanism, the situation is a "plus." However, for those who fail,

it is a detriment. He continued by saying that the situation would probably change due to economic, not humanitarian, reasons. He also noted, "High standards are fine when there is an abundance of teenagers. However, as the numbers decline so will the insistence upon standards."

The strength of having all of the programs (vocational, business, and academic) under one roof should mean that students can move with relative ease from one program to another. It would also allow students of various backgrounds to socialize and interact. "Ideally," Shimahara stated, "the comprehensive high school could be a big plus." The reality, as viewed by several of the American educators who were interviewed, was that, due to the demand for tougher academic standards brought about by the various educational reform reports and by parents, many elective course offerings and diversity of curriculum will become a thing of the past. The American interviewees generally concurred that comprehensive types of high schools with many options for students are desirable for a democratic society such as the United States.

5. <u>What is your understanding of the role of testing in one or more of the three countries?</u>

The responses from all of the Japanese and German interviewees indicated that testing plays an important role in their educational systems. They noted that the sorting-out process occurs between the elementary and secondary levels (grades 4 to 6) in Germany, and in Japan at the end of grades 9 and 12.

Schnitzler observed, and the other German interviewees concurred, that testing at the end of elementary school has become one of several criteria rather than the only criterion to be used when assigning students to an appropriate secondary school. He noted that, until about ten years ago, test results for all practical purposes were the only criterion used. Today, placement is based more and more on multiple criteria, including teacher observation and parental input.

German respondents suggested that, in the 1960s and 1970s, major efforts were made to make German schools less elitist and more egalitarian. As part of this effort, strong attempts were undertaken to change the role of testing. One change was in the emphasis placed on tests at the end of the elementary school years. According to most of those interviewed, no further major changes in testing will occur soon, and testing, together with other criteria, will continue to be used more strenuously than in the United States.

Japanese respondents emphasized the importance of testing in their educational system and noted that it provides motivation and incentive for students to learn. They observed that some negative effects are associated with the emphasis on testing. However, the overall results have been acceptable, and there is little likelihood that appreciable changes will occur soon.

Some German and Japanese respondents suggested that, in some ways, testing seems to be emphasized more in the United States than in Germany or Japan. Shimahara believed that, in the United States, intelligence is equated with IQ or innate ability, whereas in Japan

intelligence is equated with hard work. He thought that the tests in Japan have more merit than those in the United States, in part because of the different assumptions about intelligence in these countries.

Schnitzler thought that in the United States there is a commonly held belief that students are motivated to learn only what they think will be on the tests. He agreed that, although German students are tested also, they are encouraged to "learn for the love of learning," and tests are used to determine what they have learned. He implied that in the United States tests are used primarily as a sorting-out device, and they provide little valid information about what students have learned.

In Germany and other European countries, where national testing has long been established ("National Testing: Many Questions," 1987) students are evaluated on a combination of multiple-choice, essay, and oral examinations. In the United States, in those areas where large-scale testing is done, it is usually conducted almost entirely with multiple-choice questions. In Japan, too, tests tend to be in a multiple-choice format.

All of the American respondents had relatively strong feelings concerning the role of testing in the United States. Many individuals were highly critical and suspicious of testing, whereas others were more positive and favorable about the idea.

6. In your opinion, are there differences in the number of courses which secondary students are required to study in their respective countries and what students in the other two countries are required to study?

All of the interviewees believed that German and Japanese students have more required courses of study than do American students. For instance, both Germany and Japan have a foreign language requirement for all students, beginning at the lower secondary school level. Art and music are also required in those countries. The teachers from Japan and Germany said the majority of classes in their secondary schools are required for all students. (It is important to remember that there are different types of secondary schools, and students are separated.) However, more basic requirements extend across all types of schools in Germany and Japan than in the United States. Representatives from Japan and Germany thought this provides a more appropriate education for their students. The advantages they cited were:

1. Students cannot side-step difficult courses and choose many electives.

2. School is treated as important, and all students must study certain basic/core subjects.

3. This practice allows the schools to be run more efficiently.

The only disadvantage mentioned was that students cannot pursue a special-interest course of study. However, all of the interviewees thought this format provided a more balanced basic education for their students. They noted, however, that in addition

to the core courses, there are different requirements for various categories of students: academic, vocational, and business programs.

Interviewees from the United States thought that American students have more flexibility in course selection than do their Japanese or German counterparts. They acknowledged that there seemed to be less emphasis than in the other two countries on achieving a balanced core curriculum for all students. One superintendent said he thought the overwhelming emphasis in the United States is on reading, mathematics, and science. One educator reported that offering many choices to students in American schools provides opportunities, not available to students in the other countries, to learn how to think, reason, and apply what they have learned.

When asked if they thought any significant changes would be forthcoming, respondents' answers ranged from skepticism about whether important changes would occur to a feeling that perhaps a few changes might take place. For example, Boyer thought a core curriculum should be required for all students. Shimahara concurred, noting that the advantage of a core or balanced curriculum is that it calls for developing a whole personality. A balanced curriculum, he noted, would include more attention than is now given to art, music, mathematics, and science. As it is now, he added, art and music programs in American schools tend to be inferior and mathematics instruction haphazard.

Several of the interviewees had difficulty distinguishing between what they thought should be and what was likely to occur. This same problem seems to be characteristic of many of the educational reform reports of the 1980s. An example of the dilemma is evident in Secretary of Education Bennett's recommended ideal curriculum for a fictitious Madison High (Fiske, 1987) and the questionable likelihood that his recommendations will become reality in any significant number of American high schools in the foreseeable future.

The American interviewees concurred about the use and misuse of tests and test results. For example, some suggested that results of the Scholastic Aptitude Test (SAT), which is an aptitude test, are reported as if they are achievement scores, and in some cases the results are used as a screening device in determining which higher education institutions students may attend. The results are also used by the press and others to evaluate schools and education in general. In such cases, as Boyer suggested, the results are being used unethically. In his opinion, the SAT was created to measure human potential and to test innate ability, not to determine whether schools are doing a good job or not.

Stevenson et al. (in press) noted that testing does play a positive and important role in each of the three countries. However, they concluded that Americans are reluctant to admit there is a need for greater use of testing in the nation's schools. Some interviewees agreed somewhat with this assessment; however, most of them were skeptical and concluded that:

1. Test results are often used to drive the curriculum, and they are misused by the press and others.

2. Too often, narrowly interpreted test results are used as the primary criterion in assessing what students have learned.

3. Minimal-competency testing has increased in the United States, but it has been watered down so much that everyone can pass these tests. Hence, they are meaningless.

Nevertheless, as Porter suggested, in the United States there appears to be a strong movement toward more standardized national goals, accompanied by increased federal testing of school children. As Fiske (1987) reported, the question is no longer whether or not there will be expanded federal involvement in education; rather, the question focuses on what form the involvement will take and how much involvement there will be.

7. Are there appreciable differences in the length of the school year, school day, and amount of homework students are required to complete in the three countries?

The 32 interviewees from all three countries indicated their countries differed in the length of school day and school year, as well as the amount of homework assigned to students. Surprisingly, the Germans said their school day is somewhat shorter than that in the United States, and the Japanese indicated theirs is about the same as some in the United States. The major difference, according to the interviewees, is the length of the school week. Many German students attend Saturday morning classes twice a month. The German educators indicated that this practice is slowly changing, and some

Saturday classes have been dropped and the length of the five school days increased. They said that German students have 32 obligatory course hours (50-minute periods) each week and two to three elective hours.

The Japanese interviewees confirmed that the Japanese school day includes six course hours (50-minute periods) five days a week and four course hours on Saturday.

The Germans said their school year is about the length of the American school year, although their holiday breaks differ: autumn (two weeks), winter (two weeks), spring (three weeks), and a six-week summer vacation.

The Japanese interviewees confirmed statements that have appeared in the American media and in various national reports claiming that the Japanese school year is 240 days long as compared to the 180- or 182-day American school year. The Japanese school year begins in April and ends in March. There is a one-month summer holiday beginning the third Friday in July, a winter break at the end of the calendar year, and a spring break at the end of the school year. Schools close for 12 national holidays.

All of the German and Japanese educators said students in their countries begin having homework at a very early age. For instance, one German teacher said that first graders are expected to practice at home the work they start in school. Schnitzler said that, at all levels, homework is viewed as a continuation of what was begun in class. Hiroshi Okano (administrator and researcher, Chicago

Futabaki Day School) shared similar thoughts about Japanese students' homework. He stated that Japanese textbooks were created for homework and that the prevailing belief is that homework (practice) should continue until it becomes fun. Akinori Shimatori (educational attache, Embassy of Japan, Washington, D.C.) added that in Japan, as compared to the United States, more homework is assigned by teachers and completed by students because of the support and encouragement of Japanese parents.

The American educators generally thought there were differences in the amount of time (hours per day/week and length of school year) children attend school in the three countries. However, there was little consensus among American interviewees about whether an increase in school time in the United States would be desirable. Most were inclined to believe that the effective use of time is the important factor to be considered. Thus, simply adding time without giving increased attention to how the time is used has little merit.

8. <u>What is the status of tutoring schools (such as the juku in Japan) in the three countries?</u>

When individuals from each country were asked, "To what degree do students in your country attend tutoring classes?" there were three distinct replies. The Germans indicated there were no formalized tutoring schools in their country. An organized form of tutoring is virtually nonexistent, and they thought there would be few changes in this situation in the near future.

In contrast, the American educators said that increasing numbers of students in the United States are receiving tutorial

assistance. They cited the following reasons for the increase in tutoring:

1. Increased competitiveness in the job market.

2. Parents looking to see what additional things can be done to fill in or add to public school education.

3. Parents wanting to ensure that their sons and daughters will be prepared for colleges/universities.

American interviewees agreed that pressure on students to participate in some sort of tutoring program (study-skills workshops and ACT and SAT preparation institutes) would continue to increase. One of the interviewees pointed out that one has only to pick up a Sunday edition of a newspaper like the Chicago Tribune or The New York Times to see how formalized and what a big business different types of tutoring schools have become.

