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An Inquiry into the Curriculum Development of Physical Education Programs for Girls, Grades 7 through 12, and its Application to Menomonie Junior-Senior High School

by

Jane Ardis Swanson

ABSTRACT

The purpose of this study was to investigate the underlying theories involved in the development of a curriculum regarding the importance of growth and development of adolescents and their ability to acquire motor skills. The findings of this investigation were applied in establishing evaluation techniques for the girls' physical education program at Menomonie Junior-Senior High School. There were 600 girls evaluated in this study.

Check lists were used in determining interest and attitudes of the student and for their choices of friends and fellow students with whom they like to work. Bookwalters' classification index on height-weight grouping was used and in the final tabulation of the results, a sociogram, scattergram and charts were used.

This study was of great assistance in gaining insight into the particular group studied. The results focused attention in the areas needing motivation and guidance, the

need for training of leadership, and the challenge to adapt a program to aid the individual to work towards her potential.

AN INQUIRY INTO THE CURRICULUM DEVELOPMENT OF PHYSICAL EDUCATION PROGRAMS FOR GIRLS, GRADES 7 THROUGH 12

A Seminar Paper

Presented to

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In Partial Fulfillment

of the Requirements for the Degree

Master of Science in Physical Education

by

Jane Ardis Swanson

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CHAPTER I

INTRODUCTION

This paper was written as a result of previous curriculum planning by the physical education staff at Menomonie Junior-Senior High School. This brought to the attention of the writer the need to investigate theories, methods and tools which may be adapted as guide lines and evaluation techniques.

The problem was chosen for inquiry for several reasons. Much has been written about basing curriculum development upon the importance of recognizing the growth and development of children and adolescents. Of late has been increasing awareness of the "dynamics of child development." Since this involves the theory of the "teachable moment" and the various plateaus of development, there arose a concern with the effectiveness with which the physical education program has been developed for girls at Menomonie Junior-Senior High School.

Development along all lines of growth is consistent. It may not be parallel, neither is it an all-of-a-piece development.[1] There are spurts of development, then a plateau along which they coast without any great accrual. If one makes use of these plateaus, the teacher will be able to teach

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[1]Evelyn Millis Duvall, Family Development (Philadelphia: J. B. Lippincott, 1962), p. 40.

to better advantage, and the pupils will be able to accomplish with a greater degree of success. A question then is: Are curriculums making use of these plateaus, and is the curriculum for girls at Menomonie High School doing as much as possible to make their program effective?

According to Duvall, there are three dimensions in which readiness appears: (1) in the physical organism; (2) in the social pressures; and (3) in the personal values of the individual.[2] Since this is true, then physical education programs must be concerned with much more than the acquisition of skills. Other areas of development must be considered in order to assist each pupil to reach toward his potential. Again a question: Are the programs set forth in curriculum guides helping teachers to understand and promote this progression toward individual potential? Is the Junior-Senior High School program for girls succeeding in doing this in their classes at Menomonie with any degree of success? It is upon the above basis that the writer's concern rests.

Statement of the Problem

The problem may be stated as follows: "An Inquiry into the Curriculum Development of Physical Education Programs for Girls, Grades 7 through 12."

This stated, the problem resolves itself into several sub-topics: (1) Reviewing some of the literature dealing with

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[2] Ibid., pp. 38-42.

the importance of using developmental tasks as a basis for curriculum development; (2) Reviewing some of the current research on correlation of elements involved in the determination of the organization of the curriculum; (3) Reviewing a few selected state curriculum guides. From the above sub-topics the findings were applied to the evaluation of the girls' physical education program at Menomonie High School.

Purpose of the Study

One purpose of the study was to investigate the underlying theories in curriculum development in order to establish a criteria for evaluation of the program for girls at Menomonie High School. Another purpose was to compare the results of the evaluation to the underlying theories investigated through research.

Need of the Study

The need is ever present in the evaluation of a curriculum so that the student will be taught to better advantage in reaching his potential. The results of this inquiry will be utilized in presenting a more effective program in physical education for the girls at Menomonie High School, and in meeting the needs and capabilities of the student in reaching her potential.

Limitations

The fact that this study is for the purpose of inquiry and evaluation through a cursory examination of the results, may limit the validity with regards to conclusions.

Definitions

A few of the terms that will be used throughout the study are defined here.

Developmental task. A developmental task is a task which arises at or about a certain period in the life of an individual, successful achievement of which leads to his happiness and to success with later tasks, while failure leads to unhappiness in the individual, disapproval by society, and difficulties with later tasks.[3]

Teachable moment. When the time comes that the body is ripe for, culture is pressing for, and the individual is striving for some achievement, the teachable moment has arrived.[4]

Potential. That which an individual is capable of being, but not yet being. Possibility.

Dynamics. The different moving forces which affect child development and the alterable conditions that determine behavior and growth.[5]

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[3]Ibid., p. 31.

[4]Ibid., p. 31.

[5]Horace B. English, Dynamics of Child Development (New York: Holt, Rinehart and Winston, 1962), p. 8.

CHAPTER II

A PREVIEW OF THE ORGANIZATION OF THE SEMINAR PAPER

The organization of the study shall follow this pattern. A review of some of the literature with regard to concepts of curriculum development in general will be presented. Then the writer will present a review of some of the current literature concentrating on the development of curriculum and programs of physical education for high school girls.

The next step will be to review current reports on investigations into the practices concerned with physical education programs.

Curriculum guides for physical education programs will be reviewed to try and determine their basic objectives.

A review will be made of the program in physical education for girls in the Menomonie High School, Menomonie, Wisconsin. Pursuant to the above the writer will demonstrate through the use of test results and check lists what is being done to check up on the program.

A summary of the materials read with regard to its bearing on the inquiry, along with a summary of the findings with regard to the program in the Menomonie High School will complete the paper. Suggestions will be made for further investigations which may aid others as well as Menomonie to

present a more effective program of physical education for high school girls.

An annotated bibliography and appendix will conclude the paper.

CHAPTER III

A REVIEW OF THE LITERATURE READ ON GENERAL CURRICULUM DEVELOPMENT

"The path of learning is not a long, slow, up-hill climb with something to learn every new day, but consists of steep places, where the learning effort is severe, interspersed with plateaus, where one can speed along almost without effort."[1] So says Havighurst, long an advocate of teaching through the use of the developmental task concept.

The use of the developmental task concept goes a long way back in the history of education and culture. In 1895 Boas stated (in connection with growth, maturation and intelligence) that Porter's data proved only that physical and mental growth are correlated.[2] This relates indirectly, of course, to developmental task, in this context, yet Boas, one of the most illustrious of anthropologists, believed that varying with culture, developmental tasks were universal, and those concerned with growth and development were similar.

Havighurst believes that schools have an important and an inescapable duty in training pupils in all areas of

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[1]Robert J. Havighurst, Developmental Tasks and Education (New York: Longmans, Green and Company, 1950), p. 5.

[2]Boas' Contributions to the Knowledge of Human Growth and Form (American Anthropological Association, Mem. 89, W. Goldsmith, Ed., 1959), pp. 76-111.

development, none of which can be ignored. This idea is carried further by Havighurst when he says, "The goal: to be proud, or at least tolerant of one's body, to accept a socially approved masculine or feminine role."[3] He made the statement in speaking of the developmental tasks which face the twelve to eighteen year olds, in the process of physical and emotional maturing. Havighurst relates his ideas directly to schools and in part to physical education when he recommends that we use the criteria of skill and physical development in grouping students for physical education. Also recommended was the use of dance, to build up an appreciation of the beauty of the human body.

Jersild[4] emphasized the importance of what an individual thinks of himself. Physical characteristics largely influence this self esteem. Through his research, Jersild feels that girls are less susceptible to differences in body build, than are boys, yet it is an item to be considered in grouping pupils for class instruction. If values are kept where they belong and all areas of development are emphasized, less pressure results and less emphasis is placed on body build. Jersild believes that through pride in competence rather than in possessing a certain type of ability, pupils gain

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[3]Havighurst, op. cit., p. 34.

[4]Arthur T. Jersild, In Search of Self (Teachers College, Columbia University, Bureau of Publications: New York, 1952), pp. 3-9.

confidence and a better degree of success. Here again, we see the importance of coordinating tasks to developmental level.

Frandsen[5] says "Variations in timing and rates of growth produce problems of readiness for both motor and social activities." The gradual attainment of both subject matter and personal-social developmental objectives is a product of learning and experience. Therefore, learning tasks and activities must be adjusted to each individual's level of maturity and pattern of abilities. In adolescence, whole development proceeds, the primary gains are in strength, speed, control and endurance. Our curriculum for physical education should make good but judicious use of these, in order that each pupil advance toward their potential. Usually intellectual development parallels motor development. Practice then, is necessary to reach a high level of proficiency, but the nature of practice is important and will determine the progression of activities in a physical education program. Adolescents have many important developmental tasks to conquer. Areas in which these tasks lie, such as accepting of a rapidly developing body, establishing new social relationships, achieving a self-directing independence, planning for future economic and social status, achieving confidence in more sharply identified self-roles, and building a system of values to which he can commit

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[5]Arden M. Frandsen, Educational Psychology, (New York: McGraw-Hill Book Co., Inc., 1961), p. 88.

himself, are basic to the development of a curriculum based on developmental tasks.

Krogman,[6] in his contribution to the study "New Dimensions in Learning," makes this statement. "Our objection to the artificial and largely arbitrary nature of much school subject matter, is derived from the fact that it is arbitrary, superficial material." Then he goes on to say that since physical growth is a factor in the development of the child, physical education methods need a good long look. By physical growth, Krogman states that "it means all of the processes of biological or organic growth--structural and functional growth."[7] Thus development is the total of the cultural integration of the child, in both the social and psychological patterning. Both are cumulative and both are time-linked. To what extent these areas are correlated and whether or not the correlation differs with age period is important. Another question arises, what relationship does this correlation have on the concept of readiness?

Krogman tells us, too, that Cannon, the great physiologist, referred to "the wisdom of the body." In other words, the body knows what is best for it and this is true in terms of the growth of the entire organism.

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[6]William M. Krogman, "Physical Growth as a Factor in the Behavioral Development of the Child," New Dimensions in Learning (Curriculum Research Institute Association for Supervision and Curriculum Development, N. E. A., 1201 Sixteenth Street, N. W., Washington 6, D. C., 1962), p. 8.

[7]Ibid., p. 13.

