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THE ELEMENTARY SCHOOL CHILD AND HIS POSTURE PATTERNS.

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A CHILD'S POSTURE PATTERNS MAY LEAD TO AN ADULT'S PHYSICAL HANDICAP. THE MAIN THEME OF THIS BOOK IS TO SERVE AS A GUIDE FOR THE ELEMENTARY TEACHER OR PARENT IN THE DETECTION AND UNDERSTANDING OF DEVIATIONS FROM THE NORMAL POSTURE PATTERNS WHILE THE CHILD IS SITTING, STANDING, OR MOVING ABOUT SO AS TO PREVENT FUTURE HANDICAPPING CONDITIONS. SELECTION OF SUITABLE ACTIVITIES CAN AID IN DEVELOPMENT OF GOOD POSTURE PATTERNS. EARLY DETECTION OF DIVERGENCIES AND EARLY REFERRAL TO A PHYSICIAN OR OTHER SPECIALIST MAKES POSSIBLE THE PREVENTION OR CORRECTION OF HANDICAPS. WRITTEN IN NONTECHNICAL LANGUAGE, IT DEALS WITH DESCRIPTIONS OF POSTURAL PATTERNS AND REASONS FOR THEM. INCLUDED ARE METHODS FOR DETECTING POSTURAL DIVERGENCIES, PROCEDURES TO FOLLOW AFTER D TECTION, AS WELL AS METHODS FOR PREVENTING THEM. SUGGESTIONS ARE MADE FOR CLASSROOM AND PLAYGROUND ACTIVITIES WHICH MAY ASSIST IN THE TOTAL GROWTH AND DEVELOPMENT OF THE CHILD AND IN THE PREVENTION OF POSTURAL DIVERGENCIES. PROPER FURNITURE SELECTION IS NECESSARY FOR GOOD POSTURE. THE TOTAL CLASSROOM'S ENVIRONMENT CAN ENCOURAGE GROWTH AND LEARNING FOR ELEMENTARY PUPILS. (RK)

The Elementary School Child and His Posture Patterns

EVELYN A. DAVIES

Current Problems in Education

The Elementary School Child and His Posture Patterns

CURRENT PROBLEMS IN EDUCATION

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TO

MY MOTHER

Annie Davies

Preface

A young child's posture patterns may lead to an adult's physical handicap. The teacher or parent who recognizes and understands deviations from the normal posture patterns while the child is sitting, standing, or moving about, may prevent future handicapping conditions. Selection of suitable activities may aid in development of good posture patterns. Early detection of divergencies and early referral to a physician or other specialist makes possible the prevention or correction of handicaps.

This is the main theme of this book, written in nontechnical language as a guide for the elementary classroom teacher. It may be equally valuable for parents of the elementary school child. It deals with descriptions of postural patterns and some of the reasons for them. It includes methods of detecting postural divergencies, procedures to follow after detection, as well as methods for preventing them. Suggestions are made for classroom and playground activities which may assist in the total growth and development of the child and in the prevention of postural divergencies.

It is hoped this book will be used by students learning to become teachers as well as by those now working with children, in helping all children obtain their optimum development, free from handicapping conditions.

My thanks to Rosalind Cassidy, Co-ordinator of The Women's Staff, Department of Physical Education, University of California at Los Angeles, for instigating this project; to William Burton, Appleton-Century-Crofts Editor, for his encouragement and assistance; to Ellen Millisor, Jessica Nixon, and Ethel Tobin Bell, former UCLA associates, for their aid and suggestions; to Nora Cole, Los Angeles City Schools, for her editorial assistance; and to my family and other friends who helped in any way toward the completion of this project.

E.A.D.

Contents

1

The Elementary Child's Posture Patterns

Posture, for many years, was considered a static position assumed upon occasion, when there was a posture check at school or when you were told to "stand up straight and put your shoulders back," or to "stand tall." As soon as you felt no one was looking you could let your shoulders and "tummy" relax and get on with what you were doing.

Today *posture* is considered a dynamic term, each individual possessing not one, but many postures. These postures may be defined as the positions or relationships of body parts while sitting, standing, walking, running, or during any activity. These true relationships are present whether or not the individual is under scrutiny.

Each elementary child has his own individual posture pattern, the results of influences from people and things with whom he comes in contact and the society in which he lives.

POSTURE AND ACTIVITY PATTERNS IN A CHANGING SOCIETY

The more dynamic the world about us becomes, the more static we seem to become. We go places faster, we do more things easier, we are able to see more and hear more; but this is all accomplished for us by efficient automatic devices. These devices make it possible for us to enjoy more things by doing less and less. Things are brought to us, we don't have to use physical effort or energy to go after them. Although we travel greater distances in shorter periods of time, we sit in one place to do it. We ride for longer periods in automobiles which are being made more comfortable every day. We fly across country

or to Europe with great speed, but we sit in one seat most of the nine or thirteen hours it takes to do it.

Many things are being done for us with new inventions. Most of these inventions are directed toward conservation of time and energy for humans, making it possible for them to enjoy more leisure time. Instead of using this leisure time to participate in some physical activity, such as a family outing in a recreational park, many people spend it in static, sedentary positions, while watching the few, usually professional participants who are still active. This increasing inactivity is not limited to adults.

Children also are succumbing to these modern inventions and becoming more sedentary. The child now lives closer to school so he doesn't walk so far; he eats at the school cafeteria so he doesn't run home for lunch. His home and school are on one floor so he doesn't need to go up and down stairs. Those who still live considerable distances from the school are driven there and back by the school bus or private car. This also enables them to get home in time to watch the afternoon television programs, and soon it is bedtime. On Saturdays and holidays, television and the movie theaters compete for the child's attention and attendance by offering special children's programs. On Sunday it is difficult to find many playmates, except at Sunday school when all are dressed in their best clothes and not prepared for active games and activities. This mode of living leads the child more and more into a sedentary life. Like the adults, he is becoming more of a spectator than a participant. Children still run, hop, skip, jump, and do everything the growing child should do, but to a much lesser degree than previously.

While a spectator in the theater or television room, or a passenger in the cars, buses, planes, and trains, children usually sit in chairs fashioned for adults. There are as yet few seats constructed for children in homes, in public places, or in public conveyances, be it bus, train, or plane. Instead the children sit in seats too large for them, and in order to be comfortable, they sit on one side of the chair with their weight balanced over one side of the body, or on the edge of the chair with their backs rounded so they can swing their legs. At home many children sit on the floor with backs rounded or with their weight resting on one side of the body. Granted some parents provide

special television chairs and some remind the children how they are slouching; but this does not prevent them from acquiring posture patterns which may disturb them later. These patterns would be the result of too sedentary an existence without proper facilities.

In the first place the child should not lead such a sedentary life. If this is the pattern, however, proper fitting furniture should be used to prevent improper postural habits. The chair should be high or low enough to enable the child to place his feet flat on the floor while sitting against the back of the seat. The seat should be about the length of the child's thighs so he is able to bend his knees and place his feet flat on the floor, just in front of his chair, without the seat hitting him in the back of the knees. Tables and desks should also be a height the child can reach comfortably without having to hunch his shoulders or round his back, and thus form improper posture patterns.

POSTURES AS REFLECTIONS

Postures may reveal different things to different people. To some, postures reflect the child's attitude toward life, toward people, and toward himself. In postures some observers see just the relationship of body parts, while others see the reflection of an individual's total personality through the relationship of body parts. For the most part, reflections seen in postures depend upon the observer's training and background and the things which are of particular interest to him.

Different children have different postures and it is felt there may be many reasons for these differences. In addition to his body build, some of the more common things which teachers may see reflected in a child's posture are his environment, background, ideals, emotions, and health.

Environment and Background

Climate may affect postures and movement of children, mainly due to its influence on circulation. The child reared in warm climates is taught to move slowly and rest frequently to cool off, while the child in cooler climates is taught to move rapidly to keep warm. Similarly, the movements of the rural child used

to the wide open fields may be different from those of the child reared in the speed and hubbub of a large metropolis with its confining areas.

Habits and modes of living are often revealed in patterns of movements. These may not differ to any great extent within one school, since the majority of the children come from comparable homes, economic backgrounds, and families. It should not be too difficult to distinguish between the children who are and those who are not given love, affection, and security at home. It is often found that the first type child is usually poised and moves naturally in an elevated or extended manner, whereas the latter is usually hesitant, unsure and moves in an unnatural, constricted or contracted manner. Needless to say, there can be no hard and fast rules for determining the child's environment and background from his posture patterns. It is the duty of the classroom teacher to be aware of these various patterns and the possible reasons for them. These posture patterns may not be divorced from the child's body image of himself which is influenced by his family, his background, and his environment. His body image is reflected in his movement patterns.

Ideals

The child may think and feel that he looks and moves exactly like his ideal character. Children often try to emulate their idols or their favorite fictional characters. They mimic walks, standing positions, mannerisms, and even speech of their favorite television idols, movie idols, or heroes. Many children move exactly as their parents do. Part of this is due to the hereditary structure, but part is due also to the child's desire to be like his favorite parent. These posture patterns, many acquired, are the result of the child's body image of himself and his concept of how he looks to people or how he desires to appear to others. His body image may change from time to time and therefore some of his deliberate patterns of movement may change. This may account for a decided limp one day or an arm pressed close to his side, a swaggering walk, walking only on the toes, holding one or both shoulders tight, taking steps much too long for him or too short, or any sudden change in a body part for no apparent reason. Any or all of these positions may be

assumed because the child is playing a part and wants to look and act that part. He is assuming his ideal posture. We may be unable to determine readily the cause for Johnny's sudden change in movement patterns. His basic structure will remain the same, however, and he will probably revert to his natural movement patterns frequently enough during the school day or week to enable one to determine the child's individual movement patterns.

Emotions

There appears to be a close relationship between the way a child feels and how he holds his body or carries himself. An individual in pain usually places or carries the aching part in flexion. A painful arm is kept close to the body, flexed at the shoulder, elbow, and wrist. In like manner, a child with a "tummy ache" bends at the waist as he holds his "tummy."

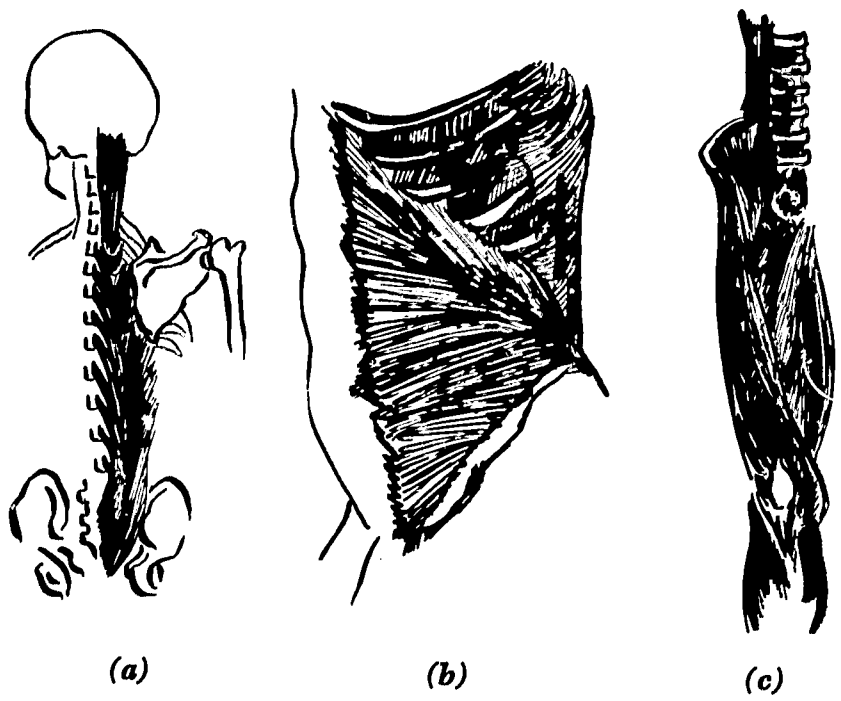
Fear is often characterized by contraction or flexion and hesitancy in movement, while joy and security, as stated before, are characterized by elevation or extension and sureness in movement. It is also true in many instances that aggressiveness and belligerency may be portrayed by constrained movements. As a general rule, people, all ages, look the way they feel; their emotions are often portrayed in their appearances.

Health

Good postures do not necessarily reflect good health, nor do poor postures necessarily reflect poor health. The healthy child, however, usually is enthusiastic, energetic, and vivacious and is interested in participating in activities around him. His postures and movements reflect many of his feelings which are ofttimes the result of his mental and physical condition. The happy, healthy child usually stands tall whereas the sad, dejected child appears to shrink and become smaller. The healthy child is generally a happy child and his happiness is reflected through his posture patterns.

All of the above mentioned, environment and background, ideals, emotions, health and activity, and perhaps more, influence a child's posture patterns. It cannot be said that any one thing is more responsible than another; nor can we say at times

which is the cause and which the effect. We are all such closely knit individuals that it is not always possible to decide whether the postures are affecting the child's health or whether his health is responsible for his postures. The author is of the opinion that in most cases health is responsible for postures; that when children feel well, they look well. It should not be necessary to remind a healthy child whose basic structure is without deviations to stand tall or to stand in good posture. When a child is well, his muscles should be strong enough to withstand the pull of gravity. The muscles mainly responsible for this are called the extensor muscles, or anti-gravity muscles (Fig. 1).



(a) *(b)* *(c)*

Fig. 1. Extension or anti-gravity muscles: *(a)* back, *(b)* trunk, *(c)* thigh.

They are found in layers on his back, on the front of his thighs, and on the front of his trunk. They are the muscles mainly responsible for holding the head and trunk erect, and helping to keep the knees in an extended position. They also help to hold the shoulders erect and to assist in the movements of the scapulae. When the child is healthy his muscles usually are in good condition and are able to keep the body in extension. If there is a deviation or a divergency, this should be evident in the lack of symmetry of both sides of the body.

POSTURES AND GROWTH

The elementary child is a growing child. As he passes through different stages of growth, he also engages in different types of activity. Activity, geared to the child's growth stage, also aids in the development of body parts. Lack of proper activity may be reflected in lack of development, as seen through divergencies in postural patterns.

Upper Extremities

Growth takes place from the head to the feet. The shoulders and arms increase in bulk and strength before the legs and feet. The elementary child is likely to have stronger muscles in his shoulders and arms than in his lower extremities. Because of this he is able to climb and crawl before he is able to walk. Climbing and crawling activities in turn help to develop the upper extremities and to strengthen the abdominal muscles.

Lower Extremities

Later when the child starts to support himself on his lower extremities, their strength begins to increase. His legs develop mainly through locomotor activities such as skipping, jumping, running, galloping, and hopping.

