

ADVANTAGES AND DISADVANTAGES OF VARIOUS GRADE-LEVEL ORGANIZATIONS

The grade-level organization of the American school is characterized not by a single uniform pattern but by a variety of grade configurations. Each of these grade configurations has its advantages and disadvantages which have varying weights and influence in local districts as a consequence of local circumstances. For schools districts seeking a definitive answer on “the best” grade-level organization, no definitive answer exists. What exists are various lists of the pros and cons of each grade-level pattern which must be examined and evaluated in light of each local district’s needs.

Advantages and Disadvantages

In 1978, the Jefferson County Public Schools in Kentucky conducted a review of the advantages and disadvantages of the most popular grade-level structures in use. The Mineola Union Free School District also completed such a study in 1980. In 1981, the Spencerport Central School District undertook a similar review of various grade-level organizations and prepared a listing of the various advantages and disadvantages. These advantages and disadvantages of various grade-level configurations identified by these three studies are listed as follows. In reviewing the listings, it needs to be pointed out that an advantage identified by one district may well be, given circumstances, a disadvantage for another. Any of the suggested advantages and disadvantages must be examined from the perspective of the local school district, its needs, circumstances, and situations.

The 8-4 Plan (Grades K-S, 9-12). The 8-4 plan dominated other plans from the 1920’s through the 1950’s. The four-year high schools enjoyed national popularity for over 40 years, but began to be phased out in favor of the three-year high school, and then again reappeared with the advent of the middle school movement. This plan created large elementary schools (grades 1-8) and grouped pupils in their childhood years with early adolescents, causing educators to move to other organization plans.

Advantages

- Pupils in an 8-4 grade—level configuration would be kept in the elementary school environment longer than those pupils in most other grade-level patterns; thus, the change from an elementary education program to a secondary education program would come later when the pupil would be better prepared to cope with it.
- More emphasis could be given to the traditional so called fundamentals for students in the K-S school; the teacher would be with the pupil for the entire day or most of it and thus could provide better and more continuous instruction and guidance.
- Articulation between the elementary education program and secondary education program could be easily achieved, since only one bridge would be required. Other patterns such as the 6-2-4 plan would require two bridges.
- With pupils remaining longer in contact with their elementary school and other elementary students, pressure from older students to “grow’ up” socially would occur later.

- Home-school cooperation might be more easily attained, particularly at the elementary (K-8) level since parents would have many years to develop a relationship with and attachment to the school, the staff, and the administration. *Staff*, administration and students could get to know each other very well.
- Since K-8 schools would probably be nearer the home of the pupil, transportation problems and costs could conceivably be less for students in grades seven and eight when compared to the costs of transporting seventh and eighth graders in other grade—level patterns such as the 6-3-3 or 6-2-4.
- The 8-4 pattern could afford an opportunity for a broader curriculum offering in the high schools than would such grade-level patterns as the 6-3-3 plan as a natural result of developing curriculum for four grades rather than three.

Disadvantages

- The curriculum and program of activities for grades seven and eight in the 8-4 plan could be narrower than the curriculum in the middle grades of a 6-3-3, 6-2-4 or 5-3-4 pattern (without or with much less adequate libraries, shops, science rooms, physical education facilities, homemaking rooms, arts and crafts rooms, guidance provisions) and thus would provide for the needs of these pupils much less adequately. In addition, the opportunities of pupils in grades kindergarten to six might be seriously diminished by making provisions for the older pupils; to provide equivalent opportunity, both capital outlay and current expense costs would tend to be considerably greater.
- Exploratory courses, such as industrial arts, home economics and foreign languages would be more costly if brought to the elementary school than if centralized in a junior high or middle school. If an enriched program was attempted in the K-S schools, it might under certain circumstances and in a number of schools, call for considerable duplication of special rooms and equipment which would not be used fully. Staffing costs in special areas for grade 6, 7 and 8 would be higher than in a centralized model such as the 5-3-4 plan.
- Elementary teachers for grades seven and eight in the 8-4 plan might be difficult to find given existing tenure areas and certification requirements in New York State.
- With pupils forced to make a rapid adjustment from elementary to high school, the gap between elementary and secondary education might easily be so wide that it would be extremely difficult for students to bridge. Adequate guidance and necessary experience to facilitate bridging the gap to secondary education might be difficult to provide.
 - Early adolescents would be denied a school of their own and a broader curriculum offering appropriate to their needs. In addition, the seventh and eighth grade social scene may cause difficulty for the elementary school children.
 - Elementary schools spanning K-S might become too large with students and teachers getting lost in the crowd.
 - Extracurricular activities, particularly interschool athletics, might suffer given the need to address the requirements of all students grades K-S rather than a more limited grade span such as K-5, 6-8, 9-12.

