EDITORIAL BOARD

CONTENTS

FOREWORD

Dear Readers!

In the second issue of our scientific journal, we bring you eight interesting papers, which are rich in information, findings of research studies, and recommendations for practice.

The topics presented in the papers are diverse, one of them is from the fields of philosophy of education, it is particularly focused on freedom as impacted by education. Branislav Malík, in the paper entitled 'The Place of Education in an Emancipatory Struggle of Man', maps individuals' pathways leading to freedom. He sets criteria to be considered when making choices. He also delineates the space where education could productively enter into the human emancipation process and thematizes competences that need to be developed in order to enable the adepts of education to participate in human emancipatory process. The paper summarizes the assumptions and limits that need to be respected in order to make education a space for the cultivation of human sense for freedom.

The issues of collaboratory mentoring and teachers' inclusive teaching practice needs are discussed in the paper by Tuğba Kamalı-Arslantaş and Gülistan Yalçın in the paper 'Collaborative Mentoring as a Way of Meeting Teachers' Inclusive Teaching Practices Needs: Investigating Learning Outcomes'. The results of this study point to the needs for more interdisciplinary collaboration studies in order to support teachers' dealing with diverse students. The current collaborative mentoring study has several contributions for teachers in terms of their knowledge and skills in implementing an effective inclusive education. Inclusive education is a broadly discussed issue worldwide.

The role of music education in childhood is dealt with by Tímea Szűcs and Erika Juhász in their paper 'The Role of Music Education in Childhood'. They claim that from the second half of the 20th century onwards, studies on the transfer effects of music learning have become increasingly common and research with a solid scientific background supports the transfer effects of music education on different aspects of life. The aim of their literature review is to map the effect of learning music in childhood based on both international and Hungarian scientific literature. They assume that music education institutions transmit several values and hidden curriculum to children the effect of which serves as a determining and formative factor throughout their whole lives. That is why teachers should be aware of it and consciously control it. Learning music can act as a supporting factor for the physical, spiritual, and mental development in children and apart from improving different areas of competence, it can also influence their attitude to work, with which we can only agree.

Mária Kožuchová, Silvia Barnová, Ján Stebila, and Slávka Krásna search the answer for the question regarding the efficiency of the application of an inquiry-based approach in schools. Their paper is entitled 'Inquiry-Based Approach to Education'. In the study, the authors present the results of an original research study focused on the impact of inquiry-based teaching on students' knowledge acquisition. The obtained results indicate that inquiry-based teaching can lead to better knowledge acquisition in students than traditional methods of teaching and so, it appears to be an efficient alternative. Its apllication can contribute to improving the quality of the educational process and increasing students' motivation by using activating methods of teaching. It is an adventurous and exciting approach popular among students as it is connected with fantasy and experiencing.

In the following paper, we return to the field of music education, but from a different perspective. In the study 'Use of Technology-Supported Educational Tools in General Music Education and Its Contribution to the Process of Music Education', Gülnihal Gül investigates into the changes in the process of music education under the influence of technology supported educational tools. From the results of the research, it can be seen that technology-supported applications are used especially in the listening and expression stages of the teacher, and are preferred in the sampling, song teaching and showing and telling stages. The results show that technology-supported applications contribute positively to the learning speed, permanent learning, the realization of more effective lessons, and learning success. In this sense, it is crucially significant that teachers have the competence to use different applications in today's age of technology.

The topical post-COVID issues and distance learning experiences are focused on by Hungarian authors Erika Homoki, Tímea Nyitrai, and Zita Czapné Makó in the study 'Online Educational Experiences in Some Majors of Eszterházy Károly University'. They point out that digital connectivity and the digital environment became the main arena for students and faculty over the course of a weekend. They ask interesting questions – 'Can we talk about real digital education during this period?' or 'Was online education effective or rather a blind spot?' The authors were looking for student answers to how each segment of distance learning can be integrated into the normal education system and compared their results with similar Hungarian and international research results. Their results confirmed that educational systems pushed into the online environment are capable of independent change. The changes that occurred can be highlighted as secondary benefits, this educational environment could be more sustainable in the future than the traditional educational environment, however, the consequences of isolation cannot be ignored, as accentuated by the authors.

The relationship between teachers' professional development activities and their job satisfaction was investigated into by Abdurrahman Ilgan and Yagmur

Basaran and are presented in their study 'Examining Types and Duration of Teachers' Professional Development Activities and Their Relationship with Job Satisfaction'. The aim of the study is to describe teachers' views on professional development activities, the frequency of teachers' participation, and the effectiveness of these professional development activities. Alonside with that, the relationship between participation in professional development activities and job satisfaction is analysed and the association between these two variables was confirmed. It was also found out that very few teachers attended educational congresses to present their activities/scientific studies. Therefore, it might be recommended to improve teachers' study skills in terms of scientific studies, and they might be encouraged to present their studies at conferences.

The issues of Roma children's education in the EU, but especially in Hungary are elaborated from the aspect of the presence of a friend in the lives of multiply disadvantaged Roma and non-Roma youth in the paper 'Roma Mentor Project: The Roma Intellectual Friend Model' by Péter Bogdán. In general, the alternative and innovative features of the Roma Mentor Project differ from formal education in a way that the project completely breaks away from traditional educational content, embraces and broadcasts aspects of Roma folklore that are rarely present even in experimental educational locations. A mentor from Roma origins appears during the project as a Roma intellectual friend in multiply disadvantaged Roma and non-Roma children's lives, which is especially true considering that the Roma mentor draws tools of socialization from Roma culture, which makes them unique and original in education.

Dear Readers, we have introduced you a set of interesting and sophisticated papers from diverse parts of the world. Please read them and let them be an inspiration for you for further studies, research projects, and new ideas. We are looking forward to your papers as we believe that they will enrich our Journal, as we create Acta Educationis Generalis together.

Wishing you a sunny summer and a successful end of the academic year,

Viola Tamášová
Editor-in-Chief

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The Place of Education in an Emancipatory Struggle of Man

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Abstract:
Introduction: In the paper, the author maps the ways leading to human freedom. He sets out the criteria that should be taken into account in their selection. He also delineates the space where education could productively enter into the human emancipation process.
Purpose: The aim of the paper is to thematize competences that need to be developed in order to enable the adepts of education to participate in human emancipatory process.
Methods: The author uses explanatory method to expose the issue.
Conclusions: The paper summarizes the assumptions and limits that need to be respected in order to make education a space for the cultivation of human sense for freedom.

Key words: freedom, education, creativity, will, subversion of goals.

Freedom presupposes that there are always things and circumstances in play that are contrary to freedom, things we must overcome in order to achieve it. From this perspective, freedom can be seen as overcoming itself. However, the struggle with the obstacles that stand in the way of freedom cannot be carried to a victorious conclusion. It is not possible to win freedom once and for all[1]. Nor can it be won for everyone, since one of the obstacles in the way of my, or our, freedom are often other people seeking to maximize their own freedom. One of the frequent ideas that resonate in Friedrich Nietzsche's work (2020) is the

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[1] As Karl Jaspers (1991) observes, "where freedom is, it struggles with unfreedom, and if unfreedom is completely overcome as a result of the removal of all obstacles, freedom itself will come to an end."

statement that "people value things according to how much they expend for them, what price they pay for them." Karl Jaspers (1991) applies this to freedom as well. Freedom, too, must constantly be risked, and it is the magnitude of that risk that determines its value. The value of freedom, then, lies not in its achievement, but in the act of achieving. As Gandhi says satisfaction lies in the effort, not in the attainment. It is that effort (the will to freedom) that makes freedom real. An unearned (merely granted, bestowed) freedom, a freedom without overpowering and "duties", would be slavery rather than real freedom. As Goethe put it in his Faust poetically, "... freedom and life are earned by those alone who conquer them each day anew." (2018) This struggle, according to Nietzsche (1993), also has an educational aspect, "the struggle educates to freedom."

The decline of education, which we often speak of today, can be partly attributed to the fact that its acquisition no longer requires any effort. Today we are accustomed and taught that if someone or something puts up a certain resistance, we go elsewhere to get it without a fight. Even marketing strategists have come to understand that the most effective advertising is that which offers something requiring no effort to consume, which puts no resistance in the consumer's path, and which places no obstacles in the way of affirmation. Today, not only is everything that enters our lives required to be light, seamless or easy to consume. Today it must also be "fun". As Nietzsche (2020) observes "we would hardly have any interest in knowledge if we were to be bored on the way to it." It was therefore only a matter of time before schools and teachers would adapt and begin to catch up with these expectations.

Freedom is also associated with choice. Freedom presupposes that one has the possibility of alternative action and response. However, the choice of alternatives should not be an arbitrary choice or simply a choice of any option. This choice should take into account the following fundamental criteria: We should be choosing a genuine alternative, that is, an alternative to what provoked the choice, an alternative to the given and existing, the dissatisfaction with which motivated us to seek a substitute for it.

When we decide between options, priority should be given to those that require more effort to implement. We should prioritize the paths to our goals that enable us to grow, that make us whole and affirm us in our humanity. The easy way is not the way of man. At least not the path leading to his freedom. A common saying attributed to the writer Arthur C. Clarke states that when you find a path without obstacles, it certainly leads nowhere.

A truly free man chooses the impossible. The range of possibilities that are the object of his free choice is never just a gift from someone else (chance, nature, the state, God or other actors involved in arranging the situation of choice). It is he who gives them to himself as a gift. Man is also a being who can grant reality

to the unreal and thus expand the range of choices beyond the possibilities currently given. Man has freedom not only in that he has the chance to choose from pre-given possibilities, but he is also free to create these possibilities and opportunities for his own decision and action. It is also true that the range of possibilities which we are able to create for ourselves, unlike those which fate has assigned to us, is in principle limitless. Jaspers (1991) therefore defines freedom in relation to man as "inexhaustible possibility". The purpose of education[2] is to protect and develop this gift (the ability to not only find but also to invent new possibilities) in man. Even in this endeavour, however, one must be very cautious. Man can choose the impossible because he is able to create the currently absent possibility or possibilities de novo as a creative being. However, even this path to freedom can, in certain circumstances, turn out to be a dead end. When everything is possible and everything possible can become real, we cease to be free because freedom loses its value when everything is at our fingertips.