Trunk and Abdomen

The muscles in the trunk and abdomen also develop through use. Through crawling and stretching as well as holding his body erect against the pull of gravity, the elementary child is continually developing these larger muscles. The lungs and diaphragm increase in size and strength as the child participates in running activities and those activities requiring endurance and stamina.

In like manner, the elementary child develops the large muscles in his trunk and extremities, through participation in gross movements; but the muscles responsible for finer and more exact movements are still undeveloped. Thus he is able to perform large movements, such as running, jumping, and other locomotor movements, but is unable to co-ordinate well enough to accomplish the finer movements such as buttoning his shirt, tying his shoe laces, and threading a needle. These activities may

become possible in the more advanced elementary grades, especially with practice, as the nervous and muscular systems become better co-ordinated.

ACTIVITY PROGRAMS

Activity programs should be designed to aid the child in overcoming his sedentary existence, as well as to promote his growth and improve his posture patterns. One of these programs is the physical activity program at school. Since the child spends much of his day in school, he should have opportunities there for activities to assist his over-all growth and development. In some schools these activities are planned by a specialist in physical education. In other schools it is the duty of the elementary teacher to plan, teach, and supervise the outdoor activity as well as the classroom activity. These activities should be planned for the optimum growth and development of each child and for the improvement of his posture patterns.

SUMMARY

The elementary child, as all children, possesses many different postures, depending upon the activity in which he is engaging. His postures change constantly, but always reveal considerable information to the practiced observer. Like adults, the child is influenced by the many new inventions and time saving devices of our mechanized world. Also like most adults, he uses his leisure time for sedentary activities rather than for active ones. Unlike the adults, he usually assumes static positions in furniture which is not designed for him and which, therefore, encourages poor postural habits and postural divergencies.

Postures reflect different things to different people. Some of the things reflected in a child's posture may be his environment, background, ideals, emotions, and over-all health.

As the child grows his body proportions change and this necessitates postural changes. All children pass through the same periods and stages of growth, but do so at different ages. As growth progresses from head to toe, postural patterns develop,

aided by the activities in which the child participates. Because of body changes, stages of growth and activities, the child's postures change. Knowledge of the patterns of growth and development for different ages, enables the teacher to gain considerable insight into the individual child through his posture patterns. This knowledge also enables the teacher to help the child select activities which promote optimum development.

It is important to remember that the elementary teacher is not expected to diagnose the child's condition, but to be cognizant of the many influencing factors which could be responsible for the child's posture patterns. With this knowledge the teacher may help prevent permanent postural divergencies in some children and help others to secure needed professional assistance to halt the progress of their divergencies. If found in time, some of these divergencies may be corrected.

2

Posture and Activity

Posture affects activity and is affected by activity. The child's posture changes with activities and is changed as a result of participation in activities. Some activities may be performed when the child is sitting, some when standing. The child changes his positions, the relationships of his body parts, or his postures in order to satisfactorily perform different activities. Through performance of activities, the child grows and develops and his postures change.

RELATION OF ACTIVITY TO POSTURE

Activity is accomplished through the use of the body in varied positions. Strength is increased through use, so the parts of the body used, whether in performing the actual act or helping to hold the body in balance, are aided in their development. The manner in which they are used influences the direction of their growth.

Muscles develop through use and since muscles are attached to bone, the direction of muscle pull will influence the direction of bony growth. Muscles aid the body parts in assuming or in holding positions in relation to the rest of the body. They are responsible for movement of body parts as well as for static positions. Whether the body is in movement or stationary, muscles are exerting pull on bones, helping them to change positions or helping them to hold their positions against the pull of gravity or other external forces. Muscles are arranged on all sides of most bones and joints to keep them in a balanced position. If muscles on one side of a joint are used more than those on the opposing side, the bones will tend to be pulled toward

the stronger muscle group, and tend to grow in that direction. To prevent this, the body is constantly being placed in different positions, and opposing muscle groups are thus used and strengthened. In this manner the child, unknowingly, is aiding the balanced growth of the body.

ACTIVITY AND POSTURAL CHANGES

The child in the lower elementary grades may still have a rounded abdomen and his shoulder blades may still be "winged" but as he continues to participate in activities these prominences should be controlled through muscle development. Development is aided by participation in physical activities. This is true of both muscles and bones. As stated previously, muscles grow in strength only when they must work. As muscle strength increases, force is exerted on bones to which muscles are attached. Bones may change in shape as a result of muscle pull, and this change in shape may change body balance and movement efficiency. It will undoubtedly influence the child's posture patterns.

An example of the above may be seen in the growth and development of the foot and leg. When children first start to walk, they maintain a wide base with their feet far apart, since it is easier for them to balance this way. The muscle group mainly responsible for turning the feet outward are used more in this position, thus they are stronger than the muscles responsible for turning the feet and toes inward. As the child continues to walk, he must lift his toes or flex his ankles, and this strengthens the muscles responsible for this action. These same muscles aid in turning the toes inward; and as stated before, strengthening all of these antagonistic muscles helps to straighten the feet and legs and thus maintain them in better balance.

Another example of the effect of activity on posture may be seen in many adults who have definite postures as the result of their occupations. An elevator operator who, before the electronic age had to use some force to turn the wheel or to open the door, often had one arm and shoulder much more developed than the other arm and shoulder.

The typist often developes a rigid back and shoulders from

assuming a static position in front of the typewriter for many hours of the day and week. The tennis or baseball players, unless switch batters or throwers, often develop one side of the body much more than the other. All of this because one group of muscles is used more than the other and exerts muscle pull against bony structure.

In adults the direction of bony growth has already been largely determined and it is difficult to change, even with surgery. In children, however, while the bones are soft and there is still a great amount of cartilage present, the bony growth direction is more easily influenced. Thus the interest in proper selection of activities to insure all-around physical growth and development.

ACTIVITY AND ORGANIC DEVELOPMENT

As activity influences muscular and bony development, it also aids in organic development. As the child grows in size, as muscles and bones grow, there is more demand on the internal organs, stimulating their growth and development. Muscles and bones are nourished through the blood and their growth depends upon the amount of blood received. All internal organs and systems are closely related, and the function of one depends upon the function of all others. The circulatory system which carries oxygen to the muscular system depends upon the respiratory system to supply the oxygen. Activity creates the need for more oxygen in the blood, so the child breathes deeper and perhaps faster, thus helping the development of his lungs. When active, his heart must work harder to pump more oxygenated blood to places it is needed, thus aiding the development of the heart muscle. The need for more oxygen in the blood increases the circulation to bring nourishment to the muscles and bones. All systems, including the glandular as well as the nervous system, must co-operate in body movements, and all of their functioning is usually increased through activity.

ACTIVITY AND TENSIONS

In order to perform any activity, there must be some muscular tension. Some physiologists refer to this as muscular tonus, or

the readiness of a muscle to perform. This form of tension is a healthy and necessary muscular quality. The unhealthy state occurs when muscular tension is present although no action is being performed. Anytime muscular contraction is present, energy is being used and fuel must be consumed. This unnecessary tension or muscular contraction taxes all of the body systems and creates unnecessary fatigue.

Elementary school children seldom recognize fatigue although, like adults, they show the effects of it. When muscles are held in constant contraction, even though an activity is not being performed, the muscles become fatigued. As with everything else concerned with the body, or the human being, fatigue is not limited to one body part, but is disseminated throughout the body and becomes apparent in the child's postures.

Activity is also used by both children and adults as a means of getting rid of excess tensions and pent-up emotions. The adult deliberately schedules weekly golf, bridge, bowling, or social dates in order to get his mind off the worries of the office and to lose some of the tensions or tenseness he has acquired. When children participate in physical activity they often rid themselves of excess energy and excess tensions while giving vent to their feelings. This latter fact is used in play therapy when children sometimes reveal their innermost thoughts and reasons for their emotional disturbances. Giving expression to these inner feelings through activity helps the child rid himself of tensions or possible causes of tensions.

Some of these expressions may be winking, blinking, shaking the foot, knee, or some other body part, grimacing, biting nails, or any of the many little things which are so disturbing to the teacher or person trying to gain and hold the child's attention.

POSTURES AND TENSIONS

Tension is often created by "held positions." These positions may be assumed unconsciously by children with inner tensions, or may be assumed deliberately. The child straining to hear or see may hold his head forward or to one side; the child with a weakness in one hip may sit or stand with the weight on the other hip for protection of the weaker one. Unconsciously the

child will hold positions to protect the weak part of the body from being used. This is also true of adults. Postures are sometimes assumed for protection of body parts, even though these positions are awkward, uncomfortable, and tension creating. A slight limp may be found in the child or adult who is unconsciously protecting a weakened muscle from being used too extensively.

In like manner, tensions may be created by adults who tell children to "stand up straight" and "hold those shoulders back" or "pull your tummy in." It may be true that the constant reminding by teachers and parents may help the children to practice good posture until it practically becomes habitual, but generally this is not accomplished without increasing body tensions. How much better it would be for the child to develop his shoulders, his back, and abdominal muscles and to be healthy enough to assume these postures instinctively or automatically without creating excessive tensions due to constantly thinking about it or being reminded of it! Activity properly chosen and performed may accomplish this by helping the muscles responsible. As stated previously, when the child is healthy, he usually assumes a good posture without creating excessive tension in doing so.

SUMMARY

Posture affects activity and is affected by activity. Postures must be assumed, consciously or unconsciously, in order to perform activity. The kinds and extent of activities performed determine the eventual shape of the bones and muscles, or the posture.

The child's development is aided through his participation in physical activities. Muscles and bones grow in relation to the way in which they are used. The strength of muscles is increased by increasing the work load placed upon them, and the muscles in turn exert pull on bones to influence the direction of bony growth.

In the same manner, activity increases development of the heart and lungs, since they must work to increase the blood and oxygen supply to working muscles.

Muscular tension is necessary for performance of muscular

activity, but excessive tension may result in fatigue and postural divergencies.

Activity is often used consciously or unconsciously as a means of getting rid of excessive tensions.

Tensions may be created by children attempting to assume "good postures" or attempting through held positions to protect a body part.

Through selected activity properly performed, muscles may be developed which enable the child to have "good postures" without creating undue tensions in the attempt.

3

Posture Patterns and Divergencies

As a child's posture is affected by activity, it is also affected by divergencies. A divergency in one part of the body usually affects the adjoining body part and many times the whole individual. Although the divergency may be temporary or may be minor, it influences the individual, and can be noted in his posture patterns.

In like manner, posture of one body part may reveal a divergency in another area, due to the compactness and interrelatedness of our body parts.

The elementary teacher has opportunity to discern divergencies of children through observance of their posture patterns while at work or at play.

POSTURE AND EQUILIBRIUM

Equilibrium is the basis for many posture problems. Our heads are balanced over the center of our trunks and bodies. The weight of our heads and trunks appears to be centered in the lower part of our vertebral columns before it is divided, half of it being carried or supported by each lower extremity. This weight division is present when both extremities are in contact with the ground (Fig. 2). Many times during locomotion, walking, running, and skipping, all the body weight is supported on one leg, or is quickly transferred from one extremity to the other. This support and transfer of weight is made possible through movement of joints. The joints are held in position by ligaments, tendons, and muscles, all of which function during movement of a joint. This holding action is mainly the responsibility of the ligaments, but they are assisted by all these other

structures. It is difficult, if at all possible, to move any joint without having it influence or affect another joint. All of this because we are such closely knit individuals that a movement in one joint usually affects the joint above or below it or both. Thus, when the feet and legs are well balanced, there is less strain on muscles and ligaments, not only of the feet and legs,

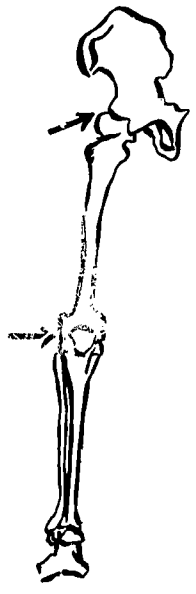


Fig. 2. Balanced posture. Fig. 3. Hip and knee joints.

but also of the knees. One of the bones which comprises the knee joint is also a part of the hip joint (Fig. 3). The socket for the hip joint is part of the pelvic girdle. The bottom of the vertebral column is the sacrum, which is also part of the pelvic girdle, and the vertebral column extends to the base of the skull. The entire column is comprised of vertebrae, each joined to the one above and below it by ligaments and muscles. So you see, when the feet and legs are well balanced and in good alignment, there is less strain on muscles, ligaments, and joints, not only of the feet and legs, but also of the knees, hips, and entire body.

A structure is considered to be well balanced when equilibrium is maintained against opposing forces. These forces may originate from within the body or from outside. They can be psychological as well as physical. The well-balanced individual

"rolls with the blow," but has sufficient resiliency and stability to regain equilibrium without much delay or difficulty. The child is able to maintain static positions at his desk, table, easel, or on the floor over a longer period of time when his head and trunk are balanced evenly over his hips and both legs. In the same manner, his dynamic posture should be more efficient when this balance is maintained. This may be more difficult when the child is moving, but it is accomplished by a disturbance of equilibrium or balance and a quick recovery.

In running the equilibrium is disturbed by the head or trunk going in front of the center of gravity. The body then attempts to recover the equilibrium by moving the legs faster, thus increasing speed. During most of the day some part of the child's body is waging a battle against the pull of gravity. This struggle is quite obvious in some, especially those whose health is questionable. In others whose bodies are healthier, although this battle is still present, it is not so obvious.

DETECTION OF DIVERGENCIES

It is amazing the things you see when you're looking for them! Because of the symmetry of our bodies, it is easy to detect variations from normal patterns, especially in static positions.

STATIC POSTURES

Head. Does he tilt his head to one side, always the same side, when reading or listening to a story? Does he hold his head forward when sitting, standing, or walking? (Fig. 4.)

Shoulders. Are his shoulders relatively level or is one much closer to his ear than the other? Does he hold his shoulders tight or forward? (Fig. 5.)

Hips. Like the shoulders, one hip may be higher than the other, or appear to be larger or more prominent than the other. This also is noticeable through clothing. The belts and waistbands may be the indicators here. If one side or hip is more prominent than the other, the belt or waistband will appear higher on one side than on the other. This will be noticeable most every day, since the same type of clothing is worn (Fig. 6).