The 6—6 Plan (Grades K-6, 7-12). This organizational plan has been used extensively throughout the United States and may still be found in many districts. Prior to the 1960's, many districts began to recognize the need for the early adolescent to be housed in a separate facility. This awareness started the movement away from the 6-6 plan to the 6-3-3 plan. Many districts have been reluctant to remove 7th and 8th grades because it would leave their high schools underused, and would require two separate facilities.

Advantages

- The secondary program in the 6-6 plan would provide an educational continuity for a longer period of time than any other of the grade-level configurations and a broader range of courses for students in the secondary school. A continuity of staff (e.g., guidance can follow student for six years) would exist, and the entire secondary staff for grades 6 to 12 could work together longer. The learning environment could be standardized for the full six years of secondary school.
- Earlier competition and a breakaway from the elementary school would be provided as compared to the 8-4 plan. More mature 12 to 14 year olds would have an opportunity to interact with older students, while immature sixth-graders would have an additional year in the elementary school as compared to the 5-3-4 plan or the 4-4-4 plan.
- The secondary school would be able to provide a subject-centered program with specialists to teach particular courses. A wider base for staff flexibility would exist than with almost any other grade-level pattern with staff also more flexible for extracurricular activities. More electives could be possible for students. A team approach to solving educational problems would be possible; peer counseling and tutorial programs could be easily administered.
- Articulation between the elementary education program and secondary education program would be more easily achieved, since only one bridge would be required than in other patterns that require two bridges (e.g., the 6-2-4 plan).
- The 6-6 plan is congruent with New York State's teacher training and teacher certification requirements and the State Education Department regulations which are based upon a K-6, 7-12 split.

Disadvantages

- This grade structure would force an earlier break from the elementary school than the 8-4 plan and would create larger secondary schools than in other grade—level patterns.
- Pupils between 11 and 14 years of age might be pressured to place their childhood behind them as a result of constant interaction between young adults and early adolescents.
- The 6-6 plan almost mandates a subject-centered program for the 6 years of secondary school. Teachers would be more subject-matter than child-oriented, and students would have little opportunity for close identification with a teacher. Departmentalization would be required and could mean decreased flexibility of teachers to explore a variety of subject areas.

- Seventh and eighth graders could be short-changed on extracurricular activities since the focus might well be on students in grades 9—12. There could also be less personal attention to seventh and eighth grade students by guidance and other supportive staff than to students in grades 9-12.

The 6-3—3 Plan (Grades K-6, 7-9, 10-12). By the 1960's, this plan had become by far the most popular, succeeding the 8-4 plan. It emerged as a result of educators' recognition of the special needs of the early adolescent. The plan successfully existed in many districts for several years until more recent research studies revealed two major shortcomings: (1) ninth graders were more like the 10th, 11th, and 12th graders and (2) the junior high schools were becoming more like high schools. These findings, in part, caused the demise of the junior high and the emergence of the middle school movement.