All of the Japanese interviewees confirmed the fact that tutoring schools (juku) in their country have become an "education industry." Wakei Nakai (high school English teacher) believed that 80% to 90% of the students in urban areas attend juku classes, and the number of participating students will continue to increase. Shimatori provided further insight by stating that the juku provide services for students in need of remediation as well as for advanced students considered by many to be gifted. He emphasized the importance of these provisions, stating that "students are not retained in a grade if they are behind; neither are they skipped a grade if they are above average in ability." He reported that at

the junior high school level the juku is a major method of providing for gifted students. However, at the senior high level, juku are attended primarily by students preparing for university entrance examinations.

Although one of the principals who was interviewed agreed with Shimatori's point about the advantage of having enrichment types of juku, he indicated that the "cram" types of juku also compete with the public schools. They offer students an alternative type of experience. Thus, as Chono observed, another reason for the success of the juku education industry is that "students enjoy juku."

All of the Japanese interviewees agreed that there are not likely to be any changes in tutoring practices in their country in the near future. That is, the tutoring schools will continue increase in popularity.

9. What proportion of the school day is spent on instruction, and how much time is spent in extracurricular activities (e.g., band, chorus, clubs)?

Both the German and Japanese interviewees indicated that none of their students' school day is spent in extracurricular activities. The Germans said that in many schools an optional sixth hour is provided for what they referred to as electives; however, no credit is given for participation in elective offerings. Schnitzler said that extracurricular activities are unknown in schools in Germany.

The Japanese interviewees said that in Japanese schools extracurricular activities are provided through after-school clubs.

They indicated they liked the separation of academic and extracurricular activities because the main purpose of school is serious academic study and work. One principal commented that in many instances the after-school activities provide leadership opportunities for older students. One teacher noted that the after-school activities give teachers and students an opportunity to interact in an environment that is less structured than the regular classroom.

A drawback of the after-school activities, one teacher acknowledged, is that students do not get home from school until 6:00 p.m. or later. None of the Japanese thought the practice of having after-school club activities would change, nor did they want the situation to change. They saw the situation as a desirable way of separating serious academic study from less academically rigorous activity.

The German interviewees also said they thought the situation in Germany would continue unchanged. Tess Wieland (elementary teacher), who had grown up in Germany, taught in Germany, and now teaches in the United States, thought that the separation of extracurricular activities from the regular school program leads to stronger academic programs. This, she believed, is one advantage German schools have over American schools. A few of the United States educators expressed concern that extracurricular activities often intrude on the regular school program. All of the American interviewees agreed that the American school day is often

interrupted and includes various types of nonacademic extracurricular activities.

Robert Amble (a suburban school district superintendent) indicated that a strength of having extracurricular activities as an integral part of the school day is that the experiences themselves may enhance students' ability to succeed in later life. The extracurricular activities, in his opinion, are not "extra," but many belong on the same level as courses usually identified as "core" offerings.

On the other hand, Moreno thought the practice of including extracurricular activities in the school day promotes the notion that schools are primarily a socializing agency. Many of the American educators thought it unlikely that, in the foreseeable future, less time would be spent on extracurricular activities.

10. What role does competitive athletics play in secondary schools in the three countries?

The entire group of American interviewees acknowledged that competitive athletics plays a large and important role in United States secondary schools. Two of the major strengths of this role were expressed by Porter and Sizer. Porter suggested that athletics "blurs discrimination," and Sizer said it contributes to a sense of "community building." The majority of the American interviewees thought the role of athletics will become even greater. Halik believed that the trend is toward an increased number and variety of athletic offerings. Skinner, a high school history teacher and

former coach, said that athletics will become more competitive and the reality is "It's a money maker."

Porter suggested that because athletics is the one aspect of American education that is extremely popular, it will lead to curriculum changes, thereby making the role of athletics even greater. He thought the new National Collegiate Athletic Association rules requiring athletes to have a minimum grade point average and to take a college entrance examination before being eligible to participate in competitive varsity sports programs would lead to changes in curriculum at the high school level and below. These changes will occur because athletic competition is highly valued in the United States. Thus, whatever is needed to insure that talented athletes can compete at the collegiate level will occur. Moreover, in his opinion, the effects will apply not only to athletes but to other students, as well.

Sizer highlighted the fact that some of the best teaching occurs on the football field and pointed out that Mortimer Adler has brought "coaching" to the classroom. The majority of Americans interviewed thought the role of athletics in the nation's high schools is acceptable and that the only changes they foresee are positive ones.

The 12 German interviewees said that competitive athletics does not have a role in German schools. German students participate in sports by joining sports clubs that meet after school, as well as playing at municipal centers and fields. Such programs are heavily subsidized by the municipal government. Interviewees also said that

in many cities summer sports competitions are held, in which students from the high school physical education classes participate. When asked how they viewed this practice, interviewees said they saw it as a positive one. They did not think there would be any changes in the near future. As one teacher commented, "Schools can't do everything." Moreover, the respondents thought that schools should emphasize academic study, not sports.

When asked what role competitive athletics plays in Japan, Shimatori suggested that athletics plays an important role but in a different way than in the United States. He and others indicated that students are able to join one after-school club each year, and the sports club is usually one of the most popular. However, competitive sports activity occurs only during school vacation periods. When the Japanese were asked how they viewed this practice, the majority asserted that school is for study and work, and it is good to keep competitive sports separate. A few individuals mentioned the following weaknesses of the practice in Japan:

1. Secondary sports clubs generally consist only of tenth and eleventh graders because seniors must drop out of clubs to prepare for university entrance examinations.

2. Practice is usually six days a week, and competition often is on Sundays.

The majority of interviewees did not think there were likely to be any major changes in the role of athletics in Japanese schools.

11. Are there differences in regard to the number and types of community service projects in which students in the three countries participate?

All of the interviewees from the United States agreed that some high schools engage in various types of community service projects. The majority of them acknowledged that students usually become involved in a community service project (a) as an Honor Society member, (b) as a member of a special interest/subject club, (c) as a project for a particular class, or (d) as a member of a church or community organization. The weaknesses of current practices are that (a) not enough students become involved, and (b) there is a lack of consistency in the activities selected.

When these same individuals were asked if they thought the situation might change, most of them said it was possible but not probable. All of them liked Boyer's (1983) recommendation that all high school students should be required to complete some type of volunteer work in the community or at school. Students would fulfill the requirement in the evening, on weekends, and/or during summer vacations. Although the majority of respondents thought this recommendation was a good idea, they voiced some concerns about the wisdom of mandating such a requirement because (a) many students have part-time jobs, (b) many students are busy with other activities, and (c) some parents might be reluctant to support such activities. Although Moreno liked the recommendation, she thought the primary responsibility for community service belongs with the churches and other community organizations. She believed the role of the schools in community service should be secondary.

The German educators replied that few, if any, volunteer community service activities exist in Germany. One teacher said that, if students go out into the community on their own, they might be able to volunteer to do things like plant flowers in the community. In general, all of the German respondents thought it would be good for students to have their level of consciousness raised, but they did not believe it should be the responsibility of the school to do so.

The Japanese interviewees also indicated that few students in Japanese schools are involved in community service activities. However, several noted that all students do participate in service within the school community. As Chono stated, each student has a responsibility for the upkeep of the school. When the Japanese were asked how they viewed this practice, they all indicated they supported it. The strength of this practice, they reported, is that students learn that manual labor is not bad. The lesson stays with them when they enter the world of work. None of those interviewed saw any weaknesses in this practice. All of them thought the practice would continue without change; as one teacher said, "It works."

12. Is there a significant difference in the number of students in each country who hold part-time jobs either during the school year or their vacation time?

When educators from Germany and Japan were asked if many of the high school students in their countries worked part time while in high school, the majority of them responded negatively. The

Japanese indicated that students were either discouraged or prohibited from working while in school because (a) learning is the primary task at this time in the student's life, (b) it is the parent's responsibility to provide financially for children at this stage of life, (c) working could bring negative influences from society, and (d) working for money is not what the student should be learning.

All of the German interviewees said their high school students are discouraged from taking part-time jobs. Some of them did say, however, that a small percentage of students work two to three hours a week during summer vacation. They said the main reason students do not work is that school is viewed as a student's full-time job. Other reasons included the facts that (a) unemployment is high, and adults need the jobs; and (b) after age 16, students in the Hauptschule and the Realschule are paid a stipend by the government to attend school.

When asked if there were likely to be changes in the near future with regard to students working, all of the interviewees from Japan and Germany said, "No."

Conversely, the American educators claimed that a great majority of high school students in this country hold part-time jobs. They said students work because of (a) a need for independence, (b) a desire to have control over themselves, (c) a need for "wheels," (d) a desire for "things," and (e) parents encouraging them to work.

When these individuals were asked their opinion of students' working, they all said they thought the high schooler's primary responsibility is "to be a student." However, as Boyer stated, "Schooling is not taken as seriously by parents or students in the United States as in other countries." Skinner said he thought "students working 20 hours per week were hurting their opportunity to get an education just as much as if they were watching 20 hours of television each week." When asked whether they thought this situation would change, most American respondents said, "No." Of those who thought the situation would change, some of the reasons they gave were as follows:

1. Due to cost of living and college expenses, more students will feel more pressure from parents to work.

2. The need or desire to work while a student will become greater because Americans like material things (concrete) as opposed to ideas (abstract).

3. The pressure for students to have their own cars and other material items will continue to grow.

Shimahara said he hoped the situation would change and that the change would be brought about because students would realize that studying is a full-time job.

CHAPTER VI

SUMMARY, MAJOR RESULTS, DISCUSSION AND IMPLICATIONS OF THE FINDINGS, AND RECOMMENDATIONS FOR FURTHER RESEARCH

Summary

The purposes of this study were:

1. To examine and compare the structure, organization, and goals of education in the Genesee Intermediate School District (GISD) in the United States with the structure, organization, and goals of education in two other industrialized societies (Japan and Germany).

2. To examine and compare the achievement, characteristics, and educational experiences (formal and informal) of a selected group of GISD twelfth-grade students.

3. To examine and compare the educational experiences (formal and informal) of a selected group of GISD twelfth-grade students with those of their counterparts from two other industrialized societies.