Human choices are a step towards freedom only if they also meet another condition: they must also be choices that allow man to transcend himself. He should therefore choose not only what affirms him in his bare existence, but also what elevates him above himself. The true man, as Patočka (1990) says, does not live merely to live, but to seek deeper, truer forms of his life. Man's freedom differs from the freedom possessed to one degree or another by some other living beings in that his choices do not merely serve his biological survival. Of course, human life can also fall into its decadent mode, which, according to Patočka (1990), is characterized by "life for life's sake." But man should also live for something else that transcends this life. Patočka (1990) calls the above mode of human life the life of rise and initiative.

Yet again, the situation is not that simple. For a man to rise above his simple life he has lead so far, he would have to "see" and understand the difference between what his life in its present mode is and what it could be (Patočka, 1990). That means that he must be able to take a certain distance from his life. And the only way to achieve that is to retreat into the imaginary plane of conceptual thinking. Conceptual thinking enables him to imagine his life in other forms and positions than the current one.

It is also true that these choices, by which man transcends his bare life, should also lift him morally out of that state. In other words, said choices should also be axiologically dimensioned. That is to say, this choice, or choices of his should simultaneously be a choice for the good. Therefore, when deciding between the options offered, the students of education should also be guided to recognise the

[2] Individual, commonly marginalised aspects of the ethical dimension of the educational process are dealt with by M. Zaviš (2017).

option that is not only the most appropriate at a given moment and in relation to the life situation they are facing (one that offers the most effective or least painful solution, or the one that promises more benefits), but also the one most appropriate from a moral point of view. The path to freedom is arduous because there are disproportionately more ways to be bad than to be good. This is because the choices on the side of evil are so much richer and more varied than those on the side of good. Being good (moral) therefore brings more restraints related to this narrowed range of options for our choices and actions. On the other hand, being good does not necessarily mean being less free. For the path of goodness usually guarantees freedom for a wider range of people and also freedom for the future, i.e. freedom with an open perspective. Evil brings only immediate advantage, profit or release, but in the long run it is (also in the question of freedom) a loss.

For education, then, in relation to the human emancipatory struggle an opportunity opens up in the following areas:

Education can contribute to the expansion of the range of human freedom by fostering the competence[3] to make use of the available opportunities that life itself offers. That is to say, their mere availability, however realistic, is not in itself sufficient for human emancipation. The obstacles to the emancipatory process do not lie only outside man, but also within himself - for example, in his inability to recognize the opportunities that would take his life out of its current limitations, in his lack of competence to respond adequately to them, etc.

Education also opens the way to freedom by making available to its adepts the aggregate of humanity's collective experience acquired so far. Thus it gives them access to and expands the range of possible and impossible paths to achieving their life goals that have been known and tested before. Since this knowledge is largely encoded in a special language, one must first acquire the appropriate type of literacy without which this knowledge is not legible and therefore not accessible and usable.

Inner obstacles to the expansion of the scope of human freedom include indecisiveness and lack of will. Education should therefore include not only its direct development and strengthening, but also the cultivation of a kind of asceticism - the will not to react immediately to a given offer of options, but to reflect on them or delay one's choice to a more opportune moment, when the effects of a particular decision will become more productive in relation to human freedom. For self-restraint is, as Nietzsche (2020) puts it, the best "gymnastics of the will". The act of choice requires a strong will and determination also because every emancipatory act (and the choice that goes with it) requires embarking on something that may, in addition to its expected effects, bring unintended

[3] In this context, we also note the analysis of pedagogical competences according to M. Zaviš (2013).

consequences and the hardships that result from them. The decision to be free must therefore go hand-in-hand with the knowledge that the person who has embarked on this path has also embarked on a very arduous and never-ending journey with an uncertain outcome. Will and perseverance, then, are the necessary conditions to remain on this path, to be able to permanently overcome the constantly renewed constraints that limit one's freedom.[4] For the above reasons, adepts of education should also be guided to have the will to overcome their inclinations towards comfort. There are simply no straight, broad, and beaten paths to freedom, but only narrow, winding, and rocky ones. Nor do we find any signposts to guide us safely along these roads. They are therefore also adventurous and risky. No one will walk this road for us; we must actively contribute to our own freedom. In the process of education, therefore, its adepts should be inspired to make the move from a passive spectator's approach to the world and to their lives, to an active participatory approach, from the desire "I would like it." to the volitional act "I want it! I will achieve it!" The aim of education is to encourage pupils and students to become social actors, not just passive spectators, actors, but also authors of their own life story. To live their own lives and not just act as extras in other people's stories, or stories directed by someone else.

Among other equally important aims of education is to awaken in its adepts the will towards free will. This includes the ethical dimension of the task: to set boundaries for the course of free will so that freedom does not ultimately mar its own achievements. As the philosopher Georg Henrik von Wright (2001) observes, "A man freed from his bonds is like a wild animal that must be tamed in order to endure this freedom. To tame the beast is to educate, to educate man."[5] Even according to the well-known educational reformer Johann Heinrich Pestalozzi, the mission of education is to lead man to the proper use of free will. Hegel (1957) attributes such a pedagogical effect to history. According to him, world history is education progressing from "unbridled subjective will to universal and subjective freedom."

The mission of education is also to cultivate a sense of measure. For freedom is also a matter of measure. It is an art to estimate the limit beyond which the expansion of freedom becomes counterproductive. For example, if it happens at the expense of nature, if its use turns into its abuse. It is also important to find the optimal balance between personal freedom and the freedom of others (freedom and social equality), which is a prerequisite for social justice.

[4] In other words - in order to prevent these limiting circumstances of his life from becoming permanent, a person must be persistent in overcoming them.

[5] Although von Wright adopted this idea from the ideological background of German enlightenment humanism, it has undeniably a more general validity.

For the above reasons, it is also important, in relation to human emancipatory efforts, to teach the adepts of education creativity. This, in turn, is not possible without the development of abstract thinking. Only well-developed eidetic imagination, the ability to imagine world differently in the conceptual plane, allows us to detach ourselves from the world as it is currently presented to us. Students must be encouraged to be creative, to be inventive and to discover not only new things but also alternatives to the status quo. In doing so, the semantic distinction between these terms must also be taken into account, for instance, inventing means more than discovering. Discovery is not necessarily some fundamental innovation (as is 'invention'). Discovery is not about inventing new things, but only about discovering things that already exist. It is not, therefore, something completely new. Rather man has been able to reproduce in thought what nature, for example, has already created before. Most often, however, what qualifies as novelty is neither a discovery nor an invention, but merely a variation of the old (already discovered or invented). Inventiveness, on the other hand, is the ability to apply what has already been discovered or invented to some other field of application. In the case of each of these processes, however, they are always activities that help expand the range of human freedom.

The opposite of creativity (and therefore a certain antagonist of freedom) is consumerism. From the point of view of human emancipatory endeavour, therefore, creation should take precedence over consumerism. It should also not be forgotten that a contemporary consumer society primarily prefers the choices that encourage and satiate consumption. For this reason, the choices that are most widely represented and preferred are those that affirm man in his mode of 'having'. As for the choices and options that support the second of Fromm's (1992) thematized modalities of human being, 'being', here the range is much narrower. Democratic society seeks to extend the options on the side of 'being', for example by the possibilities that would enable a person to become different. The school should also play its part in reorienting the human being towards that modality of human being ('being').

Future educators also need to be prepared to be able to detect and then confront certain implicit constraints that limit their freedom in "a behind the scenes" manner. One of these is what we used to call symbolic power. In this case, it is a depersonalised form of violence, which takes an implicit and therefore less recognizable form. In the name of widening the range of our freedom, it is therefore necessary to shed this skin as well. The only way to do this is to constantly change our positionality and thus the perspective from which we view and judge things and processes. This is the only way to reflect what was unreflected from the previous perspective. Another strategy for bringing these 'blind spots' into our field of vision is to take a position 'on the border', or a

position 'in between' (so that we cease to merge with either of these positions), or to assume a position 'outside'.[6]

Since the obstacles that stand in the way of man and mankind's attainment of freedom change over time, and since there is always a new antagonist on the historical scene that stands in the way of man and mankind in their emancipatory struggle[7], the virtues of vigilance, fortitude and caution must definitely be cultivated in the framework of education. The cultivation of these virtues is also required in order that man should not, as a result of his inattention, dullness or resignation, become stuck in a new impasse. Vigilance must also be developed in education because emancipatory efforts are often marked by counterfinality. The use of emancipatory tools can very easily get out of control when vigilance is lost, and an emancipatory tool can become an instrument of enslavement. We can only free (emancipate) ourselves from something by taking control of that which previously had an enslaving power over us. However, the effort to dominate nature through technology has not eliminated the problem of human freedom, but only reproduced it on a new level. Although today we are no longer directly threatened by nature (the "natural jungle"), our freedom is becoming more and more limited by the new "manufactured jungle" (Giddens, 1998). With the help of modern technology, we may have mastered nature, but ultimately we have lost control over these technologies. Jean-Jacques Salomon (1997), however, views this situation as even more dire: in trying to control nature through technology, we have ultimately lost control over each of these spheres - nature and technology. It must also be taken into account that the tendency to emancipate oneself from the servitude to man and his needs and interests is shared by all the systems that man has engaged in his service - from the economy, bureaucratic apparatuses to technology. The great challenge to human freedom is therefore the process that Robert Merton (2007) termed "goal displacement", by which he meant the transformation of the means of achieving certain human goals into an end in itself. We understand it as a situation in which man becomes the instrument of the tools he originally mobilised for his emancipation. The term nonhuman has been coined for such social actors emancipated from man. Their discovery is also problematic in that their autonomous functioning is preferentially oriented towards their own self-affirmation. The writer Hermann Broch (2016) commented on the process of their autonomization in the following words: "One value area after another inexorably proclaimed its own autonomy: economic value took on the slogan

[6] See, for example, excentric positionality, which has an important place in Helmuth Plessner's philosophical concept.

