Journal of Education and Future
year: 2016, issue: 9, 155-162

A Cognitive Approach to Practising the Violin

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Abstract

When playing a musical instrument, visually perceived musical symbols are translated into motor commands while simultaneously monitoring instrumental output, and receiving multi-sensory feedback. In addition, artistic and interpretational aspects have to be considered. First the mind has to have a clear idea of the music, tone, and movements of the playing apparatus (body) before starting to practise on the violin. It may be thought that repeated physical practice alone will result in achieving mastery as an instrumentalist, however what is essential is to be able to convey the mental perception of the movements to the hands. This article presents a cognitive approach to practising the violin; that is, practising by first seeing the musical symbols, identifying a musical structure, imagining the phrase, identifying the needed technique, taking notes, imagining the movements and the sensory feeling of the arms and hands especially, and the playing apparatus as a whole, together with the artistic and interpretational goals. Only when this mental process is completed, should actual practice start. This article demonstrates that mental practising is of utmost importance as it enables one to overcome difficulties, even in extreme situations such as the severing of the median nerve of the left hand. Four cases are presented to illustrate the applicability of this cognitive approach. Each case addresses violinists of differing technical and musical skill levels: a professional concert violinist and seven students at Hacettepe University, Ankara State Conservatory. The author, himself a professional concert violinist has developed, applied and observed this technique on himself for more than 8 years after he had an accident where the median nerve of his left hand was cut, and a nerve transplant was necessary. He was able not only to play the violin again, but to give public concerts during the early convalescence stage, without feeling in his hand, and a paralysed thumb muscle.

Keywords: cognitive learning, violin, practising a musical instrument

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Keman Eğitiminde Bilişsel Bir Yaklaşım

Öz

Bir müzik enstrumanı çalarken, öncelikle gördüğümüz müzikal sembolleri, notaları, müzikal nüansları, form gibi ögeleri okuruz. Bunların bizde yarattığı zihinsel duyuş; işitsel, dokunsal ve duyumsal arzulamayla, hareket komutlarını tetikleyerek eyleme-sese dönüşür. Bu süreç icra ve artistik prosesin de temelini oluşturmalıdır. Zihnimiz pasajları, parçaları, eserleri, keman üzerinde çalışmaya başlamadan önce, genel müzikal fikir, anlatım ve iletim unsurları bağlamında, çalma organlarımızın uyumlu hareketlerini önceleme ve eylemleme yolunda berrak bir konuma getirilmelidir. Bu, doğrudan keman üzerinde yapabilmeye çalışmak/çabalamak yerine, resmi görmek, pasajın/pasajların çalışılması/çalınması için zihinsel öngörü oluşturmak anlamındadır. Zihinsel prosesin öncelenmesi; çoğu verimsiz sonuçlanan, zaman ve enerji kaybına neden olan ve dahası onanmaz fiziksel deformasyonlara yol açabilen bir dizi verimsiz tekrardan korur. Bu makalede, keman eğitiminde bilişsel bir yaklaşımla; "müzikal sembolleri görmek, müziksel kuruluşu resmetmek, cümleleri analiz etmek ve gerekli teknik verileri belirlemek, bu saptamalarla ilgili notlar almak, uyumlu hareketleri tasarlamak" yoluyla, çalma organlarımızın icra-yorum duyarlığında hedefe hazır duruma getirilmesi öngörülmektedir. Keman üzerinde yapılacak çalışmalara ancak bu aşamadan sonra başlanılmalıdır. Bu makale ayrıca, meslek dışı kazalar sonucunda meydana gelebilecek yaralanmalar sonrasında dahi, "zihinsel öngörü-aksiyon" bağlamında yapılacak çalışmalarla, çalma becerilerinin yeniden kazanabileceği örneklenmektedir. Makalede, bilişsel yaklaşımın uygulanabilirliği ile ilgili dört ayrı örneklem sunulmaktadır. Sunuşta her örneklemin, farklı teknik ve müzikal düzeylerde bulunan kemancılara yönelik olarak sıralanması esas alınmıştır. Örnekler, bir profesyonel konser kemencısı ile Hacettepe Üniversitesi Ankara Devlet Konservatuvarı'nda öğrenimlerini sürdürmekte olan yedi öğrenciyle ilgilidir. Kendisi profesyonel bir konsertist olan, ayrıca bir orkestrada konsertmaisterlik gibi önemli bir yükümlülüğü bulunan bu makalenin yazarı, geçirdiği bir kazada sol elinin ana sinirlerin kopması gibi mesleğini tehdit eden olumsuz bir sonuçla karşılaşmış, sinir transplantasyonu operasyonu geçirmek zorunda kalmış, sonrasında sekiz yıldan fazla bir süreçte yaptığı gözlemlerle, bu tekniği geliştirip şahsen uygulamıştır. Sanatçı bu süreçte, bilişsel yaklaşımı kullanarak eli henüz alçıda olduğu dönemde, kemanın tellerine dokunarak hislerini uyandırmaya çalışmış, alçının çıkarılmasından sonra ilk notaları çalabilmiştir. Sanatçı bu süreçte ayrıca, sırasıyla ton duygusu ve örtüşen hareketlerin anılarıyla; müziği vareden estetik unsurların zihinsel duyumlama ve canlandırılması yoluyla; his kaybına uğramış olan el ve parmaklarını itaatkarlıklarıyla yönetilebileceğini saptamış ve kanıtlamıştır. Sanatçı, keman çalabilmenin çok ötesinde, dokunma duyusunda kaybettiklerini yeniden ve aynı duyarlıkta elde etmiş, konser hayatına yeniden ve hissettiği yetkinlikle geri dönmüştür.