4. To examine how selected GISD twelfth-grade students evaluate their high school experiences.

The results of this exploratory study can be used by educators and others to make more valid cross-national comparisons. The results can also be used by appropriate school officials within the

GISD to assess the strengths and weaknesses of the educational experiences provided for students in their schools.

The study sample of twelfth-grade students was drawn from 13 school districts in the GISD as well as from foreign exchange students from Japan and Germany. A total sample of 443 students participated in the study. In preceding chapters, background for the study, related research, the setting, population, data-collection instruments, methodology, and statistical analysis of the hypotheses were described. Presented in this chapter are the major findings of the study, a discussion of the implications of the results, and recommendations for future research.

Major Results

In this section the major results of the study are discussed within the limitations of the setting, sample, and methodology.

Comparison of Structure/Organization and Goals of Education in the United States, Japan, and Germany

The organization and structure of education, including grade-level patterns, in the three countries are similar. However, the sorting-out of students into special types of schools and programs, in particular at the high school level, varies from one country to another. In Japan and Germany, the sorting-out practices are more openly acknowledged than they are in the United States.

The three nations vary with regard to which governmental level (national, state, local) has the most authority and responsibility for the governance and financial support of schools. In Japan, the

national government has the greatest control and responsibility; in Germany, the state level is strongest; and in the United States, the local government generally plays the primary role.

According to the comparative education literature and the interview results, there appears to be a stronger emphasis on egalitarian education in the elementary and lower secondary grades (K-9), the compulsory education years, in Japan than in Germany or the United States. In Japan, there seems to be more congruence between the stated democratic philosophy of equal educational opportunities for all and the actual practice than what exists in the United States.

Comparison of Results Across the Three Countries Studied: Background Data, Extracurricular Activities, and Out-of-Class Experiences

Background data. The comments in this section focus on background characteristics of the three student samples,: GISD, Japanese, and German.

Education of parents. About twice as many of the GISD students' fathers and mothers had completed some type of higher education as had parents of the other two student groups. This finding reflects the generally accepted assumption that, for several decades, higher education has been more readily available to more people in the United States than in Japan and Germany.

Hours per week of television viewing. Contrary to the widespread but not necessarily accurate belief that because Japanese

and German students have longer school days and more homework than American students they watch less television, in this study it was found that approximately 35% of the Japanese and German students watched 6 to 10 hours of television per week. In contrast, about 26% of the GISD students reported watching television that many hours a week.

Hours per week reading for pleasure. Fifty-five percent of the GISD students reported that they read for pleasure between one and five hours a week. From 39% to 41% of the Japanese and German students reported that they read for pleasure one to five hours per week. This finding may suggest that the reading habits of American students, particularly reading for pleasure, are not as poor as some might believe. The reason for this difference between American students and their Japanese and German counterparts might be that students in Japan and Germany have more required reading assignments and less time to read for pleasure.

Subjects studied in high school. A comparison of the data concerning the number of years students from the three countries took various subjects revealed that:

1. Ninety to 92% of the students in all three countries had completed at least three years of mathematics.

2. Sixty-five percent of the GISD students, 83% of the Japanese students, and 96% of the German students had completed three or more years of science.

3. Forty-six percent of the GISD students, 88% of the German students, and 97% of the Japanese students had completed three or more years of social studies.

4. Seventy-five percent of the German students had studied English for five years, and 52% had studied French, Latin, or another foreign language for five years; 97% of the Japanese students had studied English at least four years; only 11% of the GISD students had studied a foreign language for four years.

To summarize, the data indicated only a slight variation among groups in the area of mathematics, a greater variation in science, and an extreme variation with regard to social studies and foreign languages.

Extracurricular activities. The results of the comparisons of participation in extracurricular activities were pronounced. Japanese students overwhelmingly indicated that their participation in such activities was extremely limited. On the other hand, the GISD students participated extensively in extracurricular activities.

The type of extracurricular activity that ranked high with students from all three countries was athletics. Among the American students, the highest ranked extracurricular activity category was service organizations, which ranked very low in terms of participation among German and Japanese students. However, if the figures for intramural athletics and varsity sports were added together and considered as one category, the service-organization category would have ranked second for the GISD students.

In Japan and Germany, the regular school day is reserved primarily for academic study. Much of what is considered extracurricular in nature in the United States is not a part of the regular school program in Japan or Germany.

These findings are inconsistent with those reported in the High School and Beyond study (cited by Stocking, 1986). In that study, approximately three-fourths to four-fifths of the students surveyed in the United States and Japan reported having no involvement in extracurricular activities such as athletic teams, hobby clubs, subject matter clubs, student government, and so on.

Out-of-class experiences. In this study, out-of-class experiences comprised a variety of specific extracurricular activities that provide opportunities for students to demonstrate special abilities and acquire proficiency in such areas as leadership, the fine arts, science, and athletics. Frequently, students who participate in those activities receive awards and recognition for special achievement. In other types of out-of-school activities, students are able to gain experience and develop skills that will help them become effective and responsible citizens (e.g., community service, work experience, and participation in out-of-school political campaigns).

It was difficult to compare the relationship between out-of-class experiences and the regular academic school day in the three countries, in part because of culturally determined practices. For example, as reported in the interviews and elsewhere, Japanese

students (K-12) are responsible for most of the custodial duties in their schools. In neither the United States nor Germany do students have that responsibility.

In the United States, one out-of-class experience designed to help students acquire citizenship skills provided opportunities for students (11.9%) to participate in a nonschool political campaign. Student participation in this type of activity in Japan (3.4%) and Germany (2.2%) was extremely limited. According to the interviewees, in Germany there are official prohibitions and restrictions on political activity by students. Similar limitations exist in Japan.

A comparison of the data concerning students' work experiences revealed that a large percentage of students from each country held a regular part-time job during their high school years (GISD--69%, Japanese--50%, German--45.7%). These results are consistent with findings of the High School and Beyond study (cited by Stocking, 1986). Stocking reported that 56% of Japanese students in that study held jobs during the school term or vacation periods while they were in high school (38% worked during the school term). She also reported that 63% of the American students worked during the school term.

In her discussions with Japanese experts (Japanese scholars and American experts on Japan), Stocking was told that "virtually no Japanese students worked while attending upper secondary school and that Japanese high schools forbid students to hold part-time jobs" (p. 145). Experts on Japan who were interviewed for the present

study tended to respond similarly. Their responses ranged from "Work while in high school is prohibited" to "A very few students might work very little during summer break." The data from both studies revealed that Japanese high school students do hold jobs, and the present situation in Japan has changed more quickly than the perceptions of experts on Japanese education.

Comparison of Results Across Academic-Achievement Groups and by Gender for GISD Students: Background Data, Extracurricular Activities, and Out-of-Class Experiences

Background data for GISD students. A review of the background data for GISD students revealed that only 15.3% of the students surveyed had taken the SAT. In light of the frequent references in the press to fluctuations in SAT scores and the tendency to equate these test results with the caliber of education in the United States, the small number of students in the relatively affluent high schools in this study who had taken the SAT may lead one to question whether the SAT scores are a valid measure of the quality of school programs. In conjunction with the small numbers of students who take the SAT, another factor that limits the validity of using the SAT as a barometer is that it is not an achievement test but an aptitude test. It is not designed to measure what is taught in schools (Boyer, personal communication, 1987; Stone, 1987).

Extracurricular activities and out-of-class experiences. Students in the highest of the four academic-achievement groups participated in significantly more extracurricular activities and

out-of-class experiences than did students in the three lower groups. No significant differences were noted in the number and variety of extracurricular activities and out-of-school experiences between male and female students in the GISD sample.

With regard to all categories of out-of-class experiences, the top academic-achievement group consistently had the most students participating. In the category of work experience, large numbers of students in all four academic-achievement groups worked (67.7% to 82.7%). However, more students in the lowest than in the highest achievement group worked.

Regarding the variety of out-of-class experiences, significantly more males than females participated in athletics and science. Significantly more females than males participated in writing, school newspaper, and yearbook and were elected or appointed to school offices.

Comparison of Results Across GISD Districts: Extracurricular and Out-of-Class Experiences

In 3 of the 13 districts included in this study, a majority of students participated in four or more extracurricular activities; in 4 districts, between 40% and 50% of the students participated in four or more activities; and in another 4 districts, between 30% and 40% of the students participated in that many activities. In all 13 districts, at least 60% of the students participated in no fewer than two extracurricular activities.

Comparison of Results Across GISD Academic-Achievement Groups: Evaluation of High School Experiences

With only two exceptions (provisions for students needing special assistance and provisions for academically outstanding students), no significant differences were found among academic-achievement groups with regard to how students evaluated selected aspects of their school experience. However, there were some interesting findings with regard to how students in all groups evaluated certain aspects of their high school experience.

For example, no significant difference was found among academic-achievement groups as to the quality of the instruction within their classrooms. However, only 4.5% of the students in the bottom achievement group expressed satisfaction with instruction in their classrooms, fewer than 50% of the students in the top three achievement groups (35% to 47%) were satisfied with instruction in their classrooms, and 20% to 30% of the students in all four groups expressed dissatisfaction with instruction.

One-third or more (33% to 48.8%) of the students in all four academic-achievement groups were dissatisfied with the number and variety of course offerings in their schools, 15.3% to 25.8% had no strong feelings about the offerings, and 37.7% to 43.9% were satisfied with the course offerings.

A large number of students in all academic-achievement groups expressed satisfaction with the number and kinds of tests given. Fewer than 15% of the students in any group were dissatisfied, and between 42% and 44.3% had no strong feelings on the subject.

The largest number of students who expressed dissatisfaction with two aspects of their school program (guidance services and provisions for academically outstanding students) were in the top academic-achievement group (27% and 36.5%, respectively). However, a majority of students in each group expressed satisfaction with the guidance services provided by their schools. Many students in all four achievement groups were either dissatisfied with or had no strong feelings about guidance services.

The only aspect of schooling with which a majority of students in all groups expressed satisfaction was libraries and learning centers. The only aspect of schooling with which a majority of the students in all groups expressed dissatisfaction was school rules, regulations, and policies (46.8% to 53.1%).

Across academic-achievement groups, a large number of students (31.2% to 62.9%) indicated they could not evaluate their school experiences in terms of provisions for special assistance in improving skills. They had had no experience in this regard.