[7] In addition to nature, society, the limiting factors for human freedom today include economics, technology and artificial intelligence.

'business is business'; artistic value became 'art for art's sake'; industrial development became a process of 'production for production's sake' that no longer had anything to do with satisfying human needs; the state became an institution for 'the sake of the state'; and each value area itself aspired to its own infinity." In other words, each of these mutually alienated spheres claims absolute validity, which brings it into conflict with the claims of the other spheres and also into conflict with human emancipatory demands. As Broch (2016) notes, the result of their antagonism is "war, which is a manifestation of militarism itself, war for war's sake..."

At this point we can revisit the beginning of our paper, where we pointed out the close links between struggle and freedom by defining freedom as "the struggle for emancipation". However, the struggle itself should never become the goal of man's emancipatory struggle, but should always play only the role of a mediator in it. Where the struggle becomes an end, or even an end in itself, freedom itself becomes its first victim. For a struggle defined in this way (struggle, war - war for war's sake) is the total negation of freedom. In it, freedom is not simply negated (overturned) into a state of slavery, but is completely annihilated by the fact that its counterpart (slavery) without which freedom is inconceivable, loses its significance in this self-serving struggle. For the desire for freedom can only be ignited where one becomes aware of one's limits. After all, even freedom itself should not be the end result of human endeavours. Nor should the human emancipatory struggle be about freedom itself - freedom for freedom's sake. Even freedom should only be a means of our self-realisation and of the fulfilment of our human mission. Man wants to be free above all in order to be able to determine himself. Only in the second place should he invest the acquired freedom in determining the course of the external world. Even here, however, the determination and shaping of the world should always be at the service of man's self-determination. This means that man's shaping of the world should never become an end in itself or a matter of human arbitrariness. The mastery of nature should be preceded by the mastery of oneself. According to Albert Schweitzer, man's failure is that he had mastered nature before he mastered himself. To prevent such failure we consider one of the most important aims of education.

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Collaborative Mentoring as a Way of Meeting Teachers' Inclusive Teaching Practices Needs: Investigating Learning Outcomes

Tuğba Kamalı-Arslantaş - Gülistan Yalçın*

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Abstract:
Introduction: This article discusses a mentoring project that was aimed at improving the inclusive education practices of teachers.
Methods: There were 10 mentors who were faculty members in science education and special education. Mentees were 59 teachers who have an inclusive student in their class or school. A qualitative approach was chosen.
Results: Reported learning outcomes referred to changes in knowledge related to "Basic Concepts", "Educational Support and Legislation", "Assistive Technology", and "Educational Accommodations".
Discussion: The results of this study points to the needs for more interdisciplinary collaboration studies in order to support teachers' dealing with diverse students.
Limitations: The results of the study are bound to the project duration and the place of the study.
Conclusions: The current collaborative mentoring study has several contributions for teachers in terms of their knowledge and skills in implementing an effective inclusive education.

Key words: interdisciplinary collaboration; inclusive education; assistive technology; visually impaired; science education.

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Introduction

Teacher education literature has emphasized the importance of systematic collaboration between faculty and teachers (Erickson et al., 2005; McCotter, 2001; Putnam & Borko, 2000) which has been recognized as a promising way for enhancing professional knowledge (Burns et al., 2015) and addressing fundamental issues related to student learning (McCotter, 2001). Especially, due to the well-known divide between the theoretical teacher education courses and field experiences (Dani et al., 2019; Metsala & Harkins, 2019; Zeichner et al., 2015), collaboration might be a solution for eliminating the ongoing barriers.

One of the areas that this divide is seen mostly is related to the inclusive education (IE) practices mostly due to the inadequate training provided in teacher education programs (Nam et al., 2013; Opie, 2018). IE is based on the assumption that equal opportunities can be created in educational settings for both students with and without disability (Nilholm & Göransson, 2017). Internationally, several factors are found to be related with the success of IE including teachers' attitude (Akalin et al., 2014; Nel et al. 2014), self-efficacy (Jordan, 2018; Metsala & Harkins, 2019; Zelina, 2020), a lack of teacher knowledge in teaching students with diverse needs (Morgado Camacho et al. 2017), lack of knowledge in assistive technology (AT) integration (Fernández-Batanero; 2019; Cappuccio et al., 2016), and lack of adequate time (Horne & Timmons, 2009). These studies imply that teachers have limited training, thus they lack the skills to teach students with disabilities. Consequently, considering these factors and the presence of students with disabilities in the general classrooms is an increasing reality (Suc et al., 2017), collaboration becomes indispensable in order to have a better successful IE (Suc et al., 2017; Weiss et al., 2017). In order to improve the educational outcomes in an inclusive setting, it is possible to develop solutions for ongoing problems by combining different expertise in an effective and creative way (Engeström, 2015) which is attributed as a proactive step for tackling inclusive educational practices (Gerdes et al., 2020; Hedegaard-Soerensen, 2018).

Consequently, collaboration has been a hallmark in IE practices as different stakeholders try to nurture meaningful learning experiences of students with disabilities (Friend & Cook, 2010). Teachers and faculty members can collaborate together with a mutual goal to better improve the teachers' skills and in the end improve the learning of students (Kamalı Arslantaş & Kocaöz, 2021; Munthe & Rogne, 2015). Despite the literature provides information on the problems observed related to the IE practices, it lacks providing teachers with collaborative learning environments that offer a flexibility in the process shaped based on their needs. Therefore, in the current study, it was aimed to conduct an interdisciplinary collaboration-mentoring program to improve the in-service teachers' inclusive teaching practices during which the program was progressed

based on the teachers' needs and decision making. The article discusses the learning outcomes of the teachers.

1 Teachers' role in IE

There are differences in the implementation of IE practices around the world (Florian, 2014). However, internationally the role of the teachers in implementing effective IE is at the central importance since most of the challenges faced are related to the teachers themselves. In order to prevent those challenges and improve the IE practices teachers need to be prepared to implement IE (Zagona et al., 2017) and providing teachers with more knowledge and experience should be the priority in order to catch success in IE (Akalin et al., 2014).

Teachers' lack of knowledge in IE is related to several areas based on the literature review. The first issue is related to the teachers' misconceptions of basic terms (Carballo et al., 2019; Kilinc, 2019). As Carballo et al. (2019) indicated faculty members in their study figure disability as a barrier to the development of the people with a disability. Thus, understanding and transforming teachers' misconceptions is a key issue in the IE process. Similarly, the literature shows that teachers also lack information related to the legislation about inclusion (Anglim et al., 2018; Carballo et al., 2019; O'Connor et al., 2016), the rules of the institutions (Gelbar et al. 2015) and how to support the education of inclusive student (Aktan, 2020; Gelbar et al.,2015). In order to support an inclusive student, it is critical for the teachers to know special education legislation, the rules of their institutions and educational support opportunities that they can benefit.

Teachers are also expected to have expertise in educational accommodations in supporting inclusive students in meeting academic standards (Harrison et al., 2013; O'Connor et al., 2016) which is also covered in educational policies. The major goal of the IDEA (2004) was to create an accessible learning environment to the maximum extent, which can be accomplished with the educational accommodations. Research shows that inclusive students have difficulties in performing academic success and need effective instruction (Blanton et al., 2017). This issue can be achieved by improving teachers' knowledge in basic material adoptions, developing curricular materials and also AT knowledge and awareness. The other point literature put forward is the teachers' lack of knowledge in assistive technology (AT) (Nam et al., 2013; Opie, 2018; Zapf et al., 2016) which also negatively effects the IE practices. The significant contribution of AT has been emphasized by the literature in terms creating an accessible and equal learning environment for the inclusive students (Susanto & Nanda, 2018; Yalçın & Kamalı Arslantaş, 2020). Thus, teachers' skills related to AT knowledge should be supported and improved.

2 Problem area

IE has mostly taken its place in Turkish policy and educational practices in recent years. IE has been associated with the students with disabilities in Turkey. In Turkey, support education services are provided for teachers and students with disabilities who are two important elements of inclusion process. These services can be provided through three different ways including support education classrooms (MoEU Special Education Services Regulation, 2018), classroom assistance (Ahmmed, Sharma, & Deppeler, 2014; Batu & Topsakal, 2003) and special education counselling (Ahmmed, Sharma, & Deppeler, 2014).

However, likewise the problems occurred in IE internationally, these problems have also been observed in Turkey mainly due to the teachers' lack of knowledge and skills in implementing effective IE (Akalin et al., 2014). One of the biggest challenges faced in Turkey is related to the inclusion services provided for students with visual impairment (VI) since regulations made for these students in inclusion classrooms are limited (İşlek, 2018; Yalçın, 2015). Therefore, these students cannot participate in this process with equal opportunities with their peers. Students with VI use more different materials than their sighted peers (Tuncer, 2014; Yalçın & Altunay Arslantekin, 2019) and also need different regulations in order to access the materials (Yalçın & Kamalı Arslantaş, 2020). However, support personnel service that provide such support and adaptations for students who attend inclusion classrooms is not available in Turkey. Therefore, the whole process is tried to be managed by classroom or branch teachers. Furthermore, literature emphasized that teachers also lack the understanding of how to adapt the content and materials especially for students with VI, a gap in knowledge affects their skills to implement IE (Yalçın, 2015).