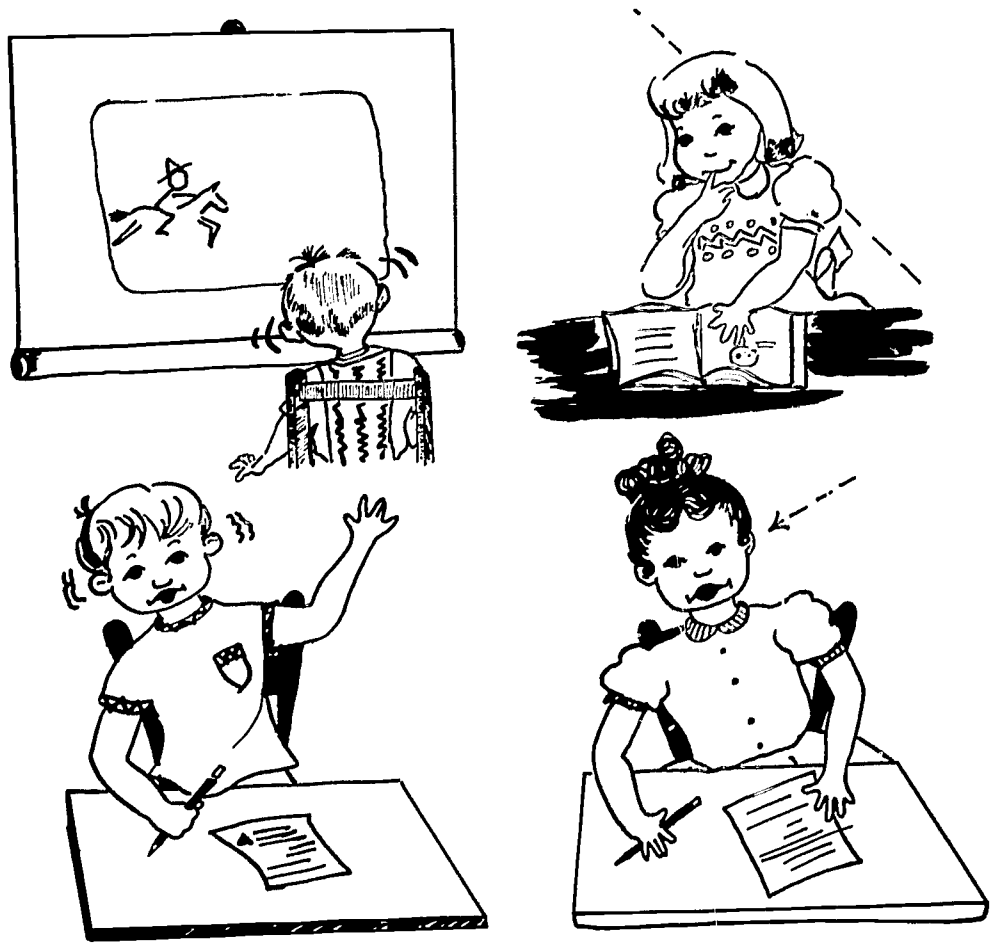


Fig. 4. Is the head constantly twisted or tilted?

Fig. 5. Are the shoulders level?

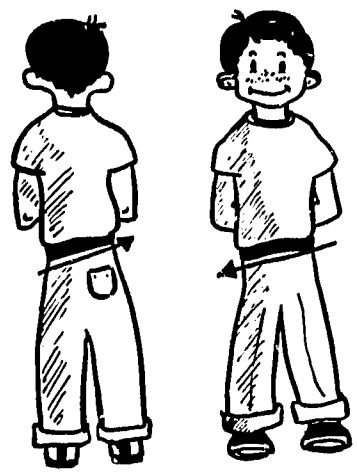


Fig. 6. Are the hips level?

Knees. Does one knee seem to be turned toward the other, braced against it? The knees may point toward each other, knock against each other, or face in opposite directions. In any case this will be reflected in the bones of the thigh and lower leg, since the ends of these bones are part of the knee joint (Fig. 7). The knees should point straight ahead to effectively balance the hip and the trunk. They should also be at the same level or height. Often when one hip appears higher than the other, we find there is also a discrepancy in the height of the knees. This again because the same bone is a part of both joints. When such is the case, the child may stand with one knee braced against or overlapping the other (Fig. 8). This child then carries his weight on the inner part of his feet and his inner ankles, while his toes, instead of pointing straight ahead, may point outward. Sometimes, especially when there is a difference in leg lengths, the child may point only one foot outward while standing or walking (Fig. 9).

Feet. Does he usually point his feet in or out or straight ahead? Does he stand with his weight on his inner ankles? Does he stand with one foot straight and the other always pointed outward? (Fig. 10.)

INTERRELATEDNESS OF BODY SEGMENTS

These deviations may affect only that one body part, but this is not usually the case. As explained previously, due to the compactness of our bodies and the close relationship of one part to another, any small divergency may affect the whole structure. A divergency in one part of the body may be the cue for discovering a more serious divergency elsewhere. A simple example of this may be found in the head tilt to one side revealing a vision defect in one eye or a hearing defect in one ear. The head carried forward may also denote the fact that the child has an eye or ear defect.

Another example may be found in one shoulder being higher than the other. This may be the only divergency. It is more likely, however, that this condition reflects a more serious one, a spinal curvature. One side of the body may be developed more than the other side. After athletes have been training or

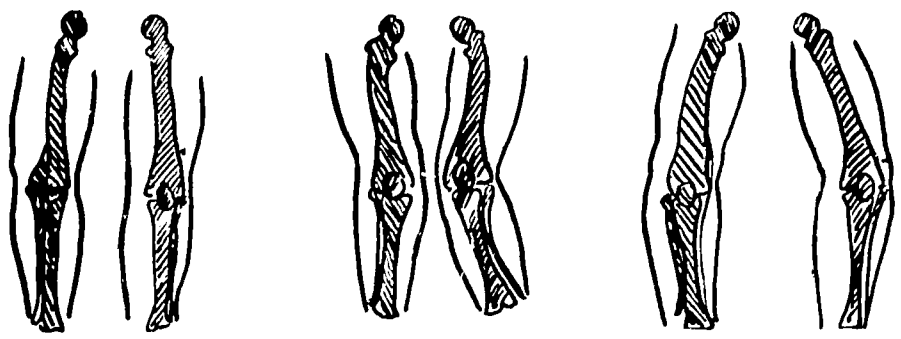


Fig. 7. Do the knees point straight ahead, toward each other, or in opposite directions?

Fig. 8. Does the child stand with one knee braced against the other?

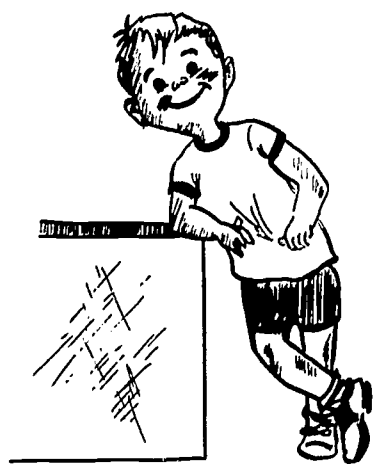


Fig. 9. Does the child stand with his weight on one foot?

Fig. 10. Does the child stand with his toes pointing inward or outward? Does he carry his weight on his inner ankles?

participating in one activity for long periods of time, if that activity stresses one side of the body, such as baseball or tennis, this side may become larger, more fully developed than the other. This occurs because, as has been explained previously, muscles develop with use. This asymmetry should not be present in a child who has not been training. The spine should be the division line for the muscles of the back, and the muscles on each side should be equally developed in order to keep equal tension on both sides of the spine (Fig. 11). A difference in size

Fig. 11. Muscles on both sides of the spine should be equally developed.

of muscles on either side of the spine may be seen easily through clothing. It may be the result of always sitting on one side of an adult's large chair while watching television (Fig. 12). The child who has uneven development will undoubtedly use the stronger side of his body for most activities, thus increasing the strength of that side even more so.

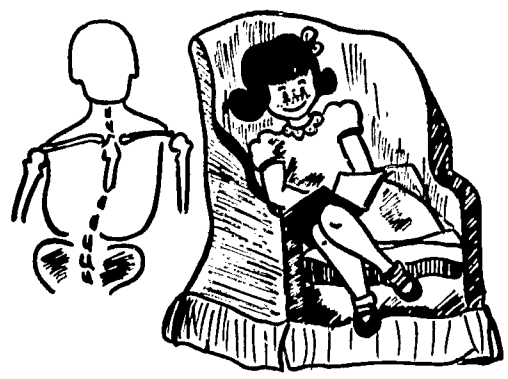


Fig. 12. Uneven muscle development and spinal curvatures may be the result of a child always sitting on one side of an adult's chair.

If the head is twisted or tilted, the trunk may become twisted also. In other words, the trunk may follow the direction of the head thus increasing the original deviation (Fig. 13).

A twisted trunk is usually the result of a spinal curvature. This curvature may come as a result of unequal muscle pull, the stronger muscles on one side of the spine (vertebrae) exerting a greater pull on the vertebrae than their opponents on the other side. As in the foot, this unequal pull can cause the spine to curve in the direction of the stronger muscle group (Fig. 14). If this pull continues long enough or if it is strong enough the vertebrae may also rotate and pull the ribs along with them. This combination of lateral curvature and rotation is known as scoliosis.

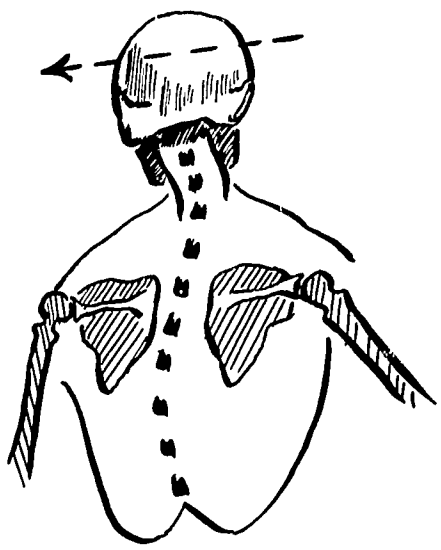


Fig. 13. Twisted trunk.

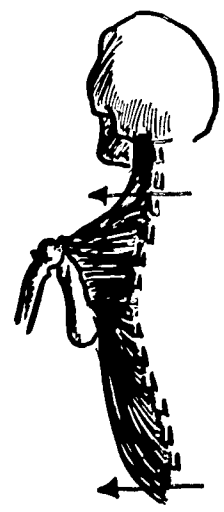


Fig. 14. Spinal curvature.

DYNAMIC POSTURES

Dynamic posture is concerned with the body in movement. It is related to body mechanics in movement, and in this pamphlet we will use it to indicate posture during activity.

Healthy children seldom walk any place if they can help it. They start walking, but after the first few steps are skipping, hopping, running, or galloping in imitation of their favorite television cowboy on his horse, or piloting their jet through outer space. When they do walk, in the classroom or on the

playground, it is interesting to note the number of children who don't use their heels. They may be envisioning themselves as dancers; then again, their calf muscles may be too tight to allow the heel to touch the floor. If so this tightness may be noticed in the thigh muscles or in the lower back when the child tries to bend over, stoop, or sit "tailor fashion" on the floor.

Have you ever noticed the way children's arms swing when they walk? Some hold one arm close to their side while the other hangs free. In many cases, if the child has one shoulder lower than the other he will hold that arm closer to the body. This is the result of body structure and the way the arm fits into the shoulder joint (Fig. 15).

Shoes tell quite a story. Some children wear out one shoe faster than the other, wearing down the heels or scuffing the toes (Fig. 16). Many times the toe scuffing is done purposely,

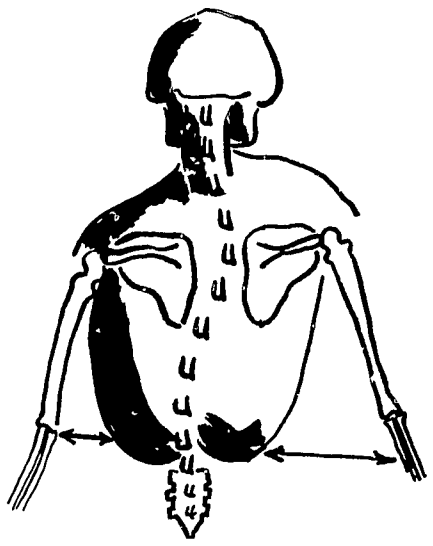


Fig. 15. When a spinal curvature is present, the child usually has one shoulder lower than the other, and carries that arm closer to the body.

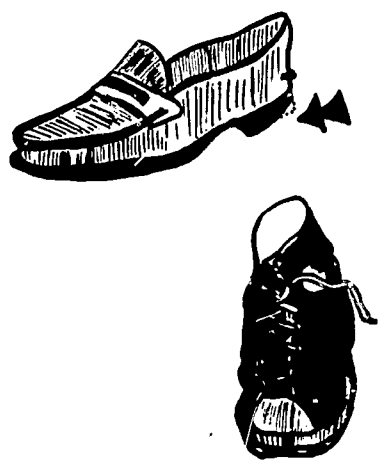


Fig. 16. Shoes tell quite a story —of the difference in leg lengths.

and other times the child hasn't the muscular strength to lift his toe to clear the ground or floor. This may be especially noticeable when he is tired. It may also be noticeable in the child who stumbles or falls frequently. It may be a residual muscular weakness as a result of a disease such as poliomyelitis. Some childhood diseases which affect the nervous system may result

in a muscular weakness which becomes more apparent when the child becomes fatigued. Co-ordination may be affected resulting in inability to keep up with the other children in their games and activities.

A few children may be able to skip, gallop, or balance with only one side of the body leading. These same children may be those who always bump into objects, who stumble and fall often. Their motor center in the brain may have been affected as the result of birth injury, disease, infection, trauma, or some other reason. This condition may be temporary or permanent, depending upon the cause and the extent of the damage. In the early elementary grades some children may not have the co-ordination to skip or to skate well. When the child is able to do these activities, such as skip, gallop, and skate, he should be able to do so on one foot or on one side of the body as well as on the other. Children should learn to use and manipulate both sides of their bodies. This does not mean they should necessarily become ambidextrous, but they should learn to use both sides of their bodies in large locomotor activities such as running, skipping, and galloping. When they are running or galloping some children use one foot considerably more than the other. If you watch, they usually have the same foot in the lead, and when you suggest changing lead foot, they are unable to co-ordinate in this pattern. If you listen you can hear them bear down harder on one foot than the other when they are walking in the classroom. In other words, there is an unevenness in their gaits. The one shoe may show more wear than the other, especially on the heel. This could be due to a difference in leg length, making it easier to have one foot do most of the work while the other just follows along. This difference in length may neither affect nor prohibit movement greatly during the elementary grades, but may result in a severe spinal curvature or scoliosis later.

DETECTION OF PSYCHOLOGICAL DIVERGENCIES

It is more difficult at times for the elementary teacher to discover psychological divergencies in a child, but even some of these may be revealed in his posture patterns.

Many of the world tensions are transferred to the child through his parents and the people around him. The speed and tempo of modern society are reflected in the movements of all individuals. The child's pace is usually established for him by his parents, and any dissent from this pace causes tensions. His habits of eating, sleeping, and working are influenced and regulated for him by his family. Their tensions are often transferred to him. Usually the child is unaware of these tensions but may reflect them in many ways. The elementary classroom teacher should be aware, at least, of the outward signs of tension and, through early referral, perhaps help to prevent the need for psychological or psychiatric care later.