Discussion and Implications of the Findings

Structure/Organization and Goals of Education in the United States, Japan, and Germany

In agreement with what has been reported elsewhere (Hurn, 1983; Husen, 1983, 1985), experts interviewed in this study thought that there were similarities in the organization/structure and goals of education in the United States, Japan, and Germany. For example, in all three countries the systems of education are similar, the years

of compulsory education are about the same, and some type of sorting-out occurs.

On the other hand, the governmental level with primary responsibility for the governance and financial support of schools varies in the three nations studied. Another difference concerns when the sorting-out process begins and how it takes place. These differences may be attributable to such factors as national educational goals and cultural values.

In A Nation at Risk (National Commission on Excellence in Education, 1983) as well as in the press (Spratling, 1988), writers frequently have suggested that the United States should attempt to reform its educational systems and practices so that they more closely resemble those of such countries as Japan and Germany. The findings in this study suggested that nations that attempt to borrow ideas and practices from others may find the task difficult and often unproductive. However, it is possible selectively to borrow ideas and practices from other countries, and careful study of other educational systems may provide insight into one's own system.

Cross-National Comparison of Students' Background Data

In addition to the major findings of this study, some of the background data on the three student samples may be of use to other comparative educationists. The data revealed that about twice as many of the GISD students' parents had completed some type of higher education as had the parents of the Japanese and German students.

The differences among the three countries in access to higher education in part reflect American educational values, such as egalitarianism, utilitarianism, and individualism. Any attempt to compare education across national boundaries must take into consideration differences in values and educational philosophies. Thus, it might be concluded that one of the strengths of education in the United States is that many people from a variety of socioeconomic levels and cultural groups can complete some type of higher education.

Contrary to generally held misconceptions and stereotypes about students in the United States, Japan, and Germany, a lower percentage of GISD students (26%) than Japanese and German students (35% each) reported spending 6 to 10 hours per week watching television. Also, 55% of the GISD students reported that they read for pleasure one to five hours per week, whereas only 39% to 41% of the Japanese and German students spent that amount of time reading for pleasure. These findings may stimulate comparative education researchers to examine more carefully their perceptions about education in their own country, as well as in other nations.

The study findings revealed that 90% to 92% of the students from all three countries had completed three or more years of mathematics. Cross-national comparisons of student achievement in mathematics have consistently revealed that, in general, American students score lower than those from other industrialized countries, including Japan and Germany. Husen (1985) found that the top 5% to

10% of American students scored at a level comparable to that of students in other industrialized nations.

A number of recommendations were made in A Nation at Risk (National Commission on Excellence in Education, 1983) and elsewhere to increase the number of required mathematics and science courses in secondary schools. The findings of this study suggest that the quality of instruction in classrooms and improved student motivation are factors that may lead to improved achievement in mathematics and other courses.

Extracurricular Activities and Out-of-Class Experiences of GISD Students, Across Academic-Achievement Groups and by Gender

The results of this study showed that students in the highest of the four academic-achievement groups participated in significantly more extracurricular activities and out-of-class experiences than did students in any of the lower three groups.

No significant differences were noted between male and female students in the number and variety of extracurricular activities and out-of-class experiences in which they participated. However, when all 12 items were combined for analysis purposes, differences were found between males and females on specific activities. For example, more females (67.5%) than males (43%) participated in school community service organizations. More males than females participated in varsity athletics (males--71.3%, females--53.3%) and intramural athletics (males--49.1%, females--29.4%). Historically, athletics has been perceived as an appropriate avenue for males to

follow, and males have been provided more opportunities than females to participate in athletics. Even though more equitable provisions are now being made for females to participate in athletics, the results of this study suggest that there is still a wide gap between the number of males and females who participate in athletics.

In the area of community service, more females than males may participate, perhaps because traditional societal expectations are for women to assume the responsibility of caring for others and reaching out, whereas traditional role expectations for males do not include time for participation in activities perceived to be less masculine in nature.

The data revealed that more males than females were involved in a variety of out-of-class science experiences. Perhaps females are still not being strongly encouraged to pursue studies in science.

Schools should be encouraged to develop programs that give all of their students opportunities to complete a community service requirement (Boyer, 1983). Schools also need to increase their efforts to achieve a greater balance of males and females in activities such as community service, athletics, and science.

GISD Academic-Achievement Groups: Evaluation of High School Experiences

Consistent with what has been reported by other researchers in the 1980s (Boyer, 1983; Goodlad, 1984; Powell et al., 1985), the students in this study expressed dissatisfaction with the quality of instruction in their classrooms. Less than 50% of the students

across all four academic-achievement groups were satisfied with the type of instruction they had received. (It is worth noting that Stocking [1986] reported that, in the High School and Beyond study, only 20% of Japanese students indicated that they were satisfied with the quality of instruction in their classrooms.) The researchers referred to above reported that, based on their research, the quality of instruction in many classrooms is inadequate.

As was noted in Chapter I of this dissertation, suggestions were made in A Nation at Risk (National Commission on Excellence in Education, 1983) and elsewhere for school districts in the United States to lengthen the school day and school year, to assign more homework, and to offer fewer electives so that students would achieve at a higher level and compare more favorably with students from other countries. Students' low evaluations of the instructional process in their classrooms combined with other researchers' observations concerning instructional deficiencies in American classrooms indicate that there may be a need for something more than a longer school year or more homework.

Based on these findings, it would appear that there is a critical need for teachers to evaluate the strategies and instructional practices that they are currently using in their classrooms. Curriculum and staff-development leaders in school districts need to design and conduct inservice education activities that focus on instructional improvement. Teacher educators in institutions of higher education need to design preservice teacher

education programs wherein the emphasis is on realistic and effective teaching techniques, strategies, and methodology. The types of preservice and inservice educational activities should be something other than "one-shot, quick-fix packaged programs," which all too frequently have been foisted on teachers and school districts over the past ten years.

More than 80% of the GISD students in all four academic-achievement groups expressed satisfaction with or had no strong feelings about the number and kinds of tests given during their high school years. In some of the educational reform reports of the 1980s and frequently in the media, there have been suggestions that America can improve its educational systems by imitating what is being done in other countries (including Japan and Germany). Particular attention has been drawn to how poorly American students have fared on comparative academic-achievement tests and the need for more rigorous testing of American students.

As reported in The New York Times and elsewhere, Congress is considering legislation to set up more systematic national testing of school children, in part to make international comparisons (Fiske, 1987a). In response to A Nation at Risk, many states and school districts have initiated stronger and more systematic testing programs (Fiske, 1987b).

Should the trend and emphasis on more testing continue, it seems reasonable to conclude that a large percentage of students will need to make changes in the way in which they approach

schooling. For example, there will be a need for larger blocks of time for study and possibly less time for such things as part-time jobs and extracurricular activities. Therefore, it would be worthwhile for educators and others to consider the value of experiences such as these before making changes in the direction of more testing.

It is axiomatic that learning occurs best in pleasant surroundings with abundant resources available. Approximately 50% of the GISD students in all four academic-achievement groups expressed satisfaction with the libraries and learning centers in their schools. The GISD students' responses were much more positive than those of Japanese students in the 1980 High School and Beyond study (cited by Stocking, 1986). Stocking reported that only 26% of the Japanese students were satisfied with their library facilities.

Thus, educators and others should consider those aspects of their educational systems that enhance learning before they attempt to imitate what is being done across international borders.

Projected Outcomes of the Study

The results of this study will be shared with the GISD curriculum office, superintendents, and appropriate school officials in the districts included in the survey and with John Chapman, social studies specialist with the Michigan Department of Education. It is hoped that GISD school administrators and others will use the results of this study in evaluating pertinent sections of their school programs and make any necessary changes in those programs.

In particular, the findings on how students evaluate their school experiences should prove helpful to districts that wish to pursue how students view their schools.

By sharing the study results with John Chapman of the Michigan Department of Education, the researcher hopes that the investigation will serve as a basis for comparison and aid the Department in its efforts to enhance Michigan educators' knowledge and understanding of global interdependency. Finally, it is hoped that, as educators and others attempt to improve education in their communities, they will be able to use information and ideas included in this study.

Recommendations for Further Research

The following recommendations are suggested for further research:

1. This study should be replicated in appropriate settings to determine if comparable results are obtained. Such additional studies should include larger populations of high-ability students and students from urban settings.

2. In-depth comparative research is needed on specific topics, such as centralized and decentralized educational systems; the nature and role of testing in different societies; the role of extracurricular activities and out-of-class experiences, particularly athletics, in relation to the formal school program; and the process of sorting-out or tracking students.

3. A comparative study of various educational reform efforts in the United States, Japan, and Germany, as well as in other

industrialized societies, is needed. Data from such research can serve as the basis for discussion and consideration of what knowledge and educational practices might be transferred from one country to another.

4. In this study, it was found that more American students had worked for pay than had Japanese or German students. However, the differences among groups were not as large as those reported in the literature and interviews. The findings in this study were consistent with those of the High School and Beyond research (cited by Stocking, 1986). A more in-depth study should be conducted to determine if the findings of this investigation concerning students who work hold true for similar populations.

5. Very little information has been collected and analyzed with regard to gifted education in countries other than the United States. Moreover, research on education for the gifted in the United States has been limited. Further research is needed on this topic.

6. One concern of this researcher was how students would evaluate selected aspects of their school experiences. The findings suggested that students' satisfaction with some of these aspects was less than it could or should be. More in-depth study is needed to obtain data that will support and/or expand on the findings about how students evaluated their schools.

7. At least 60% of the students in the 13 GISD school districts included in the study participated in two or more extra-curricular activities. In the High School and Beyond study (cited

by Stocking, 1986), more than 59% of the American high school students surveyed indicated that, during a one-year period, they had not participated in any extracurricular activities. Hence, further research is needed on students' involvement in such activities.

APPENDICES

APPENDIX A

CORRESPONDENCE

STATE OF MICHIGAN

DEPARTMENT OF EDUCATION

Lansing Michigan 48909

PHILLIP E. RUNKEL
Superintendent
of Public Instruction

March 13, 1986

Ms. Marsha Leep
411 Lapeer Street
Davison, Michigan 48423

Dear Ms. Leep:

It was good of you to share with me your plans for doctoral research. I was particularly pleased to learn of your intention to focus your research on a topic related to some of the pluses of high school education in the United States.