From experimental data, it is known that there is a positive correlation between rate, time, and degree of growth attainment, and the socio-behavioral complex of the individual. This affects peer-rating and status, and in turn affects what the individual thinks of self and his role on society. "How far this penetrates into curriculum development is a matter of individualization."[8]

If one interprets physical growth as an anatomic ontogenesis during which there are stages for functional and structural advancement, then one can interpret these stages as readiness. Thus there are a series of "best times" for learning certain tasks, in the developmental life of the child. One must determine these "best times" and teach accordingly. This theory is good, but as one attempts to define the task, set levels, and degrees of performance, one is putting the child in the educational framework.

As the individual grows and matures, there is a series of progressive functional possibilities. This is over-all behavioral readiness. From this emerges patterns of performance in terms of integrated functioning. They are time-linked in appearance and sequence. As these patterns emerge and are integrated into changes in form and function, there results certain behavioral performance and the organism is engaged in the learning process. If curriculum is based on Olson's concept of "organismic age" it becomes too pat, too simple, because

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[8] Ibid., p. 8.

there are too many variables and too many individual differences. A child's readiness may vary in time level, latitude, flexibility, intensity, composition, and motivation. The expected task may vary in time level of life-span, magnitude, complexity, quality, kind and degree of differential and motivational power or valence. The two variables will negate any simple approach to the "able and ready to learn" premise.[9]

W. C. Olson in his contribution to the readings, deals with maturational age.[10] He maintains that "pace, maturation and learning go hand in hand." His theory is that a rapidly growing child will yield to achievement earlier, while a slowly growing child will achieve the status later than the average child. He feels that readiness can be said to be an individual potential translated in terms of ability and capacity.

Tanner's contribution deals with intelligence and response.[11] He maintains that each of us define intelligence in the way in which we think of it, that it is a fairly general but effective individual response. If the response is effective, one speaks of intelligence, if it is not effective one speaks of ignorance. The relationship it has to maturation as Boas said, is that physical growth and mental growth is

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[9] Ibid., p. 11.

[10] W. C. Olson, Child Development (Boston: D. C. Heath and Company, 1959), p. 44.

[11] J. M. Tanner, "Intelligence and Response," New Dimensions in Learning (The Sixth Curriculum Research Institute, Ed. Walter B. Waltgen and Staff, Association for Supervision and Curriculum Development, N. E. A., 1201 Sixteenth Street, N. W., Washington 6, D. C., 1962), p. 15.

correlated. How effective the correlation is he did not state. However, Hand made the observation that maturation is not an experience, it is that upon which experience imprints itself and without which experience does not register. Tanner then goes on to state that during adolescence the individuals who mature early have a higher I. Q., and the brain does share to some small extent on the general factor of bodily maturity during the growing stage. At adolescence he feels that there is a general or "heightened capacity" to carry out, in groups and singly, logical operations involving the ideas of identity, reciprocity, inversion and correlation. Thus curriculum should be a logical, progressive series of learning situations, tending to enhance these abilities.

No matter what the progression is in mental or physical growth, Denney[12] believes that one of the most important factors in an individual's ability to achieve, is his audience. Adolescents are deeply affected by what their peer group thinks of them. Their parents are a specialized audience, and the attitude of both parents, and peer groups influences an individual's idea of self. Adolescents are dependent on their sense of the "others." Their response is made through the development of cultural techniques for camouflage. Properly

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[12]Reuel Denney, "The Learner and His Audience," New Dimensions in Learning (The Sixth Curriculum Research Institute, Association for Supervision and Curriculum Development, N. E. A., 1201 Sixteenth Street, N. W., Washington 6, D. C., 1962), pp. 24-25.

developed curriculums help them to achieve with a high enough degree of success to minimize the camouflage.

Parental attitudes have a high impact on the performance of adolescents. Stradtbeck[13] sets forth his ideas by first making the statement that day to day, repetitive behavior between parents and their children, influence expectations in learning, social adjustment, attitudes, and acquisition in skills. That the higher the rank as a group member of the family, the greater the effect. The more able the child is to compete in external adaptation, the greater power he has in the group. Stradtbeck goes on; since in physical education we are interested in group process, we must consider it as involving three dimensions; (1) the instrumental, relating to a concern for the solution of problems external to the group; (2) adaptive, relating to the concern with the strain on interpersonal relations arising from the differences in internal rewards; (3) expressive, relating to the motivational gratifications of the individual participant. The group to which an individual belongs; (1) determines the nature of the tasks which he shall accomplish; (2) it imposes standards of excellence which normally includes the age at which the task is to be mastered; (3) the individual derives meanings, about one's

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[13]Fred L. Stradtbeck, "Interrelationships between Socialization Practices and Values as Affected by Parental Attitudes," New Dimensions in Learning (The Sixth Curriculum Research Institute, Association for Supervision and Curriculum Development, N. E. A., 1201 Sixteenth Street, N. W., Washington 6, D. C., 1962), pp. 35-41.

self, and in terms of what has been learned and what shall be learned.

In using the concept of readiness as developmental task, we must try to specify the unit of behavior or the task, for which a certain kind of readiness is pre-requisite. The most logical, then, seems to be the general guides for readiness, already set up. The problem then becomes developing techniques by which we can ascertain when individual pupils are ready for that which they must learn. Stradtbeck[14] gives us his idea in terms of: (1) Are the different ways of learning appropriate for specific learning tasks? (2) What does the learner perceive as reenforcement? (3) How can the teacher increase the achievement motivation of the learner? (4) How does the learner perceive the teacher's attempts to influence the achievement motive? (5) What is the learner's perception of his audience? (6) Is learning the same for all?

The Thirty-eighth Yearbook for the Study of Education in its part on Child Development and the Curriculum again emphasizes the use of the developmental task concept. However, Jersild[15] feels that there is much to be done by way of research. He dealt with the area of physical education, and maintains that so-called manuals are influenced by precedent

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[14] Ibid., pp. 35-41.

[15] Arthur T. Jersild, "Education in Motor Activities," Child Development and the Curriculum. Thirty-eighth Yearbook of the National Society for the Study of Education, Part I (Bloomington, Illinois: Public School Publishing Company, 1939), pp. 57-78.

and tradition, and are not based on the developmental task concept, that there are such wide variations in programs that little or no comparison can be made. If there is a choice to be made in skills taught, then those that will be employed throughout life, and have substantial value, should be taught. He quotes from Espenschade with regard to adaptation of programs to sex differences. Jersild also advises that at all developmental levels, evidence points to the use of readiness plateaus, and indicates that much can still be done.

John E. Anderson[16] in the same yearbook, again emphasizes developmental tasks and ability to learn. Attitudes are important in the learning process, and are not only influenced by the home but by the tone of the learning environment. There should be emphasis on success, through leadership and guidance, and without pressures. Make it a goal-seeking behavior. Anderson states that there is little inter-correlation among motor skills, therefore, the physical education program should offer a wide variety of opportunity to take care of the differences in motor capacities.

Two references to the learning process were taken from the book, "Readings in Education Psychology." William

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[16]John E. Anderson, "Child Development and the Growth Process," Child Development and the Curriculum. Thirty-eighth Yearbook of the National Society for the Study of Education, Part I (Bloomington, Illinois: Public School Publishing Company, 1939), pp. 15-56.

Clark Trow[17] says that children are ready to learn when they are healthy, well-adjusted, mature enough, and when interested. Emphasizing the fact that pushing them beyond their capacity does more harm than good, Trow says, "Our most basic human quality is an inborn urge and drive to push our own development and self-realization to their limits."

In the same book Glenn C. Dildine[18] brings out the fact that energy varies with the growth cycle. Teenagers have contrasting days of boredom, disorganized restlessness and even hostility. Adolescent bodies are growing and changing so fast that skills and activities must be highly organized, progressive in difficulty, and appeal to values put on a particular kind of physical excellence and beauty. Since he feels physical differences are easy to discover, how an adolescent feels about himself is more difficult. It becomes the duty of the physical education teacher to offer a challenge and motivate them in such a way that this challenge becomes a promise and a pleasure.

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[17]William Clark Trow, "When are Children Ready to Learn?", William A. Fullager, Hal J. Lewis and Carroll F. Cumber, Readings on Education Psychology (New York: Thomas Y. Crowell Company, 1959), pp. 311-315.

[18]Glenn C. Dildine, "Growth and Learning," William A. Fullager, Hal J. Lewis and Carroll F. Cumber, Readings on Educational Psychology (New York: Thomas Y. Crowell Company, 1959), pp. 315-319.

CHAPTER IV

PHYSICAL EDUCATION--AN INTERPRETATION AND REVIEW OF SOME BOOKS ON CURRICULUM DEVELOPMENT IN PHYSICAL EDUCATION

The interpretation of physical education,[1] states the purposes of physical education as: (1) developing and maintaining maximum physical efficiency, (2) developing useful physical skills, (3) developing socially acceptable behavior, (4) enjoyment of wholesome physical recreation. Physical education deals with the individual as an integrated being whose physical, mental, emotional, social and spiritual responses are all interrelated. Based upon this premise the physical education program in working with high school youth should promote proper growth and development. Such a program would promote the development of physical efficiency, acquisition of skills and develop good attitudes and a better understanding of self and others. Individual differences must be taken into account. Classes should be made up of groups, classified according to their size, level of maturity, and abilities. Evaluation of achievement should be made objectively, and measured in terms of: (1) physical efficiency, (2) skill

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[1] Physical Education--An Interpretation, AAHPER, Coordinated by Simon A. McNeely (Washington, D. C.: United States Office of Education, 1964), p. 1.

development, (3) social and emotional adjustment, (4) body mechanics, and (5) health and safety practices. Classes should be scheduled by grades, but within the grade, classified and grouped according to age, weight, height, strength, skills or similar characteristics.

The Teacher's Guide[2] repeated the above observation and contained a planned program of instruction which included small and large group games, skill drills, lead-up games, fundamentals of team games, simple combatives, rhythmic activities and outdoor recreational games. The program was to be based on classified groups. Again we see the carrying out of the idea based on developmental tasks and an individual's "readiness."

Cowell[3] feels that physical education must be scientific in its approach, for on the scientific foundations we can obtain generalizations which give us a sound basis for doing things better. Applied to physical education, it makes possible increased, intelligent control and understanding.[4] More investigation, the use of tests and measurements of various kinds, and our observations help us to deal more effectively with our own groups. Classifying groups becomes important,

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[2]Dorothy Mohr, Teacher's Guide for Physical Education for High School Students, AAHPER (Washington, D. C.: N. E. A., 1955), p. 4.

[3]Charles C. Cowell, Scientific Foundations of Physical Education (New York: Harper and Brothers, 1953), p. 11.