SIGNS OF TENSIONS

Some tensions are evident from the static positions assumed by the child. Have you noticed how many children sitting in chairs listening or reading have their legs wrapped tightly around the chair legs? (Fig. 17.) Some children even forget to

Fig. 17. Some children sit with their legs wrapped around the chair, or around each other.

unwind them before attempting to get up. While listening, some children sit with their hands tightly clasped, some grasp the chair or some object, some clench fists, some hold their heads on one side, or assume other static poses (Fig. 18). These children may be revealing inner tensions. Other children can't possibly sit still. They continually move their feet, their hands,

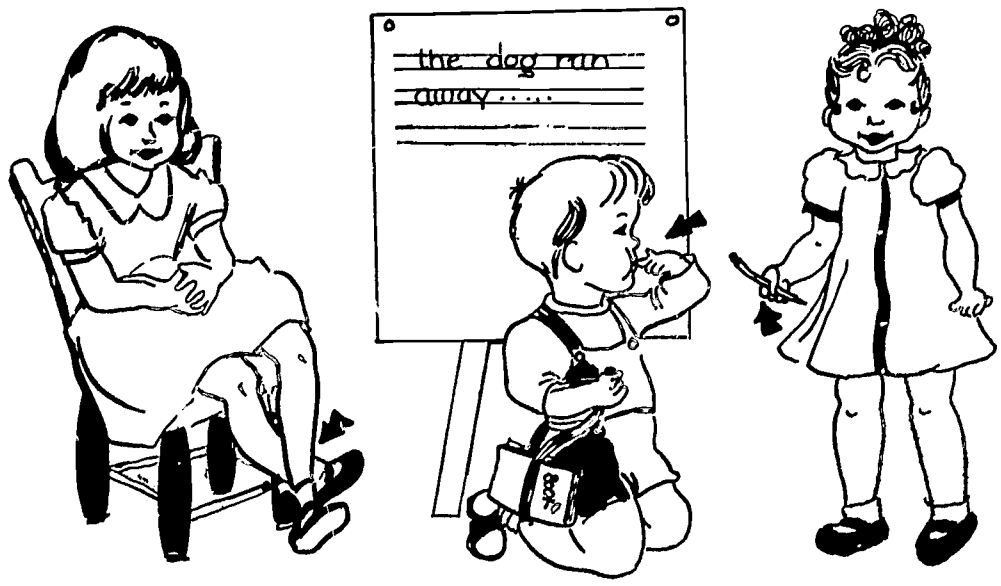


Fig. 18. Children often reveal their inner tensions by assuming static poses.

twist their heads, or find reasons for jumping up from their seats and moving around the room. Many of these children are finding release from their tensions. These extraneous movements which may disturb the teacher or onlooker are helping the tense child to rid himself of pent-up emotions. As long as he continues like this he probably will never have an ulcer, but may be responsible for others developing this condition. This excess tension in one muscle group may be the result of some psychological disturbance, as well as some physiological disturbance or injury.

Another evidence of tension within the child may be found in his unco-ordinated movement. His jerky gait when walking or running, or his inability to keep from stumbling, bumping into things, and falling, may be the result of excess tension in one group of muscles which overbalance the opposing group. This overbalance or lack of equilibrium prevents smooth action in that joint. So you see, joint tension may be caused by many factors, some physical some psychological; regardless of the cause the whole person is affected and the result may be unco-ordinated movement, in deliberate or in unconscious actions.

SUMMARY

Equilibrium, or the loss of it, is the basis of many problems. The body is constantly striving to maintain equilibrium against opposing forces, some from within the body and some from without. Inability to maintain this equilibrium results in divergencies, either postural or psychological.

All parts of our bodies are interrelated, and because of this, any small divergency, physiological, psychological, or otherwise, may affect the whole structure. A noticeable divergency in one part of the body, although minor in itself, may be a cue for a more serious divergency elsewhere.

Postural defects are very noticeable and easy to see when you know what you are looking for. A few practice sessions enables the teacher to detect postural divergencies with little or no difficulty. Divergencies may be observed while the child is in static positions, or when in dynamic movements during some activity.

Although harder to detect, psychological divergencies may also be detected through postural divergencies. Static positions and other signs of tension may portray psychological divergencies as may the methods used by the child to release his tensions.

4

Responsibilities of Elementary Teachers

The elementary teacher has as one of her responsibilities, early detection of her pupils' divergencies, whether they be physical, psychological, social, emotional, or a combination of any of these. The teacher is not expected to diagnose the condition—just to detect it. Her responsibility does not end here, however; once the divergency is detected, she must make a prompt referral to the proper person and then assist in the follow-up by the use of records and reports. These suggested records and reports are not additions to the elementary teacher's well-filled schedule of duties; instead they are suggestions for more specific content of these daily reports to portray a more complete picture of the child.

EARLY DETECTION OF DIVERGENCIES

Early detection of divergencies may prevent the future development of serious conditions. In Chapter 3 we discussed kinds of things that may be detected by the alert teacher. Many different methods may be used for this detection, some of them more formal than others. During the school day the teacher has opportunity to observe her pupils in many varied types of situations. She may observe them in the classroom or on the playground, in the cafeteria, in the assembly hall, going to and from buildings, walking, running, or using some other form of locomotion, sitting or even lying during rest or relaxation periods.

Observations made in these places would be classified as informal observations, and these may be extremely profitable for the early detection of divergencies for any age group.

The younger child who has not been told to "stand tall" or

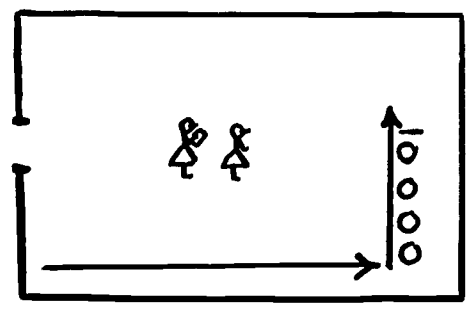
who is not yet aware of posture problems and how to correct them may be observed successfully in formal as well as informal situations. Some of the older children may have learned the postures they should have for special occasions, and in formal observations or check-ups, may assume postures for the benefit of the observer. In this case a true picture may not be seen. In some situations a formal check may be made, followed by informal checks or observations, especially when there is some question concerning one or two items.

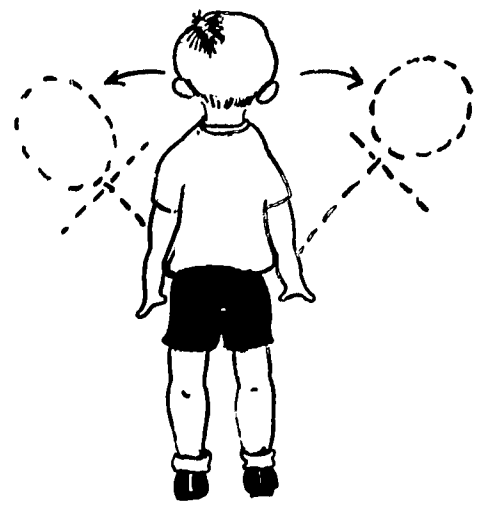
The alert teacher, interested in helping to prevent divergencies, will be making continual observations, most of them during daily routines. The following check lists have been devised to assist in formal or informal observations, with groups or with individuals. After the teacher has become accustomed to the items listed, she will find that she may automatically recognize the more pronounced cases whenever she sees a group of children at work or at play.

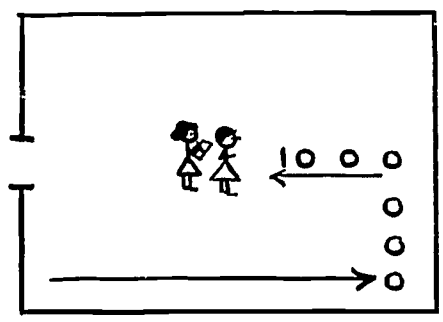
FORMAL OBSERVATIONS

For purposes of this pamphlet, formal situations include those times the children know they are being checked or examined. For these occasions there may be a team composed of the doctor, nurse, physical education teacher, or parent. In a team such as this, the elementary teacher may serve as an assistant instead of a leader. Even then she should understand and be able to recognize the divergencies noted by the doctor. In schools where the doctor and nurse are not able to visit frequently, it may be necessary for the teachers to check the pupils by themselves, sharing the responsibilities of checking and recording. From their findings they can then make the necessary referrals.

When this is true, the following procedure may help to expedite the entire process. The recorder should stand or sit close to the examiner to facilitate communciation. The examiner should be at one end of the room, but should also be able to observe the children from the side, front, and back. This may be achieved by having one group of pupils at a time walk down one side of the room to a place in the center of the front or rear of the examining area. There each pupil can face the







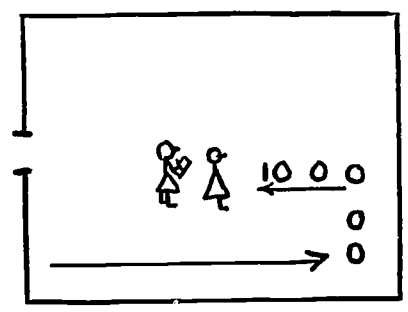


Fig. 19. Procedure for formal observations.

examiner one at a time, then turn his back, bend forward and from side to side before returning to his seat. A check list of the more common and easier things to notice may be found in Fig. 20. The teacher should make any additions to the list that she desires. Also included is a more comprehensive list (Fig. 21). Either of these may be used as a guide for the teacher to formulate her own list.

It is suggested that the recorder first list the names of the students in the order of their appearance before the examination begins. Then, as a preliminary part, the entire group may walk around the area, either accompanied by music or without any accompaniment, and then skip or use some other form of locomotion. Many different forms of locomotion may be used, depending upon the age group. During this time, the children with odd gaits may be noticed. These may be children with slight or marked limps, those who walk just on their toes, those who bounce considerably, those whose knees knock together, or who turn their feet and toes in or out, or who have any other outstanding discrepancy in their gaits. Just a check after the name, in the appropriate block marked "gait," will signify a divergency noted for that student. If time allows, the divergency may be listed, but usually this can be done more specifically during an individual recheck or follow-up.

This same procedure would be followed with all of the listed items. A check would signify a divergency noted. As previously stated, the teacher is neither diagnosing nor giving the extent of the divergency. She is merely noting the imbalance of body parts, or restricted flexibility. After the gait has been checked, the rest of the students may sit down while one group is being examined. The easiest way to accomplish this seems to be by having one student at a time walk to the front of the room so the examiner gets a side view, then toward the examiner for a front view, turn his back and bend from side to side and forward for a view of his back as well as his flexibility. This whole procedure should take but a few minutes, and as the examiner gets more practice, the time is shortened. After the elementary teacher uses this or a similar check list several times, it also becomes an easy matter to notice these same items while the children are at work or at play, or in informal situations.

ORTHOPEDIC SCREENING

CODE: *Slight* – 1, *Marked* – 2, *Right* – R, *Left* – L

Name															
Gait															
Body Lean															
General Slump															
Head Forward															
Shoulders Forward															
Increased / Thoracic Curve / Decreased															
Increased / Lumbar Curve / Decreased															
Hips Forward															
Abdomen Protruding															
Knees Hyperextended															
Head Tilt															
Shoulder High															
Trunk List															
Chest Depressed															
Hip Prominent															
Thigh Inward Rotated															
Knees Knocked															
Leg Alignment															
Ankles Pronated															
Feet Everted															
Scapulae Winged															
Spine – Lateral / Rotation / Restricted															
Recheck Needed															
Remarks															

Fig. 20. Check list for formal observations.
(Group screening for divergencies)

CHECK LIST FOR DIVERGENCIES

	Name						
Gait: (Subject walks to and from rater)							
Predominance of weight carried on one foot							
Swings leg around instead of straight through							
Knees turn in							
Knees turn out							
Feet turn out							
Feet turn in							
Weight on inner ankles							
Weight on heels							
Weight on toes							
Exaggerated hip swing							
Exaggerated arm swing							
Exaggerated bounce							
Drags or scuffs feet							
Lateral Position: (Subject stands with side toward rater)							
Body lean forward							
backward							
Shoulders forward							
Thoracic curve increased							
(Upper back) decreased							
Lumbar curve increased							
(Lower back) decreased							
Hips forward							
Abdomen protrudes							
Knees hyperextended							
Anterior Position: (Subject stands facing rater)							
Head tilt							
Shoulder high							
Shoulders rigid							
Trunk leans to one side							
Hip high or prominent							
Posterior Position: (Subject stands with back to rater.) Recheck head tilt, shoulders, and hip							
Scapulae prominent							
Lateral curvature of spine							
Rotation (child bends forward, Adams position, knees straight, returns slowly							
Restricted flexibility (child bends from side to side							
Recheck needed							
Standing Postures							
Head							
Twisted to one side							
Tilted to one side							
Forward							

Fig. 21. Check list for group screening.

CHECK LIST FOR DIVERGENCIES

	Name						
Standing Postures							
Shoulders							
Uneven width							
Uneven height							
Rigid							
Forward							
Arms							
Uneven length							
Held close to side							
Spine							
Upper back rounded							
Rigid (restricted flexibility)							
One side of back higher than other when bending forward							
Hips							
One prominent							
Uneven height							
Abdomen							
Protruding							
Chest							
Depressed							
Knees							
Uneven height							
Pointed toward each other							
Pointed away from each other							
Knock or overlap							
Swollen							
Ankles							
Rub against each other							
Swollen							
Feet							
Toes point toward each other							
Toes point away from each other							
Weight on inside of foot							
Weight on outside of foot							
Weight on one leg							
Sitting Postures							
Sits on one leg							
Leans on one arm							
Wraps feet around chair							
Winds one foot around other							
Twists head							
Holds head forward							
Additional Observations							

Fig. 21. ***Continued.***

INFORMAL OBSERVATIONS

The informal system of using the check lists usually gives a truer picture of the child in his normal activity. This informal check may be made through daily observations by the teacher, and can be one of the best sources of information concerning the condition and progress of a child's growth. At school while the child is at work or at play, the teacher has opportunity to observe him during many phases of his development. The teacher must decide the method to be used to make her observations and record them. Some suggestions for doing this are: (1) check four or five students each day until the class list has been completed; (2) check students at random until all have eventually been checked; and (3) check those students who appear to have a noticeable divergency and then continue with the others in the class, a few each day. After all the children have been observed and checked at least once, it is relatively easy to refer and recheck those students in whom some divergency is noticed or suspected. When divergencies are noticed in a formal check, those students should be observed in informal situations, or in individual examinations for further checks. Informal checks may take place at any time, and some suggested places are while the child is at his desk, table, easel, or board, on the floor while working or playing, at the work bench, in the assembly, in the cafeteria, or on the playground.