Far too many of the various education reports which have appeared during the last several years, have, in my judgement, unfairly portrayed the strengths and weaknesses of education in our country. Also the state of education in other industrialized countries has been inadequately described.

Your proposed survey research and recommendations in regard to: 1) the state of education for selected 12th grade Genesee Intermediate School District students, and 2) a more accurate appraisal of how our situation compares with some other nations can be extremely useful in many respects.

In particular, the results: 1) can assist us in charting needs and priorities in curriculum planning and staff development activities, and 2) more accurate information in regard to how our programs and practices compare with some other industrialized nations can be made available to the media and other appropriate groups.

Your district is to be commended for providing you with support in this type of research. Please contact Dr. John Chapman, Department Social Studies Specialist, if you have questions or wish to discuss details as you proceed to develop your proposal and conduct your study.

Sincerely,

Phillip E. Runkel

GENESEE INTERMEDIATE SCHOOL DISTRICT
Instructional Services
2413 West Maple Avenue
Flint, Michigan 48507

February 24, 1986

TO: Coordinating Committee

FROM: Marsha Leep

RE: Request to Conduct Research
in Genesee Intermediate
School District

Attached is a proposal to conduct research in Genesee Intermediate School District.

ML:kjm

Attachment

Genesee Intermediate School District

2413 West Maple Avenue Flint, Michigan 48507-3924 (313) 768-4400

March 17, 1986

Dear Superintendent:

Thank you for agreeing to participate in the student research project, designed to improve our educational programs. As indicated at the superintendents meeting, March 4, 1986, Ms. Marsha Leep will be contacting the designated individual in your high school regarding student selection, date, time and location for collection of the data.

All information collected will be treated confidentially and each participating school district and their students will remain anonymous. A code will be used so that no names are revealed.

I am confident this study will provide valuable information that will prove useful as we continue to provide leadership on behalf of quality education in the Genesee Intermediate School District.

Sincerely,

David E. Spathelf
Superintendent

ML:kjm/sb
letter/leep3

Attachment: questionnaire

GENESEE INTERMEDIATE SCHOOL DISTRICT
Instructional Services
2413 West Maple Avenue
Flint, Michigan 48507

March 24, 1986

To: Local District Contacts

FROM: Marsha Leep
Gifted/Talented Consultant

RE: Student Profile Research Project

This memo is in regard to our earlier telephone conversation concerning the research I will be conducting in your school. As we discussed:

1. This research is being conducted to assist Genesee Intermediate School District in planning appropriate programs as well as to provide valuable information for the local school districts which can be used to identify strengths of their existing programs.

2. I will be gathering data from this year's seniors who have taken the ACT. In order to determine the number of students I will be surveying in your district, I need a count of seniors who have taken the ACT.

3. I will be at your school on _____ at _____ to have your students complete the questionnaire. (It will take approximately one class period.)

4. In order to assure the confidentiality of each participant, please have a list of the students' names which I will receive upon arrival. I will use the list to assign identification numbers. I will bring all materials needed to conduct the survey. You may ask students to bring #2 pencils.

5. I will need to receive a count from you by telephone prior to my visit indicating the number of students participating in the project.

6. Some of the information I will need to get from you, either the day I am in your district or at a later date, includes:
    a. courses required in grades 9-12
    b. electives offered in grades 9-12
    c. information on testing for high school students in your district
    d. total senior class count

ML:kjm

Genesee Intermediate School District

2413 W MAPLE AVENUE TELEPHONE (313) 767-4310 FLINT, MICHIGAN 48507

DEAR STUDENT:

You have been chosen to help out in a study. Other twelfth grade students in selected high schools throughout Genesee County will be doing the same thing. The study is designed to obtain some general background information about students attending our schools, what kind of courses they take, what kinds of extracurricular activities they are involved in as well as out-of-class accomplishments. In addition, I would like to know how students evaluate their high school experiences. During the course of this study I will also be looking at similar kinds of experiences of students in other countries.

You are being asked to complete one questionnaire. This will take approximately one class period. Your answers will help school officials in assessing the strengths and weaknesses of existing programs and in planning future programs. It would be helpful if everyone who is invited to participate would do so, but nothing will happen to you if you choose not to participate. This study will have nothing to do with your grades on your report card. All information collected will be treated with strict confidence and each participant will remain anonymous. A code will be used so no names will be known.

Thank you for helping me. I think you will enjoy it.

Sincerely,

Marsha Leep

Marsha Leep
Gifted/Talented Consultant

MJL:kjm
letter1 3-24-86
LEEP

GISD

Genesee Intermediate School District

2413 West Maple Avenue **Flint, Michigan 48507-3924** **(313) 768-4400**

July 22, 1986

Dear :

This letter is being written to you as the result of a meeting with members of my doctoral committee at Michigan State University. During the course of that meeting, I had made reference to items in regard to your research as reported in which is related to research that I am conducting as a part of my doctoral studies. At that time it was suggested that I contact you regarding some of the items in your research that are related to the topic of my study.

One component of my research is in comparative education. My focus is on gathering data on formal and informal educational experiences of selected high school students in the United States, the Federal Republic of Germany, and Japan. I am also interviewing significant educators from the three countries regarding the educational philosophy, organization, and structure of their respective school systems.

I am hopeful that the results of this study will provide baseline data to be used by appropriate educators, within Michigan and elsewhere, to assess the strengths and weaknesses of their respective educational systems. The Michigan Department of Education has expressed an interest in using this study as a model for other doctoral students and researchers in general to use as they expand upon the theme of international education research. Please see the enclosed copy of a letter to me from Dr. Phillip Runkel, Superintendent of Public Instruction for the State of Michigan.

Needless to say, I am very excited about the potential of obtaining more accurate and relevant data in regard to education in the two other countries which will be of use to the researchers, the media, and the community at large.

July 22, 1986

I have taken the liberty to include a condensed version of my Interview Form. I would be extremely grateful for any comments and opinions you would care to make in answering any or all of the questions.

I will call you during the next two weeks to answer questions you may have in regard to this letter and my research.

Sincerely,

Marsha Leep
Education Consultant

ML:dt
letter 7-22-86/LEEP5

Enclosures

APPENDIX B

INSTRUMENTATION

STUDENT PROFILE RESEARCH PROJECT
Genesee Intermediate School District
Spring, 1986

STUDENT BACKGROUND QUESTIONNAIRE

A-B Age
C Sex: 1 Male 2 Female K-N District Code_____

Instructions: While there is no fixed time limit for finishing the questions, you should work at a pace that will allow you to complete the questions in about 40 minutes.

PART I GENERAL BACKGROUND

1. How would you describe yourself?

   1 American Indian, Eskimo, or Aleut
   2 Black or Afro-American
   3 Chicano or Mexican-American
   4 Oriental, Filipino, or Asian-American
   5 Puerto Rican, Cuban, or Hispanic
   6 White or Caucasian
   7 Other (Specify:_____)

2. Please indicate the number in front of the region of the world in which you were born.

   1 Canada
   2 Central America
   3 South America
   4 Europe
   5 Asia
   6 Africa
   7 Australia
   8 Mexico
   9 United States
   10 Other (Specify:_____)

3. Indicate the highest level of formal education completed by your father or male guardian.

   1 None
   2 Some grade school
   3 Grade school
   4 Some high school
   5 High school diploma
   6 Business or trade school
   7 Some college
   8 Bachelor's degree
   9 Some graduate or professional school
   10 Graduate or professional degree

4. Indicate the highest level of formal education completed by your mother or female guardian.

   1 None
   2 Some grade school
   3 Grade school
   4 Some high school
   5 High school diploma
   6 Business or trade school
   7 Some college
   8 Bachelor's degree
   9 Some graduate or professional school
  10 Graduate or professional degree

5. How many hours a week do you usually spend watching television?

   1 Less than 1 hour
   2 1-5 hours
   3 6-10 hours
   4 11-15 hours
   5 16-20 hours
   6 More than 20 hours

6. When you watch television, which of the following do you watch?

   1 Detective/police adventures
   2 Musical performances
   3 Situation comedies
   4 Dramatic series
   5 Sports events
   6 Movies
   7 News
   8 Game shows
   9 Specials
  10 Talk shows

7. How often do you read a newspaper?

   1 Daily
   2 5-6 times a week
   3 3-4 times a week
   4 1-2 times a week
   5 Less than once a week

8. When you read a newspaper, which of the following do you usually read?

   1 Sports section
   2 Entertainment section
   3 Local news articles
   4 State news articles
   5 National news articles

8. (Cont'd)

   6 International news articles
   7 Financial section
   8 Home section
   9 Editorials
  10 Letters to the editor

9. Do you regularly read a newspaper that carries a good deal of international news? Indicate any that you read.

   1 The New York Times
   2 The Chicago Tribune
   3 The Wall Street Journal
   4 The Christian Science Monitor
   5 The Flint Journal
   6 The Detroit Free Press
   7 The Detroit News
   8 USA Today
   9 Other (Specify:_____)

10. Do you regularly read a weekly news magazine or newspaper? Indicate any that you read.

   1 Time
   2 Newsweek
   3 U.S. News and World Report
   4 Business Week
   5 Other (Specify:_____)

11. Do you <u>regularly</u> read a magazine devoted to a special interest (such as fashion, sports, photography, business, psychology, etc.)?

   1 NO
   2 YES

12. How many hours a week do you usually spend reading for pleasure?

   1 Less than 1 hour
   2 1-5 hours
   3 6-10 hours
   4 11-15 hours
   5 16-20 hours
   6 More than 20 hours

13. I prefer to attend the following type of college:

   1 Public college or university (4-year)
   2 Private college or university (4-year)
   3 Public community or junior college (2-year)
   4 Private junior college (2-year)
   5 Vocational-technical school (2-year or less)
   6 School of nursing

14. If you plan to attend college, what area of study is your major or intended major?

1 Agriculture
2 Art/Music
3 Biological Sciences/Physical Sciences
4 Business/Accounting/Finance
5 Education
6 Engineering
7 English/Drama/Communications
8 Mathematics
9 Social Sciences/History
10 I don't know.