[4]Ibid., p. 18.

in that a reasonable degree of success can be attained. Planning a program to take into account growth and physical behavior, since individual differences are elements with which one must deal. Thinking of development as progress toward maturity, Cowell brings out two concepts: "(1) the inner growth potential called maturation--the degree of neurological readiness of the organism to be able to profit by the experience, and (2) learning, which depends on experiences, environment or nurture the child has had."[5]

Since the purpose of general education is to meet the needs of individuals in the basic aspects of living, in order to promote the greatest possible realization of personal potentialities, then programs must foster effective participation in group activities. In the past curriculums have been based largely on convention and tradition.[6] Any curriculum which ignores the principles of human growth and development, the needs, interests and concerns of youth, will result in bad education. The activity drive is the foundation for all education.

The physical education teacher is a subject matter specialist. Skill, strength, speed, agility and endurance represent "essentials" in the program. It includes as well emotional factors, social development, personal security and effective methods of thinking. The physical education teacher

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[5]Ibid., pp. 90-91.

[6]Cowell, op. cit., p. 109.

is particularly sensitive to the "understanding, development, use and appreciation of the body as a 'symbol of self' operating within a social pattern."[7]

Integration is an important problem in curriculum development. This can be done through specialization. Physical education activities can incorporate all other elements of learning. While it deals essentially with the organization and instruction of physical activities, the curriculum must make it possible for youth to gain experiences which a rapidly changing social order has denied them. This is imperative if the developmental needs are to be met adequately.

According to Nicoll and Long[8] the effect of physical education is measurable in terms of student development. There should be progressive individual development in physical fitness. All students must learn the skills presented in the physical education program. This total class learning and participation necessitates skillful class organization.[9] The teacher must plan so that each student becomes proficient in at least one activity.

The physical education for high school girls should emphasize the development of poise and grace of movement. The

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[7]Ibid., p. 171.

[8]James S. Nicoll and May Belle Long, Developmental Physical Education (Yonkers-on-Hudson, New York: World Book Company, 1947), p. 1.

[9]Ibid., p. 1.

activities can be vigorous, but should not be the same as given to the boys. Poise, posture and body control are merely skillful applications of muscular strength; consequently, girls' activities must be vigorous enough to develop muscular strength and endurance.[10] Their outlined four-year program for girls demonstrates their theory. No mention was made of "readiness," nor were any suggestions made other than squad division, for grouping within the class, on the basis of "readiness" or developmental task concept.

Students in junior and senior high school are growing in all phases of their being.[11] While these changes are not perceptible they cannot be discounted. Students must come to realize what is happening to them physically, emotionally, socially and intellectually.[12] The teacher in the secondary school must assist them in understanding this developmental process. Planning programs to this end is not easy.

In general, the stages of development may be identified at certain age levels.[13] The most obvious physical changes become evident in the height and weight. These changes

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[10] Ibid., p. 3.

[11] Charles A. Bucher, Constance Koenig and Milton Barnhard, Methods and Materials for Secondary School Physical Education (St. Louis: The C. V. Moshy Company, 1961), p. 17.

[12] Ibid., p. 17.

[13] Ibid., p. 18.

are reflected to a certain extent in personal self-consciousness, and is apparent in physical education classes where emphasis is placed on physical skill and body coordinations. Skeletal changes cause a difference on body proportions.

With this skeletal change, adolescents need exercise for large muscles in order to maintain competent physical skills. Adolescents need to know about these changes, and undue fatigue and strain guarded against.

Sex characteristics become more obvious. Girls should be taught that some exercise will do no harm. Group instruction in hygiene could be of value.

Motor skills during adolescence should, for girls, be emphasized from the standpoint of balance, agility, control and strength.

Emotional development at this stage is quite erratic. With consideration for all these changes it becomes necessary to meet the developmental needs of the group. Providing socializing situations, achievement through success, challenges through competition, opportunities for leadership, imagination, and responsibility will help adolescent girls to meet the developmental tasks they face.[14]

Methods and materials are important to the success of any program in physical education. The program presented follows closely others that have been reviewed. Based on the

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[14] Ibid., p. 25.

thesis of developmental levels and progression toward potentialities, it seems to be extremely well done. The evaluation suggested will be used in evaluating the program in the Menomonie High School.

Bookwalter[15] feels that physical education is part of the general education process, gives students not only interest and skills in activities, but fosters the development of desirable attitudes. It follows the general aim of education in that it contributes to optimal physical, mental and social growth, development and adjustment of the individual, both at the present and in the future. While all individuals will not achieve optimum development in all areas, the integration is at least begun.

Bookwalter refers to "the welter of statements and the diversity of sources and viewpoints as to the purposes of physical education." From all this there can be evolved an orderly, logical, and helpful array of objectives,[16] which he presents, along with the controls involved.

In working with junior high school girls, Bookwalter suggests that since there is such a variation in height and weight, a classification based upon height, weight and function

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[15]Karl W. Bookwalter, Physical Education in the Secondary Schools (Washington, D. C.: The Center for Applied Research on Education, Inc., 1964), p. 3.

[16]Ibid., p. 4.

should be used in activity classes, where these characteristics may be factors in achievement.[17]

High school girls have, for the most part, attained maximum height. Weight may change. Individual differences should be considered, and height and weight alone have been found to be fairly satisfactory for classification of girls at the senior high school level.[18]

In presenting his ideas, and especially on presenting the criteria for selecting activities, Bookwalter keeps referring to the motives and needs of adolescents. He also refers to the capacities of the learner, and says: "the factors of great importance in determining capacity for success . . . (developmental level) . . ."[19] Thus it is imperative that proper grade placement of pupils and proper progression of activities on the physical education be practiced. He then proceeds to classify physical education activities and their organization.

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[17]Ibid., p. 32.

[18]Ibid., p. 35.

[19]Ibid., p. 41.

CHAPTER V

A REVIEW OF SOME OF THE RESEARCH PERTAINING TO THE PROBLEM STUDIED

The adolescent, in the process of establishing his identity, brings to the fore the problems of developmental levels. The basic responsibility of culture is to nuture immature members, so that they may work toward their potential. One of the functions of the school is to see that responsibility is realized, by providing meaningful experiences. Through these experiences they can work toward self-realization, attain individuality, and become aware of themselves as unique beings.

Physical education is part of this total educational setting. It should provide a rich variety of experiences. High school pupils should be able to participate in a multitude of movement activities which will promote individual growth and development. Such activities should be the medium through which the pupils develop basic locomotor skills, fundamental qualities of endurance, agility, flexibility, strength, speed, and balance. It should also enable them to gain individual insight into function and mechanics of the human body.[1]

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[1]Dale Spence, "What is the Deeper Meaning of Physical Education," The Physical Educator, Vol. 21, No. 2 (Indianapolis 18, Indiana: Phi Epsilon Kappa Fraternity, May, 1964), pp. 68-69.

Physical education is concerned with the total growth and development of the individual, especially the developmental skills which will carry over into later life. All activities must be planned to meet the needs of these individuals, and to challenge them to reach toward their potential, which, of course, is the basis for curriculum development. Physical education must go beyond the superficial, technical, learning experiences.[2]

The idea of designing curriculum to meet differing capacities and differing purposes, but honoring all parts of it, becomes the concern of all physical education teachers. Not only must it meet the needs of pupils on a secondary level, but it must also meet the needs of a large body of knowledge to be so incorporated.[3]

To do this much research is necessary. One is the area of motor learning. "This area includes a study of some of the problems and processes involved in the learning of skills and knowledges as they relate to successful participation in physical recreation and competitive sports, with possible implications of this information for other areas of living; for example, maturation and motor learning; intelligence and motor learning; motivation and motor learning; teaching in

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[2]Ibid., pp. 68-69.

[3]Arthur S. Daniels, "The Potential of Physical Education as an Area of Research and Scholarly Effort," J. O. H. P. E. R., Vol. 36, No. 1, January, 1965, pp. 32, 33, 74.

parts and wholes, length and distribution of practice; speed and accuracy, and rate of learning."[4]

In connection with the above-quoted material, Lorge believes that regularly interpolated time intervals are more effective than massing in the learning process.[5] His experiment, perhaps not conclusive, did show that efficiency was promoted, using time intervals. Lorge felt that this might be due to two factors: (1) neural changes may in some way "set" or establish themselves more fully when time is allowed them; (2) the process of learning may be more satisfying and receive better attention when rest periods intervene. Again, basing experiment and conclusions on developmental level; rather implied than directly stated.

It has long been felt that the organization of a class must take growth and development into account. Many proposals have been made as to how this could best be done. One proposal is the use of age, height and weight groupings. This is especially true in teaching physical education to girls on the secondary level.

Bookwalter did some experimenting in this area a number of years ago. His conclusions set forth in a report on the results of these studies were: this means of classification is "not highly satisfactory--but functionally worthy

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[4]Ibid., p. 33.

[5]Irving Lorge, Influence of Regularly Interpolated Intervals Upon Subsequent Learning (New York: Columbia University Press, 1930).

of consideration."[6] That in light of the results obtained in the experiment, there were advantages accruing from the use of the classification, that it is simple to do and therefore he recommended its use. He did think that a four-fold height, weight class division might be more effective, and its administration more functional.[7]

He did maintain this in the face of evidence produced through the studies of Humeston, Cozens, Cubberly and Neilson when they concluded that these studies revealed an inadequacy for age, height, and weight in combination or singly, for classification of secondary school girls.

Espenschade, after research on boys and girls, felt that height-weight classification was not a good classification. However, working with younger children, when growth is rapid, there are more variables to be taken into consideration than when working with high school girls.[8]

A paper of interest to me was the one by Dr. Melvin Weiner.[9] He feels that girls need to take part in group participation in gymnastics and athletics in general. "They become members of the group, and a strong group identification

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[6]Karl W. Bookwalter, "An Assessment of the Validity of Height, Weight Class Divisions for High School Girls," Research Quarterly, 15 (1944), pp. 145-49.

[7]Ibid., p. 149.

[8]Anna A. Espenschade, "Restudy of Relationships Between Physical Performance of School Children and Age, Height, and Weight," Research Quarterly, 34:144-153, May, 1963.

[9]Dr. Melvin Weiner, "Psychological Factors in Physical Education Activities Among Teenage Girls," (A paper.), p. 2.

develops." Physical activities take on a special significance during adolescence, since they foster feelings of security. Gymnastics provides the participant with a sense of doing things in rhythm, and gives a feeling of precision and control. Design of gym clothes is important since it helps, too, in making the girl feel part of a group, and releases her energies to participate in the activity itself. The sameness fosters feelings of identification with the group. While it has no direct bearing on the study, it helped me in two ways: (1) to be able to defend good design and the desirability of proper gym clothing, (2) to understand better the atmosphere and the group feeling produced by uniformity of gym cothing for girls.

