Türk Üstün Zekâ ve Eğitim Dergisi
2014, Cilt 4, Sayı 1, 2-9

Turkish Journal of Giftedness and Education
2014, Volume 4, Issue 1, 2-9

The Nuremberg Music-Ecological Approach: Why are Some Musicians Internationally Successful and Others Not?

Nürnberg Müzik Ekolojik Yaklaşımı: Neden Bazı Müzisyenler Uluslararası Başarılı, Diğerleri Değil?

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Abstract

Success in music depends on a number of crucial factors with musical talent figuring prominently in gifted research. However, in the Nuremberg Music-Ecological Approach presented in this paper a different view is taken. Instead of talents and factors, the concept of available resources in an individual´s actiotope (Ziegler, 2005) is put in the center of our analysis. Educational Capital refers to exogenous resources and comprises five different forms of resources: Economic Educational Capital, Cultural Educational Capital, Social Educational Capital, Infrastructural Educational Capital and Didactic Educational Capital. Learning Capital refers to endogenous resources and also comprises five different forms of resources: Organismic Learning Capital, Actional Learning Capital, Telic Learning Capital, Episodic Learning Capital and Attentional Learning Capital. Results of an empirical study are reported which was designed to test the claim that successful professional musicians possess more Educational Capital as well as more Learning Capital than their less successful colleagues. The hypothesis was confirmed with a sample of professional musicians who were successful on a local, regional or international level.

Keywords: Nuremberg Music-Ecological Approach, educational capital, learning capital

Öz

Müzik alanında başarı daha çok üstün zeka araştırmalarında baskın yer bulan müzik yeteneği ile birlikte bir takım faktörlere bağlıdır. Bu çalışmada sunulan Nürnberg Müzik Ekolojik Yaklaşımında ise farklı bir bakış açısı ele alınmıştır. Yetenekler ve faktörler yerine bireyin eylem alanında varolan kaynaklar (Ziegler, 2005) analizin merkezine alınmıştır. Eğitimsel Kapital dışsal kaynakları ifade eder ve beş farklı kaynak türünü kapsar: Ekonomik eğitimsel kapital, kültürel eğitimsel kapital, sosyal eğitimsel kapital, altyapısal eğitimsel kapital ve öğretici/didaktik eğitimsel kapital. Öğrenme Kapitali içsel kaynakları ifade eder ve beş farklı kaynak türünü içermektedir: Biyolojik öğrenme kapitali, eylemsel öğrenme kapitali, öğrenme amaçları kapitali, periyodik öğrenme kapitali ve dikkat kaynakları öğrenme kapitali. Başarılı profesyonel müzisyenlerin eğitim ve öğrenme kapitallerinin daha az başarılı olan meslektaşlarına göre daha sık sergiledikleri hipotezini test etmek amacıyla tasarlanmış olan deneysel bir araştırmanın bulguları rapor edilmiştir. Hipotezler yerel, bölgesel veya uluslararası düzeyde başarılı olan müzisyenlerden oluşan bir örneklem ile doğrulanmıştır.

Anahtar Sözcükler: Nürnberg Müzik Ekolojik Yaklaşımı, eğitim kapitali, öğrenme kapitali

Introduction

Musical activities are among the most pleasurable human experiences (Juslin & Sloboda, 2001). Indeed, human nature and its evolution seems to be unimaginable without music (McDermott,

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ISSN 2146-3832, http://www.tuzed.org

& Hauser, 2005; Patel, 2006). Music is held in high regard in virtually all known human societies (Benzon, 2001; Patel, 2008; Wallin, Merker, & Brown, 2000).