PART II HIGH SCHOOL INFORMATION (Formal)
Items 16-36 concern information about your high school education and activities.

15. The number of students in my high school graduating class is

1 Fewer than 25
2 25-99
3 100-199
4 200-399
5 400-599
6 600-899
7 900 or more

16. The percentage of students in my high school who are of racial background similar to mine is

1 10% or less
2 Between 11% and 25%
3 Between 26% and 50%
4 Between 51% and 75%
5 Between 76% and 90%
6 91% or more

17. If you took the SAT, approximately what were your scores for the SAT Verbal?

1 200-390
2 400-520
3 530-650
4 600-800

18. If you took the SAT, approximately what were your scores for the SAT Math?

1 200-390
2 400-520
3 530-650
4 600-800

19. When you last took the ACT, approximately what were your scores?

ACT (composite)

1 1-15
2 16-20
3 21-25
4 26-36

20. My class rank in high school is (If you are not sure, give your best estimate.)

1 top quarter
2 second quarter
3 third quarter
4 fourth quarter

21. My overall high school average is

1 D- to D (0.5-0.9)
2 D to C- (1.0-1.4)
3 C- to C (1.5-1.9)
4 C to B- (2.0-2.4)
5 B- to B (2.5-2.9)
6 B to B+ (3.0-3.4)
7 A- to A (3.5-4.0)

22. The program of high school courses I took can best be described as

1 Business or commercial
2 Vocational-occupational
3 College preparatory
4 Other or general

Items 23-36 concern the number of years you will have studied certain subjects by the time you graduate from high school (grades 9-12). Use the responses below to answer all the items in this group.

1 Half-year
2 One year
3 One and a half years
4 Two years
5 Two and a half years
6 Three years
7 Three and a half years
8 Four years or more
9 I did not take any courses in the subject

23. English
24. Mathematics
25. Social studies (history, civics, geography, economics)

26. Natural sciences (biology, chemistry, physics)
27. Foreign language (Spanish)
28. Foreign language (German)
29. Foreign language (French)
30. Business or commercial
31. Vocational-occupational

While in high school, I have been enrolled in advanced placement, accelerated, or honors courses in the following areas. Use the responses below to answer all the items in this group.

1 Yes
2 No

32. English
33. Mathematics
34. Social studies
35. Natural sciences
36. Foreign language

PART III - HIGH SCHOOL INFORMATION (Informal)

A. HIGH SCHOOL EXTRACURRICULAR ACTIVITIES
Items 37-48 list student extracurricular activities (grades 9-12). Please answer 1 or 2 to each item on the list.

1 Yes, I participated in this activity
2 No, I did not participate in this activity

37. Instrumental music (band, orchestra)
38. Vocal music
39. Student government
40. Publications (newspaper, yearbook, literary magazine)
41. Debate
42. Departmental clubs (science club, math club, etc.)
43. Dramatics, theater, radio-TV
44. Intramural athletics
45. Varsity athletics
46. Political organizations
47. Special interest groups (ski club, sailing club, judo club, card section, drill teams, etc.)
48. School or community service organizations

B. HIGH SCHOOL OUT-OF-CLASS ACCOMPLISHMENTS
Items 49-106 deal with your high school out-of-class accomplishments (grades 9-12). Please respond 1 or 2 to each item.

1 Yes, applies to me
2 No, does not apply to me

<u>Leadership</u>

49. Was appointed to a student office
50. Actively campaigned to elect myself or another student to a school office

Leadership (Cont'd)

51. Participated in a school political group or campaign to change institutional rules, procedures, or policies
52. Participated in a nonschool political campaign
53. Was elected to one or more student offices
54. Received an award or special recognition for leadership (of any kind)

Music

55. Composed music
56. Performed with a professional musical group (orchestra, band, choral group)
57. Performed in a school musical group
58. Played a musical instrument
59. Received a superior rating in a state music contest
60. Participated in a state music contest

Speech

61. Placed first, second, or third in a regional or state speech or debate contest
62. Entered a school speech or debate contest
63. Had substantial roles in high school or church-sponsored plays
64. Had roles in plays (not high school or church-sponsored)
65. Appeared on radio or TV as a performer
66. Read for a part in a high school play

Art

67. Finished a work of art (painting, ceramics, sculpture, etc.) on my own (not as part of a course)
68. Exhibited a work of art at my school
69. Exhibited a work of art in a statewide or regional show
70. Exhibited a work of art in a city or county art show
71. Won a prize or award in an art competition at my high school
72. Won a prize or award in a city, county, or state artistic competition
73. Had photographs, drawings, or other artwork published in a public newspaper or magazine.

Writing

74. Worked on the staff of a school paper or yearbook
75. Had poems, stories, essays, or articles published in a school publication
76. Wrote an original but unpublished piece of creative writing on my own (not as a part of a course)
77. Had poems, stories, or articles published in a public newspaper or magazine (not school paper) or in a state or national high school anthology
78. Won literary award or prize for creative writing
79. Had a work of creative writing published in a public magazine or book
80. Had a work of creative writing published in a school literary magazine or newspaper

Science

81. Performed an independent scientific experiment (not as part of a course)
82. Participated in a National Science Foundation summer program for high school students
83. Won a prize or award (of any kind) for scientific work or study
84. Placed first, second, or third in a regional or state science contest
85. Placed first, second, or third in a school science contest
86. Participated in a scientific contest or talent search

Athletics

87. Participated in one or more varsity athletic team events (football, basketball, baseball, etc.) while attending high school
88. Earned a varsity letter in one or more sports in high school
89. Was appointed or elected cheerleader or captain of a varsity team in high school
90. Received all-city, league, county, or state team award (including honorable mention)
91. Participated in an organized athletic competition outside high school
92. Participated in two or more individual athletic activities (tennis, swimming, bowling, skiing, golf, etc.)

Community Service

93. Won recognition or an award for a club or organization activity (FFA, FHA, 4-H, Scouting, Boys' Club, Girls' Club)
94. Taught in a church or synagogue, or led a religious service on a regular basis
95. Worked as a volunteer aid in a hospital, clinic, or home
96. Was active in programs which helped my community or neighborhood develop pride in itself
97. Participated in a program to assist children or adults who were handicapped mentally, physically, educationally, or economically
98. Worked as a volunteer on a civic improvement project or in a voter education project
99. Received an award or recognition for any kind of community service

Work Experience

100. Held a regular part-time job (e.g., waitress, sales clerk, newspaper carrier, etc.)
101. Held a full-time paying job during the summer
102. Earned money by selling goods or services
103. Participated in a work-study, distributive education, cooperative work program while enrolled in high school
104. Started my own business or service
105. Supervised the work of others
106. Managed the financial affairs of some organization

PART IV EVALUATION OF HIGH SCHOOL EXPERIENCE

Items 107-120 ask you to rate certain aspects of your high school. Your name will not be identified with your responses. (A group report without names will be sent to high schools. Please try to be both frank and fair; answer in terms of your own experience or observations and not in terms of what you may have heard from other students. Use the following scale:

1 Satisfied, no change necessary
2 No strong feelings one way or the other
3 Dissatisfied, improvement is needed
4 No experience with this aspect of the school

107. Classroom instruction
108. Number and variety of course offerings
109. Grading practices and policies
110. Number and kinds of tests given
111. Guidance services provided by the school as a whole (teachers, guidance office, library, etc.)
112. School rules, regulations, and policies
113. Library or learning center
114. Laboratory facilities
115. Provision for students needing special assistance in improving skills in reading, math, etc.
116. Provision for academically outstanding students (e.g., honor programs, accelerated courses, etc.)
117. Adequacy of programs in career education and planning
118. How adequate do you feel your high school education has been?

1 Very inadequate
2 Below average
3 Average
4 Good
5 Excellent

119. How often did you study or discuss world problems or issues in your high school classes?

1 At least once a day
2 Once or twice a week
3 Less than once a week
4 Never

120. To what extent did your high school experiences outside of the classroom contribute to your awareness of world issues?

1 A great deal
2 Some
3 A little
4 I don't know.

Name:_____ Date:_____ Time:_____

GENESEE INTERMEDIATE SCHOOL DISTRICT

Student Research Project 1986

INTERVIEW FORM - United States

Transcribing and Recording Interview Results: Summary Form for Individual

1. To understand the ways in which education differs from one country to another, some writers have suggested it is first necessary to understand the educational philosophies that underlie the different systems. Do you think the philosophy which underlies the American system is significantly different from that which underlies the German and Japanese systems?

   _____ Yes _____ No

   a. If so, what are some examples of differences that you see?

   b. In your opinion, what are the strengths/weaknesses of the characteristics which are unique to the respective systems?

      Strengths:

      Weaknesses:

   c. Are there likely to be changes?

      _____ Yes _____ No

      Why?

c. Are there likely to be changes? (cont'd)

Why not?

2. What is your opinion in regard to the highly decentralized educational system that exists in the United States which is different from the highly centralized system that exists in Japan and the relatively strongly centralized system in Germany?

a. Strengths/weaknesses of a decentralized system?

Strengths:

Weaknesses:

b. Is the American decentralized system likely to change in the future?

_____ Yes _____ No

Why?

Why not?

b. Is the American decentralized system likely to change in the future? (cont'd)

If yes, in what ways?

c. Do you think the United States system would benefit by becoming more centralized?

_____ Yes _____ No

3. In the United States there is a variety and pattern in regard to the organization and structure of schools. In Japan there is a 6-3-3 pattern which is standard throughout the country. In Germany primary school concludes at the end of grade four. An orientation phase exists through the end of grade six. The secondary level begins with grade seven.

a. Is the United States "potpourri" grade structure a + or a - in your mind?

_____ + _____ -

b. Is the existing United States system likely to change?

_____ Yes _____ No

Why?

Why not?

To what degree?

b. Is the existing United States system likely to change? (cont'd)

In what direction?

4. At the end of grade nine in Japanese schools, students move to either academic or vocational/technical upper secondary schools. In Germany, at the end of grade four students move to either academic or vocational/technical kinds of programs. In the United States it appears that a larger percentage of the students enter comprehensive types of secondary schools beginning at grade nine/ten.

a. How would you describe the situation in the United States?

b. Do you see the situation in the United States as a + or - in your mind?