The paper on policies for competition in girls' and women's sports presented the practices for desirable outcomes as a result of competitive events. Such events were adapted to age-level groupings in school programs, and made part of the regular physical education instructional program. Modifications were suggested for the different age levels.[10] This paper was of interest since it proposed making competitive sports a part of the physical education program for girls.

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[10]"Statement of Policies for Competition in Girls' and Women's Sports," Journal of Health, Physical Education, Recreation, September, 1957, (later in Standards in Sports for Girls and Women, a revision, A. A. H. P. E. R.), 1961, pp. 138-144.

The Proceedings of the First National Institute on Girls Sports, consisted of a series of presentations on philosophy and research, gymnastics, track and field, and for the generalist. All of it was interesting and informative, but of particular interest were those portions pertaining to growth and development, gymnastics and the generalist.

Regarding the growth and development, Dr. Schaffer made the statement, "In our own culture, adolescents do not have an easy time, because there is a sizable gap between physical and 'sociological' maturation."[11] They need strenuous physical exercise, they do not like restriction, and they do like competition.

Every dimension of the body takes part in the adolescent growth activity. Growth stature in girls is generally finished by the age of sixteen years. Girls at the beginning of adolescence tend to have more fatty tissue than boys. A certain weight excess is part of the rapid growth and development during puberty. Espenschade maintains that girls do not improve in motor skills after fourteen years. Height is usually attained at sixteen to seventeen years of age. Dr. Schaffer maintains also that physical exercise has no adverse effect upon girls during their menstrual cycle, and furthermore has

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[11]Thomas E. Schaffer, M. D., "Principles of Growth and Development as Related to Girls Participating in Track and Field and Gymnastics," First National Institute on Girls Sports, A. A. H. P. E. R., 1965, p. 15.

no effect upon the growth and development of the bony pelvic or adjacent soft tissue, and thus no effect upon childbirth.[12]

Age, he says, is notoriously unsatisfactory for classifying girls. Developmental level of maturation is satisfactory and will eventually supplement age-height-weight gauge. "It is only when we consider the developmental age that a common denominator for performance is available."[13]

Blanche Jessen Drury expressed not only her own opinion but that of Dorothy Ainsworth in her book, The History of Physical Education in Colleges for Women,[14] when she says that physical education is a preventive measure and the social value as well as the physical value of such training is being recognized. Two things have influenced more gymnastics in the physical education program: (1) the Olympic games, (2) the physical fitness program. She feels that taking part in gymnastic competition has several beneficial results: (1) development of courage, (2) development of a feeling of responsibility to self and to the group, (3) feeling of achievement of a skill, (4) appreciation of beauty in line and movement. Gymnastics is fun, yet it serves to impress the girl with the importance of a physically fit body.

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[12]Ibid., p. 20.

[13]Ibid., p. 15.

[14]Blanche Jessen Drury, "The Place of Gymnastics in the Physical Education Program," First National Institute on Girls Sports, A. A. H. P. E. R., 1964, p. 37.

Lucy McDaniel and Frank A. Woolcott at the same institute stressed conditioning exercises for gymnastics while Erna Wachtel stressed warm-up activities.

The idea of the "generalist" or an individual responsible for interpreting the philosophy underlying the girls' program. She must know that competition opportunities for girls are increasing--what they are, what they stand for, how their efforts overlap and how these programs complement school programs of physical education.

CHAPTER VI

REVIEW OF COLLECTED STATE CURRICULUM GUIDES

In collecting state study guides, six north central states of Minnesota, Wisconsin, Iowa, Illinois, Ohio and Michigan were chosen. Minnesota was the only state to have a complete guide, 1954, which is now being revised. Michigan has two small pamphlets as guides to planning in the schools and in the community. Iowa sent one on Physical Education for Girls, Secondary Schools, and Illinois sent two pamphlets, one on standards and a suggested curriculum outline in physical education for high school boys and girls. Wisconsin has no guide at present but is now working on one, however. The writer received copies of the talks presented at the Midwest Regional Clinic on Physical Fitness, held at the University of Illinois, a booklet of Standards for Physical Education Grades One through Twelve, State of Wisconsin, and several leaflets on specific activities.

The Minneapolis guide standards as expressed therein, "All normal girls should participate in the vigorous program."[1] No definition was given for "normal" nor was any procedure

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[1] Senior High School Physical Education Course of Study for Girls, Minneapolis Public Schools, Supt. of Schools, 1944, p. 7, Introduction.

defined for determining normalcy. The Minneapolis guide urged intramural programs and a total physical education program to develop endurance. No reference was made with regard to developing good attitudes, fostering interests, social development nor grouping. Neither was anything implied nor said with regard to developmental tasks or the needs of the individuals participating. There was a comprehensive program outlined for rhythm, modern dance, individual sports, body building or conditioning, drills and objective tests.

The Minnesota guide was complete, with definition of terms, objectives and in some instances techniques to be used, and an outline of activities by weeks at each grade level. Resource units followed with teaching suggestions, activities and evaluation. As a preface to the Minnesota guide, a statement of purpose of physical education and the relationship of these purposes to general education was enlarged upon. The objectives outlined covered all of the areas of development. Of particular interest were the objectives of self-realization, the objectives of human relationships and developing a sense of security. These objectives were based on levels of abilities and the needs of individual pupils.

The Menomonie High School physical education study, done in 1962-1963, set forth objectives and included those concerned with developmental plateaus, but were implied rather than stated. An abbreviated course of study presented for each grade level was outlined. A resume of answers to questionnaires

sent to fourteen selected Wisconsin high schools was compiled. These questionnaires included number of days each pupil has physical education, length of periods, size of physical education classes, number of instructors, daily class hours and associated extra-curricular activities.

According to the Iowa syllabus, "Physical Education is the education of the whole person by means of vigorous physical activity."[2] They use the general purpose of all education; i. e., "to help each student to grow to her fullest capacity as a member of a democratic society."[3] The syllabus is thorough in its presentation of the main features of the program. However, Iowa believes that grouping or classification of pupils must be done first according to the physician's examination, then by grades.[4] After that, grouping is done within the class by homogenous, balanced or squad groupings.[5] There is no mention made as to developmental level, or development tasks or the needs of the pupils. While the games, sports, rhythm activities, body mechanics and intramurals are outlined in detail, there is no evidence of gradation according to ability to perform these tasks.

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[2]Physical Education for Girls, Secondary Schools, Iowa Secondary Cooperative Curriculum Program, Vol. IX (State of Iowa, 1948), p. 10.

[3]Ibid., p. 11.

[4]Ibid., p. 45.

[5]Ibid., p. 46.

Illinois, on the other hand, leaves the curriculum planning to each individual school. While it sets forth sixteen standards, many required by law, each school would have a program tailored to fit its own needs. The standards do state that those programs must be well-organized, graded programs to meet the needs of students. No further suggestions as to how this should be done are given. Hence, every program would vary according to the abilities of the individual teacher setting up said program.

The suggested curriculum outline is not specific either. No mention is made as to how goals are to be met, nor upon what basis these goals were developed. Many of the activities listed are required activities, although some choice is left to the discretion of the individual teacher. Here again we see the lack of developmental concept. It is mentioned that the program meet the needs of the pupils, but a concept of "needs" is totally lacking.

Michigan promotes their physical education on the basis of: (1) physical fitness, (2) harmony with growth and developmental changes of boys and girls, (3) instructional period, intramural sports and recreational activities, (4) adaptation of programs to levels of ability, (5) school objectives in education. They further state that teachers should plan each lesson to: (1) insure continuity of program, (2) provide for progressive skill development, (3) provide for individual differences, (4) offer new challenges. This is soundly basic

upon the developmental task concept, ability and needs of the pupils. Adjusting activities to increase physical demands, measuring student progress and evaluation of the effectiveness of the curriculum and the teaching methods employed are stated in the guide lines.[6] It appears that this program is based on developmental tasks, training the whole child, and providing for future use of recreational activities.

Michigan's bulletin for the community is a well-done, comprehensive one, which is for the individuals in the community at large. Its emphasis is placed on the contributions physical education makes to the process of continuous growth through education.[7]

Wisconsin's bulletin on standards is well done and effective.[8] While setting up standards, the committee believes that each school must set up local norms as well. The division by grades is extremely well done, and gives the individual teacher guidelines, yet leaves them free to add or delete as local conditions demand. They are not limited by a long list of activities, but are left free to be creative and

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[6]The Physical Fitness Phase of the Physical Education Program in Michigan Schools (Lansing, Michigan: Department of Public Instruction, 1963), pp. 4-5.

[7]Physical Education for Michigan Communities, Bulletin 359 (Revised) (Lansing, Michigan: Department of Public Instruction, 1963), pp. 1-3.

[8]Standards for Physical Education, Grades One through Twelve, (State of Wisconsin, Issued by Angus B. Rothwell, State Superintendent, 1964), pp. 1-64.

original, still selecting on the basis of reason for the activity, rather than merely using the activity per se. This material is based on the developmental task concept, and the training of the whole child.

The series of talks given at the University of Illinois, Midwestern Regional Clinic on Physical Fitness, covered a wide range of subjects, from Interval Training and Its Application in Circulatory Improvement to Trends of Research on Prevention of Physiological Aging and the Value of Exercise for Fitness and Health. While interesting, they were of little or no value to the overall picture of physical education programs.

The sheets on individual and specific activities were also of interest, but did not contribute materially to the study.

The Wisconsin bulletin on standards and Michigan's guidelines were of value. They proved the increased interest in developing programs of physical education based on: (1) education of the whole child, (2) developmental levels, (3) needs of pupils, (4) need for the continuous evaluation. Both bulletins, of very recent work, showed a way in which one could make better use of their knowledge in curriculum planning.

CHAPTER VII

THE MATERIALS USED AND THE GROUP STUDIED

The results of a group intelligence test given to the girls the year preceding their entry into the senior high school were collected, as well as the results obtained by them on the tests of educational progress, and the school and college ability tests.

Using the classifier devised by Cozens,[1] and adapted to girls by Bookwalter,[2] the girls in the senior high school were divided according to height and weight groups.

In testing the girls in these classes data on the Indiana Physical Fitness Test were used. The test consisted of straddle chins, plus squat thrust, plus push ups from the knees, and the jump and reach.

The girls were given a check sheet for rating themselves on attitudes and social adjustment. These sheets were questions which were made up by the writer in order to condense them as much as possible.

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[1]Frederick W. Cozens, Achievement Scales in Physical Education for College Men (Philadelphia: Lea and Febiger, 1936), p. 7.