Anahtar Sözcükler: bilişsel yaklaşım, keman, enstrüman öğrenimi

Introduction

Although there is a vast number of different approaches to violin playing, some of the most important instrumentalists share the idea of the importance of the mind. Physical practice alone will not necessarily lead to major improvements. As Galamian (1962) stated “I would like to point to the one-sided overemphasis on the purely physical and mechanical aspect of violin technique, the ignoring of the fact that what is paramount in importance is not in physical movements as such but the mental control over them.”

First, seeing the score must invoke a musical and technical pattern. Then, a faultless flow from the mind to the hands is necessary to achieve ease of playing. This transfer from mind to hand must be as flawless and rapid as possible, and ultimately come naturally. In the beginning, a greater part is the cognitive proses, i.e. the thinking rather than the physical actions. Over time, musical and technical patterns are perceived quickly, and the cognitive process is accomplished in almost real time.

“The key to facility and accuracy and, ultimately, to complete mastery of violin technique is to be found in the relationship of mind to muscles, that is, in the ability to make the sequence of mental command and physical response as quick and precise as possible. Therein resides the fundamental principal of violin technique that is being overlooked and neglected by far too many players and teachers.” (Galamian, 1962)

Another aspect that reinforces the cognitive approach is related to the fact that each individual has different physical capabilities. Movements that are prepared through mental processes provide the adjustment of movements to existing capabilities in the most natural way.

"The acquirement of a technique is nothing else than fitting a given difficulty to one's own capacities. That this will be furthered to a lesser extent through physical practising and to a greater extent through keeping an eye on the task mentally is a truth which perhaps has not been obvious to every pianoforte pedagogue, but surely is obvious to every player who attains his aim through self-education and reflection" (Kochevitsky, 1967). These words of Ferruccio Busoni in 1917, one of the greatest performers and pedagogues of the 20th century, and apply to all types of instrumental learning. Nearly a hundred years later this holds true. Practising violinists see printed music, take hold of their instrument, try to play, fail and then try to fix problems with mindless repetitions, correcting movements while playing, instead of thinking about them, and are not advised otherwise by their instructors. Practising through repetition will lead to gain very little improvement, and furthermore may result in tension and an excess of movements. Therefore, a movement that has been achieved in such a way should not be considered as “learned”. It is neither reliable nor repeatable. Borders and limitations will build up in the mind of the violinist. Frustration will be the result. A cognitive approach to practising combines inward hearing, imagining the movement and excitement of the playing apparatus while the movement is done,

while at the same time focusing on interpretational goals. Once this is mentally practised and fluent, it may be executed on the instrument. Hence, the violinist will be working consciously on movements while opening up the mind to the subconscious, simultaneously concentrating on interpretational and artistic goals. The playing apparatus is therefore prepared for the movements it has to execute, and will do so in the most natural way, without the burden of unwanted habits that hinder the acquisition of the right technique.