_____ + _____ -

c. Is the situation likely to change?

_____ Yes _____ No

Why?

Why not?

d. Any comments?

5. Testing plays a different role in the United States than it does in Japan or Germany. In Japan it plays a very important role in getting from lower secondary school to upper secondary school and then into a university. In Germany testing appears to play an important role in getting from primary school into secondary school and determining which type of school students will attend at the secondary level (e.g., academic, vocational/technical). In both instances the pattern is standardized throughout the country. Increasingly, in the United States at the state level in many states there is an emphasis on minimal competency testing in the basic skills (reading and mathematics). In the United States, whether students are accepted at prestigious private universities, state universities, or other less prestigious institutions of higher education is determined in large part by their scores on college board tests (ACT, SAT).

   a. What in your opinion, are the strengths/weaknesses of this emphasis on testing in the various countries?

      Strengths:

      Weaknesses:

   b. Are there likely to be changes in the future?

      _____ Yes _____ No

   c. If so, what kind of changes (e.g., emphasis on higher level thinking skills, testing in the content areas)?

6. In the United States there is a strong emphasis on reading, mathematics and science at all levels (K-12). There is less emphasis on the idea of a balanced curriculum than what appears to be the case in Japan and Germany.

   a. In your opinion, is this true?

      _____ Yes _____ No

b. If true, what are the advantages/disadvantages?

Advantages:

Disadvantages:

c. Are changes likely to occur?

_____ Yes _____ No

Why?

Why not?

What types?

7. Much has been made of the longer school day, longer school year in Germany and Japan and the fact that students in these countries have much more homework than students in the United States. Are the reports accurate?

_____ Yes _____ No

a. What is your opinion regarding this?

b. Is this a good thing?

_____ Yes _____ No

c. Is it likely to change?

_____ Yes _____ No

Why?

Why not?

If yes, what direction?

8. There have been many reports in regard to the parallel system of schooling in Japan, tutoring schools (juku). In your opinion, to what degree are students in schools in the United States tutored (e.g., workshops/ institutes preparing for ACT/SAT)?

a. Are there likely to be changes?

_____ Yes _____ No

Why?

a. Are there likely to be changes? (cont'd)

Why not?

If yes, what direction?

9. In United States high schools, certain extracurricular activities are offered during the school day (band, chorus, National Honor Society, etc.). In Germany, extracurricular activities are not even connected with the school.

a. Is this a true picture of United States schools?

_____ Yes _____ No

b. What are the strengths and weaknesses of the situation in the United States?

Strengths:

Weaknesses:

c. Is it likely to change?

_____ Yes _____ No

Why?

c. Is it likely to change? (cont'd)

Why not?

What types of changes?

10. The national reports have stated that competitive athletics play a very large role in United States high schools. This appears to be different from the role they play in Japan (round robin/tournament competition in Japan; league/tournament competition in the United States). It is also different from Germany, where there is no school-related athletic competition.

a. What is your opinion of the situations?

b. Are there likely to be changes?

_____ Yes _____ No

Why?

Why not?

If yes, what types of changes?

11. In Boyer's book, High School: A Report on Secondary Education in America, he recommends a required volunteer community service type of experience for all high school students.

    a. What is your opinion of this recommendation?

    b. To what degree do you think this might already be occurring?

12. In the reading I have done, a large number of secondary students in the United States work part-time for pay. As a result of my interviews thus far, it appears that very few Japanese or German secondary students work part-time.

    a. What is your opinion on the situation in the United States?

    b. Is the situation likely to change?

    _____ Yes _____ No

    Why?

    Why not?

    If yes, what direction?

APPENDIX C

LIST OF INDIVIDUALS INTERVIEWED

List of Individuals Interviewed

The individuals selected to be interviewed were people who had lived and/or studied extensively in one or more of the three countries included in this study; those individuals who had studied, written, and/or conducted research that focused on one or more of the countries studied; and individuals who, in their professional roles, had acquired knowledge and understanding about education in one or more of the countries included in this study.

Japan

Mr. Wakei Nakai
High School English Teacher
Shiga, Japan

Mr. Shinji Tanaka
Elementary School Teacher
Shiga, Japan

Mr. Hitoshi Iwatani
High School English Teacher
Shiga, Japan

All of the teachers listed above were exchange teachers in the United States at the time they were interviewed.

Mr. Akinori Shimotori (May 1986)
Mr. Tomigi Sugawa (May 1987)
Educational Attache
First Secretary of the Embassy of Japan
Washington, D.C.

Ms. Chiyoko Oda
Education Specialist
Japan Informational Services
Chicago, Illinois

Mr. Tadashi Chono
Principal
Chicago Futabaki Day School
Niles, Illinois

Dr. Hiroshi Okano
Administrator and Researcher
Chicago Futabaki Day School
Niles, Illinois

Dr. Robert Leestma
Director, U.S. Study of Education in Japan
Washington, D.C.

Dr. Harold Stevenson
Department of Psychology and Human Growth and Development
University of Michigan
Ann Arbor, Michigan

Professor Nobuo K. Shimahara
Assistant Dean, Graduate School of Education
Rutgers University
New Brunswick, New Jersey

Germany

Mr. Klaus Soering
Educational Attache
Vice-Consul, Federal Republic of Germany
Detroit, Michigan

Mr. Wolfgang Schnitzler
German K-12 Education Specialist
State Department of Education
New York, New York

Ms. Tess Wieland
Elementary School Teacher
Waverly Schools
Lansing, Michigan

Mr. Juergen Ziegler
Principal
German Government School
Potomac, Maryland

Mr. Gunter Zwingelberg
Mathematics Teacher
(Niedersachsen)

Mr. Hans Korb
Mathematics and Physics Teacher
(Berlin)

Mr. Werner Dunst
English and French Teacher
(Bavaria)

Dr. Walter Biedermann
German, French, and Philosophy Teacher
(Hessen)

All of the teachers listed above taught at the German Government School in Potomac, Maryland. Their permanent teaching assignments in Germany are indicated in parentheses.

Mr. Juergen Hildebrand
Principal
German School of New York
White Plains, New York

Mr. Peter Woelling
Assistant Principal
(Bavaria)

Mr. Matthias Steinberg
Secondary School German, PE, and Politics Teacher
(Niedersachsen)

Mr. Roland Kohls
Secondary School Physics, Chemistry, and Mathematics Teacher
(Baden-Wurttemberg)

All of the teachers listed above taught at the German School of New York in White Plains, New York. Their permanent teaching assignments in Germany are indicated in parentheses.

United States

Dr. Robert Amble
Superintendent
Davison Community Schools
Davison, Michigan

Mr. Harry Avesian
High School Principal
Owosso Public Schools
Owosso, Michigan

Mr. Robert Skinner
High School History Teacher
Essexville/Hampton Public Schools
Essexville, Michigan

Dr. Richard Halik
Superintendent
Lansing Public Schools
Lansing, Michigan

Ms. Rachael E. Moreno
Associate Superintendent
Genesee Intermediate School District
Flint, Michigan

Dr. John W. Porter
President
Eastern Michigan University
Ypsilanti, Michigan

Dr. Ernest L. Boyer
President
The Carnegie Foundation for the Advancement of Teaching
Princeton, New Jersey

Professor Theodore Sizer
Chairman, Education Department
Brown University
Providence, Rhode Island

Mr. Joe H. Stroud
Editor
The Detroit Free Press
Detroit, Michigan

APPENDIX D

SUPPLEMENTARY TABLES

Table D.1.--Minimum requirements (in credit units) for high school graduation, United States, 1984 (1 credit = 1 year).

State	Total	E	SS	M	S	Other
Alabama	22	4	3	2	2	1 PE; 0.5 each CP, personal management, H (E1984)
Alaska	21	4	3	2	2	1 PE or H (1984, E1985)
Arizona	18	4		2	2	(1983, E1987)
Arkansas	20	4	3			5 M&S; 0.5 each PE, H, FA (1984)
California	23	3	2	2	1	FA or FL (1983, E1986)
Colorado	18					Local
Connecticut	20	4	3	3	2	PE and arts or VE (1984, E1986)
Delaware	18			2	2	(1983, E1987)
Washington, D.C.	20.5					(E1984)
Florida	24	4	3	3	3	0.5 each PE, H, FA, VE (E1987)
Georgia	20	4	3	2	2	1 PE-H, CP, FA, or VE (E1988)
Hawaii	20	4	4	2	2	1 PE; 0.5 H; 0.5 guidance/career (E1983)
Idaho	20	4		2		Additional courses in S, speech, reading, history (E1984)
Illinois	16	3	2	2	1	1 art, music, VE or FL (1983)
Indiana	19	4		2	2	1983
Iowa						Local
Kansas	21		3	2	2	(1983; E1989)
Kentucky	20	4	2	3	2	1 H, PE (1983, E1984)
Louisiana	23			3	3	1 world history; 0.5 CP (E1989)
Maine	16		2	2	2	1 FA, CP (1984, E1989)
Maryland	20			2	2	
Massachusetts						Local
Michigan						Local
Minnesota	15					Local
Mississippi	16			1	1	
Missouri	22	3	2	2	2	1 FA, practical arts, PE (E1987)
Montana	20					(1984, E1989)
Nebraska	16					
Nevada	20	3		2	2	(1982)
New Hampshire	19.75	4	2.5	2	2	1 PE, 0.5 each arts, CP; 0.25 H (1984, E1989)

Table D.1.--Continued.