This is also true for the country in which the empirical research reported in this paper was conducted. Germany has a flourishing music industry with 133 public and professional symphony orchestras, 83 music theatres as well as a variety of musical educational institutions (cf. Deutsches Musikinformationszentrum, 2011a). Around 7 million amateur musicians live in the country (Reimers, 2010). The government spends approximately 2.5 billion Euro per year on music related activities. This is approximately 30% of the total cultural expenditure (cf. Deutsches Musikinformationszentrum, 2011b). Private funding of musical activities (by donations, foundation means, sponsoring, etc.) adds approximately another 800 million to 2.6 billion Euro (cf. Deutsches Musikinformationszentrum, 2011b).

It therefore comes as no surprise that those who perform music professionally, also enjoy a high degree of appreciation. In all countries music is a profession of its own, even though there is no strict definition or profile of a musician. In Germany there are courses in music that can be undertaken at a professional academy or a college of music. However, not all trained musicians can live on their salary. Many of them are forced to take a second job. On the other hand there are also musicians who make their living completely with music although they did not receive a formal musical education. But which factors determine the development of a high level of performance as a professional musician and, which factors are responsible for success in music?

From the perspective of gifted research the most common answer is: musical talent (Sternberg & Lubart, 2006; Winner, 1996). However, in this article an alternative explanation is suggested. Based on a systemic approach our basic assumption is that musicians who succeed had more learning resources at their disposal (Ziegler & Baker, 2013).

The Nuremberg Music-Ecological Approach

The Nuremberg Music-Ecological Approach postulates that talent development in music takes place in an actiotope which […] includes an individual and the material, social and informational environment with which that individual interacts“ (Ziegler, Vialle, & Wimmer, 2013, p. 3). It is regarded as an active process of self-organization during which individuals gradually adapt to specific environments and the environments are gradually adapted to the growing skill levels of the individuals. The crucial question is what determines successful adaptations?

Successful adaptation is equally dependent on exogenous and endogenous resources, the former located in the environmental component of the actiotope, the latter in the individual component of the actiotope. In the Nuremberg Music-Ecological Approach exogenous resources are termed Educational Capital and endogenous resources are termed Learning Capital. They are the necessary conditions for successful learning and talent development.

Within Educational Capital as well as Learning Capital five different forms can be distinguished, making in all, ten forms of Capital (for a detailed overview see Ziegler & Baker, 2013). In Table 1 these Capitals are defined and illustrated with an example. The examples refer to model learning and its consequences. In doing so it is assumed that a student listens fascinated to the concert performance of a violinist and considers learning to play the violin himself.

Table 1: Forms of Educational and Learning Capital, Definitions and Examples

Capital	Definition	Example
Exogenous resources: Educational Capital		
Economic Educational Capital	"Economic Educational Capital includes all those possessions and valuables, which can be used for the initiation or continuation of learning episodes." (p. 10f.)	A fundamental precondition for being able to learn to play the violin is the availability of a violin and that a student can afford violin instruction.
Cultural Educational Capital	"Cultural Educational Capital includes values, concepts and ways of thinking, which can promote or impede the development of an effective Action Repertoire." (p. 11)	If the student's peer group disapproves of playing a classical musical instrument, the probability that the student pursues the plan to learn to play the violin is reduced.
Social Educational Capital	"Social Educational Capital includes all individuals and social institutions that have direct or indirect impact on the success of learning episodes." (p. 11)	The parents have to support the student's plans (financially, motivationally), a violin teacher needs to be available.
Infrastructural Educational Capital	"Infrastructural Educational Capital includes the material and policy options, which can be used in support of learning." (p. 11)	Access to a nearby conservatory or a music school may trigger the implementation of the plan.
Didactic Educational Capital	"Didactic Educational Capital is the available knowledge on the design and optimization of pedagogical approaches	The didactic quality of his violin teacher helps the student after some setbacks to increase his skill level and overcome some motivational issues.
Endogenous resources: Learning Capital		
Organismic Learning Capital	"Organismic Learning Capital refers to the physiological and constitutive resources of a learner." (p. 11)	Fatigue, a lack of dexterity, hearing impairments etc. might interfere with the student's learning abilities.
Telic Learning Capital	"Telic Learning Capital refers to the availability of learning goals." (p. 11)	If the student sets unrealistic musical goals, disappointments are bound to occur and the student may give up the violin.
Actional Learning Capital	"Actional Learning Capital includes the complete Action Repertoire of a learner, or of which the learner is basically capable of utilizing." (p. 11)	If the student has more effective learning strategies at his disposal, he will more easily overcome motivational obstacles.
Episodic Learning Capital	"Episodic Learning Capital represents the available goal- or situation-related patterns of actions for students." (p. 12)	After a period of time the student has acquired significant experience on how best to master a difficult piece of music.
Attentional Learning Capital	"Attentional Learning Capital refers to the quantitative and qualitative attention resources available for learning." (p. 12)	If the student is involved in further activities besides playing the violin (e.g. football club, friends, computer games) he might not have enough time at his disposal to practice the music instrument sufficiently.