INDIVIDUAL EXAMINATIONS

Individual examinations are usually used for re-examinations in case of some questionable items. The child may display some postural divergency because of his mood of the day or for some of the reasons explained in Chapter 1. If there is any question at all, having the child by himself should enable the examiner to determine whether the postures are true or assumed. However this should be achieved more easily in an informal situation as mentioned above. Some teachers prefer this individual examination method exclusively, since it may prevent a recheck; usually though, the group method produces a more natural situation and therefore better results.

INDIVIDUAL SCREENING RECORD

Name .....
Last *First* *Grade*..... *Room*..... *Date*.....

			R or L	
Gait	.....	Head tilt	( )	.....
Body lean	.....	Shoulder high	( )	.....
General Slump	.....	Hip prominent	( )	.....
Shoulders forward	.....	Thigh		
		Inward rotated	( )	.....
Upper Spine				
Increased curve	.....	Leg alignment	( )	.....
Decreased curve	.....	Ankles pronated	( )	.....
Lower Spine		Feet		
Increased curve	.....	Toeing out	( )	.....
Decreased curve	.....	Toeing in	( )	.....
Abdomen protruding	.....	Scapulae winged	( )	.....
Knees hyperextended	.....	Spine — lateral curve		.....
		rotation		.....
		Restricted flexibility		.....

Remarks:

Action taken:

Examiner ..... *Recheck needed* .....

Fig. 22. Individual screening record.

SELF-CHECKS

Many teachers have achieved excellent results by explaining the divergencies found to the students, and helping them to learn to check their own progress by using mirrors. A three-way

mirror is most satisfactory for this purpose. If there is none in the school, one stationary mirror placed in a corner of the room and two movable mirrors may also be beneficial (Fig. 23). These mirrors may be used by the child in observing his sitting postures as well as his locomotor patterns. Once the movement pattern has been pointed out to the child in the mirror, the child can continue to check himself at home as well as at school.

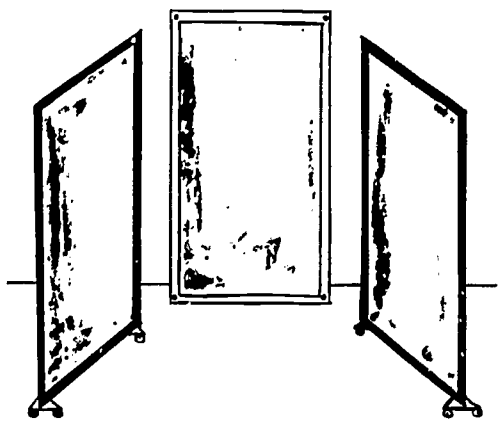


Fig. 23. Use of one stationary mirror and two movable mirrors.

Although as explained previously, postures may be the result of health conditions, they may also be just habits which can be overcome or corrected when the need for correction is understood. This then is a responsibility for the teacher—to understand and be able to teach the pupils how to overcome poor postural habits and the need for this correction.

PICTURES

One of the most successful and interesting media of explaining this need is the use of pictures. These may vary from group or individual snapshots to moving pictures. The pictures may be posed or candid camera shots, in the classroom or anywhere around school.

The extent of this program will vary depending upon the amount of money budgeted for this purpose. It is felt, however, that properly used, the pictures will sell themselves.

Body alignment may be shown easily by photographing the

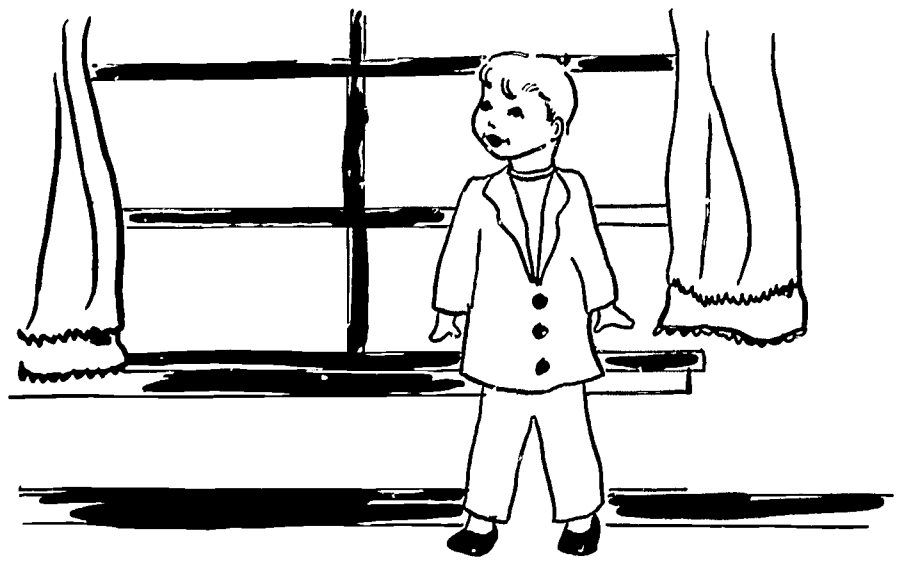


Fig. 24. Use of horizontal and vertical lines for determining body alignment.

student against a wall upon which has been painted horizontal and vertical lines. The main trick here is to have the pupil stand in the right spot without making him tense while getting him there. This may be averted by drawing foot prints for him to stand in. Drawing two intersecting lines and having him straddle the one line for a side view and the other for a front view or a rear view may facilitate the process. Another important thing to remember is to have contrasting colors of lines against the wall and clothing. For example, if the wall is light, the lines should be dark and vice versa. Light clothing shows better against a dark background, or dark clothing against a light background.

Still shots may be taken of groups of students on a playground, either in static or dynamic postures. Comparisons of these pictures taken several times during the year may reveal many heretofore unseen postural divergencies.

If there are any questions concerning locomotion of a student, moving pictures may prove invaluable in determining the divergency or the reason for it.

In addition to using pictures, snapshots, candid shots, or moving pictures in the early detection of divergencies, they can also be used to call the attention of the doctor or parent to the divergency. Many times when candid camera shots are posted

on bulletin boards, parents may see or have pointed out to them postural items which need attention. Attention may also be called to commendable items, especially during PTA meetings or open house. At any rate, pictures may be used as motivational devices with the parents as well as with the students.

Pictures may also be used for evaluation purposes. Pictures taken periodically may show progress of the student or of his divergency and may definitely be used for comparison to determine his growth. Most children are interested in seeing pictures of themselves and with the teacher's help may learn a great deal from them.

REFERRAL

As soon as any divergency is seen or suspected, the elementary teacher should refer the child to someone for a further check.

In some schools this person would be the school nurse or doctor. In other schools the teacher may want to consult with the physical education teacher or other teachers before referring the student to the parent or family physician. This is usually good practice, especially when the physical education teacher has had some special training along this line.

The procedure used will depend upon the administration and policies of the school. Regardless of the person to whom the child is referred, the elementary teacher should just state exactly what she has seen, without any attempt to give it a technical name or to diagnose it. For example, a referral to a doctor or parent may read, "Mary holds her head to the right side," "Mary appears to have a high right shoulder and high left hip. She also carries her right arm close to her body." It may also read, "Mary seems unable to use the left side of her body as well as her right side during locomotor activities," or "Mary always walks or runs on her toes." If there is any question or discussion, the pictures may be used to help clarify the divergency noted.

Special forms may be prepared to report these findings, but in most cases a few well-written sentences, perhaps accompanying the periodic report, are much more satisfactory. The elementary teacher must remember she is not expected to know the reason for the divergency, but is merely assisting in the early detection of it.

FOLLOW-UP

The elementary teacher's responsibilities do not end with detection and referral. As with all other phases of her teaching, there must be a follow-up to insure the program's success.

Some parents need more than one reminder before any action is taken. Again, the administration determines the policies to be followed in these cases.

CUMULATIVE RECORDS

Most modern teachers keep individual records of their students or a cumulative record. This includes information concerning the family background, his illnesses, his height, weight, vision, hearing, teeth, intelligence test results, results of other standardized tests, any information concerning social and emotional development, as well as physical development, and the progress of the child in all phases of his growth and development. This record usually follows the child through school.

Included in this folder should be an explanation of the divergencies found and when they were found, plus the referrals and recommendations made. The recommendations would include those made by the nurse or doctor or person to whom the child was referred. Periodic examinations made would show the progress made and the direction of the child's growth. Copies of reports received from doctors or clinics should be included so they may also show the child's progress.

ANECDOTAL RECORDS

Anecdotal records have proved very valuable in cumulative files. They are objective reports or statements on the child's appearance or behavior recorded periodically or whenever any teacher in the school notices anything about the child that should be recorded. When concerned about growth and development, they might include statements such as "James skipped today" or "James skips only on his right foot," or "Mary is unable to sit comfortably in 'tailor-sit' position," or "Johnny's muscles in his face kept twitching today during the relaxation period." It

may not be feasible to expect a daily anecdotal record of each child's postural patterns; but as with other records, the more complete the file, the more complete the picture of the individual.

ANECDOTAL RECORD

Date ..... *Student's Name* .....

Remarks:

Teacher or observer .....

Fig. 25. Individual anecdotal record.

How these records may be used is another story. Any and all of the above records and reports may be used many times during the course of a semester or term. These records may be useful during evaluation of the child's growth and development or during conferences with the doctor, parent, or with the child during his elementary years as well as his later years. As with all school records, they may be used to aid the teachers and parents to have greater knowledge and understanding of the child and his growth and development as seen through his posture patterns.

SUMMARY

The elementary teacher should be responsible for early detection of divergencies in the children with whom she comes in contact. Detection may be achieved through formal or informal observations. When divergencies are discovered, these children should be referred to the nurse, doctor, or parent for further examination and assistance. Once referral has been made, the teacher also has responsibility for recording conditions found as well as the child's progress.

Formal observations may be planned and executed with a group of people, the teacher being an assistant to the school doctor or being in charge and assisted by other school personnel.

Children usually realize they are being observed in formal situations and may therefore assume unnatural postures, or become tense.

Informal observations may be made any time during the day when the child is in the classroom or participating in some activity on the playground.

Using mirrors, especially a three-way mirror, enables the child to check himself for divergencies. Once they have been pointed out by the teacher, the child should be able to watch his progress in overcoming his divergencies. This is particularly true of postural habits.

Pictures, including snapshots, candid camera shots, group pictures, silhouettes, and moving pictures may be used to stimulate interest in postures, to detect divergencies, and to show progress in overcoming divergencies.

Once divergencies have been detected, the teacher has the responsibility to refer students to the proper person or agency for assistance. The method of referral will depend to a great extent upon administrative policies. Regardless of the referral method used, the teacher just states what she has seen, but does not attempt to diagnose the condition.

Once the divergency has been discovered and referral has been made, it is the teacher's responsibility to keep records of the child's progress through the use of records and reports, such as anecdotal records and cumulative records.

This method will enable anyone working with the child in the future to have a more complete picture of the child and to keep abreast of his over-all growth and development.

5

Opportunities for Prevention of Divergencies

As previously explained, it is the responsibility of the elementary classroom teacher to detect the child's divergencies as early as possible. She may also have the ability and opportunity to help prevent these divergencies. These opportunities are afforded her through provision of a healthy environment for the child while in school, the selection and use of appropriate and efficient equipment and facilities, and the selection and provision of activities conducive to the optimum growth and development of each individual child.

CLASSROOM ENVIRONMENT

The elementary teacher has opportunity for providing a friendly, healthy atmosphere, free from tensions and conducive to growth and learning. In any schoolroom the teacher can regulate the light, color, sound, and space to help each child feel comfortable, secure, happy, and relaxed.

It is the teacher who determines the pace of the children and who helps them to realize satisfactions from their endeavors. It is she who can stimulate the slow mover and calm the excitable, high-strung child, helping them both to find equilibrium in living and learning. To accomplish this she may be aided considerably by the physical aspect of the classroom. The teacher may or may not have much to say in the construction of the room or with the selection of basic equipment. The manner in which it is arranged and the "extras" are her responsibility and will greatly influence the morale of the children.

Most elementary teachers are aware of the importance of good lighting, heating, and ventilating from a physical comfort

and health point of view. Modern classrooms are finished with colors which blend harmoniously and which reflect warmth and friendliness. New furniture and equipment, including blackboards, are also fashioned to give the room light without glare and to add soothing colors.

Color and Sound

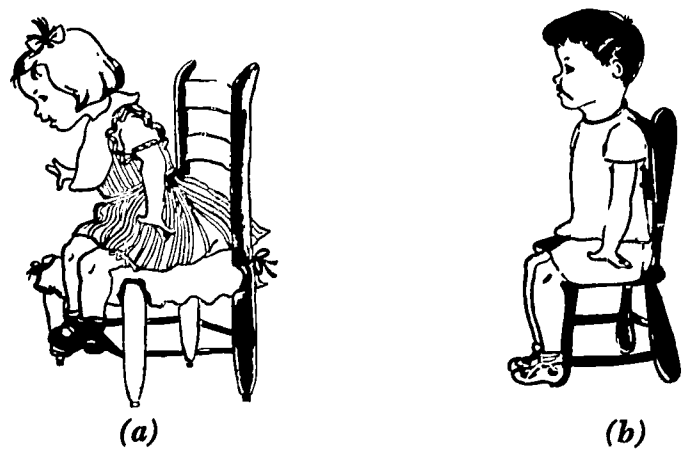
The importance of color selection cannot be overemphasized in relation to its influence on the emotional tone of the classroom and the relaxation it affords the children—as well as the teacher. Psychologists have found color a great determinant in the well-being of individuals and are still experimenting with colors with those who are emotionally ill. In like manner, sounds influence the child and either soothe and relax him or help to create considerable tension within him. For this reason acoustics have been improved, many classrooms now being equipped with sound absorbent walls and ceilings. The elementary classroom teacher has opportunity to experiment with colors and sound and to determine those most conducive to relaxation and well-being of her students. Her success will be felt as well as seen by all who enter her classroom.

Emotional Tone

More important than the items mentioned previously is the child's reaction to the teacher and the emotional tone of all the students toward each other as well as toward the teacher. When a healthy environment is provided, the child feels secure and is able to relax and to learn. This comfortable atmosphere, free from unnecessary tensions, is at once noticeable to any visitor.