One of the fields this gap is seen is related to the science education of students with VI where visual elements and abstract concepts are intense, need more different teaching strategies (Atila, 2017; Okçu & Sözbilir, 2017) and materials (Atila, 2017; Şahin & Yörek, 2009) than their sighted peers. Teachers' lack of training in teaching science to VI effects the science learning process of students with VI negatively and students do not show the expected efficiency in science laboratories, they have low motivation in lessons and develop misconceptions (Bell & Silverman, 2019; Gül, Yazıcı, & Sözbilir, 2016). As a matter of fact, a limited number of studies in the literature show that students with VI learn the outcomes of the science lesson when learning materials are prepared or adapted for their needs (Yazıcı & Sözbilir, 2020; Okçu & Sözbilir, 2016; Teke & Sözbilir, 2019). For this reason, it is crucial to make the appropriate material and educational accommodations available for the students with VI who are educated both in schools for the visually impaired and in inclusion classrooms.

Literature highlighted collaboration as an important strategy in order to support teachers in dealing with the diversity of students (Gerdes et al., 2020;

Hedegaard-Soerensen, 2018; Nochajski, 2002; Suc et al., 2017; Weiss et al., 2017). There is an increasing tendency in recent years to conduct research projects on teachers' collaborative practices related to inclusion (Hedegaard-Soerensen et al., 2018; Ní Bhroin & King, 2020). These studies provide promising results for the effectiveness of IE, however still there is a need for more research projects to effectuate IE practices due to the problems highlighted. In order to fill this gap, a comprehensive research project was initiated in Turkey with twofold purposes. Firstly, project aimed at improving the knowledge of teachers in IE. The second purpose of the study was to improve the science teaching skills of teachers for VI. The general structure of the project was determined by the researchers based on the needs of the teachers related to IE reported in literature. However, the process was reshaped based on the participants' needs. Thus, the current study contributes to the small body of literature which is conducted for improving IE practices of teachers which were shaped and progressed with the needs of teachers. Interdisciplinary collaborative mentoring program was thought of as a way of ensuring the flexibility of the process. Researchers believe that it is possible to enable teachers to feel competent and have self-efficacy in order to improve their IE practices, when the procedure is left to their preferences. By this way researchers had a chance both to understand the specific needs of actual practitioners related to their inclusive teaching practices and to meet their needs immediately right after they required. The study focused on the learning outcomes of the interdisciplinary collaborative mentoring program.

3 Methods

3.1 Research design

This research investigated the learning outcomes of the interdisciplinary collaborative mentoring program which was conducted to improve 3th and 4th grade in-service teachers' inclusive teaching practices and provided them with knowledge and experience related to those needs. A qualitative approach was chosen as the research methodology, which allows researchers to do an in-depth description of the researched phenomenon. The research question guided the study was "Which learning outcomes do teachers report?"

3.2 Research setting and procedures

The current study was initiated in Turkey, in 2019 and involved a collaborative partnership between a group of teachers and faculty members of a university in Turkey. The collaborative work of the participants can be associated with the efforts to create an inclusive learning environment and to improve the teachers' inclusive science teaching practices. Despite the general outline of the project was determined by the project team, the content and the process reshaped

depending on the participant teacher' needs. The purpose of the current study was twofold, and thus it progressed in two stages. In the first stage, four panels, 1 conference and 1 seminar were conducted to provide teachers with knowledge and experience related to effective IE considering their missing information. The second stage of the project focused on the science teaching practices regarding the students with VI due to problems mostly faced in science classes. At this stage teachers developed hands-on science curriculum materials while benefiting from the affordances of assistive technologies. The study implemented an interdisciplinary collaborative mentoring program. The findings of the mentoring program can be found in the article written by Yalçın and Kamalı Arslantaş (2020).

First Stage: Panels, Conference and Seminar

Four panels were conducted and mostly, the content was related to the teachers' lack of information regarding general IE issues. Panels progressed as both informative sessions and discussion sessions. During the panels, discussions were conducted between groups and within groups. During the conference and seminar, mentors guided the process as those sessions were more informative.

Second Stage: Workshops

Workshops focused on the inclusion of students with VI who are demonstrating difficulties in science education. In the second stage of the project, six workshops were conducted through an effective collaborative partnership among pedagogically diverse groups who can benefit from the process and correspondingly benefit the students they teach. Five individuals with diverse backgrounds composed a group to create science curricular materials for third and fourth year students. Several AT were used in this process, in order to improve teachers' skills in using AT. Figure 1 presents the whole process related to the project.

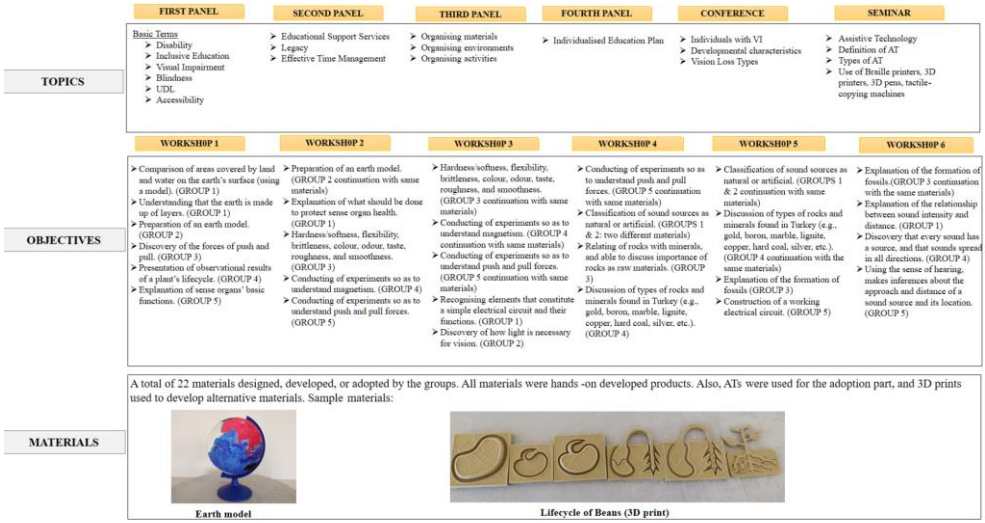

Figure 1. The whole process of the project.

Teachers were grouped into five people during the material development process. Academicians from special education and science education departments took part in each group. The features that should be in the material to be developed or adapted first were discussed and listed in the groups. The important issue was that the material developed or adapted should be available for both sighted, low vision and blind students at the same time. All of the materials were tested by one student with low vision and one student with total blind. They evaluated the materials.

3.3 Participants

The participants of the study included both mentors and mentees. There were 10 mentors who were faculty members in science education and special education at a university. They attended all the steps of the study. Mentees were teachers who are working at different schools and have an inclusive student in their class or school. 59 teachers who are teaching 3rd or 4th grade students joined the panels, conference and seminar. Among those participants, there were 23 science teachers, 36 classroom teachers. During the panels the groups were formed with five to six people, and all groups included teachers from both of the disciplines. Mentors directed the discussion sessions and provided informative explanations about the points mentees required.

During the workshops there were 23 teachers who also attended the panels. The rest of the teachers could not join the workshops due to the time restrictions they had in their schools. Thus, mentees were selected based on the convenience sampling method. 2 mentors were assigned to each group. Mentors and mentees were grouped randomly.

3.4 Data collection

Observation Forms

In the first stage of the study, observation forms were the main data sources. Observation forms were filled by the mentors during all events including panels, conference and seminar. During the within group discussions mentors used these forms to understand the needs of the teachers regarding inclusive education. This was done in order to reshape the content depending on the teachers' needs.

In the second stage (during workshops) of the study another observation form was filled by the mentors. The mentors filled the forms and took notes while the materials were developed and the students with VI tested the materials.

Focus Group Interview Schedules

At the end of the whole process, focus group interviews were conducted with all participants who attended all of the stages. An interview schedule with open-ended questions and prompts was developed. The purpose of the interview was to understand the opinions of the teachers regarding the procedure, the role of the collaborative mentoring program in meeting their needs and their learning outcomes. Researchers specifically looked for the changes in teachers' knowledge related to effective inclusive teaching. The interviews were audio recorded and all of them lasted between 45 minutes to 1 hour.

3.5 Data analysis

The researchers conducted content analysis for all the collected data. Firstly, the researchers transcribed verbatim audio data and then read all the observation and interview data. The codes observed in the data were determined by the researchers. Based on the codes that emerged in the first stage, the themes that can explain the data at a general level were determined. Both of the researchers actively took part in all stages and together they finalized the analysis by trying to find the most plausible codes. First two researchers independently analyzed data and then listed learning outcomes identified in the data. Then researchers met regularly to compare their codes and themes. Thus, intercoder reliability was assured in the study.

4 Results

The data showed that classroom and science teachers lack basic information related to IE which is similar to the literature review findings and they did not practice material adoption, design and development before. Teachers reflected their positive perceptions regarding the process and reported that project was effective in meeting their learning needs. Learning outcomes of teachers in the current study refers to changes in their knowledge which are grouped as "Basic Concepts", "Educational Support and Legislation", "Assistive Technology", and "Practicing Educational Accommodations". Frequencies of reported learning outcomes are presented below.

Table 1

Frequencies of reported learning outcomes

Learning Outcomes (Changes in Knowledge)	f	
Basic Concepts	248	
Disability		69
Inclusive Education		102
Accessibility		77
Educational Support and Legislation	177	
Educational Support Services		62
Legislation & Rules of the Institution		59
Regulations		56
Assistive Technology	152	
Definition of AT		86
Types of AT		66
Practicing Educational Accommodations	145	
Quick, simple and functional arrangements		48
Material design and development		53
Use of specific assistive technologies		44

Basic concepts

According to the results of the study, teachers had deficiencies about the basic terms and how to understand the diverse needs. They specifically asked for help on their conceptions of some terms, which were disability, IE and accessibility. For this purpose, mentors organized the first panel and covered basic terms and issues related to understanding the individualized needs of students. The interview data and observation data showed that teachers' understanding of those terms progressed an important change.