[2]Karl W. Bookwalter, "An Assessment of the Validity of Height, Weight Class Divisions for High School Girls," Research Quarterly, 15 (1944), pp. 145-149.

The group studied consisted of girls, grades seven through twelve, attending junior high school and senior high school in Menomonie, Wisconsin. There were 600 girls in these classes.

As to the value of the formulated check sheets, it is undetermined at this point. More studying would need to be done, and comparisons made to be sure of their value. At this time, it appears that it does not have as much bearing on the inquiry as does some of the other materials used.

The tests of mental ability and educational progress were of value in that they assisted in determining to some extent the readiness of the students for directions given and understood in the presentation of various activities. They were also of value in the critical analysis of materials presented from the standpoint of: (1) readiness for the activity, (2) challenge of the activity, (3) probability of successful achievement.

The use of Cozen's classifier, adapted to high school girls by Bookwalter, and the Indiana Physical Fitness Test, made it possible for comparison of the results obtained, with those obtained by giving the Indiana Physical Fitness Test to the girls under the squad system division.

The check sheet given to the girls for use in indicating their two best friends, and the girls they liked best to work with were formulated by the teacher. The choices were on the basis of the five they liked to work with in order of preference, numbering one through five.

The check sheets for rating themselves on attitudes and social adjustment were used to compare with the teacher's rating of them.

The IQ's of the girls and their basic skills ratings were also used to determine whether or not there was any relationship to the grades earned in physical education classes with regard to motor skills.

All test results were tabulated in chart form, samples of which appear with the presentation material. From this tabulation comparisons were made which, although not statistically analyzed, gave the teacher the information which was to relate to the efficiency of her teaching and evaluation practices and techniques.

CHAPTER VIII

TECHNIQUES AND RESULTS

The IQ scores for girls in seventh through twelfth grades were collected from the guidance office. The Henmon-Nelson tests are given as indicated.

HENMON-NELSON
(Tests of Mental Ability)

The Henmon-Nelson tests are given in grades seven, nine and eleven as a rule. The tests are designed for four (4) different levels of difficulty and we use the tests designed for grades 6-9 and 9-12. They are scholastic aptitude tests and are designed to give a measure of probable success in academic work and similar endeavors. They are timed verbal tests, so reading skill plays a part in gaining a good test score.

The test is standardized in a norm group chosen from 750 classrooms in 242 schools around the United States. Twenty-nine per cent of the norm group is from the Midwest and the group includes five schools from Wisconsin.

The IQ given by this test is a deviation IQ based on the average performance of the norm group rather than the old ratio IQ obtained by the method of mental age over chronological age.

The mean IQ of the 6-9 test is approximately 109. The test has a standard error of measurement of 3½-4½ points. This means that there are 2 out of 3 chances that a person's raw score is within 3½-4½ points of his true score. Speaking in terms of IQ, this means that there is 2 out of 3 chances that the person's obtained IQ is within 3-3½ points of his true IQ. For the 9-12 group the mean IQ is 103 with a SEM of 3.5-4.1.

This test also gives the percentile ranks. A certain percentile rank indicates that his score equalled or exceeded the scores of that percentage of the group the test was standardized on. For example, if a person received a percentile rank of 52, that would mean his score exceeded the scores of 52% of the standardization group. This percentile rank is probably of more value in interpreting the test results than the IQ score.

Along with the IQ tests were received the results for the same grades, in terms of total scores, made on the Iowa Achievement Tests.

IOWA TESTS OF BASIC SKILLS

The Iowa Tests are achievement tests, designed to reveal how well each student has mastered the basic skills. They consist of eleven separate tests for grades 3-9. These tests with their symbols are:

R - Reading Comprehension

L - Language Skills

L_1 - Spelling

L_2 - Capitalization

L_3 - Punctuation

L_4 - Usage

W - Work Study Drills

W_1 - Map Reading

W_2 - Reading Graphs and Tables

W_3 - Knowledge and Use of Reference Materials

A - Arithmetic Concepts

A_1 - Arithmetic Concepts

A_2 - Arithmetic Problem Solving

V - Vocabulary

In the Menomonie school system, these tests are given in the fall of the year. The raw score which a pupil obtains is converted into a grade equivalent score. This grade equivalent score indicates the grade level at which the typical pupil makes the corresponding raw score.

The scores are written in 2 or 3 digit numbers. A score of 32, for example, represents a grade equivalent score that the typical pupil would make at the beginning of the second month of the 3rd grade. A score of 115 would represent a score that the typical pupil would make at the beginning of the 5th month of the 11th grade. However, scores below 31 and above 81 may not be interpreted literally as representing grade and month, as they were not obtained from actual score

distributions. They were derived statistically on the assumption that pupils grow at the same rate in skills measured below 3rd grade and above 8th grade, as they do in grades 3-8. Though this assumption may not be valid, the scales were extended to give the teacher an estimate of the superiority or retardedness of a pupil.

Grade equivalent scores are best used for measuring growth from year to year. A pupil's average growth should be 10 points a year. A pupil may rank low on a test and yet have made a normal 10-point improvement or better over his previous year. However, talented pupils may gain more than 10 points in a year while slower pupils may fail to gain 10 points. This is probably normal for those students. Therefore, a pupil's scholastic aptitude should be kept in mind when interpreting these tests.

Suggestions are given in the test manual for use of these tests in improving instruction. Each teacher should check this section of the manual to see if there might be some information he can use in it.

A chart was then made for each grade recording IQ's, achievement scores, and the grades given in physical education classes. This was done for comparative purposes only, and for the writer's information with regard to possibilities of achievement in physical education.

The highest IQ's, 112 and above, and the lowest IQ's, 90 and below, were taken for comparative purposes, charting them as before.

Following this study only the IQ's and the teacher's grades were charted in the form of a scattergram to determine the incidence of achievement with regard to grouped IQ's. In the past it appeared that IQ has had little to do with ability in motor skills, yet of interest is knowing how great the variance was within the groups at Menomonie High School.

At the beginning of the semester the classes were given a rating sheet to complete so that teacher comparisons of their rating of the girls could be made with regard to attitudes and interests in physical education activities. A chart was made up by grades, showing the ratings the girls gave themselves, then in the same squares, using a red pencil, inserted the teachers' rating of each girl. It appeared that this would do two things: (1) indicate the degree of self-esteem each girl possessed, (2) when compared with the teachers' rating and re-examination of the teachers' idea of the girl in various class activities, it would indicate as to where the girl needed strengthening, or guiding, in re-evaluating herself. This will be used again at the end of the semester to see if there has been any marked change.

The same rating scale was used to chart interests of various grade levels. It was interesting to find out whether or not there is a stabilizing of interests in the groups, and whether or not the interests varied to any great extent.

Using Cozen's classification, the girls were divided in the classes into height, weight groups. Since there had

been used squad divisions without regard to height and weight up to this time, the same methods of teaching will be used and at the end of the semester a comparison of the grades earned by the girls to see if there has been any improvement in learning skills under the height-weight groupings. Since Bookwalter feels it is to be recommended, it will be used as a comparative device.[1]

The girls in each class filled out a choice sheet, indicating five choices of girls they liked to work with in physical education classes: first, second, third, fourth and fifth choices. This was done on an informal classroom basis explaining that this was to be used in determining a new class division based on height and weight, and that the information would be used to help determine alternate leaders for the new groups. A diagram was then made with the names of the girls in each class down the left-hand column, "the choosers," and repeating them across the top as "chosen," inserting the choice numbers in the squares. Then the vertical columns were totaled. At the bottom of the chart was entered the total number of first, second, third, fourth and fifth choices each student received. The score was found for each individual by multiplying the total number of first choices by 5, the total number of second choices by 4 and so on down to 1 for fifth choice. These scores could be used as a basis for selecting leaders,

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[1]Karl W. Bookwalter, "An Assessment of the Validity of Height, Weight Class Divisions for High School Girls," Research Quarterly, 15 (1944), pp. 145-149.

as well as used to check on the choice of leaders being used the first semester under the squad system.

Since this inquiry chosen as a problem was not a research problem, no statistical analysis was used. The information gained was used to focus attention on the teaching procedures in the physical education classes at Menomonie High School. Although the material is not yet completed, even to date it has focused attention on: (1) a different class division to facilitate teaching procedures, (2) finding predominant interests in each class which brings to the attention of the teacher a look at teaching procedures as well as a means of motivating them in developing increased interest in low interest items, (3) re-evaluating the teacher's choice of group leaders in light of choices made by each class, and using some of those girls not previously used as leaders, (4) knowing more about the probable capabilities of girls in each class from the comparative study of IQ's, basic skills and teachers' grades assigned to them--again a look at techniques, attitudes and motivation, and (5) development of social awareness and emotional adjustment.

After giving the tests, charting the findings and analyzing these findings, the inquiry was of value in focusing attention upon the particular situation in the Menomonie High School.

In going over the IQ's, scores on basic skills and grades given for proficiency in motor skills, it was found that there was a definite and positive relationship. Those

girls in the group who showed greater skills in motor activities were those who had also achieved high ratings in basic skills. The grades earned for proficiency in motor skills requiring balance and coordination were those which related most positively to academic achievement. Those who performed well in motor activities were also those whose attitudes were good and who seemed to be the best adjusted emotionally, had good healthy bodies, were interested in physical education activities and had pride enough to excel in these activities. They seemed to have confidence in their abilities, followed directions easily and well, were well liked by their classmates and showed a greater degree of leadership qualities.

The scattergram of pupils' IQ's and the teacher's grades for motor skills achievement confirmed this conclusion, since the higher IQ's received the higher scores on motor skills tests. As stated before, "It had been noted that IQ has little to do with ability in motor skills"--probably because of the number of times this was read in review of the literature. However, it stands corrected, since the results of the tests and charts have proved that there is a relationship.

The rating sheets which gave the girls an opportunity to rate themselves as to interest, cooperation, courtesy, and health were used to compare with the teachers' ratings of them. It not only acted as an evaluation of the teachers' ability to observe and rate them, but gave an insight into their

strong and weak points with regard to self esteem. Since one of the objectives of physical education is guidance, the writer wished to be able to help build up confidence in the weak areas. It was found that the majority of the girls had a well-developed sense of self esteem, perhaps running higher on the 7th and 8th grade levels than on the 9th, 10th, 11th and 12th grade levels. This is probably due to the fact that at this age level the girls are more anxious to please, their interests are not so diversified, and they tend to enjoy the activities requiring more energy and endurance. Also noted was that as attitudes and interests were analyzed on the 9th, 10th, 11th and 12th grade levels, more girls evidenced a less positive evaluation of their courtesy, cooperation and interest. Interests changed, too, in that the girls, as they progressed, 9th through 12th grades, showed a tendency toward activities that took less energy and endurance, but required more skill in balance and coordination.