"The full acoustic picture of the music must be lodged in the mind, before it can be expressed through the hands." Then the "playing is simply the manual expression of something (a pianist) knows." (Hofmann, 1920).

Four cases are discussed to illustrate the application of this cognitive approach. Each case presents violinists of differing physical capabilities, technical and musical skill levels.

Case 1: Professional Concert Violinist Age: 31

A violinist (the author), at the time he was concert soloist and concertmaster of an orchestra had an accident where the median nerve of his left hand was cut, and a nerve transplant was necessary. This left him with a left hand that had useable feeling only on the little finger, and no feeling at all on the other fingers. Also, the muscle of the thumb, which is operated by the median nerve, was paralysed. The actions of the middle and the ring finger were mixed up. One week after the surgery, his hand still in plaster, he started to hold the violin, fingers touching the strings softly, trying to remember the feeling of the fingers touching the string. This may have helped to trigger the part of the brain that is responsible for hand movements. He resumed this routine for three weeks, until the plaster was removed. At that point, his hand had healed to a degree where no physical therapy was deemed necessary. Four days after the plaster was removed, he started to play his first notes on the violin. The process of playing an instrument as described by Kochevitsky (1967) is as follows: visual stimulus, auditory stimulus (inward hearing), anticipation of motor act, motor act resulting in actual sound, auditory perception and evaluation of the actual sound. To this must be added the fact that it is necessary to have feedback of all the motor act in order to correct the actual movements if necessary. The violinist had no sensory-motor feedback due to his impairment, so there was no way of correcting a poorly executed movement of the hand. Therefore he had to find a way of giving commands to the hand that resulted in at least near perfect execution. At this point, he found that with perfect imagination, first of the tone, then the movement and the feel of the movement, it was possible to lead the hand to play the violin, even without feeling in the left hand. This playing was based on a conscious imagination of every movement of the hand. This was only possible because the violinist had a vivid memory of all movements of his violin technique. Mental practising was the most important factor that enabled him to play. At this time, it was too overwhelming a task to perform, because every movement required too much active thinking. Concentrating on musical aspects, however opened the possibility to move this active thinking to the

subconscious. A map of the musical composition played was meticulously made, and every aspect of the work marked in the score through the use of artistic intuitions, memories, and all kinds of mental images. In this way, subgroups of movements were organized, and thinking about a passage musically, triggered several movements that could be executed subconsciously. He was able to perform again as concertmaster at the orchestra four month after the surgery and in solo concerts a year later; still without feeling in the fingers, and the thumb muscle paralysed to a certain degree. The cognitive approach has enabled him to continue his duty as a concertmaster, and to gradually increase his performances as a soloist. 8 years on, he has decided to share his findings with younger violinists to facilitate their learning and practising. He is therefore currently also an instructor at the Hacettepe University Ankara State Conservatory. The following cases describe the implementation of this cognitive approach to students with different skill levels and learning difficulties.