New Jersey	20	4	2	2	1	4 PE; 1 FA, performing or practical arts; 0.5 career exploration (1983)
New Mexico	20	4	2	2	2	1 FA; 1 PE (1983; E1987)
New York	18.5	4	4	2	2	1 art or music; 0.5 H (1984, E1989)
North Carolina	20	4	2	2	2	1 PE, H (1983)
North Dakota						Local
Ohio	18			2	1	(1982)
Oklahoma	22	4	2	2	2	(1983, E1987)
Oregon	21			2	2	(1984)
Pennsylvania		4	3	3	3	2 art, humanities (1983, E1985)
Rhode Island		4	2	2	2	(1985)
South Carolina	20	4	3	3	2	1 PE (1984)
South Dakota	20	4	3	2	2	0.5 CP; 0.5 FA (1983, E1988)
Tennessee	18			2	2	(1983, E1987)
Texas	21	4	2.5	3	2	0.5 economics, 1.5 PE, 0.5 H (E1986)
Utah	15			1	1	All graduates must be CP literate (1983)
Vermont	15.5	4	3	3	3	1 art; 1.5 PE & CP (E1985)
Virginia	20	4	2	2	2	1 more in M or S; 1 PE (1983, E1984)
Washington	29	3		2	2	1 history & U.S. government; 0.5 state history & government; 1 contemporary world history; 1 occupational education; 2 PE
West Virginia	20	4	3	2	1	(1981)
Wisconsin		4	3	2	2	1.5 PE, 0.5 CP, H (E1989)
Wyoming	18					

Sources: *Education Week* (1983, pp. 6-17; 1984a, pp. 8, 14; 1985, pp. 11-29); U.S. Department of Education (1984, pp. 173-77); data for New York: *Livonia Gazette* (1984, p. 4); data for Washington State: *Your Public Schools* (1984, p. 17).

Notes: Year of enactment and year requirements become effective (E) are in parentheses. Blank cell may indicate locally set requirements ("local"), no requirement, or no data available.

Key to abbreviations: CP = computer science or literacy; E = English or language arts; FA = fine arts; FL = foreign language; H = health; M = mathematics; PE = physical education; S = science; SS = social studies.

Table D.2.--Sample of a school time table at a lower secondary school in Japan.

Grade 7 (1st grade of lower secondary school)
(a sample class for April 1985-March 1986

Monday

1. Japanese language
2. Social studies (geography)
3. Science
4. Music
5. Physical education

Tuesday

1. Science
2. Japanese language
3. English
4. Social studies (geography)
5. Mathematics

Wednesday

1. Fine arts
2. Fine arts
3. English
4. Physical education
5. Long homeroom

Thursday

1. Social studies (geography)
2. Mathematics
3. Science
4. Music
5. Japanese language

Friday

1. Social studies (geography)
2. Japanese language
3. Physical education
4. English
5. Mathematics
6. Long homeroom

Saturday

1. Calligraphy
2. Industrial arts for boys
   Home-making for girls
3. Industrial arts for boys
   Home-making for girls

Table D.2.--Continued.

Grade 8 (2nd grade of lower secondary school)
(A sample class for April 1985-March 1986)

Monday

1. Science
2. Mathematics
3. Social studies
   (World & Japanese history)
4. English
5. Japanese language

Tuesday

1. Japanese language
2. Mathematics
3. Social studies
   (World & Japanese history)
4. Music
5. Physical education

Wednesday

1. English
2. Science
3. Health
4. Japanese language
5. Long homeroom

Thursday

1. English
2. Social studies
   (World & Japanese history)
3. Industrial arts for boys
   Home-making for girls
4. Industrial arts for boys
   Home-making for girls
5. Mathematics

Friday

1. Japanese language
2. Music
3. Mathematics
4. Physical education
5. Science
6. Long homeroom

Saturday

1. Fine arts
2. Fine arts
3. Social studies
   (World & Japanese history)

Table D.2.--Continued.

Grade 9 (3rd grade of lower secondary school)
(A sample class for April 1985-March 1986)

Monday

1. Social studies (Politics & Economics)
2. Japanese language
3. English
4. Mathematics
5. Industrial arts for boys / Home-making for girls

Tuesday

1. Physical education
2. Music
3. Mathematics
4. Science 1 (Physics & Chemistry)
5. English

Wednesday

1. Industrial arts for boys / Home-making for girls
2. Industrial arts for boys / Home-making for girls
3. Japanese language
4. Health
5. Long homeroom

Thursday

1. Science 2 (Biology & Earth sciences)
2. English
3. Fine arts
4. Japanese language
5. Mathematics

Friday

1. Physical education
2. Social studies (Politics & Economics)
3. Japanese language
4. Mathematics
5. Science 2 (Biology & Earth sciences)
6. Long homeroom

Saturday

1. Science 1 (Physics & Chemistry)
2. English
3. Social studies (Politics & Economics)

Data Presentation: Shuichi Makayama, Associate Prof. of Geography, Dept. of Social Studies, Faculty of Education, University of Hiroshima

Name of School: Fuchu Lower Secondary School, Hiroshima Prefecture

Category of School: Public, Town-municipal and Full-time

One School Year: 35 weeks

One Standard Unit Hour: 50 minutes of teaching

Table D.3.--Sample of a school time table at an upper secondary school.

Grade 10 (1st grade of upper secondary school)
(A sample class for April 1985-March 1986)

Monday

1. Mathematics 1
2. Health
3. Science 1
4. Japanese language 1
5. English 1
6. Physical education

Tuesday

1. English 1
2. Japanese classics
3. Music
4. Music
5. Physical education
6. Mathematics 1

Wednesday

1. Preparatory period
2. Contemporary society
3. Japanese language 1
4. English 1
5. Science 1
6. Mathematics 1

Thursday

1. Japanese classics
2. English 1
3. Science 1
4. Mathematics 1
5. Contemporary society
6. Physical education

Friday

1. English 1
2. Science 1
3. Physical education
4. Long homeroom
5. Contemporary society
6. Mathematics 1

Saturday

1. Mathematics 1
2. Contemporary society
3. English 1
4. Japanese language 1

Table D.3.--Continued.

Grade 11 (2nd grade of upper secondary school)
(A sample class for April 1985-March 1986)

HUMANITIES COURSE

Monday

1. Japanese language II
2. Japanese classics
3. Physics
4. Physical education
5. English II
6. English II

Tuesday

1. English II
2. Algebra and geometry
3. World history
4. Chemistry
5. Music
6. Music

Wednesday

1. Preparatory period
2. World history
3. Basic analytical geometry
4. Japanese language II
5. Physics
6. Physical education

Thursday

1. Algebra and geometry
2. Chemistry
3. Health
4. English II
5. World history
6. Japanese classics

Friday

1. Basic analytical geometry
2. Physical education
3. English II
4. Long homeroom
5. Japanese language II
6. English II

Saturday

1. English II
2. World history
3. Algebra and geometry
4. Physical education

Table D.3.--Continued.

Grade 11 (2nd grade of upper secondary school)
(A sample class for April 1985-March 1986)

SCIENCES COURSE

Monday

1. Physical education
2. World history
3. Basic analytical geometry
4. Japanese language II
5. English II
6. Chemistry

Tuesday

1. World history
2. Algebra and geometry
3. Japanese classics
4. Physics
5. English II
6. Health

Wednesday

1. Preparatory period
2. Physical education
3. Physics
4. Japanese language II
5. Basic analytical geometry
6. Japanese classics

Thursday

1. Algebra and geometry
2. Basic analytical geometry
3. Music
4. Music
5. English II
6. Japanese language II

Friday

1. Physics
2. English II
3. Chemistry
4. Long homeroom
5. Physical education
6. World history

Saturday

1. World history
2. English II
3. Algebra and geometry
4. Physical education

Table D.3.--Continued.

Grade 12 (3rd grade of upper secondary school)
(A sample class for April 1985-March 1986)

HUMANITIES COURSE

Monday

1. Basic analytical geometry
2. Physical education
3. Japanese history or geography
4. English IIB
5. Japanese classics 5. Probability and statistics
6. Probability and statistics

Tuesday

1. Physical education
2. Japanese classics
3. Modern Japanese
4. Physics
5. Politics and economics
6. Japanese history or geography

Wednesday

1. Preparatory period
2. English IIB
3. Modern Japanese
4. English IIC
5. Politics and economics
6. Japanese history or geography

Thursday

1. English II
2. Modern Japanese
3. Probability and statistics
4. Physics
5. Japanese classics
6. Japanese history or geography

Friday

1. English II
2. Basic analytical geometry
3. Physics
4. Long homeroom
5. Probability and statistics
6. Japanese history or geog.

Saturday

1. Physical education
2. Physics
3. English IIB
4. Japanese classics

Table D.3.--Continued.

Grade 12 (3rd grade of upper secondary school)
(A sample class for April 1985-March 1986)

SCIENCES COURSE

Monday

1. Japanese history or geography
2. English IIB
3. Physics
4. Modern Japanese
5. Basic analytical geometry

Tuesday

1. English IIB
2. Differentiation and integration
3. Physical education
4. Japanese history or geography
5. Basic analytical geometry
6. Chemistry

Wednesday

1. Preparatory period
2. English II
3. Physical education
4. Modern Japanese
5. Physics
6. Probability and statistics

Thursday

1. English IIC
2. Physical education
3. Physics
4. Japanese history or geog.
5. Chemistry
6. Differentiation and integration

Friday

1. Modern Japanese
2. Japanese history or geog.
3. Chemistry
4. Long homeroom
5. Physics
6. Probability and statistics

Saturday

1. English IIB
2. Probability and statistics
3. English II
4. Chemistry

Data Presentation: Shuichi Nakayama, Assoc. Prof. of Geography, Dept. of Social Studies, Faculty of Education, University of Hiroshima

Name of School: Hatsukaichi Nishi Upper Secondary School, Hiroshima Prefecture

Category of School: Public, Prefectural, Full-time, and Academic (General course) School

One School Year: 35 weeks

One Standard Unit Hour: 50 minutes of teaching

Elective subjects are reserved at such subject areas as Social Studies, Science and Arts.

APPENDIX E

FORMULA FOR ASSIGNING STUDENTS TO ACADEMIC-ACHIEVEMENT GROUPS

STUDENT PROFILE RESEARCH PROJECT

Formula for Assigning Students to Academic-Achievement Groups

For purposes of comparison, Genesee Intermediate School District students will be divided into academic-achievement groups according to a formula based on grade point average (GPA) and American College Test (ACT) scores.

ACT Score	GPA	Combined Score	Academic Group
1-15 = 1	0.5-1.4 = 1	0-4	1
16-20 = 2	1.5-2.4 = 2	5	2
21-25 = 3	2.5-3.4 = 3	6	3
26-36 = 4	3.5-4.0 = 4	7-8	4

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