As teachers indicated, they do not know how to address a student with a disability in their classes and they always feel nervous about this issue. They

mostly used terms "handicapped" and "obstacles". The way teachers figure out disability had negative implications as they thought individuals with disability have serious limitations in daily live activities and in lessons. This situation causes them to have low expectations about those students. At the end teachers indicated they improved their understanding of disability as a term and changed the way they understand disability. Teachers also indicated that the other concept confusion they need to clarify is related to inclusive education. Teachers stated that they have heard the term IE in recent years, and they needed information on who is responsible for inclusive education, and how it should be provided. As they indicated, they have never been informed when an inclusive student participates in their class. Thus, mentors targeted to provide information about IE and UDL. Teachers indicated that they figured out they should support all students with usable and accessible education whether they have a disability or not.

The other confusion of the teachers was related to accessibility issues. Teachers stated that they know that accessibility is only dealt with in the context of physical structures and they do not have information about other conditions. Especially teachers had problems in the exams as they do not know how to target the students with disabilities. In the panels, they were informed about different accessibility issues especially the educational accessibility. They were provided with useful accessibility applications such as giving additional time in the exams, providing support for sight reader-writer, and delivering the exam paper in braille format. Teacher also explained that they are better in understanding accessibility term and they know it covers many fields and not only limited with physical environment.

Educational support and legislation

The second main category teachers needed information is related to the educational support services and legislation as they lack the specific information. Teachers stated that they are provided with limited information when an inclusive student is placed in their class. Teachers' lack of information about this issue causes a huge gap between applications and thus inconsistency between schools. Furthermore, teachers also asked for the information related to the educational support services and also they had very little information about any kind of regulations. During the second panel, mentors informed teachers about how they can support inclusive students and what legislations there are the about this issue.

Additionally, teachers needed information on how to support inclusive students with accessible educational materials and about the regulations to support the participation of the inclusive student in the lessons. Mentors informed about the procedures how to get and require additional resources for inclusive students.

Teachers were informed that they can require materials by requesting them from provincial national education directorates by writing an official letter as shown in the following excerpt:

I have a student with low vision in my class, I was only explaining the content and materials aloud for him. But now, I figured out that these students can use vision as their primary senses but need regulation (Focus Group 2).

Furthermore, teachers were informed about the environmental, setting and educational accommodations that should be made to support inclusive student's participation in the lesson, and what arrangements each includes. Very similar results were found related to their initial information of preparing individualized educational plans (IEP). Teachers stated that they had no information about how to prepare IEP, how to attend an IEP meeting and also who is responsible for all of these issues. Teachers were informed about the IEP processes.

The other issue teachers required help with is related to the time management issues. The teachers stated that they were insufficient in planning the lesson and using time effectively and efficiently in inclusive classrooms. Mentors conducted a discussion using sample cases and showing sample videos, in order to show how to use time efficiently. One of the teachers stated that:

It seemed very difficult for us to teach in classes with inclusive students. I also believed that it was unfair to devote the whole time to an inclusive student. However, the teacher in the video showed in the panels, involved both his/her inclusive student and the other students in the course during a course hour… (Focus Group 3).

Another issue teachers mentioned was related to the negative attitudes of the families whose child has a classmate with a disability. Teachers required information on how to deal with the negative attitudes of families about the way they react to inclusive students. Teachers were informed about the ways they can follow like informing the students and their families about the IE and the inclusive students. During the information process they were recommended to use sample games, videos and talking with the other partners who experienced the same issues.

Assistive technology

The next most mentioned item by the teachers was their improvement in AT. Teachers stated that they learned several varieties of assistive technologies that they can afford, reach and use in their classes. According to the findings, teachers had conceptualized AT as high-level technology in their minds and therefore stated that they never benefit from technological solutions. During the panel, teachers were informed about the definition of AT, types of AT and several sample AT from low tech to high tech including 3D pens, 3D printers, and PIAF machines.

There has been a 3D printer at our school for three years. None of us used it because we did not know how to use it. In the workshop, I understood that it is very simple to use it and Swell Paper as well (Focus Group 4).

Educational accommodations

Teachers expressed their improvement in learning basic simple arrangements which has significance for them due to their difficulties with time and the problems they had in developing the curriculum during the first stage. Mentors determined several objectives from the science curriculum and distributed to groups. The groups brainstormed during the material adoptions. During the interviews, all of the teachers stated that they learned many quick, simple and functional arrangements in the workshops held.

Furthermore, teachers learned modifications targeting the students with various visual loss. With the workshops, they stated that they learned that the materials that appeal to multiple senses (tactile and auditory) are more effective for students with total blindness and that for students with low vision, materials that will appeal to the senses of vision, hearing and touch should be prepared or existing materials should be adapted within the framework of these senses.

It always frightened me to organize materials for students with low vision. But I learned that I can adapt with a simple top-up or contrasting light and dark colours. (Focus Group 3).

In addition to the basic modifications teachers also experienced material design and development in groups. Teachers also reflected that they learned with easy-to-reach materials that it is possible to develop specific materials for the students with VI. 22 materials were developed during the workshops which also can be perceived as the output of the project. Those materials were tested by 2 students with VI and they explained their positive experiences. During the material development process, teachers also experienced the use of specific assistive technologies. For example; the ear and its parts are embossed on swell paper, making the visuals in textbooks tactile on Swell Paper,3D printing material describing the life cycle of beans (3D visuals were found on the Internet), 3D pencils used to emboss visuals.

This Swell Paper is a life saver; I can make a table for a student with VI. I can also assure this with a 3D pen. I will definitely get a 3D pen. I can make everything tactile with a 3D pen (Focus Group 1).

5 Discussion

In the current study, learning outcomes of in-service teachers related to inclusive teaching practices in the interdisciplinary collaborative mentoring program during 1 year were examined. The analysis based on learning outcomes of the teachers which refer to changes in their knowledge were grouped under the titles

of "Basic Concepts", "Educational Support and Legislation", "Assistive Technology", and "Practicing Educational Accommodations".

Many studies in the literature related to IE show that teachers' skills and competency levels related to inclusive teaching practices are not at the desired level (e.g. Akalin et al., 2014; Engelbrecht et al., 2015; Jordan, 2018; Metsala & Harkins, 2019). This study also suggests that in-service teachers need to be guided to improve their skills related to IE and collaborative studies are needed including people with diverse backgrounds among various practitioners as several barriers were identified in the implementation of inclusive education. Since teachers lack the required skills to implement IE(Love et al., 2015), collaboration of teachers and university faculty members will work as a way of composing new forms of discourse of teaching and learning (Putnam & Borko, 2000).

According to the results, teachers' conception of disability, inclusion, and accessibility were problematic and they indicated that they even face problems when they are addressing a student in class. Similarly, teachers had misconceptions related to accessibility as a notion; as their accessibility understanding was only limited to the physical accommodations. Therefore, mentors addressed those issues in the panels and they figured out teachers' understanding of those terms progressed an important change. As also mentioned in the literature conceptions related to disability and inclusion is problematic among teachers and faculty members and training programs are suggested in order to transform the target groups' misconceptions (Carballo et al., 2019). Interestingly, as Kilinc (2019) highlighted, understanding teachers' conceptualization of IE is one of the ways to ensure the success of inclusive education.

Based on the results, it can be interpreted that teachers have the motivation for meeting the needs of diverse students, however as they are not informed about the procedures in detail, rules and educational support of diverse needs, they face several challenges which negatively affect the process of inclusive education. The second learning outcome of the teachers is related to the educational support and legislation issues, as they lack the relative information. They indicated that they do not know how to reach the additional required materials for the inclusive student. The other issues they had problems with is related to the instructional accommodations including preparing the IEP and time management problems of the teachers. They thought that separating extra time for an inclusive student is a reason for inability to keep up the curriculum. This issue might be related to their lack of knowledge about the necessary educational accommodations. Mentors conducted a panel covering the general legislation and educational support issues. Teachers indicated during the interviews that they are now familiar with the legislation in Turkey, the rules and the options they have to support the

education of inclusive students. Similarly, literature also emphasized the teachers' difficulties in accessing resources, supports and services (Anglim et al., 2018), preparing IEPs (Aktan, 2020) and the needs of teachers, or faculty members' training related to the rules of the institutions (Gelbar et al., 2015). The workload and time management problems of teachers related to IE practices are also one of the issues observed frequently in the literature (Anglim et al., 2018; Sadioğlu et al., 2013).

The results showed that the other main issue teachers face problems with is related to the AT since they perceive and associate AT as the high technology, which is not affordable to use for them. Thus, mentors expressed the diverse range of the available ATs for students with disability and their usage areas. Teachers demanded more training about the ATs and required them to have personal use experience. Teachers' lack of AT knowledge is a frequent issue mentioned in the literature (Nam et al., 2013; Opie, 2018; Van Laarhoven & Conderman, 2011; Zaph et al., 2016) which affects the accessibility of course content to inclusive students in a negative way. Based on the data it was seen that teachers agreed that AT has a key role in the education of inclusive students, there are several types of AT they can use.

The last learning outcome of the teachers was about practicing educational accommodations related to presenting the content. Teachers indicated that they benefitted from this process widely in learning simple arrangements, designing and developing materials for students with VI. During the process they experienced the usage of AT also. Teachers indicated that, with simple arrangements, it is possible to present the content to the VI without excluding them from the learning process. Additionally, they figured out that it is possible to benefit from the affordances of AT without having technical knowledge and spending extra money. As highly emphasized in the literature, teachers are expected to conduct effective educational accommodations in order to provide students with accessible academic content and being successful in assessments (Rosenberg, Sindelar, & Hardman, 2004).