Case 2: Intermediate Beginner Violinist Age: 14, Playing Thirds

An intermediate beginner violinist, at the time when she newly picked up double stops had immense trouble to figure out how to place the fingers while playing thirds, and had a very tense hand while playing. She started learning an etude consisting of long slurred thirds. She was first asked to break up the piece in a musical sense, making parts. Then, she started to think about the music of the first part, which consisted of two bars. She thought about how it was sounding, and what the music was about. Then, she started to think about the movement of the playing apparatus as a whole (bow arm and hand, left arm, hand and fingers) including the inwardly heard music with expression. At this stage, it is very important to imagine not only one hand but both hands as is described by Onay (2015). Then, when she was confident about her inner hearing and imagination, she picked up the instrument. She immediately succeeded in playing the first two bars very cleanly and with expression. The immense tension in her left hand while playing thirds was gone. While playing one note the hand was totally prepared for the next movement as well. She was asked to repeat the bars, and to think about the next notes she had to play, while each time improving musicality. Doing so cultivated the flow of information from the mind to the limbs. She had a clear idea of what should be achieved in terms of the musical and technical aspects of this etude, using the cognitive approach from "feel to action". She could do sharp evaluations of what had happened. By the time she could do three faultless repeats, the two bars where learned properly. So she moved on part by part. She overlapped parts, and went on learning self-efficaciously. She left behind the bad habit of trying to make movements related to already placedfingers, and instead thought about the notes she wanted to play directly, resulting in freedom of the hand and good intonation. Also, she was much more confident in hearing intonation, because she had it all in here mind before playing. As a result, she not only learned the piece very quickly, but she also did memorise it, and was able to play it repeatedly without fault. This has shown that the cognitive approach gives rise to reliable learning. More than half of the work was achieved mentally. There was no muscular fatigue. She was able to execute what she wanted,

in a state of positive and cheerful learning. She became self-confident, and was happy to practice.

As violinist Jascha Heifetz said: "I suppose that when I play in public it looks easy, but before I ever came on the concert stage I worked hard. And I do yet- but always putting the two things together, mental work and physical work" (Klickstein 2009)

Case 3: Intermediate Level Violinists Practising Scales Age: 12-14

This case involves 6 intermediate beginner level violinists who had problems with changing position in the instance of scales. All had trouble with position changing, and all changed the position of their hands during the shift in a way that was unnatural. Because of the excess of movements none of them could do repeatable shifts. All shifts where different from the previous ones. They had all practised the scales before, but no improvements were seen. They were asked to first imagine the shift of the hands in detail, including the sensory-motor feedback of the hand and bow. After repeatedly imagining the shift down and up, they were asked to try to play the shift. All of a sudden, they knew exactly what to do, the hand shifted as a whole and looked very natural. Intonation was good, and the shifts were repeatable. If there was a problem again, they were asked to work one more time mentally. Following this, old habits were gone and they had learned a reliable and repeatable shift. That was something they had tried to achieve previously through hard physical practice. The cognitive approach described presented them with a clear picture of the movement, making execution and evaluation possible in an easy way. Also, all students achieved a better intonation of the whole scale by thinking from the previous to the next finger beforehand, and perceiving the scale as melody instead of a technical must practice.

Case 4: Beginning Violin Student Age: 10

In this case, a beginner violin student, who had just accomplished playing with all fingers in the first position, was asked to always think of the tone interval and feeling of the next note to be played. Immediately, her hand looked natural, no tension was observed, and intonation was perfect time after time. She was very confident and knew exactly where and how to put her fingers on the fingerboard. She could do a precise evaluation of the played music by herself.

Discussion and Conclusion

There are numerous violin methods one could use to gain technique, and there are many different schools, yet there is no substitute for imagining the movement beforehand. One could do a thousand repeats and gather unwanted habits instead of progress, or one could imagine a movement and then just let the playing apparatus execute the movement in the most natural way. While using the cognitive process, it is advisable not only to imagine a movement on its own, but also to realize that the movement is done for the sake of expression. As the brain learns in a rhythmic way,

and learning is very much accelerated when emotions are involved (Rose, 1987), learning with musical expression will also lead to faster and longer lasting learning. Thinking of the music and organising subgroups will open up the mind, and movements will increasingly be carried out subconsciously. After that, if some problems still remain, rhythmical variations can be done, and movements will be stored in our brain (Onay, 2015). Another benefit of musical thinking applied to even the driest technical etudes, is that experimenting with emotions and techniques for expression will keep the fun factor high during practising, and thus encourage a state conducive to teach (Sand, 2000). For master musicians, imagination of the movement in one's mind will be as easy and natural as reaching for a glass of water. For novices perceiving the movement as a tool for expression will assist them to improve musically and enjoy practising.

It can be assumed that students who are able to apply this approach will become much more self-efficacious, and will have more self-confidence, because learning takes place in manageable parts, and they are aware of what they do. They will be able to use their time more efficiently during practice, and be able to better evaluate their work. Also their goal will be the expression of the music, keeping their inspiration high.

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