

## FINE MOTOR SKILLS

All instrumental playing techniques take time to learn and refine. Most instruments require good fine motor skills in the fingers, lips or tongue, and singing also demands good fine-motor control of the larynx. The attainment of a good technique requires long, resolute practice.

Generally speaking, gross motor skills develop ahead of fine motor skills, and well-developed gross motor skills make it easier to develop good fine motor skills. This means that exercising just fine motor skills when students have difficulty with them is not a very effective approach. Often there is more to be gained by starting with movements utilizing gross motor skills.

## GROSS MOTOR PREPARATION

I advocate using *gross motor preparation*, both with beginners and with those who have made some headway. When we teach we can divide gross motor preparation into two parts: musical preparation and instrumental (technical) preparation. This means that the students should *not learn music and instrumental technique simultaneously* but prepare the two parts separately. If an attempt is made to learn several parts at once, one of them usually suffers. This also means that gross motor skill working methods are used, both for *developing motor skills* and for *learning music efficiently*.

### Musical preparation

*Musical preparation* involves learning the music one is going to play, acquiring a basic feeling for the music and internalizing the sound of the music. Musical preparation can be concerned with various musical components such as phrases, meters, note values and nuances. It can also be concerned with melody, different voices, the form of the music or musical expression. Musical preparation is described at length in Chapter 8 of this book.

### Instrumental preparation

Every musical instrument has its own technique and its specific difficulties where fine motor skills are concerned: fingering on the recorder, bowing on the violin, staccato on the piano, accompaniment figures on the guitar, and so on.

*Instrumental preparation* involves practising the instrument's specific movements with the aid of gross motor skills before playing

the music. With our bodies, various kinds of objects and *gross motor skill instruments*, we can enlarge the fine motor skill movements in order to learn movement, direction and rhythm.

Gross motor skill instruments are those played with gross motor movements, for example drums, amadinda/xylophone, boomwhackers and handheld percussion instruments.

Having mastered the basics, we can move one step ahead and reduce the movements so as to perform them with less exertion and more peripheral control.

By enlarging movements we can also experience them with more senses: we see them, we feel them in our whole body and perhaps we also hear them. This is a good way of reinforcing the learning process.



BOOMWHACKERS

## AUTOMATION

Have you ever tried playing an instrument inverted – turning the guitar the other way round, playing on a keyboard from the ‘wrong’ direction or switching drums around? This is just as difficult as writing or clapping with the ‘wrong’ hand. Anyone who has injured their dominant hand and suddenly had to do everything with the other one will testify to the difficulty we have when we relearn certain movements. The easiest everyday activities are suddenly made difficult and demand a great deal of concentration. You feel ‘fumble-fisted’ and have difficulty controlling your movements.

Every day we perform many automated movements. We brush our teeth with our mind on other things, we sit down without looking at the chair and we put our hand at exactly the correct height to turn the light on. We can do all these things without giving the movements much thought. But if something unfamiliar happens, for example if the chair is lower than usual or a new light switch is fitted, our automated programme no longer works as well as it has done before. We notice immediately that something is not as it usually is, and our movements rise to a higher level of deliberate control.

## Automated movements require less concentration

A movement which is not automated demands attention and concentration. Once it has been automated we no longer need to concentrate so hard on it. Control sinks to a lower level in the brain and, consequently, uses less mental energy. When the movement no longer requires so much conscious control, we can concentrate on something else instead, simultaneously with performing the movement. This is why a skilled footballer makes his dribbling look like ‘child’s play’. His movements are so well programmed and automated that he can devote his mental capacity to deciphering the game and getting past his opponents. Similarly, a skilled player’s instrumental technique is so well programmed that all energy can be devoted to musical expression and interaction with the other players.

*“Information which has to pass through the brain can do so on several different, parallel levels. All information processing (calculations) is performed at the lowest possible level of the hierarchy. In this way we can reduce the amount of brain work. We can walk without thinking how we walk. Knowing where we want to go is enough.”*

Martin Ingvar: ‘Hjärnbarkens funktion’, in *Hjärnan*

## How are movements automated?

In order for a movement to become automated, it has to be performed many times. Most of us, for example, can eat without looking at our fork. We have performed the same movement so many times that ‘the body’ has learned the distance and we have no trouble finding our mouth. But a child learning to eat misses its mouth a good many times while training is in progress. No child can be expected to feed itself without practising the movement over and over again.

In crafts, sport and music-making alike, the importance of attaining effective patterns of movement has long been appreciated. This is how people were thinking at the beginning of the twentieth century:

*“Muscular actions, after constant repetition, pass outside the control of the brain. New reflexes can be created, and the time lost between the conception and realisation of the movement reduced to a strict minimum. The cultivation of automatisms should be effected in all nuances of tempo.”*

Émile Jaques-Dalcroze: *Rhythmic Movement, Solfège, and Improvisation* (1914)

Now, a hundred years later, we are still thinking along the same lines, but with more scientific knowledge about the workings of the process and other terms and concepts for explaining it:

*“When one comes to learn a new motor skill, a new pattern of movement or a particular single movement, this calls for cognitive preparation. One concentrates on the new skill to be exercised and cannot devote much thought simultaneously to other matters. When the new skill has been properly attained, the movement is automated [...]*

*Kjell Fredens (1989) says that the benefit of automation lies in the freeing up of cognitive resources. The explanation, he maintains, lies in the concept of channel capacity, meaning the amount of information that can be pre-processed per unit of time, and this has a limit. If there is too much to be pre-processed, the performance will be flawed.”*

Tora Grindberg/Greta Langlo Jagtøien: *Barn i rörelse*

*“Motor programs are a series of motor commands which are pre-structured at decision-making level and which establish the essential parts of a skilfully executed movement. This means that the individual can draw on his motor experiences next time a similar movement has to be performed. The phenomenon is sometimes called automation. More often than not it is beneficial, but it can sometimes be a drawback if one wants to curtail an incipient movement or relearn a movement which has been learned wrongly.”*

Marie Nyberg och Anna Tidén: *Allsidig rörelsekompetens hos barn och ungdomar*

## Programming

In order for a movement to be automated, a ‘program’ has to be created in the brain. The program, once created, can be activated at a suitable speed. In order to create a strong program, one should perform exactly the same movement many times over. It is often an effective strategy to begin by programming the movement in a slow tempo, so as to have better control of it, and then to speed things up to the right tempo and with the right amount of exertion.

When learning to play an instrument, the movements should be carefully and correctly programmed. If you play too fast to begin with and consequently keep making mistakes in certain places, these mistakes will be programmed. Mistakes, once learned, are not easily unlearned or programmed in a different way.