Conclusion, limitations and further studies

The current study has demonstrated the learning outcomes of the teachers during collaborative mentoring programs, which are also the needs and gaps in the provision of inclusive teaching practices. The current collaborative mentoring study has several contributions for teachers in terms of their knowledge and skills in implementing an effective inclusive education. The positive outcomes of the study are the natural result of the effective collaboration among participants with diverse background who conducted series of professional development activities including seminars, conferences, panels and workshops. Thus, the results of this study point to the needs for more interdisciplinary collaboration

studies in order to support teachers' dealing with diverse students. Using a collaborative mentoring program creates a mentee-centred process, and thus improve inclusive skills of teachers, which is aligned with their needs.

Present study has several limitations. First, the data were collected during a one-year process of interdisciplinary collaborative mentoring program from the teachers who are from different schools in one city of Turkey; therefore, the results of the study are bound to the project duration and the place of the study. Since all of the information related to inclusive teaching practices cannot be provided during a limited time, thus, it was suggested that further collaboration studies should be conducted in order to improve inclusive teaching practices of teachers which also offer ongoing support. One of the assumptions regarding the current study was that the learning outcomes of teachers would lead to more meaningful learning outcomes for students. However, due to the Covid-19 pandemic, the curriculum materials developed could not be implemented by teachers in class since the schools were closed.

The second issue was that AT and accessibility issues are gaining popularity and significance due to the compulsory distance education practices during Covid-19 pandemic. The study concerned the hands-on material development and the environmental and educational accommodations in a face-to-face classroom environment. Thus, further studies are needed in the accessibility training of teachers related to digital content.

The participants of the study included science and classroom teachers. In order to reach more teachers and meet their needs, more studies are needed. Additionally, the second stage of the study concerned the material development related to the students with VI. It is suggested to implement similar studies with other teachers from different fields.

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The Role of Music Education in Childhood

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Abstract:
Introduction: From the second half of the 20th century onwards, studies on the transfer effects of music learning have become increasingly common. Both in the domestic and international literature, we can read research with a solid scientific background that supports the transfer effects of music education on different aspects of life.
Purpose: The aim of paper was to map the effect of learning music in childhood based on both the international and the Hungarian scientific literature.
Methods: When analyzing the social impact of learning music in detail we distinguished five areas: 1. state of physical development, skillfulness, health; 2. cognitive skills; 3. personal development and emotional intelligence; 4. the role of compensating for deficit; 5. community building. In this study we present in detail the results of research studies in these fields.
Conclusions: In our opinion music education institutions transmit several values and hidden curriculum to children the effect of which serves as a determining and formative factor throughout their whole lives. That is why it is important that, based on the research findings, teachers should be aware of it and consciously control it. In our view learning music can act as a supporting factor for the physical, spiritual and mental development of the children and apart from improving different areas of competence it can also influence their attitude to work.

Key words: elementary art school, music education, learning music, transfer effect, social importance.

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Introduction

Abundant material on the positive effect of learning music can be found in the Hungarian and international scientific literature. The transfer effects of learning music mean not only the development of musical skills of a child, but above this, pupils can acquire skills that can promote their academic performance.

In Hungary young children have access to music skills development from a very young age: although not in an institutional way, but there is babymusic.[1] In kindergartens (ISCED 0) professional teachers lead the musical training of children, which is a unique phenomenon internationally. Children learn nursery rhymes and songs while making simple movements and playing games. Kindergarten teachers singing well with well grounded knowledge of music utilize not only the scheduled music education occasions, but they take advantage of singing spontaneously with their groups. Music education is extremely important in childhood, because the concepts of the Kodály method can prevail the most at this level of education (Szűcs & Héjja, 2017).

At every level of education beyond their role of transmitting culture and civilization, music and singing lessons mean scenes for creativity, games, relaxation, recharging and gaining experiences. Music lessons led by a good teacher mean the feeling of a sense of achievement and recharging for the children, which can help them perform better in the lessons of other subjects. It is important to strengthen these functions so that not only the music profession should know the positive impact of singing and playing music, but non-professionals and leaders of the education system as well to avoid depriving groups of pupils from the opportunity of music and singing lessons.

1 Range of the effect of learning music

Regardless of different historical eras and ways of thinking, mankind has repeatedly experienced the healing, developing and educating effect of music. The aim of this study is to present how and what areas can be affected by playing and learning music in the development of children of the present society.

By learning music children can acquire skills and abilities that can influence not only their school results, but also their efficacy out of school due to the transfer effects. They learn values and acquire qualities that promote their better integration into the society and help them become valuable and responsible members. Such characteristics are for instance stronger endurance, greater commitment towards work and school as well as acquiring ethical norms and values. Thus, the transfer effect is pivotal for the role of music education in social development.

[1] Playful occassions for learning music organized for children under 3 together with their parents.

When analyzing the transfer effect of learning music it is important to highlight the effect of music and playing musical instruments on structural and functional changes, neurological processes as well as on the plasticity of the brain. Operations attached to playing music are all complex operations, which correlate with several cognitive, affective and psychomotor areas at the same time (Asztalos, 2016).

2 Transfer effect of learning music on health, physical development and skillfulness

Due to its stress-relieving effect, music can contribute to our physical and mental health, which is essential to healthy operation and development of a society. Moreover, several studies (Bálint, 1983; Urbánné, 1999; Varvasovszkyné, 1996) proved that music education has a positive effect on health, physiological and stress relieving processes. According to Gick (2011), biological, psychological and social aspects equally contribute to health. She examined amateur and professional singers using both qualitative and quantitative methods. Her results showed that singing has a clearly positive effect on breathing and in the short run on the immune system. Clift and Hancox (2001), in their survey based study, found that during singing, members of choirs experienced different physical, mental and emotional effects. Their results showed that 79% of the surveyed felt their stress levels decreasing while singing. According to a study from 2010, singing in a choir has several beneficial health effects. Clift and his colleagues came to a conclusion that the activity of singing plays a significant role in the development of breathing-lung capacity, the proper posture, physical activity and relieving stress.

The effects of active singing in a choir was found positive in the case of various groups. Kreutz and his colleagues (2003) observed physiological and psychometric mechanisms of action as well. Participants of the study gave account of positive changes in their psychological well-being and emotional state. Furthermore, the study revealed the immunogenetic effects of singing in a group. It plays a role in keeping the neurohumoral balance as well as in the increase of the production of slgA immunglobulin, which protects against infections of the upper respiratory tract. They also observed that the level of cortisol decreased in the organism, which resulted in the better operation of the immune system. However, these effects are significant only in case of active participation in the activity, simply listening to music has no impact.

In the research studies of Kokas and Eiben, children of music kindergarten performed better at movement memory and gymnastic type of tasks and they had better scores in tests on their physical development (vital capacity, breathing range). In the studies of Klára Kokas (1972) examining normal and music class

pupils, children in special music classes showed better results in the anthropology examinations (vital capacity) and they also scored better in terms of physical skillfulness (dynamic coordination, target toss, performing activities according to stick figure drawings, rhytmic free-activities).

In their examinations, Barkóczi and Pléh (1977) observed the coordination of movements, fine movements as well as movement possibilties performed in space during the performance of different types of dances and games. Musical activity requires precise timing, ordering and spacial implementation of several hierarchically structured activities. Thus coordinated and controlled series of movements are necessary during playing musical instruments. The development of imaging techniques enabled the observation of changes of musicians' brain functions and structures. They experienced anatomical brain changes among the musicians as a result of musical education: typically, the body of the cerebral cortex connecting the two hemispheres became thicker (Balogh & Turmezeyné, 2009). According to Altenmüller the cerebellum, which is responsible for fine motor movements, enlarged in case of musicians (Altenmüller, 2006) and this contributed to their skillfulness and success in movements. Furthermore, in these research studies we can read about the thickening of the primary auditory cortex (Gaser & Schlaug, 2003; Schneider et al, 2002) as well as the greater activity (Besson et al, 1994) in the area of the secondary and tertiary auditory field (Asztalos, 2016).

3 Transfer effect of learning music on cognitive skills

The school performance of children influences not only their possibilities in their further studies, but it can affect their self-confidence, social contacts and their bonding with their teachers and the school. This can therefore affect their future career prospects in the job market as well as their social acceptance or exclusion. That is why it is important to highlight the positive impact of learning music on cognitive skills, which is proved by the following research studies.

"They could see how much a little bit of more singing could rejoice the child if they listened to a couple of lessons in music primary schools. But they do not listen to them. Right there they could understand that music does not only teach music. These children count better, because the numbers are not abstract notions for them, they feel them in their bodies together with the rhythm. They can read fluently earlier, because in the sentence they feel the coherent form of music and make it felt. They write more clearly and more precisely, because writing sheet music trained them to be more attentive, a dot sliding aside means a different note. They learn spelling more quickly, their sense of graphics also develops. Finally, the child's self-esteem increases, he knows something that adults belittle or do not know at all. The adults' old indulgent smile when

hearing the present musical trials of the child disappears or freezes. There isn't a more effective way for the child's human development than this…" Kodály, 1956, p. 305.)

This quote of Kodály has compelled several researchers in Hungary and abroad alike to verify these statements scientifically.

In Hungary in 1963 it was Klára Kokas and Ottó Eiben who first conducted research on pupils of a music kindergarten in Szombathely. They experienced that children receiving special music education performed better in Mathematics tests (Kokas & Eiben, 1964). Klára Kokas went on to compare primary school pupils in normal and special music classes. Children in special music classes performed more precisely and more quickly, their work was characterized by strong attention, better solution methods and better skills for observation (tone, rhythm, perception of shape). The advantage of children with advanced music training could be detected in connection with exact school subjects, like spelling or Mathematical exercises (Kokas, 1972).