Cozen's classification of girls into height, weight groupings as adapted by Bookwalter, in the case of the Menomonie classes, did not seem to be a good one. The girls were very conscious of these divisions, of their weight and height, which negated any good which could come from it. On several occasions they were quite frank in their reactions, and wished to go back to the squad formations. Also, in repeating the Indiana physical fitness tests, little or no variation was found in their ability to perform. Until such classification

can be done without the apparent differences being emphasized, squad divisions will be used.

The check sheets showing choices of girls each one liked to work with served two purposes: (1) to find out whether the squad leaders or group leaders the teacher had chosen were in any way related to the group indicated as "best liked to work with" by the girls, and (2) for the classes of next year it gives the teacher a chance to train leaders on the basis of choices made by the girls. These choices may change from year to year, but that can be remedied by having them use a check sheet at the beginning of the year from which can be selected the leaders to be trained. Since the number tended to be in excess of that needed in any one class, it will also give the teacher a chance to rotate leaders so that more girls can be given an opportunity to develop good leadership qualities. It was interesting to note that, as the grades progressed from 7 through 12, the choices became more scattered and general, indicating that friendships were better developed, attachments not as fixed, and social development was becoming more stabilized. This was evidenced, too, in the rating scales, since they were consciously trying to evaluate themselves more fairly and with more forethought than did the 7th and 8th graders. Their sense of values was developing, and their feminine role becoming more apparent.

CHART I

IQ'S--BASIC SKILLS--MOTOR SKILLS

GRADES: 7-12

Name	IQ's	B. S.	M. S.	Grades 7-12
Anderson, A.	134	82	91	High IQ's--High basic skill score High motor skill grade
Bols, J.	110	78	82	
Scapple, N.	121	79	87	Low IQ's--Low basic skill score Low motor skill grade
Ziehl, J.	109	68	81	
Etc.				
				Showed positive relation

CHART II

SCATTERGRAM--IQ'S--P. E. GRADES

GRADES: 7-12

IQ'S	P. E.	70-75	75-78	78-81	81-85	85-89	89-93	93-100
120-145								
110-120								
100-110								
90-100								
85-90								
80-85								
75-80								

CHART III

PUPILS' VS. TEACHER'S ATTITUDE

GRADES: 7-12

Name	Always	Sometimes	Rarely	Always	Sometimes	Rarely	Items
Girl's Name	x				x		1.
		x			x		2.
		x			x		3.
	x					x	Etc.
							12.

1. Listed names alphabetically.

2. Had a chart for each grade.

3. Tabulated checks for each item--12 in all.

CHART IV

INTEREST INVENTORY CHART

GRADES: 7-12

Grade	Item										
7	xxxx xxx										
8		xxxx xxxx xx									
9											
10											
11											
12											

1. Each girl in each grade checked sheet.
2. Items for 7-8-9 different than those for 10-11-12.
3. Tabulated each girl's check sheets by grades.

CHART V

SOCIOGRAM

Choices of Friends and Those to Work With

Chooser	Chosen								# in red color
	#1 1	5	4		3		#2	2	
	4	1	5		2			3	
	5	2	1		3			4	

1. Girls 7-12 completed choice sheets.
2. Tabulated by grades 7-12.
3. Totals taken for each grade.
4. Scored: 5 points for 1st choice, 4 for 2nd, 3 for 3rd, 2 for 4th, 1 for 5th.

CHART VI

CHART FOR HEIGHT-WEIGHT GROUPING
By Karl Bookwalter

GRADES: 10-12

Height			Weight		
Short	Feet-Inch.	Inch.	Slender	Medium	Heavy
	4 - 7	55	Up to 82	83-111	112-up
	4 - 8	56	" " 79	80-102	103- "
	4 - 9	57	" " 82	83-107	108- "
	4 -10	58	" " 85	86-110	111- "
	4 -11	59	" " 91	92-112	113- "
	5 - 0	60	" " 96	97-117	118- "
	5 - 1	61	" " 99	100-120	121- "
Medium	5 - 2	62	" "103	104-124	125- "
	5 - 3	63	" "106	107-127	128- "
	5 - 4	64	" "110	111-132	133- "
Tall	5 - 5	65	" "113	114-136	137- "
	5 - 6	66	" "116	117-140	141- "
	5 - 7	67	" "120	121-143	144- "
	5 - 8	68	" "120	121-152	153- "
	5 - 9	69	" "126	127-153	154- "
	5 -10	70	" "125	126-154	155- "
	5 -11	71 up	" "124	125-160	161- "

CHART VII

SQUADS VS. HEIGHT-WEIGHT

GRADES: 10-12

Name	Squads	Height-Weight
	1. S-T	1. S-T
	2. PU	2. PU
	3. S-C	3. S-C
	4. JR	4. JR
	J R	J R

1. First semester--squads--gave Indiana Physical Fitness Tests

2. Second semester--Height-weight classification
   Repeated tests
   Bookwalter's groupings adapted from Cozens

CHAPTER IX

SUMMARY AND CONCLUSIONS

The inquiry into the curriculum development of physical education for girls, grades 7 through 12, was based on a personal concern.

Knowing that development along all lines of growth is consistent, but not necessarily parallel, and that it is not all-of-a-piece development, it is necessary to know how it proceeds. Not only how it proceeds, but how best to make use of the plateaus which occur after each spurt of development.

Readiness appears not only in the physical organism but in the social pressures and in the personal values of each individual. Thus using the concept of developmental task an attempt must be made to adapt programs of physical education, so that each girl experiences some degree of success.

In order to make such an inquiry, the study was organized as follows: (1) A review of some of the literature with regard to concepts of curriculum development in general, (2) a review of some of the current literature on curriculum development with regard to programs of physical education for high school girls, (3) a review of some current investigations into the practices concerned with physical education programs, (4) a review of some of the curriculum guides in the writer's

area, and (5) a review of the program in the Menomonie High School by means of check sheet, rating sheets, IQ scores and the writer's scores on basic skills.

A review of some of the literature with regard to concepts of curriculum development in general showed that the concept of developmental task goes back as far as 1895 (and probably even farther back). Authorities such as Boas (1895), Havighurst, Jersild and Frandsen emphasized the importance of motor skills, health, and self esteem to academic excellence. Frandsen brought out the relationship of growth and readiness to both motor skills and social activities. He advised the good and wise use of this concept in helping adolescents to realize their potential. Krogman states that physical growth means all of the processes of biological or organic growth. It was further brought out that as an individual grows and develops there is an over-all behavioral readiness.

There is no simple approach to the "able and ready to learn" premise. Olson feels that readiness can be said to be an individual potential translated in terms of ability and capacity. Tanner states that during adolescence there is a "heightened capacity" to carry out, and curriculum should be a successive series of learning situations, which will enhance these abilities.

An adolescent's peers, his family attitudes, all influence his ability to compete in external competition. There are guides set up for readiness, such as Durvall's,

therefore the biggest task is to devise techniques whereby a person can determine their readiness to learn.

Most authorities, while agreed upon the concept of developmental tasks, feel that much more research is necessary. As a matter of fact, Jersild believes that there is too much diversification in physical education programs, and that they are based too often upon precedent and tradition.

William Clark Trow believes that all individuals have an inborn urge to push their own development and self-realization to the limit. This seems to be limited, according to Dildine, according to the growth cycle, and the energy at its command.

The books reviewed on Curriculum Development in Physical Education emphasized acquisition of skills, development of good attitudes and a better understanding of self along with physical efficiency. Observation, the use of tests, measurements, checking devices and rating scales help one to deal more effectively with one's own group. Some types of classification within groups assure a reasonable measure of success for each individual. Human growth and development with the needs and interests of the group must be taken into consideration. According to Bucher, the stages of development may be identified at certain age levels. Height and weight are most evident. Emotional development is quite erratic; providing socializing situations, achievement through

success, opportunities for leadership, imagination and responsibility help girls meet the developmental tasks they face.

Bookwalter feels that physical education fosters good attitudes. If the optimum development is not achieved during the high school years, the integration is at least begun. He believes that height, weight classification should be used, and he keeps referring to the capacities of the learner (developmental levels), and recommends a proper progression of activities.

Some of the research reviewed again emphasizes total growth and development of the individual. Realizing that curriculum development must take these needs into consideration, along with the needs of a large body of knowledge to be incorporated, the need for much research is necessary, especially in the area of motor learning. Daniels suggests several combinations to be studied. Lorge, while emphasizing the same ideas, also suggests interpolated time intervals in the teaching of skills, again an area for more research.

While Bookwalter advocated height, weight classification, Espenschade felt that it was not a good classification. Dr. Weiner feels that in physical education good participation is important since it develops group identification. It gives the individual girl a sense of rhythm and a feeling of precision and control.

Using various methods of evaluation, the writer was able to analyze the teaching situation in the Menomonie High School. The IQ's scores and grades given on proficiency in motor skills, contrary to the idea that IQ's and scores on basic skills have no relationship to acquisition of motor skills, was refuted by the results obtained. Using a comparative chart, then a scattergram, there was evidence of a high relationship between IQ's and acquisition of motor skills. After this analyzation it was interesting to read the article in the May issue of the NEA Journal entitled "Health, Physical Education and Academic Achievement" by Charles Bucher in which he states that "evidence to date establishes the fact that a close affinity exists. . . physical and health-education programs. . . are vital to the education and academic achievement of every boy and girl."[1] His premise, of course, is that any program of physical education which promotes good health, good attitudes and social adjustment enhances the ability to achieve in academic work. The scattergrams of high and low IQ's and their relationship to grades given by the teacher for excellences in motor skills further proved that, in her classes, this seemed to be true.

The check sheets filled in by the girls, rating themselves on their attitudes, compared with the teacher's ratings

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[1]Charles A. Bucher, "Health, Physical Education and Academic Achievement," NEA Journal, Vol. 54, No. 5, May, 1965, p. 38-40.

of individual girls, showed that girls on the 7th, 8th and 9th grade levels tended to rate themselves high, but as they progressed the 10th, 11th and 12th grade girls were more conservative and they began to more nearly approach the ratings the teacher had given them. This indicated a gradual attaining of maturity, a better understanding of themselves and their abilities, and the process of evaluating themselves was more meaningful.

The division of the classes according to Cozen's Classifier, adapted by Bookwalter, did not seem to promote proficiency in the acquisition of skills. The squad system was used the first semester, testing them by using the Indiana Physical Fitness tests. The second semester height, weight groupings were used and tested at the end of the semester. There was such a small difference in their ability to perform that it was of no significance. As a matter of fact, it seemed to be detrimental, since the girls were much too conscious of the division on that basis.