[1] Definitions are quotes from Ziegler, Vialle & Wimmer (2013).

It is assumed that more endogenous and more exogenous resources in an actiotope allow for more successful adaptations in the musical domain and hence the development of more effective action repertoires. A straightforward hypothesis would be that professional musicians with more resources become more successful in the long run than their colleagues with less learning resources.

We found initial corroboration for the influence of Educational and Learning Capital on achievements in a study with students from China, Germany, and Turkey. Achievements and the amount of Educational and Learning Capital were significantly correlated (Vladut, Liu, Leana-Tscila, Vialle, & Ziegler, 2013). Further evidence was collected in case studies with world class professional athletes such as a world champion or a season´s MVP (most valuable player) of the National Basketball Association (NBA) in the US, undoubtedly the strongest Basketball League in the world. These world stars possessed substantial amounts of Educational and Learning Capital (Trottler, 2013; Ziegler, Vladut, Leavitt, & Speckenheuer, 2012).

The Current Study

In the current study we were interested to see whether it was possible to explain differences in the professional successes of musicians on the basis of the Nuremberg Music-Ecological Approach. We hypothesized that a critical period that predetermines future successes of musicians is the time when they made their decisions to pursue a career as a professional musician. Among other things they decided in this phase how high they would aim when applying for a permanent engagement, if a second job would be necessary to make a living, how much time and effort they would be willing to spend on practicing, etc. According to Ziegler and Baker (2013) the availability of exogenous (Educational Capital) and endogenous learning resources (Learning Capital) would be crucial for these decisions. Thus, our general hypothesis was that more successful professional musicians had more learning resources at their disposal than their less successful colleagues. In our research we applied the contrastive paradigm (Chi, 2011), i.e. we compared three levels of experts according to the reach of their success: local, regional (Federal state), or international.

Method

Participants

A total of 80 professional musicians participated in the study of which 38 were female and 42 were male. The average age was M = 32.1 years (SD = 12.29). The musicians started to learn their musical instrument by the age of M = 7.79 (SD = 2.60) and made their decisions to pursue a career as professional musicians by the age of M = 15.78 (SD = 4.69). In retrospect they estimated that when making the decision the daily time spent for deliberate practice amounted to M = 139.05 (SD = 73.15) minutes a day.

According to the level of success the sample was divided into three groups. Professional musicians with success on an international level (N = 7) had engagements in more than just a Federal State and their audience was not limited to the Federal State in which they lived. The N = 21 professional musicians with success on a regional level (all musicians lived either in Bavaria with 12.56 million citizens and Baden-Württemberg with 10.6 million citizens) had engagements in the Federal State where they lived, their music was regularly played on a Federal State-wide radio or TV programs and their audience was not limited to their local region or city. Professional musicians with local successes (N = 52) had predominantly occupations at municipal opera houses or municipal orchestras.