The summary that was written about the psychological analysis of the pupils taught by the Kodály method was part of the experiment planned by the Kodály Musical Training Institute. The summary was based on the visits to music lessons of schools using the Kodály method (Barkóczi & Pléh, 1977). They investigated the potential impact of the Kodály method of teaching music on the development of skills, abilities and personality. They summarized the experience of the visits to the lessons and the possible transfer effects in six areas: language education, Mathematics, movement skills, cooperating skills and other skills as well as the changes in memory and attention. From skills acquired during learning music the following can play a role in language teaching: distinguishing fine changes in tone, isolating sounds of speech, forming sounds, accent, attention categorization, identifying correlations, manipulating abstract notions, as well as signs and their interpretations. Thus, transfer effect can be possible due to the analogous features of music and language structures (Laczó, 2001). The correlation between foreign language skills and learning music was proved by several research studies. The perception of speech, pronunciation, word stress and sentence stress and their processing all showed positive correlations to learning music (Milovanov et.al, 2008, 2010; Slevc & Miyake, 2006; Tallal & Gaab, 2006). Zanutto detected that pupils learning music performed better in reading and language tests and their attention was stronger (Zanutto, 1997). Due to the specially planned music education in Mexico they experienced a significant increase in the vocabulary of children aged 5 and 6. During the programme they performed musical activities which facilitated the development of their ability to distinguish rhythm and tune and intensified their visual, auditory and motor abilities. The children who were taught by the traditional curriculum for music did not show any development in

their vocabulary (Moyeda, Gómez, & Flores, 2006). The researchers confirmed correlations between learning music and better verbal memory among boys aged 6-15. In the experiment, pupils who received music education showed significantly better performance as opposed to the control group (Ho, Cheung, & Chan, 2003). Wong and his colleagues with the help of EEG studied the processing of changes in pitch and found that musicians had better processing ability in this field. The length of time learning music changed parallel with the performance, the perception of sameness and differences, as well as the better processing of one-syllable Mandarin words. In another experiment English native speakers learned well-known English words that have different meanings with different intonations. Music studies contributed to success in this case as well (Wong & Perrachione, 2007; Wong et al., 2007).

Comparative studies were started under direction Zoltán Laczó's direction in 1978-1979. The aim of the analysis was to reveal the correlations between music skills, musical creativity, intelligence, socioeconomic status as well as musicality. During the study pupils of different social background attending special foreign language classes, special music or normal classes of junior and senior sections were examined (grades 3-4 and 6-7). Seashore tests of musical ability, Raven non-verbal intelligence tests were used and they were observing the improvising musical behaviour. The observations showed that in the school of the region with the lowest social status the results of intelligence of children in special music classes were significantly higher as compared to the other participants. Thus, the study concluded that, due to music education, the development of intelligence is more remarkable than it could be expected according to the socio-economic status. Pupils with better musical ability scored higher on the IQ tests than their peers with lower musical skills. Numerous further studies have given an account of the connection between learning music and general intelligence (Dombiné, 1992; Hargreaves, 2001; Janurik, 2020; Knappek, 2002; Schellenberg, 2006). Schumacher and Altenmüller found a positive correlation between learning music and intellectual ability, attention and endurance (Altenmüller, 2006; Schumacher, 2014). When studying the long term effects of learning music Schellenberg found that a slight, but long lasting effect can be seen in the development of intellectual abilities even years after learning music (Schellenberg, 2006). In reference to memory and attention Barkóczi and her colleagues perceived the strengthening of memory connected to moving, attached to seeing and hearing, as well as the possibility for an increase in the time of attention (Barkóczi & Pléh, 1977).

According to Huttenlocher (2002) learning music is a complex activity, comprising regular everyday practicing, reading music, memorizing longer music materials, acquiring diverse musical structures (interval, accords, scales). Learning music requires focusing the attention for a longer period of time and

the constant learning of motor skills. Furthermore, acquiring expressions driven by emotions is also a requirement. In his opinion combining all this experience is beneficial on cognition, especially in childhood, as it is the time when the development of the brain is very plastic and can be influenced by environmental effects.

Schellenberg (2004) also found connection between learning music and cognitive abilities, which cover a wide range of these cognitive abilities. He proposes three possible explanations 1. Any kind of out-of-school activities that are similar to school studies (e.g. reading, chess) promote intellectual growth. Apart from this, learning music may have special features 3. By means of the developing skills (memorizing, motor skills, emotional development, knowledge of musical systems) learning to play a musical instrument contributes to mental and intellectual growth. Most of these factors are utilized not only during playing music, but also during other non musical activities. In a special way it is music itself that causes the effect, as the abstract nature of music can contribute to the development of abstract thinking.

According to the assumption of Porowitz and her colleagues (2009) music can become a frame in which the basic cognitive structures can be explored and interpreted. They set the focus on the following cognitive components: 1. Comprehending and presenting patterns during which children can identify the important elements of music, for instance the patterns of melody and rhythm. Furthermore, discovering the metric hierarchy and eurhythmy relations within it also falls into this category. This can develop the stability of perception and help develop the basic Mathematical principles. In the case of music with text the improvement of word recognition and spelling abilities can be achieved. 2. Holistic perception, during which the elements of the structure as the building elements of the whole are perceived. 3. Merging and integrating concurrent and complex stimuli. When listening to music children listen to the compositions in their full musical complexity. Based on this they are able to perceive the global structure of music and answer related questions. Well structured music lessons help pupils consciously perceive and observe the complexity of music. They will be able to distinguish between pitch, dynamics, harmony and rhythm, and understand the relationships and their changes in music. This cognitive processing is of key importance in the Mathematical problem solving and in the ability to comprehend language. 4. With the help of self-regulation the person is able to observe, to study the possibilities and optional answers, to control the emotional reactions before starting the activity. This role is indispensable during a musical performance, as well as during listening to music and it is of great significance in the case of the general process of learning. The above described use of cognitive functions help children develop their abstract and logical

thinking and their problem solving skills with the help of which they can become better learners.

Recognizing and understanding the musical units of symbols can help in teaching Mathematics as well as understanding the connections within the symbol and the development of manipulating symbols (Barkóczi & Pléh, 1977). Gombás and Stachó (2004) studied the correlations between Mathematical skills and music skills among 10-14-year-old pupils. The results of the study showed that Mathematical total scores significantly correlated with the total scores for music. Within the Mathematical tasks the scores for problem solving exercises correlated with the scores for identifying tune and rhythm. When they took the number of years learning music into consideration, significant differences could be detected in total scores for Mathematics and music as well as in the scores for skills of recognizing rhythm (sense of rhythm). Regarding the correlation between the total score for the Mathematics tests and the years spent learning music they found that there were significant differences between the group of children who had never learnt music and those who had been learning it for a year. There were also significant differences regarding the correlation between the total scores in Gordon tests and the years of previous music education between pupils without any previous music education and those who had been learning it for a year. The fact whether the child receives music education or not seems to be the most important factor in terms of performance in the tests. At this young age it is not yet the length of learning music that counts, but the fact whether he or she has started learning music. This finding can mean that learning music affects Mathematical performance in a special way, in a by-pass way. Thus, according to this study Mathematical skills positively correlate with music skills.

Schmithorst and Holland (2004) also found evidence of the connection between music and Mathematics. The correlation between the two areas of study is based on the fact that playing from music sheets needs skills that are in connection with Mathmatical operations, for instance metre and rhythmic (Asztalos, 2016; Hallam, 2010). According to Nisbet there is significant connection between symbols incorporating the arrangement of music in time and Mathematical symbols used in connection with the concept of fractions (Nisbet, 1991). The results of the studies of Altenmüller (2006) also prove that learning music promotes the development of Mathematical skills. Whitehead studied the Mathematical performance of secondary school and university students, who were taught by the Orff Approach. The participants were divided into three groups randomly. The first group took part in music lessons 5 times a week, the second group had one 50-minute-music-lesson once a week, while the third group had no music education at all. The experiment lasted for 20 weeks. The group receiving 5 music lessons a week showed the highest and the most

significant performance increase. The group receiving one lesson a week showed limited growth whereas the least development in musical skills were seen in case of the students without any music education (Whitehead, 2001 as cited by Hodges & O'Connell, 2005).

Spelke (2008) studied how pupils identify geometrical characteristics of visual forms and she found that children receiving music education had higher performance than the results of pupils not learning music. According to the study of Wenger (1990), the use of cortical neurons operated during practicing musical pieces also intensifies cortical areas that play a role in Mathematical thinking.

According to the study of Janurik (2008) forming musical skills can promote learning to read successfully. Several research studies have found connections between the maturity of aptitude connected to speech sounds, which is significant because phonological awareness is important in the early phase of reading (Anvari et al., 2002). Who is skillful distinguishing the pitch of music sounds can cope more easily with reading (Moreno et al., 2009). Neurological studies also prove the results of studies on musical sounds and the processing of speech (Hámori, 2005). Gromko (2005) believes that listening comprehension develops more quickly as a result of playing musical instruments.

We can read about the positive transfer effect of listening to music on spatial abilities in several research studies. Rauscher and her colleagues experienced the short term development of spacial abilities while listening to Mozart sonata for two pianos. As the effect is very sensitive to the slightest change, its acceptance is not universal (Rauscher et al., 1993). Shaw (2000) thinks that the same neurological patterns are activated both in the case of spatial activities and listening to Mozart. We can conclude from this that the same cerebral areas are used during spacial and musical processing. The phenomenon can be experienced not only in connection with the music of Mozart, but also of Shubert and Albinoni. According to another theory there is neurological connection between spacial processing and processing musical rhythm (Janurik, 2008). Spelke (2008) revealed the long term correlation between learning to play the piano and thinking in space and time among kindergarten children.

According to the studies of Janurik (2008) the school performance of children learning music was significantly higher than the results of pupils not learning to play a musical instrument, provided that they had been learning to play music at least for four years. We can read about the correlation between successful school performance and learning music in the works of several researchers (Babo, 2004; Janurik, 2009; Knappek, 2002; Román-Caballero et al., 2021; Schellenberg, 2006; Winston et al., 2022). Among children learning music there is a tendency that they can activate energy in such cases when serious thinking

is required and perform well by showing a loose, playful attitude in cases when creativity is needed (Laczó, 2001).