The choice sheets upon which the girls indicated their two best friends and the five girls they liked to work with best were interesting. As the choices of girls in the 7th-12th grades were tabulated, there was evidence of a wider range of choices. The earlier grades tended to concentrate on a few girls, while the higher the grade level, the more the choices scattered. This showed that the range of social contacts was widening. The choices made by the girls in the

lower grades tallied more nearly with the teacher's choice of squad leaders than did those on the higher grade levels. Another advantage of these for the teacher was to be able to train more leaders thereby giving more girls an opportunity to develop leadership abilities.

This inquiry was worthwhile in that it provided the opportunity to (1) review literature on curriculum making in physical education in the light of the writer's teaching experiences, (2) learn more about current research and the need for continuing research, (3) study the situation in Menomonie in the light of this knowledge and apply evaluation procedures suggested in this study. This will be of help since one can make use of these procedures in the future.

The fact that a very limited amount of research in the field of physical education is being undertaken was enlightening. Much more can be done in order to achieve status in the academic world. The areas in which research could be continued are: (1) analyzing motor skills in light of maturation, intelligence, motivation, teaching by whole or part method, speed, accuracy and rate of learning, and (2) social and psychological patterning with regard to the correlation of the two patterns in a total integration of the child, whether the age of the individual has anything to do with it and whether or not it affects readiness. Another area for the average teacher is the better development of techniques by which a person can more nearly determine readiness: then, the testing of various means of classifying within groups and the

effect of such classifying upon performance. There are still other areas for research that could be found, but this inquiry brought these out quite clearly and showed the need for such research. Age is not satisfactory for classification, so the need is seen to go back to squad formations. Schaffer stresses again that only developmental age should be the common denominator for performance.

The review of collected state curriculum guides was valuable experience in itself. There seemed to be no single method by which guides were prepared. They varied from single sheets to pamphlets on standards and leaflets. Wisconsin is now working on a guide. Many guides presented good material on programs to develop endurance, intra-mural programs, and an outline of activities. Some showed evidence that the developmental task concept was the underlying consideration, but it was never referred to per se. The Michigan guide advocated the groupings of peoples according to (1) physician's examination and (2) by grades. No evidence of gradation according to ability to perform these tasks was evident. In Illinois each school plans their own program. Here is evidenced the lack of developmental concept. The Wisconsin guide or rather bulletin is extremely well done, stating guidelines, leaving the choice of activities to the creative and imaginative devices of the teacher, although it guides in the direction of selection of activities on the basis of reason for the activity. The material presented was based on the developmental

task concept and the training of the whole individual. Michigan's "guidelines" proved an increased interest in developing programs of physical education based on the whole child, developmental levels, needs of pupils and continuous evaluation.

From the readings in general education and those in physical education with regard to curriculum development, one can only draw the conclusion that the idea of developmental tasks is an old and continuing one. The guide books for teachers, curriculum guides and standards reviewed, for the most part, either clearly stated or implied, used the concept of developing the whole individual, by using graded activities suited to their level of development--physical, mental and emotional.

The areas that need research continued in are: (1) analyzing motor skills in light of maturation, intelligence, motivation, teaching by whole or part method, speed, accuracy and rate of learning; and (2) social and psychological patterning with regard to the correlation of the two patterns in a total integration of the child, whether the age of the individual has anything to do with it, and whether or not it affects readiness. Another area for the average teacher is the better development of techniques by which one can more nearly determine readiness; then the testing of various means of classifying within groups and the effect of such classifying upon performance. The use of statistical measures to more clearly define the relationship between IQ's and motor

skills, validity of height, weight grouping and comparative statistics of straddle chin to pull-up, girls' push-ups to boys' push-ups. There may be still other areas for research, but this inquiry brought these out quite clearly and showed the need for such research.

BIBLIOGRAPHY

A. BOOKS

Bookwalter, Karl W., Physical Education in the Secondary Schools. Washington, D. C.: Center for Applied Research in Education, 1964. 118 pp.

Defines aims of physical education and presents materials for teaching, based on recent research. The physical, mental, emotional and social needs of pupils on the secondary level is stressed. These facts and the stress he placed on total development of the pupil helped in forming the premise for this study.

Bovard, John F., et al, Tests and Measurements in Physical Education. Philadelphia: W. B. Saunders Co., 1949. 410 pp.

Emphasis is placed on the measurement in everyday teaching. Explanations on the interpretation of measurement are good, and based on their philosophy that physical education is an "essential phase" of the educative process.

Bucher, Charles A., et al, Methods and Materials for Secondary School Physical Education. St. Louis: The C. V. Moshy Co., 1962. 398 pp.

Considers characteristics of secondary school pupils, their interests and needs, with goals, program, teaching methods, problems, grading and evaluation following. Emphasis is placed on physical education and its contribution to the total education program. The check-lists and bibliography of references was of particular value in the preparation for the study.

Cowell, Charles C., Ph. D., Foundations of Physical Education. New York: Harper and Brothers, 1953. 260 pp.

Brings the principles of man, his culture and his behavior, human growth and development together, and organizes them so that they can be applied to a functional program of physical education. Cowell feels

that if human development and personality are to be enhanced by the activities and leadership of physical education, the threads from many of the natural sources must be brought together for the benefit of the "development supervisor" who seeks to define how personality grows. Of value in formulating ideas on development and "readiness" which was basic to this inquiry.

Frandsen, Arden N., Educational Psychology. New York: McGraw Hill Book Co., Inc., 1961. 610 pp.

Materials presented were drawn from psychologists who have done research in the field of learning. Teachers' reports were also included. Deals with goal setting and curriculum to meet these goals, then adapting the curriculum to pupils' needs and readiness for the material. This was of interest in establishing the validity of the inquiry.

Fullager, William A., et al., Readings for Educational Psychology. New York: Thomas Y. Crowell Co., 1959. 462 pp.

A collection of readings on "Learning and Learning Theory," personality development, mental hygiene and other factors that influence the development and well-being of pupils. Again, of interest since it reenforced concern for checking on the effectiveness with which programs are developed.

Havighurst, Robert J., Developmental Tasks and Education. New York: Longmans, Green and Co., 1950. 389 pp.

Havighurst, long an exponent of developmental tasks in effective program planning of instruction. He believes that the developmental task concept is the middle ground between freedom and constraint in guiding the child to full development, as well as a midpoint between what an individual needs and what society demands of him. This book was a major importance in establishing the premise which was responsible for the inquiry.

Jersild, Arthur T., In Search of Self. New York: Columbia University Bureau of Publications, 1952. 201 pp.

Based upon research data, Jersild feels that the way boys and girls feel about themselves is of paramount importance in setting up learning tasks for them. Data presented emphasized the importance of physical development. The material here presented was

of value personally, and contributed to the formation of ideas to pursue in applying the inquiry to a study of the teacher's procedures.

Klausmeier, Herbert J., Learning and Human Abilities. New York: Harper and Brothers, 1961. 432 pp.

Beginning with the nature of human abilities and the teaching-learning process, the book sets forth a theory of classroom learning. The organization of the outcomes of learning, efficiency of achieving and the purpose of evaluation and measurement completes his material. The nature of human abilities and the teaching-learning process was just another way of expressing developmental plateaus and learning. It served to further reenforce the teacher's belief in the inquiry.

Lorge, Irving, Influence of Regularly Interpolated Intervals Upon Subsequent Learning. New York: Columbia University Press, 1930. 269 pp.

An old book, but because of references to the most effective methods of teaching, was of interest to this study. Lorge believes, as he states in this book, that economy of learning is based upon the amount of effort put forth--that under distribution of practice a skill is acquired with less effort than when practice is massed. Variations in distributed practice and variations in time intervals, based on a number of factors was explained. This was related to the stage of learning involved, and to the point at which efficiency does not manifest itself. Interest in this book because of recent studies made by students in physical education with regard to distribution of practice in skills.

McCloy, Charles Harold, Philosophical Bases for Physical Education. New York: Appleton-Century-Crofts, Inc., 1940. 311 pp.

An old book, but one which takes old ideas of education as a basis for new ideas. Divided into three parts, the book states a philosophy, methods of achieving it or at least approaching a realization, then predicting what can happen. It was of particular interest because McCloy believed and practiced the use of not only psychological age characteristics but physical developmental stages.

McCloy, Charles Harold, and Norma Dorothy Young, Tests and Measurements in Physical Education. New York: Appleton-Century-Crofts, Inc., 1954. 497 pp.

Carefully selected tests and measurements, and explanations for the understanding of tests and measurements makes this a good book for physical education teachers. It challenges the reader to further investigate this area. Interest in McCloy's book since it gave greater insight into the use of some of the tests and measurements explained in its content.

McNeely, Simon, Coordinator, Physical Education--An Interpretation. Washington, D. C.: United States Office of Education, 1964. 16 pp.

This pamphlet describes a desirable program for physical education. The program is considered basic to the needs of children, youth and young adults. It deals with the individual as an integrated being, whose physical, mental, emotional, social and spiritual responses are all interrelated. The pamphlet, of recent origin, was of interest in formulating plans to examine the program at Menomonie High School.

Mohr, Dorothy R., Physical Education for High School Students--A Teacher's Guide. Washington, D. C.: National Education Association, 1955. 60 pp.

Presents a "well-balanced" program. Can be used as a test, so is unique in its field. Contains worksheets, check-charts, projects, bulletin board ideas, references and useful in obtaining ideas for checklists which were formulated.

Nicoll, James S., and MayBelle Long, Developmental Physical Education. New York: World Book Company, 1947. 229 pp.

Their belief that many physical education programs are not well-balanced; they go on to show how a well-balanced program can be developed. Development of the whole individual is stressed. Based upon "readiness," the book presents a program, developmental in character, suited to each of the respective age groups. This book was of value and helpful in making the decision to investigate further age-height-weight classification for dividing the classes in Menomonie High School.

Smithells, Phillip A., and Peter E. Cameron, Principles of Evaluation in Physical Education. New York: Harper and Brothers, 1962. 478 pp.

Primarily a textbook for senior college students, it is of value to teachers. Its approach to education is based upon a "way of doing things." Evaluation as a measure of efficiency is pursued, and various areas are discussed, all based upon those evaluated as persons, not specimens, with gains portrayed. This book gave a new insight into the type of evaluation the writer was planning for her group of girls.

Waltjen, Walter B., et al, New Dimensions in Learning. Washington, D. C.: N. E. A. Research Institute, 1962. 69 pp.