Measures

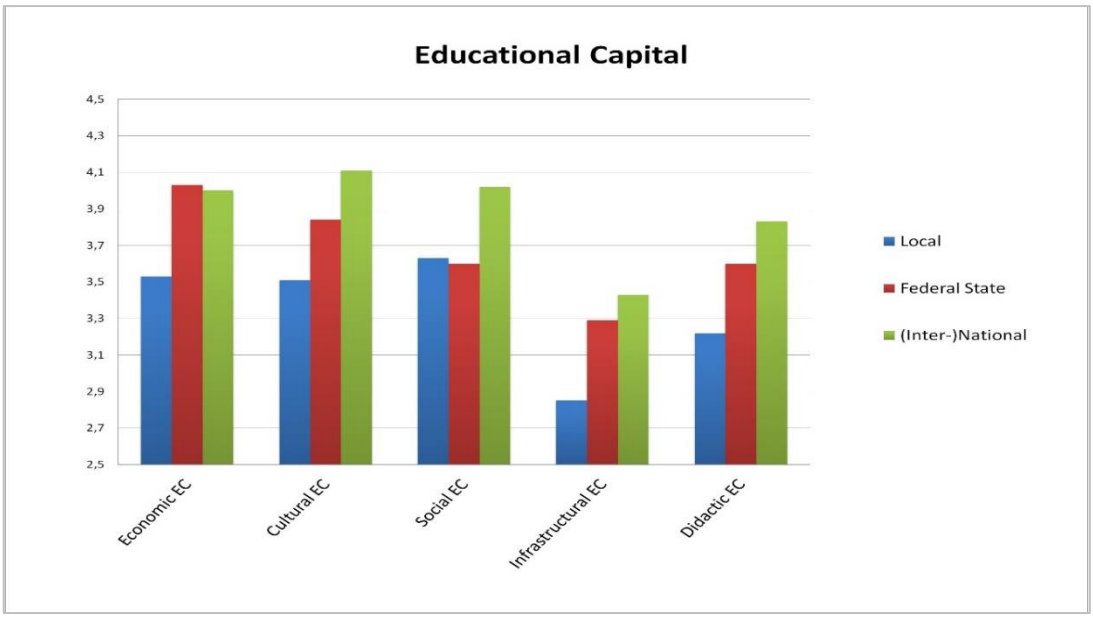
In addition to a short biographical questionnaire taken from Gruber and Ziegler (1996) the Questionnaire of Educational and Learning Capital (QELC) from Vladut et al. (2013) was administered after adapting it to the field of music. In the QELC each of the five forms of either Educational or Learning Capital is assessed by five items. However, all the questions referred to the point in time when the participants made their decision to pursue a professional career in music.

Participants were asked to express their degree of agreement on a 5-point Likert scale ranging from 1 "I strongly disagree" to 5 "I strongly agree". Reliabilities of all the scales were satisfactory with all α´s above .68.

Results

The mean values of the different kinds of Educational Capitals are depicted in Figure 1and are shown according to professional success. With the exception of Economic Educational Capital, the most successful musicians had the most learning resources at their disposal.