Equipment and Facilities

Another important factor in the growth and development of a child is the equipment and facilities with which he works and learns. Sometimes the classroom teacher has little opportunity to select equipment in the classroom. It is often there when she assumes her duties and because of budget difficulties few changes can be made. The classroom teacher can, however, make sure that the best use is made of existing equipment. She should see that the students use the chairs, tables, and desks



(a) *(b)*

Fig. 26. Ill-fitting chair *(a)*; well-fitting chair *(b)*.

which fit them. If desks are used, are there left-handed desks for left-handed students? Although chairs are often placed in circle formation for classroom activity, when they are in row formation is the child with the vision or hearing defect sitting close to the front or to the object being viewed? Many children with these defects may try to minimize them and attempt to sit in the rear of the group, thus missing most of the class activities. Are the chairs and desks the right height for the children? Can each child place his feet flat on the floor while sitting with the base of his spine against the back of the seat? (Fig. 26.) If there are some who are difficult to fit with desks or seats, small boxes or bricks may be placed on the floor for the children whose feet don't quite reach there (Fig. 27). When a

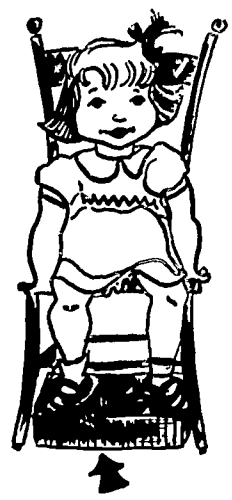


Fig. 27. Use of box for children whose feet don't quite reach the floor.

child is at his desk or table, does he appear comfortable? Is the table a convenient height or must he hunch his shoulders or reach to rest his arms on the table? Are his toes touching the floor under his chair, are his feet dangling, or is he able to place his feet flat on the floor? It may be true that not many children sit with their feet flat on the floor even when they can reach it. Wouldn't it be more comfortable for the child with the dangling legs to have a board against which he may brace his feet if he so desires? If the child is left-handed, is his table built so he can use his left hand comfortably or must he twist himself around so he can write or draw? These are but a few of the questions the elementary teacher may ask herself when determining if the best use is being made of the classroom equipment.

CLASSROOM ACTIVITIES

There is always activity within the classroom. Some activities are performed by groups, others by individuals. An alert and informed teacher may assist each student in selecting activities to aid in his particular growth and development.

Every day each child engages in many different types of activities in the classroom. In addition to his regular studies, he moves about from place to place, sits, stoops, stands, lifts, carries, pushes, pulls, and balances, among other things. All of these different movements aid his growth and development, if performed correctly. By the same token, much harm may result through improper use of the body during any of these movements. The basic mechanics of movement will be discussed in Chapter 6.

Children in the elementary grades have many and varied interests. For some, their attention span with any one activity is short and for others, they never appear to tire of some activities. The teacher may help to prevent divergencies from occurring during these activities, by seeing that the child changes positions frequently. If on the floor, the equipment he is using should be alternated from his left to his right side on different days. When passing out materials, they should be held in alternate hands or in both of them. Stretching or reaching for the shades or materials up high should be done with alter-

activities, but specifically those children for whom they were selected that day. All children may benefit from all physical activities, but since needs are individual, the teacher has much opportunity to help prevent individual divergencies through selection of proper activities.

Some activities may emphasize the social aspects of development, helping the child learn to play and co-operate with others. Other activities may be selected to give the child the confidence he needs to overcome a possible psychological divergency. Through selected games and activities, he may be made aware of other children and his relation to them. The aggressive child can be discovered from his play patterns and his movement patterns. The fearful and withdrawn child can be given confidence and can be aided in overcoming these divergencies before they become too pronounced. The child's behavior in a game situation can be an indication of his emotional state and may be improved through this or other physical activity.

The playground usually lends itself to more informal activities and gives the child a chance to express himself freely. Through this expression, it is usually possible to detect the child with the divergency, whether physical, psychological, social, or emotional, and sometimes the reasons for it.

Due to the importance of selection of proper activities, a whole chapter has been devoted to this subject.

SUMMARY

The elementary teacher has many opportunities to aid in preventing divergencies of children. Some of these opportunities include provision of a friendly, healthy, comfortable environment in the classroom as well as on the playground.

The teacher exerts considerable influence on the morale of the children and helps them determine their pace and tempo. Much of this influence can be provided through light, color, sound, equipment, facilities, and emotional tone. All of these may add to the child's feeling of security and help to prevent divergencies within him.

Activities in the classroom may be selected for the benefit of individual students as well as the group as a whole. As important

nate sides of the body. Carrying books or materials should also be done with alternate hands. If possible, when standing at the board or easel alternate feet should be in the lead unless the weight is evenly divided over both lower extremities.

The child should alternate his position in the circle during class or activities, so the same eye or ear is not always toward the teacher or leader. Children should be encouraged to do different kinds of activities. For example, the stronger boy should also be given tasks requiring precision and the more delicate boy given tasks requiring strength.

The teacher should also sit and stand in good alignment and change her positions frequently, since children will imitate her in her actions.

When sitting on the floor, children should be reminded to put alternate legs under them or rest on alternate sides of their buttocks.

When copying materials from books, painting, or the like, the original materials should be placed in front, but on alternate sides of the child. In this way, one eye may not be used more than the other and it may prevent a spinal curvature from developing. For the same reason, when working with one or more students, each child should change positions frequently, in relation to the other members of the group. If the child must sit in a large chair, he should not always lean on the same arm of the chair.

This alternating of static positions is done to avoid over-development of one side of the body, or a spinal curvature. When always using one side of the body, that side will become more developed, stronger than the other side, and as explained before, this uneven development may result in a spinal curvature.

The elementary age child should be encouraged to express himself in free, happy movement as much as possible, but of course, not to the detriment of others.

In addition to changing activities, there is also a need for the elementary teacher to deliberately change the tempo of activities and to create periods of inactivity. Periods of activity should be alternated with periods of rest. To prevent divergencies, physical as well as psychological, the child must learn to relax. For some children this is accomplished by changing the

kind and tempo of activities; others need definite instruction and practice in how to relax.

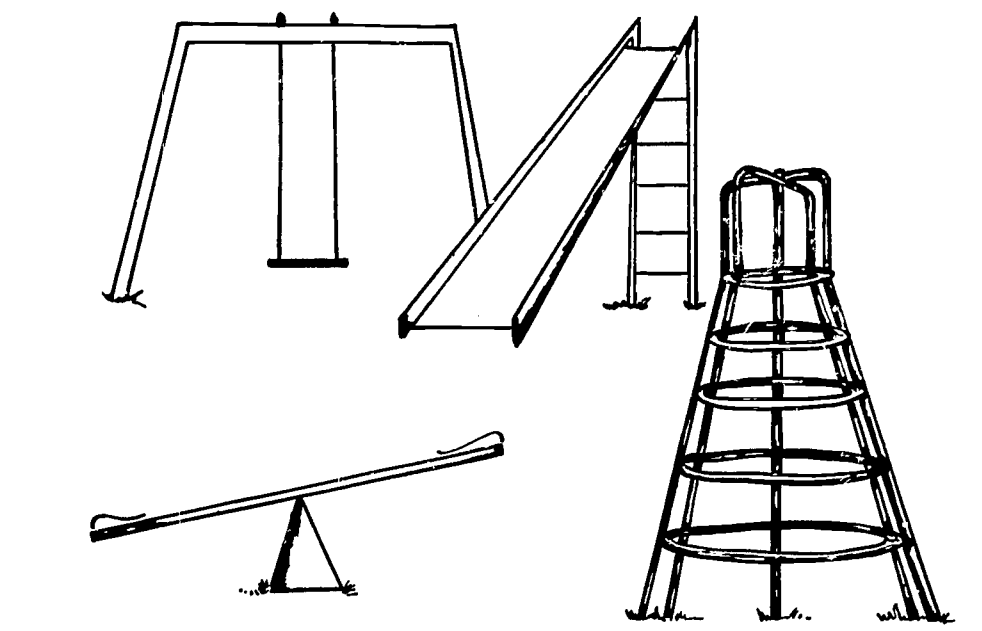
PLAYGROUND ENVIRONMENT

On the playground there should be as much space as possible to permit large motor activities. It should not be necessary to buy the most expensive equipment, but there should be provision for the child to run, climb, crawl, balance, skip, jump, kick, and throw. Again the classroom teacher may have little or nothing to say concerning the purchase of this equipment. If possible, she might suggest that basic equipment should include some sturdy pieces such as stationary boxes or large blocks, large pipes to crawl through, perhaps a jungle gym, swings, seesaws, sand boxes, jump ropes, and all kinds of balls, mostly large sized ones. Today much playground equipment comes from building materials and solid blocks made in the school shop or salvaged from some construction works. Although not fancy, these crude constructions may provide inspiration for innumerable imaginative experiences (Fig. 28).

PLAYGROUND ACTIVITIES

Some elementary schools are fortunate in having a person specialized in physical education to plan and teach playground activities. In many schools however, the elementary teacher is responsible for outdoor as well as indoor activities.

Usually on the playground, as in the classroom, activities are selected according to the age and grade level of the group. Sometimes instruction may be given in the use of equipment; more often it is used on the basis of follow the leader, or free play, in which the children are given free time to do as they choose. The interested teacher may select and teach playground activities on an individual basis within the group or class situation, without too much effort. These activities may be selected for over-all development of the whole group. This in itself may help prevent divergencies, but it is possible for the teacher to be more specific in the selection of activities, and do so with certain children in mind. All children may benefit from these



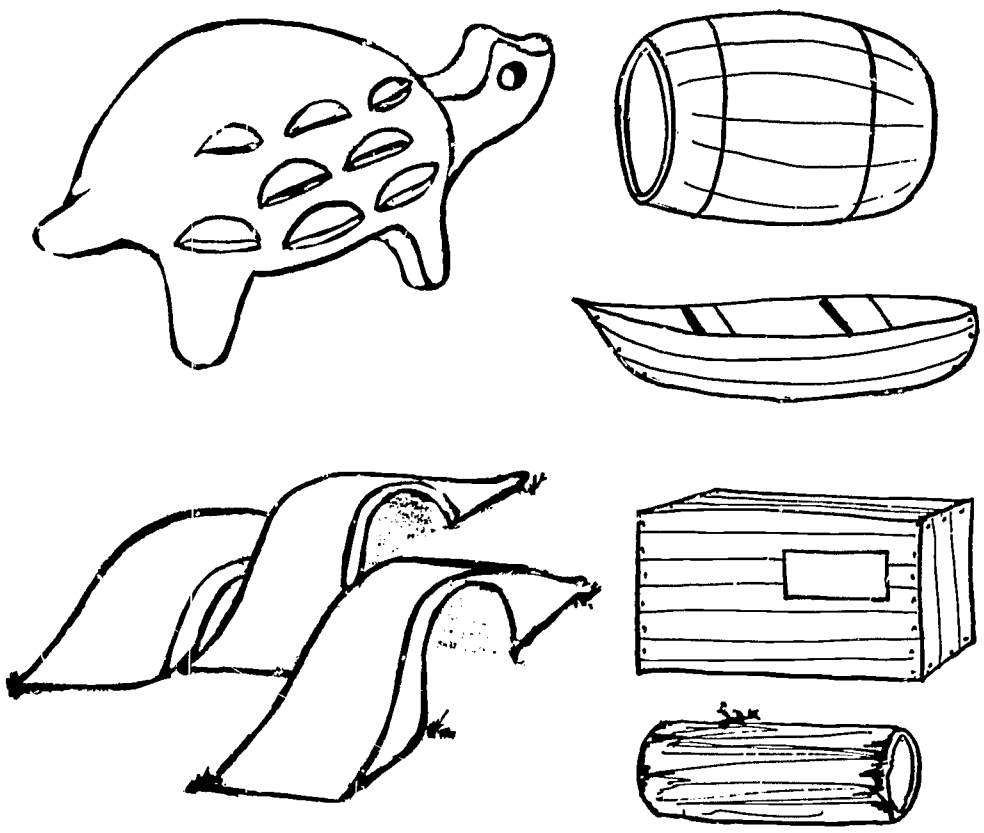


Fig. 28. Different types of playground equipment.

as the activities may be, however, the manner in which they are performed is of more importance in preventing divergencies.

Children in the elementary grades need a variety of activities performed from different positions, alternated with periods of quiet and rest. Relaxation is important for children of this age, not only to practice at the present time, but also to use when they reach adulthood.

Provision of a playground with space to permit large motor activities and equipment suitable for these activities may help to prevent divergencies from occurring.

In addition to seeing there is suitable and sufficient equipment, the teacher has opportunity to see that the use made of the equipment shall benefit each individual student to the maximum. This would entail suggesting special ways for different children to use the equipment in order to attain individual objectives.

6

Selection of Physical Activities

Through observance of posture patterns during activities, the elementary teacher is able to detect divergencies of the child, whether physical, social, or psychological, as well as promote over-all growth in these same areas.

Through the use of selected physical activities the elementary teacher also has opportunity to assist the child in overcoming the effects of an increasing sedentary life and in improving his posture patterns.

OBJECTIVES FOR SELECTION OF ACTIVITIES

Selection of physical activities is generally done on the basis of age and grade level. Games, rhythmical activities, sports, self-testing activities, stunts, relays are all classified as to the age and grade level in which they are used most beneficially. It is an accepted fact, however, although each child passes through the same stages of growth and development, the age and grade level may differ for each stage of development, for each child. One child may possess muscular control and co-ordination at eight that another child cannot possibly attain until the age of eleven. Another child may possess excellent balance, but lack in strength, as compared with his classmates. Therefore in selecting activities for individuals, more specific individual objectives may be necessary.

It is suggested here that in addition to the common essential growth and development characteristics of children, there be some additional objectives for selection of activities. These objectives would include flexibility, strength and endurance, co-ordination and balance, and relaxation. These specific objec-

tives have been selected since there are few, if any, physical activities in the classroom or on the playground which, when analyzed, will fail to fall into one of these categories.

This classification does not negate the necessity for adhering to growth and development charts as a guide for selection of activities. This material is to be used in addition to the principles of growth and development to aid the teacher in selecting more specific activities for specific children.

It is not sufficient to just select and assign the activities. To insure the attainment of the stated objectives the activities must be performed correctly. Using improper methods may result in more harm than good. Therefore a section in this chapter is devoted to the mechanics of movement.

Flexibility

Flexibility enables movement. A joint is flexible when it has a wide range of movement. Most elementary aged children have a great deal of joint flexibility and are able to put their bodies into many different positions. This flexibility gives them ability to do many stunts and activities that sometimes provoke groans on the part of adults who watch them and imagine themselves trying to do the same thing. Children need this flexibility in order to lead the active lives they lead, and the activity helps to increase their flexibility. Without flexibility they are unable to participate to the degree they desire in some large muscle activity such as stooping, crawling, climbing, jumping, running, and the like.

Strength and Endurance

Strength refers mainly to muscular development, while endurance refers mainly to organic development. Both go hand in hand, however, as we have explained previously. In order to increase muscular strength, the heart and lungs must be used. Children in the elementary grades are slowly becoming stronger muscularly, and in most cases their endurance and stamina are increasing. The large muscles have more strength than the smaller muscles, and the upper extremities are probably stronger than the lower extremities. The lungs are slowly developing and also the heart muscle.

Activities selected in this category would be to assist children in development of all muscles, large and small, as well as development of heart, lungs, and other internal organs.