The presentation of materials with regard to the insight into factors which affect learning. The physical, psychological and social aspects were emphasized. A multi-disciplinary approach, tending to overlap because of the complexity of the learning process, it gives the reader a chance to use what is applicable to his own situation. This was of value in establishing the validity of this inquiry.

B. OTHER SOURCES

A Guide for Instruction in Physical Education. St. Paul, Minnesota; State of Minnesota, Department of Education. 421 pp.

This guide sets forth the purposes of physical education, relating them to the objectives of physical education. The definition of terms makes clear the meanings of these purposes. Next, the characteristics and needs of boys and girls of eleven to thirteen years makes clear the problems, needs, and behavior tendencies which must be recognized in implementing an effective physical education program. A comprehensive program is outlined for grades 1 through 12 for girls. Well done and based on developmental plateaus or levels of abilities. One of the state guides reviewed with references to the question of developmental plateaus, stated in presenting the writer's problem.

Bookwalter, Karl W., "An Assessment of the Validity of Height, Weight Class Divisions for High School Girls," Research Quarterly, 15:145-149, January, 1944.

Using Cozen's classifier and administering the Indiana Physical Fitness Tests to 1,412 Indiana high school girls, Bookwalter felt that the results he got were not highly satisfactory, but the method was worthy of consideration. In light of other advantages accruing from such a classification and its simplicity, Bookwalter recommended its use. The article was of interest since the writer intended to classify her girls on the basis of height and weight.

Bucher, Charles A., "Health, Physical Education, and Academic Achievement," N. E. A. Journal, Vol. 54, No. 5, May, 1965. pp. 38-40.

An article on the relationship of physical activity, motor skills, and health to academic achievement. Beginning with Socrates and Comeneus he relates the importance of bodily vigor to learning. Today's Radler and Kephart in their book, "Success Through Play," relate learning to motor abilities. A definition of physical education, the relation of health and physical education programs to academic achievement and research studies, and the criteria for judging good program completes the article.

Curriculum Study. Menomonie, Wisconsin: Physical Education Department, Menomonie High School. 23 pp.

Beginning with a statement of general objectives, divided into physical fitness, motor skills, knowledge, social and aesthetic objectives, a course of study is set up, grade by grade. Then general information summaries follow, based on questionnaires sent to from thirteen to fourteen Wisconsin schools. Developmental levels are implied, but not stated. Presented in this study as part of the evaluation of study guides since the writer is relating her inquiry to Menomonie High School.

Daniels, Arthur S., "The Potential of Physical Education as an Area of Research and Scholarly Effort," J. O. H. P. E. R., 36:32-33-74, January, 1965.

Discusses the status of physical education as a discipline and the lack of scholarly research. He makes suggestions for future research in the field, one of which was the area of my inquiry--maturation

and motor learning and intelligence and motor learning. Since the writer had decided upon her inquiry before the article was published, she felt justified in doing the work.

Espenschade, Anna A., "Restudy of Relationships Between Physical Performance of School Children and Age, Height, and Weight," Research Quarterly, 34:144-153, May, 1963.

Using approximately 7,600 boys and girls, 10 to 18 years of age, the correlations of performance in five test events with height and weight were low, and in some cases, of little significance statistically. She did not feel the use of the classification then was justified, from the standpoint of labor involved.

First National Institute on Girls' Sports, A. A. H. P. E. R., 1965. 160 pp.

A book of proceedings contained articles by participants in the Institute held at the University of Oklahoma, Norman, Oklahoma. Areas covered were Philosophy and Research, Gymnastics, Track and Field, and For the Generalist. All of it was oriented to track and field events, and to gymnastics for girls. The sections on Gymnastics and Philosophy and Research were of particular value since they, at least in part, reenforced the writer's belief in the use of developmental levels in determining placement and gradation of activities.

Physical Education for Girls, Secondary Schools. Des Moines, Iowa: State of Iowa, Department of Public Instruction, 1948. 320 pp.

This is a comprehensive book, which sets forth the philosophy of Iowa schools, and the philosophy of physical education in particular. It contains material on all phases of physical education, from health examinations through testing and evaluation. This, again, was of value in the review and evaluation of another state program.

Physical Education for Michigan Communities. Lansing, Michigan: Department of Public Instruction, Bulletin 359 (Revised edition), 1963. 24 pp.

This bulletin defines a good physical education program, then describes the program in Michigan.

Primarily a bulletin for anyone interested in school curriculum, it is not primarily for teachers of physical education. This bulletin was of use in evaluating Michigan's program of physical education for high school girls.

Senior High School Physical Education Course of Study for Girls. Minneapolis, Minnesota: Minneapolis Public Schools, Superintendent of Schools, 1944. 83 pp.

This is a curriculum guide used by all teachers of physical education in the public schools of Minneapolis. Standards and organization of the program are followed by a detailed outline of activities to be taught. Detailed, with outcomes listed, and a bibliography for each type of activity. This was used as a part of evaluation of the Minnesota program in physical education for high school girls.

Standards for Physical Education, Grades One Through Twelve, State of Wisconsin. Madison, Wisconsin: State Superintendent of Instruction, 1964. 64 pp.

A document prepared by a committee under the State Coordinator of Health, Physical Education and Safety, is based on child growth and development information. It was prepared to be used as a self-appraisal instrument in detecting strengths and weaknesses. It has instructions for use. Extremely well done and of value to every physical education teacher. Used by the writer as part of her evaluation set forth in the summary of the paper.

Standards to be Observed in Developing a Program of Physical Education for High Schools. Springfield, Illinois: Office of the Superintendent of Public Instruction. 4 pp.

Lists sixteen standards for use in setting up a curriculum for physical education in the high schools of Illinois. It also makes suggestions for suitable individual, dual and sports activities. The rest of the material consists of suggestions for intramurals and a bibliography. Of value in this study from the standpoint of evaluating what Illinois is doing to promote effective curriculum development.

"Statement of Policies for Competition in Girls' and Women's Sports," A. A. H. P. E. R., 1957, and "Standards in Sports for Girls and Women," A. A. H. P. E. R., 1958 and 1961 editions.

The definition of competition, kinds of competition and the adaptation of sports for age-level groups, made up the contents of this paper. Interesting, but of little value as far as this study was concerned.

Suggested Curriculum Outline in Physical Education for High School Boys and Girls. Springfield, Illinois: Office of the Superintendent of Public Instruction. 15 pp.

This syllabus presents the School Code of Illinois and follows with objectives, class organization and regulations, with lists of selected activities for boys and girls in the high schools of Illinois. The material includes a modified program for boys and girls who cannot participate in the regular program because of physical or emotional handicaps. This syllabus with the pamphlet on standards was of help in evaluating various state programs.

The Physical Fitness Phase of the Physical Education Program in Michigan Schools. Lansing, Michigan: Department of Public Instruction, 1963. Pub. No. 531. 23 pp.

This pamphlet is a guide for planning a physical fitness program in physical education. It is based upon progression through placement of activities at appropriate levels. Starting with a philosophy of physical education, it proceeds to guidelines for an effective program, placement of activities, and evaluation. This was used as part of the evaluation of state programs as outlined in the problem of inquiry.

Werner, Melvin, Dr., Psychological Factors in Physical Education Activities Among Teenage Girls. A paper. 3 pp.

A paper dealing with, as the title states, the psychological factors in physical education activities among teenage girls. The paper stressed the importance of physical activity in adolescence from the standpoint of belonging to a group. The idea of group feeling, precision and control in rhythmic activities which aid the adolescent girl to adjust was important, since the writer's study had, in part, to do with "readiness" as well as the needs of adolescent girls.

APPENDIX

APPENDIX

APPENDIX A

RATING SCALE I
Menomonie High School
Girls' Phy. Ed.

NAME_____ GRADE_____ DATE_____

DIRECTIONS: Check each item in the column which you feel best applies to you.

Item	Always	Sometimes	Rarely
1. I feel that I am prompt.			
2. I feel that Physical Education is an important part of my school work.			
3. My uniform is clean and pressed.			
4. I take a shower after each class session.			
5. I keep my locker clean and neat.			
6. I am interested in Physical Education.			
7. I follow instructions or directions.			
8. I am attentive.			
9. I am ready to cooperate in activities.			
10. I take part in all of the activities.			
11. I am courteous to the teacher.			
12. I am courteous to my classmates.			

APPENDIX B

RATING SCALE II
Menomonie High School (Jr. High)
Girls' Phy. Ed.

NAME_____ GRADE_____ DATE_____

DIRECTIONS: Check each item in the column that best expresses your feeling about physical education activities. Rate yourself 4-3-2-1 according to how well you like the following activities. 4-best, 3-next best, 2-little, 1-not at all.

Items	4	3	2	1
1. Field Ball				
2. Soccer				
3. Exercise to Music				
4. Tumbling				
5. Trampoline				
6. Balance Beam				
7. Rope Jumping				
8. Modern Dance				
9. Folk Dance				
10. Newcomb				
11. Volleyball				
12. Softball				

APPENDIX B (Continued)

RATING SCALE II
Menomonie High School (Sr. High)
Girls' Phy. Ed.

NAME_____ GRADE_____ DATE_____

DIRECTIONS: Check each item in the column that best expresses your feeling about physical education activities. Rate yourself 4-3-2-1 according to how well you like the following activities. 4-best, 3-next best, 2-little, 1-not at all.

Items	4	3	2	1
1. Soccer				
2. Speedball				
3. Field Hockey				
4. Basketball				
5. Volleyball				
6. Badminton				
7. Softball				
8. Exercises				
9. Rope Jumping				
10. Archery				
11. Marching				
12. Tumbling				
13. Relays				
14. Track and Field				

APPENDIX C

RATING SCALE III
Menomonie High School
Girls' Phy. Ed.

NAME_____ GRADE____ DATE_____

Part A

DIRECTIONS: List at least two girls who are your best friends in class. 1-the one you like best and 2-the one you like next best.

1. Grade:	2. Grade:

Part B

DIRECTIONS: List at least 5 girls with whom you like to work. 1-the one you like to work with best, 2-next best, 3-next, and so forth.

1. Grade:	4. Grade:
2. Grade:	5. Grade:
3. Grade:	

APPENDIX D

TEACHER'S RATING SCALE IV
Menomonie High School
Girls' Physical Education

NAME_____ GRADE_____ DATE_____

Item	Excellent	Average	Poor
1. General health			
2. Self direction			
3. Improvement in skills			
4. Takes part in all activities			
5. Keeps self and uniform neat and clean			
6. Conscientious about work in physical education			
7. Plays well with others			
8. Shows leadership			
9. Cooperates in following directions			
10. Prompt			
11. Interested in physical education			
12. Is courteous to teacher and classmates			