Advantages

- The long stay in one elementary school compared to the 5-3—4 plan or the 4-4-4 plan would facilitate better relationships for pupils, staff and parents and would maintain a neighborhood school concept.
- Interaction among a wider range of age levels would be provided in the elementary school compared with the 5-3-4 plan or the 4-4-4 plan, with fifth and sixth graders able to provide appropriate role models for younger students. Early adolescents in the 7th, 8th and 9th grade school and young adults in the 10th, 11th and 12th grade school would be given schools of their own. Leadership opportunities would be available to ninth graders as opposed to being at the “bottom of the ladder” in a 5-3—4 or 6-2-4 pattern.
- The 6-3-3 plan would provide for a gradual change from self-contained classrooms to complete departmentalization. A counseling program for students in grades 7, 8 and 9 could be offered; for grades 7, 8 and 9 a better, more appropriate organization of academic studies could be developed with specialists to teach subjects. The 6-3-3 plan would allow for a subject-centered program in the upper grades.
- The 6-3-3 plan could enable the school to develop a program of extracurricular activities and to provide experiences and leadership specifically for early adolescents: pupils in grades 7, 8 and 9 could have pride in a school of their own.
- The 6-3-3 plan is congruent with New York State's teacher training and teacher certification requirements, and State Education Department regulations which are based upon a K-6, 7-12 split.

Disadvantages

- Ninth graders are physically different than seventh and eighth graders. Two thirds of the girls and one third of the boys in the eighth grade have gone through puberty. All, or almost all, of the ninth grade boys and girls have gone through puberty. A ninth grader is too sophisticated for seventh and eighth grade children who want to imitate ninth graders and grow up too fast. Also, some sixth grade students can be negative role models for younger children.
- Pupils between 12 and 14 years of age could be pressured to place their childhood behind them; the 6-3-3 plan could force an immediate break from elementary schools which might make it difficult for some pupils to adjust to the new school situation.

- In the 6-3-3 plan the possibilities for varied programs in seventh and eighth grades might be limited by the ninth-grade Carnegie unit scheduling requirements. The 10th, 11th and 12th grade school could have fewer course offerings because of the lack of a 9th grade. A 6-3-3 pattern could force limited course offerings, especially for the academically talented and gifted. When ninth grade is separated from the 10th, 11th and 12th grades, certain courses and equipment must be duplicated resulting in greater costs than plans which have grades 9, 10, 11 and 12 together in one school.
- Specialized curriculum offerings would tend to make teachers more subject matter conscious than child conscious; the 6-3-3 plan might not allow sufficient identification with a teacher for those secondary school pupils needing individual attention.
- Sometimes a junior high school is a “little high school” and not a school with its own identity; it has “junior” status. Some parents and pupils feel that a junior high school “doesn’t count,” or at least not the 7th and 8th grades.

The 5-3-4 Plan (Grades K-i, 6-8, 9-12). The 5-3-4 plan is the most generally accepted plan presently being implemented in the United States. In 1974, more than 66% of all middle schools housed grades 6 through 8.

Advantages

- Organizing grade 6 students with students in grades 7 and 8 supports many research findings which show that today youngsters enter adolescence a year earlier than they did 50 years ago due to better nutrition and improved socioeconomic conditions.

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- Students’ ages in a 6th, 7th and 8th grade school would more nearly parallel the period of human growth and development between childhood and adolescence called transcendence. Research indicates children are in pubescence between ages 11 and 13, the ages of students in grades 6-8.
- The 5-3-4 plan would group pupils who are more alike than either elementary or secondary age pupils. This middle age group would need personal attention which they would not receive sufficiently in any of the other organizations. These students are at an awkward stage and would need to be together with excellent teaching personnel.
- Students in a 6th, 7th and 8th grade school are at an academic age where they would need reinforcement and extension of skills through application (i.e., a continuation and extension of basic education). Pupils would be exposed to various areas of specialization at an earlier age on an exploratory basis. Specialists would be available to help sixth graders branch out easier than they might be able to in an elementary school. Sixth graders would be provided the opportunity to use specialized facilities such as science labs, home economics rooms, and industrial arts shops. Sixth graders would receive greater stimulation and departmentalization of teaching and special facilities and equipment, e.g., shops and labs, to advance according to their ability.
- The 5-3-4 plan would facilitate a flexibility in grouping children for instructional purposes and would afford an opportunity for a broader curriculum offering in the high school than does the 6-3-3 plan. The restraint of organizing part of a school to meet high school graduation requirements (Carnegie units) required in grade 9 of the 6-3-3 pattern would be

removed. College admission and state high school graduation requirements are based upon the assumption of a 9-12 program.