Co-ordination and Balance

Children of elementary age are growing rapidly and have difficulty with finer co-ordinations and balance. Co-ordination and balance are made possible through the synchronization of muscle activity. As was explained in Chapter 3, there are muscles on all sides of joints, which keep them in balance and which allow them smooth action. For good co-ordination, one group of muscles must relax while its antagonist is contracting. This enables the action to be smooth or well co-ordinated.

While in the elementary grades, the child's co-ordinations are being developed as well as balance. During his elementary years the child usually develops the ability to stand on one foot, to hop, to skip, and to bounce and catch a ball. All of this, however, depends upon his ability to co-ordinate his muscular activity.

Relaxation

Relaxation should be an objective for all age groups. Because of the societal tensions today and the speed and tempo of our lives, each person should learn to recognize his or her tensions and if possible, the reasons for them. This practice should be started as early as possible, and the elementary grades should be an excellent starting point. Although the elementary school child may not be able to recognize his tensions or understand the reasons for them in the beginning, he can be given activities which enable him to learn to relax.

METHODS OF SELECTION OF ACTIVITIES

As we have stated, most physical activities may fulfill objectives of flexibility, strength and endurance, co-ordination and balance, and relaxation. As you see in the Activity Chart (See Fig. 37), some of the activities can fulfill more than one objective. For over-all development, it might be a simple thing to select one activity from each group for each student every day. There is always activity within the classroom. Some activities

are performed by groups, others by individuals. Although all students may be benefited by doing any of the activities, there are some for whom particular activities may be of more benefit. An alert and informed teacher may assist the student in selecting activities to aid in his particular growth and development. It is not expected that each child will receive the maximum benefit each day, but it should be possible over a period of a term or a semester to aid most of the students in the class, through selection of activities to benefit them individually.

Before selecting activities for individual students, a great deal must be known concerning that student. A review of the cumulative file should give a picture of his background and environment, the results of tests, his condition of health, and his postural divergencies, along with recommended treatment and progress. This should also tell the teacher other characteristics of the child, including his physical, social, psychological, and emotional development. From a complete picture such as this, the teacher should know generally the kind of activity the child should be able to do and with what degree of success. With this knowledge she should also be able to select activities to fulfill more specific objectives needed by the child.

ACTIVITIES FOR FLEXIBILITY

To determine whether or not the child would benefit from activities to promote flexibility, the teacher may ask the following questions as she watches the child move. Does he appear tense and rigid in his movements? Does he walk and bend in a stiff manner, rather than in a relaxed manner? Does he appear to have more mobility in some joints than in others? When bending forward does the right side of his back show the same roundness as his left side? Does his left knee bend and extend as far and as easily as his right knee? The left elbow as much as the right?

Because of the symmetry of our bodies, a joint in the left arm should have the same amount of flexibility as the comparable joint in the right arm. Each child may differ from every other child in the amount of joint flexibility because of heredity, body build, nutrition, or as the result of some disease or accident.

Regardless of the cause, flexibility can usually be increased with proper activity.

In the classroom, for example, wrist and shoulder flexibility may be aided by sharpening pencils, sweeping, weaving, or mixing ingredients for a cake. Which activity is selected must depend on the age of the child as well as his stage of development.

On the playground, flexibility can be increased through use of equipment such as jungle gyms, horizontal ladders, or equipment on which the child can climb, "skin the cat," and stretch. Rhythmical movements, creative rhythms, and mimetics may increase flexibility as will some stunts and tumbling and other self-testing activities.

Some other types of activities to promote flexibility, either in the classroom or on the playground are stooping, stretching, bending, twisting, crawling, or climbing (Fig. 29). The latter activities are easily performed on a playground where the equipment includes large stationary pipes, boxes, planks, barrels, or tree trunks.

Fig. 29. Activities for flexibility.

ACTIVITIES FOR STRENGTH AND ENDURANCE

Practically all of the children in the elementary age group can benefit from activities for additional strength and endurance. Most of their daily activities help them increase strength in some part of their bodies and develop endurance. They are slowly becoming stronger, but may be aided in this development by climbing, pushing, and pulling activities in particular. Some

children may need additional or more specific activities to increase strength. Playground equipment such as jungle gyms, ladders, and the like, if properly used, may help improve the child's strength (Fig. 30). The child should also be encouraged to use both sides of his body when performing on the apparatus. If one side is weaker than the other, the child will be inclined to use his best side to keep abreast of his playmates. This predominant use of one side of the body will tend to make it more asymmetrical. When using this apparatus, the children should all be taught to lead with alternate arms or legs, instead of the same one each time. There appears to be in all of us an innate tendency to put our best foot forward, especially when strength is involved. Unconsciously we substitute strong muscles for weaker ones, even though we must shift our positions to do it. In this way strong muscles become stronger, and weak ones, through disuse, become weaker. It is not, therefore, sufficient to lead the children to the apparatus. The alert, interested teacher will instruct, supervise, and sometimes demonstrate its use. When demonstration by the teacher is impossible, there is usually one child in the class who can be put through the activity.

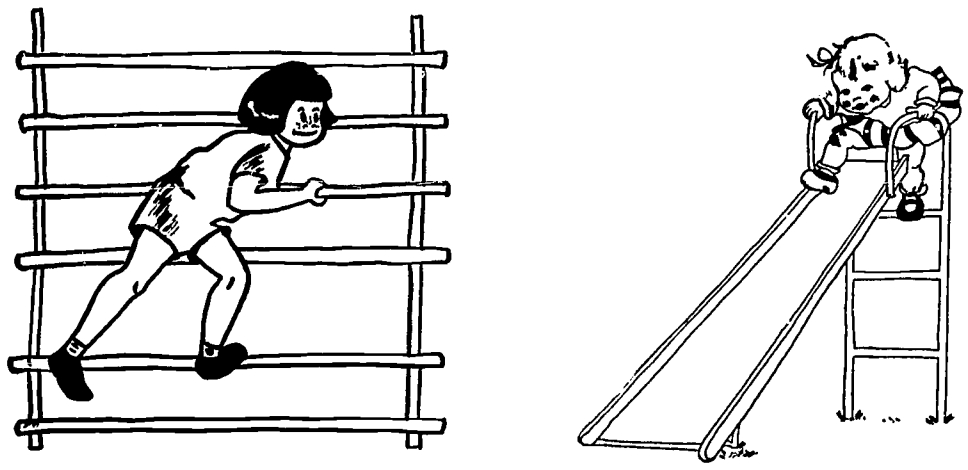


Fig. 30. Activities for strength.

Self-testing stunts, jumping, pushing, and pulling should be performed using alternate sides of the body in order to provide symmetrical growth and strength. In most children this occurs automatically if they participate in different types of activities. Although of benefit to all, special emphasis should be given to

those students who have difficulty in performing these activities. For example, the child who can only skip or gallop when he leads with his left foot, may always climb the jungle gym with the left hand and foot getting into position and then pulling the right side up. Here the teacher can show him how the right side can alternate with the left, left arm, right foot, right arm, left foot; or right side, left side, left side, right side. Children who use scooters and similar toys should also be encouraged to push with alternate feet. Some children who never have had to climb stairs, since their home and school have always been on one floor, may be fearful and tense when learning to climb, and the teacher may help him overcome his fear of heights, by learning to co-ordinate his body properly when climbing. This co-ordination is best achieved by use of the same reflex used when walking. As the left arm swings forward with the right leg in walking, so should the left arm be followed by the right leg when climbing.

Throwing, hitting, and kicking may contribute to development of strength, since the object used supplies resistance for the muscles. The action should be performed by a predominant hand or foot, and the object would be to have the other limb assist the predominant one with the movement. This assistance would be through the co-operation, co-ordination, or merely relaxation of the other limbs in order to maintain balance.

ACTIVITIES FOR CO-ORDINATION AND BALANCE

Children who should benefit mostly from selected activities for co-ordination and balance would be those children with jerky gaits, those who stumble and fall often, or who bump into objects frequently. The awkward child who has difficulty with most things he undertakes may be growing very rapidly or just be going through that clumsy stage where his arms and legs move too fast for the rest of his body. Most of his movements will be fast, choppy, and unbalanced. Although all children go through this stage, it is possible to help them overcome some of this awkwardness and clumsiness. These children may benefit from stunts and activities wherein balance on one foot or the other is stressed. Creative rhythms and dance should be bene-

ficial as well as such activities as hopping, jumping, throwing, dodging, skipping, and galloping. Throwing activities for this group of children should include specific directions or patterns. This is to aid the development of finer co-ordination (Fig. 31).

Fig. 31. Activities for co-ordination and balance.

ACTIVITIES FOR RELAXATION

Some schools have rest periods when pupils take time to lie down and perhaps take a short nap. Instead of just having a period of rest, he could be working on consciously trying to relax, by learning what tension is and how to rid himself of his tensions. Once learned, the child may use these techniques knowingly or unknowingly, and be able to prevent himself from becoming tense adult. At any rate, when the teacher recognizes tense children, she can select activities for them to relieve their tensions and to prevent the need for treatment later.

All children can use relaxation techniques. As a matter of fact, most everyone can benefit from relaxation techniques. Some may be in greater need than others, especially those who appear overly nervous and irritable, or who show some emotional disturbances. These might include the pupil who sits in one position over long periods of time; the child who chews his nails or wraps his feet around the chair; the too quiet, mousy child; the child who is constantly on the move; the real noisy, boisterous child; the child who twitches or has the constant habit of

drumming or shaking his foot or leg. All of these and many more similar things are outward signs of tension or the release of tensions. In using extraneous movements, the child is ridding himself of tensions which, for the most part, he doesn't know he has.

When the teacher has studied the child and his record, she should know those who need some additional help with relaxation techniques. For some, relaxation would include quiet periods, with or without music, sitting in comfortable chairs which fit, or lying on a mat on the floor. Storytelling or listening to stories may relax some, while just being able to chat with their peers will relax others. Because of their individual tensions, different techniques may be more effective for different children. Some children may need to rid themselves of pent-up energy before trying consciously to relax. This preparation may include running or jumping activities, stretching, or perhaps singing. Often rhythmical activities with or without music help children to release tight areas in their bodies. Laughter is one of the best ways to relax.

There are as many methods of relaxation as there are individuals. In many cases tensions may be prevented by having the children change activities frequently and alternate sedentary activities with active ones. This is especially true for the child who becomes so engrossed in his immediate project that he holds his body in a static position, hands clenched, head to one side, feet wrapped around themselves or on the chair. If for any reason, it is not an opportune time for the children to move around, just stretching all joints in their bodies and breathing deeply should help ease the tensions until more active things can be performed.

Deep breathing by itself may help some children relax. The nervous, irritable child usually takes shallow breaths. Teaching this child to breathe deeply and control his breathing may prove beneficial, not only for relaxation, but for the development of the chest as well.

Although the previously mentioned techniques may be helpful in aiding the child to relax without consciously trying to do so, it would be beneficial to him now, as well as in later years, to learn techniques he could use to consciously relax! To do

this, the child must first be taught the difference between tension and relaxation.

One method of accomplishing this may be to have the child walk like a tin soldier or mechanical doll, to have him feel stiffness, tightness, or tenseness in joints. He can then get the same feeling when lying on his back, eyes closed, raising alternate arms and legs while keeping his knees and elbows stiff. Later in this same position, when suggested, he can make both arms and legs feel stiff and tense without lifting them.

After the child learns to recognize this stiffness or tightness and how he can acquire it without moving, he can learn to rid himself of this feeling or tenseness, also without moving. He can concentrate on making himself feel and look like a rag doll. The teacher could help the child concentrate on different areas of the body, such as the left arm, left leg, and so on, concentrating on making them feel loose, heavy, and relaxed, until the whole body loses all signs and feelings of tension.

Fig. 32. Activity for relaxation.

The child might try to make himself feel relaxed, soft, and light by thinking himself to be a soft, fuzzy, or furry animal, or a leaf, a snowflake, a raindrop, or a cloud. It may make it more interesting if the children suggest the animal or thing they would like to imitate. Then they may feel the tenseness when walking on all fours, stretching as the animal does, and finally relaxing as the animal does (Fig. 32). A soft, furry animal may prove to be more conducive to relaxation than a large, bulky animal.

These techniques may be practiced while the child is resting, preparing to take a nap, or during a relaxation period. Once this method is learned by the child, he can practice it all by himself without any help from his teacher.

Relaxation techniques can be used by all people, especially in our world today—so full of tensions! If the child learns to recognize his tensions at an early age and how to relieve them, he may be able to practice these techniques at home and teach them to his parents. Above all, once he understands his tensions and the methods for releasing them, he may practice these techniques the rest of his life.

PRINCIPLES OF ACTIVITY PERFORMANCE

Just to select an activity for a child and have him perform it is not enough. In most cases, as much harm, if not more, can result from doing an activity improperly as it can from not doing it at all.

As can be seen on the chart (Fig. 37), most of the selected classroom activities have the child assuming different positions, while moving himself from place to place or while moving some object. These classroom activities may be classified further into pushing, pulling, carrying, or lifting. The child's body positions when performing these activities may be standing, kneeling, squatting, sitting, or on hands and knees. Body position is as important as the activity itself, if benefits are to result.

Fig. 33. Three points for balanced standing position: (1) great toe, (2) little toe, (3) heel.

Standing

In all body positions the weight should be balanced over the center of gravity. In standing this is accomplished by keeping the body in alignment—shoulders balanced over the hips, hips over the knees, and knees over the ankles. For position of the feet when standing, the children should be taught to be conscious of the great toe, the little toe, and the heel. They should be told to feel that these three things are in contact with the floor, for a balanced position (Fig. 33).

Squatting

When squatting or kneeling, children have a tendency to turn their toes out, thus placing strain on the muscles and ligaments around their inner ankles. After these structures have been strained, the balance of the foot is usually affected and most of the weight falls on the inner part of the foot and ankle. This condition is known as pronation (See Fig. 10). If this influenced only the foot and arch, it would be of sufficient importance to stop it. As explained before, our bodies are so built that when one part is out of alignment, the whole body is affected. In other words, and this cannot be emphasized too strongly, misuse of one part of the body may start a chain reaction felt throughout the entire body. It is difficult to correct stretched ligaments. Muscles may be strengthened with exercise but when a ligament is overstretched, surgery is usually necessary to correct the condition.

Kneeling

When kneeling or on hands and knees, the knees should be under the hips and the legs should be in a straight line, so the knees will neither be turned in or out.