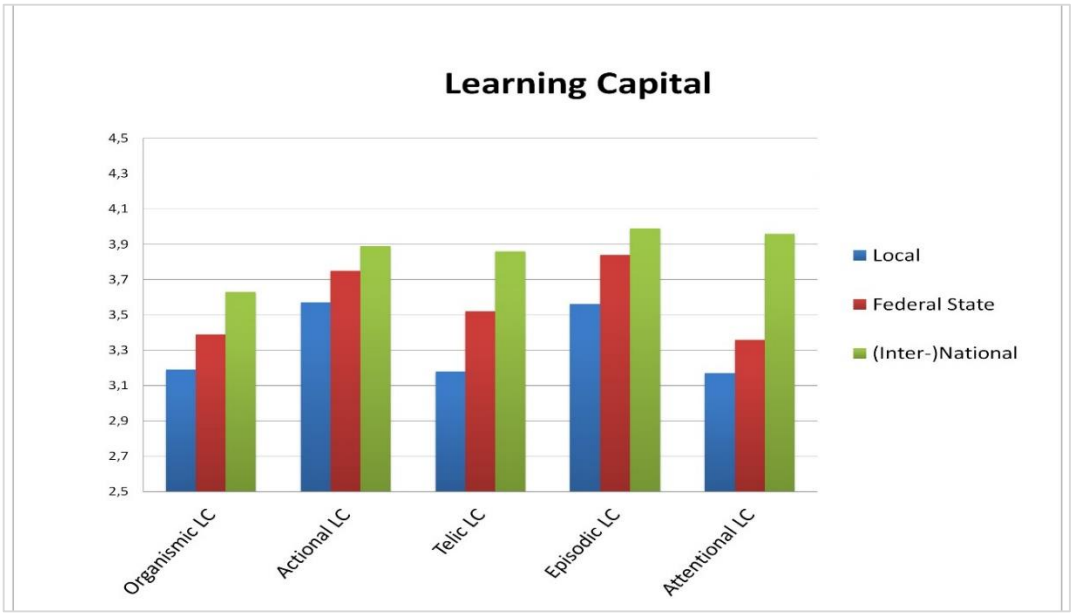
For statistical purposes we grouped the professional musicians with local or regional successes together. In order to test for mean differences a series of Mann–Whitney U tests using one-tailed testing at a .05 level were conducted. The professional musicians with success on an international level had in retrospect more Cultural, Social, Infrastructural and Didactic Educational Capital at their disposal when making the decision to pursue a career as a musician (all p´s < 0.10). Mean differences in Economic Educational Capital were only marginally significant ($p < 0.10$).



Notes: EC = Educational Capital. Min = 1, Max = 5.

Figure 1: Mean values of Educational Capital of professional musicians of different success levels.

The Mann–Whitney U tests revealed two significant differences concerning the possession of Learning Capital among the professional musicians of different levels of success (see Figure 2). Excellent musicians had on average more Telic and Attentional Learning Capital at their disposal than the combined group of professional musicians (p´s < 0.05). The mean differences in Organismic, Actional and Episodic Learning Capital didn´t reach the set 0.05 level.



Notes: LC = Learning Capital. *Min* = 1, *Max* = 5.

Figure 2. Mean values of Learning Capital of professional musicians of different success levels.

Summary

In this paper we introduced the Nuremberg Music-Ecological Approach in order to explain differences in the professional success of musicians. In contrast to talent accounts (e.g. Gagné,

2004; Heller, 2004) it is assumed that success in music depends on the coalescence of endogenous and exogenous resources within a person´s actiotope (Ziegler, 2005). A categorization of these resources was offered which were summarized under the labels Educational and Learning Capital.

This empirical study investigated whether successful musicians have more of these Capitals at their disposal when they decided to pursue a professional career than their less successful colleagues. With a sample of professional musicians who were successful either on a local, regional and international level the assumption was confirmed. The most successful musicians had, with the exception of Economic Educational Capital more of the Capitals than the other groups of professional musicians. Tests for statistical significance revealed that in seven of the ten Capitals these advantages were statistically significant: Cultural Educational Capital, Social Educational Capital, Infrastructural Educational Capital, Didactic Educational Capital, Telic Learning Capital, and Attentional Learning Capital.

In light of the empirical findings it seems promising to use the Nuremberg Music-Ecological Approach in further studies dedicated to investigating the development of musical expertise. The two next steps should be that, firstly, the questionnaire data should be supplemented with more qualitative studies such as the aforementioned case studies with successful people on a world class level (Trottler, 2013; Ziegler et al., 2012). Secondly, longitudinal data are needed in order to establish the causal link between the Capitals and the skill development of musicians. Given these studies provide further evidence for the Nuremberg Music-Ecological Approach, more fine-tuned studies would be appropriate to discover exactly how the Capitals influence skill development and in what way they correlate.

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