- The 5-3-4 pattern would provide orderly transition from elementary school methods and materials to secondary school methods, materials and complete departmentalization (i.e., from self-contained to a departmentalized environment).
- Emphasis on parties, dances and competitive athletics for students in grades 7 and 8 would be reduced compared with the 6-6 plan in which the students would participate in many secondary school activities.
- The leadership advantages given to sixth graders in a 6-3-3, 6-2-4, or 6-6 organization could be given to fifth graders in the 5-3-4 plan.
- A transitional school should have at least three grade levels in it to allow sufficient time for the students to develop an identity with the building and for the faculty to know and work with the students. Continued articulation of 9-12 educational programs in all areas, curricular and co— curricular including athletics, would be facilitated.
- Today~ ninth graders are more mature and sophisticated than those of 50 years ago, when the junior high school was created, and can handle and profit from the high school and extracurricular pressures. The end of eighth grade is a natural developmental break for youth. Many ninth graders *are* mature enough to fit in and profit by the high school program. They feel like and want to be senior high school students. The 5-3-4 pattern would provide opportunity for advanced ninth graders to take higher level courses without traveling to another school.
 - The middle school would have an identity of its own which would enhance pupils' sense of belonging. Children could have a fresh start in a new school one year earlier than students in either the 6-3-3 plan or the 6-6 plan. That is, they could detach themselves from old labels, make new friends and be introduced to new subjects and teaching styles.

Disadvantages

- Some sixth graders might be better off in the protective environment of an elementary school than in a 6th, 7th and 8th grade school. Some sixth graders might be too young to be pushed very hard academically or socially.
- Sixth graders would lose the benefit of an elementary school program and would not be available for safety patrol, student council and other leadership roles.
- The elementary school challenge to teachers of working with children at the sixth grade level would be missing.
- There might be a scaling down of standards in a K-S school (especially in chorus, band, and physical education) because the sixth grade would be absent. Some programs (i.e., instrumental music) might have to be extended into third grade in order to have a 3-year program in the building. Many third graders might be too young for such programs.
- The leadership role carried by ninth grade students in a 6-3—3 pattern could be reduced or eliminated.

- The difference between age 14 (ninth grade) and age 18 (twelfth grade) is great which could make it very difficult for some ninth graders to adjust to the new school. Some ninth graders might be too young and immature to be placed with senior high students. The academic pressure caused by teachers who are accustomed to working with senior high students and the competition of advanced senior high students might be too much for some ninth graders. Many ninth graders might not be able to accept the social pressure placed on them in a 9-12 grade school.

The 4-4-4 Plan (Grades K-4, 5-8, 9-12). The advantages and disadvantages of the 4-4-4 plan are virtually the same as those stated for the 5-3—4 plan. The appropriateness of the inclusion of the fifth grade in middle schools has raised questions among educators. Although some research indicates that many children do enter pubescence at ages 9 and 10, many research reports suggest this occurs between ages 11 and 13.