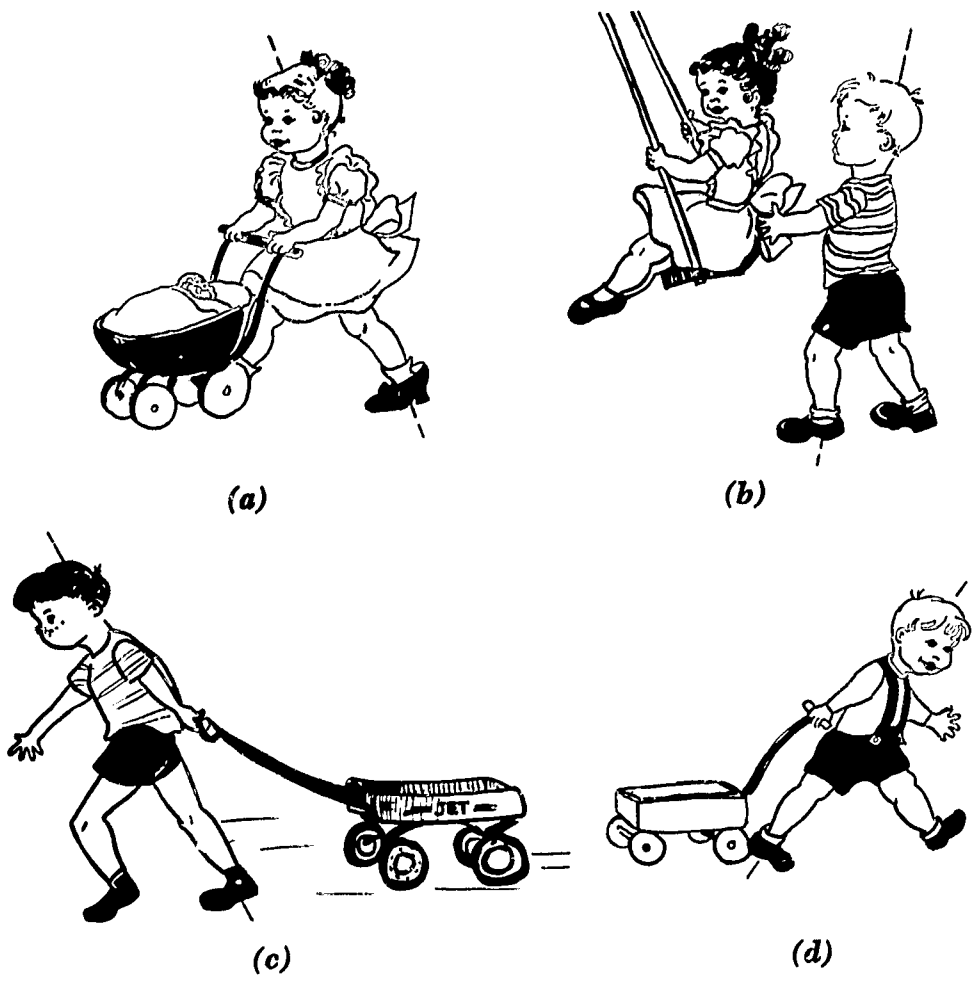
Sitting

When sitting on a chair, as explained previously, the base of the spine should be against the back of the seat, feet resting easily on the floor, and the front of the seat should be the height of the back of the knees, without touching them. The shoulders should also be free and easy, not stretched or hunched in reach-

ing the chair arms, desk, or table. When sitting on the floor, crossing the legs "tailor fashion" enables the child to sit with the weight divided on both sides of the buttocks, and the back may be held erect. When both legs are outstretched, the body weight should be on both sides of the buttocks; the arms may assist in supporting the weight.

Moving Objects

When moving objects it should be remembered that one part of the body does not function without some effect on the rest of the body. In coming to the aid of the part being used, however, the rest of the body may be pulled out of its balanced position and injury may result. Children should be taught that when moving objects, they should stand as close to the object



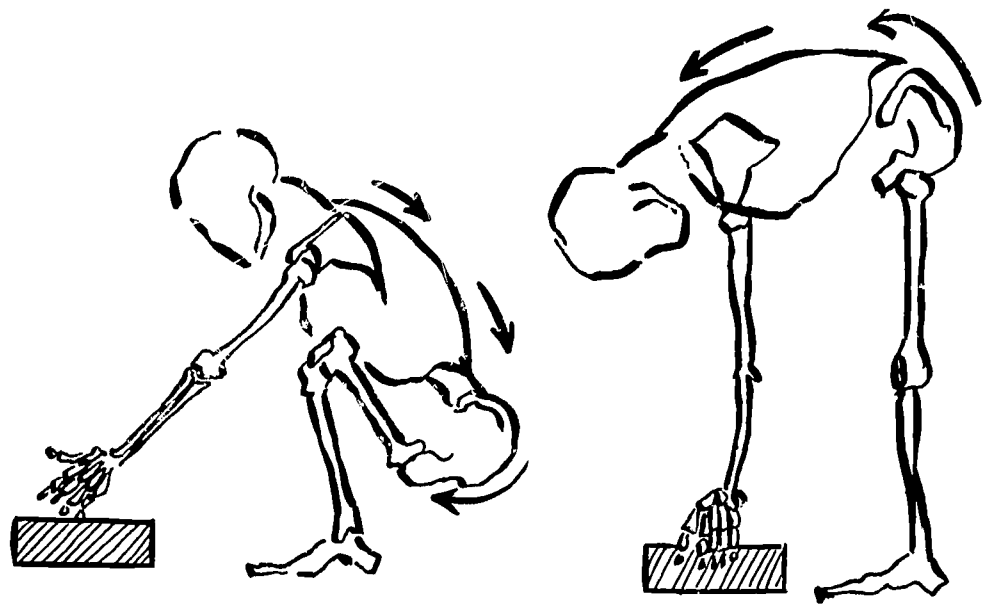
(a) *(b)* *(c)* *(d)*

Fig. 34. Pushing correctly *(a)*; pushing incorrectly *(b)*. Pulling incorrectly *(c)*; pulling correctly *(d)*.

as possible, and they should plan to use the whole body, not just one part of it. For example, it usually is not possible to move a chair with one arm, whether sliding or lifting it. The whole body must be shifted so both arms may be used and perhaps the knees and the back. The body should be kept in a balanced position with the arms and weight close to the center of the body. The trunk should be in a slightly flexed position (Fig. 34). Then, when pushing or pulling, all of the body joints may be used efficiently.

Lifting

When stooping and lifting anything, children should be taught to use their thigh muscles and to bend their knees instead of just their spines. Standing close to the object, keeping their bodies balanced over the center of gravity, and bending the knees instead of just the spine helps to conserve and prevent strain, especially in the lower back (Fig. 35).



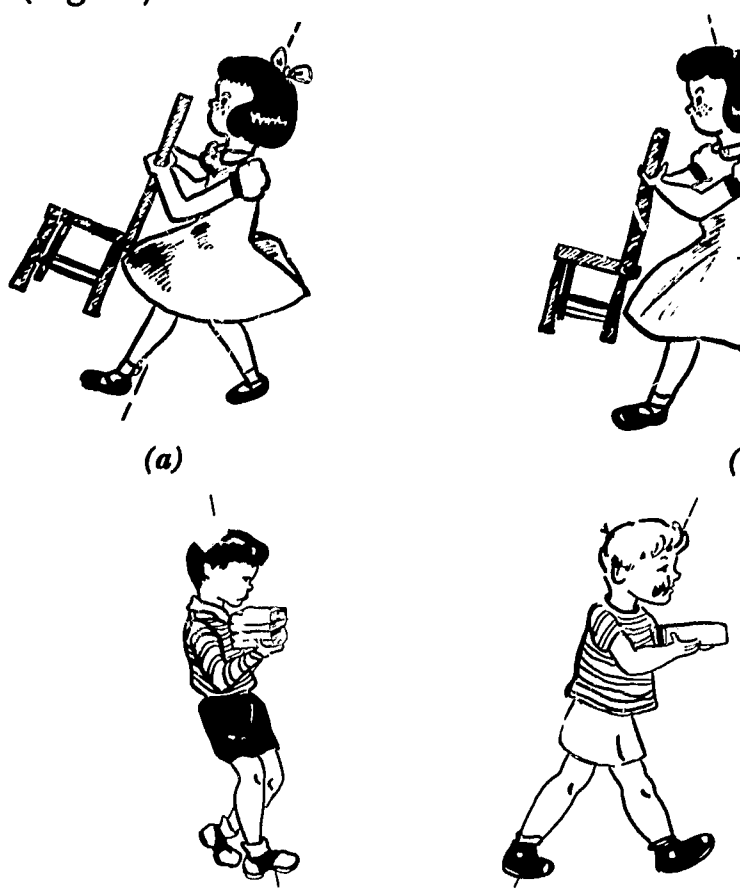
(a) *(b)*

Fig. 35. Lifting correctly *(a)*; lifting incorrectly *(b)*.

Carrying

When carrying objects with one or both hands, the object should be held close to the center of the body, thus distributing the weight to the whole body instead of it being concentrated in the arms and shoulders. The whole body would come to the

assistance of the arms, no matter where they carried the object, but the vertebral joints and those in the lower extremity may have to strain to be in position to assist the arms with the load (Fig. 36).



(a) *(b)* *(c)* *(d)*

Fig. 36. Carrying correctly *(a)*, *(c)*; carrying incorrectly *(b)*, *(d)*.

If these suggestions are followed, the whole body should be in a position to efficiently push, pull, or carry small loads without undue strain or injury.

ACTIVITY GUIDE

This guide (Fig. 37) has been prepared to aid the elementary teacher in selecting appropriate activities for individual students, to be performed in the classroom or on the playground. Since it would be practically impossible to list all activities, this list should be used as a guide, and it is hoped that the activities suggested will aid the teacher in thinking of similar appropriate activities.

ACTIVITY GUIDE

Classroom Activities for Flexibility

Stooping
Sitting on floor
Sweeping
Finger painting on floor
Hammering
Fixing Shades
Punching holes
Cutting
Sharpening pencils with different hands
Hitting keys on piano or typewriter
Pushing toy cars and trucks
Sifting flour or sand
Imitating animals
Stair climbing
Painting
Weaving
Puppets
Stretching at board
Sewing or embroidering
Sawing
Stirring liquids

Classroom Activities for Strength and Endurance

Opening windows
Hammer and tools
Building blocks
Washing clothes
Sawing
Walking on toes
Painting with brush
Blowing objects
Moving, lifting, pushing objects
Running in place
Using pointer with each hand
Opening doors with different hands
Placing equipment on shelf
Pouring things through funnel
Emptying and filling containers
Getting up from floor without hands
Boxing packages (grocery)
Moving chairs and books
Hanging up clothes
Watering plants
Using percussion instruments
Pounding clay
Stair climbing
Pressing
Holding objects

Classroom Activities for Co-ordination and Balance

Shelling vegetables
Finger painting
Peg boards
Playing instruments
Arranging flowers
Weaving
Using hammer
Balancing boards
Throwing rubber darts
Playing xylophone
Turning pages of books or magazines
Playing tea party
Loading and unloading toy trucks
Putting tops on bottles and jars
Stringing blocks and beads
Passing things with unused hand
Tying strings and shoestrings
Cutting with scissors
Painting at easel
Using magnet
Dressing dolls
Pasting
Weighing articles on scales
Dialing telephone
Puppets
Writing and erasing
Using crayons

Classroom Activities for Relaxation

Singing
Stretching
Listening to music
Breathing exercises
Mimetics
Drawing

Fig. 37. Activity guide.

Classroom Activities for Relaxation

Talking	Using clay—sculpture	Dramatic play
Resting—lying down	Imitating animals	Periods of inactivity
Reading	Imitating flowers	
Conscious relaxation	Changing positions	

Playground Activities for Flexibility

Stretching	Dodge ball	Self-testing activities
Crawling	Creative Rhythms	Mimetics
Jungle gym	Stunts	Turning rope with different hands
Weeding	Climbing	Hopping, skipping
Jumping	Galloping	
Running	Imitation activities	
Lifting	Bicycle riding	
Skin the cat	Trampoline	

Playground Activities for Strength and Endurance

Climbing apparatus	Running games	Jungle gym
Digging in sand	Rope jumping	Scooter—using both legs
Hopping, skipping	Shoveling snow or sand	Throwing, pushing
Gardening—spading, raking	Ball games	Chase
Hanging	Catching	Pushing vacuum cleaner
Digging	Sledding	
Seesaw	Using large crayons	
	Horizontal ladder	

Playground Activities for Co-ordination and Balance

Statues	Walking lines and bars	Hopscotch
Rhythms	Bicycle	Singing games
Dancing	Scooter—using both legs	Self-testing
Jumping rope	Following special patterns in walking and running	Stunts
Skipping	Imitative activities	Wading
Bouncing balls	Puzzles	Riding piggy-back
Seesaw	Throwing at targets	
Peg boards		

Playground Activities for Relaxation

Free, easy movements	Leg Swinging	Animal imitations
Quiet games	Rhythmical activities	Walking
Singing games	Mimetics	
	Arm swinging	

Fig. 37 *Continued.*

As can be seen by the guide, the activities selected are all some form of physical activity. It is believed that due to the close relationship between all parts of our development, physical, social, and psychological, correct performances of physical activities, whether done individually or with a group, can affect other aspects of the child's development. For example, catching a ball with peers watching may give the child a feeling of joy, promote self-esteem, increase his standing with his classmates, overcome fear of objects coming toward him, as well as aid in development of strength and co-ordination.

All of the activities in the classroom as we'l as those on the playground can be classified within the categories mentioned—flexibility, strength and endurance, co-ordination and balance, and relaxation. By selecting activities from each of these categories, and seeing they are properly performed, the teacher can help the child to prevent divergencies from occuring, help the child to attain over-all physical, psychological, social, and emotional development, and help the child to overcome the results of his otherwise sedentary existence. It is not expected that every child may be benefited to the maximum every day, but selections of children to perform these activities and the activities themselves should be made with individual students in mind who especially may gain from these selections.

SUMMARY

To insure maximum growth and development for each individual child, activities should be selected, not on the basis of age, sex, and grade only, but on a more individual basis directed toward the objectives of flexibility, strength and endurance, coordination and balance, and relaxation.

Once the teacher understands the child from studying previous records, as a result of formal and informal observations and tests, she should be able to select appropriate activities for each student, with the previously mentioned objectives in mind.

Selection of activities should be followed by teaching the child how to perform the activity in the way most beneficial to him. It is not enough to have equipment and facilities, the

children should also be taught how to use them properly in order to receive the most possible benefit from them.

In all body positions during activity, the weight of the body should be balanced over the center of gravity in order to obtain efficient movement.

Because of the interrelatedness of all body parts, when moving objects one part of the body does not function without some effect on the rest of the body. In moving objects children should stand as close to the object as possible, and plan to use the whole body and not just a part of it. Correct performance is just as important as proper selection of activities.

Through proper selection of activities, the elementary teacher may help the child prevent divergencies from occurring, may assist him in overcoming his sedentary existence, and may aid him in attaining optimum development, physically, psychologically, socially, and emotionally.

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