Advantages

- Organizing students in grades 5, 6, 7 and 3 together supports many research findings which show that today youngsters enter adolescence a year earlier than they did 50 years ago due to better nutrition and improved socioeconomic conditions.
- The 4-4-4 plan would group pupils who are more alike than either elementary or secondary age pupils. This middle age group would need personal attention which they would not receive sufficiently in any of the other organizations. These students are at an awkward stage and would need to be together with excellent teaching personnel.
- Students in a 5th, 6th, 7th and 8th grade school are at an academic age where they would need reinforcement and extension of skills through application (i.e., a continuation and extension of basic education). Pupils would be exposed to various areas of specialization at an earlier age on an exploratory basis. Specialists would be available to help, sixth graders branch out easier than they might be able to in an elementary school. Sixth graders would be provided the opportunity to use specialized facilities such as science labs, home economics rooms, and industrial arts shops. Sixth graders would receive greater stimulation and departmentalization of teaching and special facilities and equipment, e.g., shops and labs, to advance according to their ability.
- The 4-4-4 plan would facilitate a flexibility in grouping children for instructional purposes and would afford an opportunity for a broader curriculum offering in the high school than does the 6-3-3 plan. The restraint of organizing part of a school to meet high school graduation requirements (Carnegie units) required in grade 9 of the 6-3-3 pattern would be removed. College admission and state high school graduation requirements are based upon the assumption of a 9-12 program.
- The 4-4-4 pattern would provide orderly transition from elementary school methods and materials to secondary school methods, materials and complete departmentalization (i.e., from self-contained to a departmentalized environment).
- Emphasis on parties, dances and competitive athletics for students in grades 7 and 8 would be reduced compared with the 6-6 plan in which these grades participate in many secondary school activities.
- A transitional school should have at least three grade levels in it to allow sufficient time for the students to develop an identity with the building and for the faculty to know and work

with the students. Continued articulation of 9-12 educational programs in all areas, curricular and co-curricular including athletics, would be facilitated.

- Today's ninth graders are more mature and sophisticated than those of 50 years ago, when the junior high school was created, and can handle and profit from the high school and extracurricular pressures. The end of eighth grade is a natural developmental break for youth. Many ninth graders are mature enough to fit in and profit by the high school program. They feel like and want to be senior high school students. The 4-4-4 pattern would provide opportunity for advanced ninth graders to take higher level courses without traveling to another school.
- The middle school would have an identity of its own which would enhance pupils' sense of belonging. Children could have a fresh start in a new school earlier than students in either the 5-3-4 plan or the 6-3-3 plan. That is, they could detach themselves from old labels, make new friends and be introduced to new subjects and teaching styles.

Disadvantages

- Some fifth and sixth graders might be better off in the protective environment of an elementary school than in a 5th, 6th, 7th, and 8th grade school. Some fifth and sixth graders might be too young to be pushed very hard academically or socially.
- Fifth and sixth graders would lose the benefit of an elementary school program and would not be available for safety patrol, student council and other leadership roles.
- The elementary school challenge to teachers of working with children at the fifth and sixth grade levels would be missing.
- The leadership role carried by sixth grade and ninth grade students in a 6-3—3 pattern could be reduced or eliminated.
- The difference between age 14 (ninth grade) and age 18 (twelfth grade) is great which could make it very difficult for some ninth graders to adjust to the new school. Some ninth graders might be too young and immature to be placed with senior high students.
- The 4-4-4 plan often evolves from desegregation plans without adequate consideration of other factors.
- The 4-4-4 plan assumes, without sufficient evidence, that the maturation patterns of fifth grade pupils are more like those of the sixth, seventh, and eighth graders than they are like those of the third and fourth graders.

The 6-2-4 Plan (Grades K-6, 7-8, 9-12). The 6-2-4 plan focuses on the population which middle schools are designed to serve and is frequently found in the state of California. The major problem with this plan is that most school districts either have too few pupils at this age level to justify a school facility or the buildings are being underused with such small numbers of students.

Advantages

- The seventh and eighth grade pupils, the target population for a middle school program, are given special attention.

- The 6-2-4 pattern could afford an opportunity for a broader curriculum offering in the high schools than would such grade-level patterns as 6-3-3.
- Earlier competition and a breakaway from the elementary school would be provided as compared to the 8-4 plan.
- Immature sixth graders would have an additional year in the elementary school as compared to the 5-3-4 plan or the 4-4-4 plan. SC
- Ninth graders are physically different than seventh or eighth graders. Two-thirds of the girls and one-third of the boys in the eighth grade have gone through puberty. All, or almost all, of the ninth grade boys and girls have gone through puberty. A ninth grader is too sophisticated for seventh and eighth grade children who want to imitate ninth graders and grow up too fast.
- The long stay in one elementary school would facilitate better relationships for pupils, staff and parents and would maintain a neighborhood school concept than in the 5-3-4 plan or the 4-4-4 plan.
- Interaction among a range of age levels would be provided in the elementary school, with fifth and sixth graders able to provide appropriate role models for younger students.
- The 6-2-4 plan would enable the school to develop a program of extracurricular activities and to provide experiences and leadership specifically for early adolescents in grades 7 and 8: pupils could have pride in a school of their own. Early adolescents in the 7th and 8th grade school and young adults in the 9th, 10th, 11th, and 12th grade school would be given schools of their own.
- The 6-2-4 plan is congruent with New York State's teacher training and teacher certification requirements and State Education Department regulations which are based upon a K-6, 7-12 split.

Disadvantages

- A "revolving door" effect on pupils who are always entering or leaving the 7-8 grade school would exist. In addition there would be the difficulty in designing an adequate program for only two grade levels.
- This grade structure would force an earlier break from the elementary school than the 8-4 plan.
- Pupils between the ages of 12 and 14 could be pressured to place their childhood behind them; the 6-2-4 plan could force an immediate break from elementary schools which might deny students an opportunity for a gradual adjustment. The academic pressure caused by teachers who are accustomed to working with senior high students and the competition of advanced senior high students might be too much for some ninth graders. Many ninth graders might not be able to accept the social pressure placed on them in a 9th, 10th, 11th, and 12th grade school.

- Sometimes a junior high school is a “little high school” and not a school with its own identity; it has “junior” status. Some parents and pupils feel that a junior high school ‘doesn’t count,” or at least not the seventh and eighth graders.

Grade Centers. School systems which have designated certain buildings as grade centers, housing one or more grades, seem to have done so either for desegregation purposes, or because of the lack of space for a more desirable organization. While accomplishing the goal for which the organizational plan was designed, certain advantages and disadvantages may be seen.

Advantages

- Academic grouping and appropriate placement within the grade range of the centers would be provided. Activities appropriate to the age of the pupils housed in the centers could be provided.
- An atmosphere which generates fewer discipline problems would exist and the spread of unrest from pupils of other ages would be minimized.

Disadvantages

- Additional expenditures to meet the need for a wide range of library books and textbooks in all centers would be needed.
- The opportunity for cross-grouping from lower to higher levels and vice versa would be eliminated. The opportunity for deviant learners to be placed academically with younger pupils for instruction, but with pupils of their own age for physical education or social purposes would be decreased. The opportunity for cross-age tutoring would be eliminated.
- The opportunity for siblings to walk or ride to school together and the age range of peer relationships would be diminished.
- Communication would decrease among past, present and future teachers of the pupils.

The Middle School and the Middle School Student

Many of the advantages and disadvantages of the various grade-level configurations stem from the special needs and characteristics of students between the ages of 11 and 14. Following is an examination of the middle school and its students to better understand the characteristics of middle-school students that might influence decisions about grade-level organization.

Students between the ages of 11 and 14 are called many things -inbetween-angers, young teens, etc. This age group experiences the most dramatic growth period in the development of the human organism since infancy. Characteristics of the period are:

1. resentment of authority figures
2. ambivalence concerning dependence
3. transfer of recognition from adults to peers
4. emancipation from the home

5. fluctuation of emotions
6. development of changing values
7. concern about physical growth
8. development of self-concept
9. social and sexual maturation
10. beginning intellectual maturation.

The middle school, a fairly recent phenomenon in public education in America, proposes to provide appropriate educational experiences for students aged 11 to 14. Some advantages of the 6-7-8 middle school, as described in report prepared by the Mineola Union Free School District (1930), are as follows:

1. Eleven to 14 year olds share certain broadly defined qualities or attributes. The middle school can provide a specialized curriculum tailored to meet the unique needs of these students.
2. The middle school combines into one organization and facility a school program that bridges, yet differs from, the childhood (K-5) and adolescent (9-12) programs.
3. The three-grade (6-7-8) organizational pattern can provide more stability to the overall program than a two-grade (7-8) pattern. More time exists in which to develop programs, promote teacher/pupil relationships, and provide individualized instruction to meet the highly variable needs and ability levels of this age group.
4. The middle school facilitates extending guidance services to sixth grade students. The guidance counselor is an integral part of the organization, working closely with teachers and students.
5. The middle school de-emphasizes sophisticated social activities often found in high schools. Emphasis is on active student participation in interest groups and low-keyed athletics and social activities.
6. Because teachers are not tied to day-long classes, the middle school facilitates the introduction in grade 6 of some staff specialization and team teaching.
7. The middle school provides an opportunity for gradual change from the self-contained classroom to complete departmentalization.

The Mineola study also found three disadvantages of a 6-7-8 middle school:

1. Some students entering 6th grade are physically immature and may be intimidated being with 7th and 8th graders.
2. Sixth graders are exposed to the 7th and 8th grade social scene, possibly before they are capable of handling the resulting demands, pressures, and responsibilities.
3. Having to relate to many teachers making different demands may be a difficult adjustment for students who are accustomed to working with only one or two teachers.

The Mineola Union Free School District adopted the middle school concept and changed from a 6-2-4 grade-level organization to a 5-3-4 structure.

The Jamesville-Dewitt Central School District (1980a) found that, during the ages from about 10 to about 13, children go through a similar developmental and difficulty growth period that sets them apart from those younger or older. More specifically, students in this age group (who would be in middle schools) exhibit particular intellectual, physical, psychological and social developments:

Intellectual Development:

- Children at this age are moving from a dependence on concrete information toward an ability to deal with abstract information; they begin to reason.
- Individual intellectual differences of children this age are considerably greater than those of younger children.
- Children at this age have learned more earlier than was true 25 years ago and can profit from instruction presented by academic specialists using more advanced teaching equipment, techniques, and facilities.
- Children at this age (10 to 12), experience a measurable period of tremendous brain growth and increased intellectual capacity.
- A period of transition between the generally self-contained classroom of the elementary school and the totally departmentalized classroom of the high school is advantageous for children at this age.
- Having developed the fundamentals of academic skills, children at this age profit from the opportunities to explore other subject areas through science labs, home economics and industrial arts facilities, foreign languages, and so forth.
- Children at this age begin to develop strong, personal opinions about school and education.
- For children at this age, better provision can be made for the intellectual diversity in a building with three or four grades.

Physical Development:

- Individual physiological differences of children at this age are considerably greater than those of children who are younger or older.
- Children at this age enter puberty; the average age of entrance into puberty is younger than it was 25 years ago.
- Children at this age experience dramatic spurts in their physical development, although the organs, bones, and muscles do not grow at the same rate and time.
- Children at this age need comprehensive physical activity programs and facilities to accommodate fluctuations in basal metabolism.
- Children at this age are relatively free from illness, but dietary and sleeping habits tend to be poor.

- Children at this age are heavier and taller than their counterparts fl years ago.

Psychological Development:

- Children at this age experience widely varying moods and display erratic and inconsistent behavior.
- Children at this age begin to develop their own aspirations.
- Children at this age want to be “adult” without losing the safety of childhood.
- The emotional patterns of children at this age are becoming established.
- Children at this age tend to be self-conscious and easily embarrassed.
- Children at this age are struggling to form constructive self-images.
- The dramatic changes of puberty dominate the thoughts of children at this age.

Social Development:

- Heterosexual interest develops in children at this age.
- Children at this age increasingly seek approval from their peers, decreasingly from adults.
- Children at this age tend to increasingly resent adult restrictions.
- Differences in social development are considerably greater in children at this age than in children younger or older.
- Children at this age tend to model their behavior on that of older students; it may be disadvantageous to have, as models, older children who are experiencing adolescence (students in grades 9-12) and its related problems.
- As children of this age develop socially, it is advantageous to have a larger, more diverse population of peers.
- Children at this age experiment with language and other social behaviors they have never tried before and will not try again.
- The dramatic changes of puberty dominate the social interactions of children of this age.
- While children at this age are struggling to become independent, they tend to get lost without the security of family, peers, and school.

The Jamesville-DeWitt Central School District stressed the fact that teachers of children at this age need special training to help students during this period of intellectual, physical, psychological and social developments.

In 1975, the Education Research Service (ERS) published a Summary of Research on Middle Schools and, in 1983, prepared a report on Organization of the Middle Grades: A Summary of Research as an update and expansion of the 1975 publication. The new document addresses the development of junior high schools and middle schools as well as the early research in the earlier version on junior high schools and grade organization. The range of topics include:

- The initiation and development of junior high schools, middle schools, and elementary schools;
- Comparisons between junior high schools, middle schools and elementary schools;
- The effects of grade arrangement on student achievement and attitudes;
- The attitudes of teachers and administrators toward grade organization.

Some of the general conclusions presented in the new ERS (1983) publication are:

- Researchers tend to agree that a school program's quality is far more important than its grade-level organization.
- Brain growth activity at the 6th and 9th grade levels and a plateau at the 7th and 8th grade levels have implications for curriculum and program development in middle schools.
- Studies on the level of maturity of 9th grade students indicate that these students more closely resemble 10th grade students than 8th grade students.
- Research to determine the best entry level for students entering middle school indicates that the 6th grade rather than the 5th grade is the best entry point for maturation reasons.
- Grade-level organization seems to have little significant effect on the academic achievement of 9th grade students, on the personal-social adjustment of 7th grade students, on the academic achievement or attitude of 6th grade students, and on the organizational climate of the school.

The Herricks Union Free School District (1978), which switched from a 6-3-3 grade-level configuration to a 5-3-4 pattern, found five advantages of the 5-3-4 pattern:

- a. Middle school reorganization can itself "shake up the system" and help the adoption of more flexible teaching and administrative strategies as well as a more individualized curriculum.
- b. The removal of ninth grade from the junior high school and its placement at the senior high school would be more appropriate given the earlier physical and social maturation of ninth graders and their needs for more diverse educational experiences.
- c. Middle schools can provide sixth grade students with a more diversified curriculum and a greater range of facilities than can most elementary schools.

- d. The middle school emphasizes the guidance function as well as a close learning relationship of students with one or more teachers likely to be serving on teaching teams.
- e. The middle school allows for a smoother and less traumatic transition from the elementary school than is currently the case. Since the program and learning atmosphere of the middle school are not highly departmentalized, most students adapt quickly and comfortably.

Summary

The Niskayuna Central School District (1981) examined the research on the relationship between grade organization and student outcome variables and found

The body of literature on grade organization typically has compared various grade organization arrangements and their effect on such student-based variables as student achievement, school adjustment and student attitudes and behaviors.

There is very little conclusive evidence in the literature that one form of grade organization has a more positive effect on these outcomes than other forms. This body of research has continued to suffer from serious conceptual and methodological problems. One researcher (Johnston 1980) has pointed out these problems as:

1. Failure to specify accurately the independent variable investigated. Specifically, there are no operational definitions of what an institution calls itself (e.g., 6—8 middle school, 7-9 junior high school or 7-12 junior-senior high school). There has been no operational definition distinguishing between the treatments (i.e., programmatic differences) provided by these different institutions.
2. A second flaw in the research has been failure to select dependent variables that are likely to be influenced by some school-related treatment. Too often the research has looked for relationships between variables that have no logical or theoretical connection. When differences are found it could be because of some variable other than grade organization (e.g., teacher enthusiasm, principal leadership, school goals, etc.)
3. Methodological problems have included reliance on single measures and use of inappropriate measures.

Most researchers have concluded that decisions on grade—level organization have been for reasons that are more administrative than educational. Thus unanswered is the question, “what grade organization is best?”

Both the research and the practical experiences of local school districts indicate that no one grade—level organization can meet all the needs, circumstances and situations of all students and all school districts. Each pattern has its advantages and disadvantages. Local school districts, well aware of their own needs, must weigh the pros and cons of each structure and decide which one is best for their purposes.