4 The transfer effects of music on personality development and emotional intelligence

In the personality development of children the narrower and broader milieu is determining. Their lives and socialization can be influenced by the family, the school, various scenes of education, peers and different means of mass communication. The chance of learning music is higher if anyone in the narrower or broader environment plays music as it can serve as a role model for the child.

Music school and art school are not compulsory, however, they play an important role in the lives of children as they contribute to the children's personality development, they favorably influence socialization and promote more successful school performance. Children enrolling in a basic school of art get into a new milieu, they learn new activities and they are surrounded by a completely new system of values and norms. By playing music together this extracurricular activity generates a feeling of togetherness, the ability of self-devotion and subordination of self interest, with the help of which they become part of this small community and which can help them integrate into a bigger community, the society. Regular practicing teaches the pupils discipline, endurance, self control, hard work, purposefulness, willpower, sense of responsibility and personal commitment. All these characteristics can be excellently used in other areas of life as well. Tolerating success and failure toughens the character of the musicians. During playing music, self-expression and self-fulfillment can provide children a source of joy and the experience of flow (Custodero, 2002; Csíkszentmihályi, 2001) that can be a special experience resulting in the feeling of happiness and being contented. Children can experience the joy of immersion and total preoccupation (Csíkszentmihályi, 2013, 2015). Thus, experiences of flow may have a potential role in motivating the children to study. These autoletic activities mean occupation that children can pursue for its own sake, just for the pure joy experienced during the activity. Practicing and taking part in concerts needs constant self-assessment, through which the pupils get to know and appreciate themselves. Therefore playing music has a personality forming and value transmitting effect that can foster ethical, esthetical as well as community education (Chambra & Misra, 2012). It promotes the development of emotional and mental personality traits that determine the ideology of the pupils. Children consider expressivity a specifically important factor (Lindström et al., 2003).

It was Zoltán Kodály's belief that regular singing induces emotional, physical and mental development: "...we improve the development of the whole person…" (Kodály, as cited by Solymosi Tari, 2003). All the great civilizations believed that music has a personality forming effect. According to Kodály one is captured by music, which makes his or her spirit ordered. In his opinion *"music has a civilization creating mission: it contributes to building a world of an esthetically and ethically higher order"* (Solymosi, 2003).

Music teachers frequently experience that children can express their thoughts and feelings better with the help of music and other artistic activities (Ritók, 2010). However, in public education art education has been pushed into the background, other knowledge contents have come to the spotlight. Due to this tendency music schools and art schools are very popular in Hungary nowadays. There is a close connection between the two: what is not emphatic in public education claims its space elsewhere. As a result, more and more children have enrolled in basic art schools (Solymosi, 2003).

Vitányi Iván and his colleagues (Bácskai, Manchin, & Sági, 1972) conducted a follow-up study in 1970. The above mentioned sociologists studied the question what developing effect the years spent in a special music class had and whether it had any effect on the way of life further on. Therefore they searched for elementary school graduates of normal classes and special music classes four years after graduation. They examined their habits of visiting concerts, their taste for music, the composition of their collection of records, the characteristics of their artistic taste (fine arts, films, literature), their social status and whether they perform any musical activities. Their results proved that music played an important role in the lives of pupils of special music classes, which meant entertainment, recreation and esthetic experiences for them. The results of the study of their taste and choices clearly testify that graduates of music classes have a value judgment of a higher standard (Bácskai et al., 1972). American psychologists highlighted that through music education children can get to know other cultures, personal contacts as well as traditions (Gévayné, 2010).

In 1969 Ilona Barkoczi and her colleagues started a 3-year series of studies in Kecskemét, in which they studied the effect of the Kodály method. Their research question concerned whether it is music education or the socioeconomic status that had more influence on different areas of the personality. During different psychological examinations they compared children of normal and special music classes, as well as pupils with higher and lower socioeconomic status. The tests comprised the Rorschach personality test, the attention test (Piéron), intelligence tests as well as creativity tests, anxiety scale (Taylor) and sociometry (Barkóczi & Pléh, 1977). The results revealed that children attending special music classes adjust better to tasks requiring thinking, they

were more creative and more sensitive emotionally, they could process the experiences more profoundly and they had greater self control.

At the beginning of the 21st century it is more often believed that what we learn in school accounts only for about 20 percent of success, the remaining 80 percent depends on the emotional intelligence. Accordingly, in many cases EQ (emotional quotient) is measured instead of IQ, since art education plays a central role in the development of a higher EQ (Solymosi, 2003). At the same time, the function of the emotional area, in which music education plays an important role, is getting more and more attention. Bredács studies the mechanism of action of EQ (that is the emotional intelligence) and considers it crucial in the development of a creative personality (Bredács, 2009). More and more studies analyze the emotions generated by music and the reactions of the body to it. The correlation between emotional intelligence and music was revealed. In parallel with musical skills emotional skills move forward as well. It is indispensable to develop the EQ to achieve a successful creative activity that means a real experience. Apart from reaching the areas based on thinking it is necessary to get through the emotional layers (Uzsalyné, 2010). A life full of music contributes to the acceptance and understanding of the cultural heritage and the given culture. It helps unfold the personality, develop creativity, it promotes teamwork and the feeling of togetherness, consequently, music education contributes to become better people.

The most prominent music experience is provided by active musical activity. Another possibility is listening to music, which helps develop creativity and can be accompanied by a teacher's guidance and interpretation. This plays an important role in school, however it is a passive form (Dohány, 2009). During their studies Thompson and his colleagues came to a conclusion that adults who received music education in their childhood could more successfully identify emotions conveyed by speech (such as anger or sadness) in both spoken and unknown languages. They conducted the study among 6-year-old children and they also found that the participants receiving music education could identify emotions at a higher level. Therefore, Thomson and his colleagues believe that similar brain processes are activated during the processing of speech prosody and music (Thompson et al., 2004).

It is worth considering what characteristics pupils learning music have and what distinguishes them from their peers not learning music. Teachers working in schools with special music classes were questioned about this and it turned out that children learning music are gentler, finer and show more solidarity. The mentality of these children is completely different from that of in a normal class. The sense of achievement they experience while learning music improves their attitude to school. Besides, it promotes the contact between the parents and the school and they benefit from the effects of being educated by the

community, which develops their personality and social competences (Raffay, 2005). All of these contribute to their academic advancement.

5 The effect of music compensating for deficits

According to Bourdieu pupils from families of the lower strata start their school career with some disadvantage. However, this can be decreased, playing music can overwrite the effect of the traditional sociocultural (Harris, 1996) and socio-demographic background. When playing music the social differences disappear. During playing music together, members of the orchestra or choir do not feel any social differences, since they are working for one goal that is to present the music as authentic and demonstrative as possible. Meanwhile, family and ethnic affiliation does not matter. The sense of achievement provides greater self-confidence, which can help children in their academic advancement, in other areas of life and it can also promote their social mobility (Szűcs, 2019).

Because of the one to one teaching method used during music education teachers can pay more attention to and adjust to the pupils' personal needs and abilities, thus, less talented children with disadvantaged background can reach success more quickly and they can develop a bond to the teacher, the school and the activity as well. Giving encouragement, setting an example and building social awareness affects adaptation and success, thus, dropout can be reduced. A Venezuelan method of music pedagogy called El Sistema (called Szimfónia Program in Hungary) reinforces the above mentioned thoughts, its goal was to assist social mobility. As a result, now there are about 300 children's orchestras in the country. Thus, the method may be a kind of instrumental adaptation of the Kodály method (Kecskés & Vértesy, 2016). Klára Kokas performed investigations among children being raised in orphanages, the results of which proved the beneficial effect of music education in the case of children with disadvantaged background as well (Pethő, 2008). Learning music can increase pupils' level of resiliency[2], which can help them prosper despite their detriment (Lazarus & Folkman, 1984; Masten, 2001; Pikó, 2010; Pikó & Hamvai, 2012). The results of Vitányi's studies and those of his colleagues revealed that the class type is more determinate than the socio-economic status, as music education has influence on social mobility as well. Nearly all of the youngsters who came from poorer families and attended special music primary schools performed so well in school in 4 years time that they could continue living their future lives at a higher standard both from the point of view of social hierarchy and social standard of living (Bácskai et al., 1972).

Art education can help these children being brought up in families of marginal position to reduce dropout from primary school and to increase their motivation.

[2] ability to resist and adapt

The creative activity that they perform can mean a sense of achievement, which can help them restore their self-esteem and improve their school career as well. Furthermore, they can acquire values and methodology that can be utilized in their primary school work (Ritók, 2010).

6 The effect of music education on community building

The role of communities in personality development, their importance and their support in handling everyday problems have been proved by several research studies (Juhász, 2016, pp. 102-103). Musical art education outstandingly helps the process of integration into a community, accordingly, by strengthening social cohesion it contributes to reducing inequalities. Playing music often means a community activity, so it is suitable to teach children the rules and values necessary for living together (Degé, 2021). Such are for instance the acceptance of the values and norms of the community, being committed to and feeling responsible for the affairs and duties of the community, mutual support and cooperation as well as solidarity (Vercseg, 2014). Learning music also has a human socializing outcome, being integrated in a music community may help integrate into other communities and the society as well. Within the community informal contacts, partnerships, friendships may be formed. The feeling of belonging to a community is extremely important in the present alienated world. In the time of the physical and emotional instability of adolescence it is beneficial for the life of a child to have a place where they enjoy themselves surrounded by peers with the same interest. Community building is a result of personal and collective development, which is a complex and long process. According to L. Nagy (2004, p. 50.): *"Common musical activities should not only mean making music together, but social cooperation to help each other's personality development and social competencies as well. By forming communities playing music, with the help of music we can build communities that are presently hardly working in the society: between child and parent, student and student, audience and performer, cultural communities between past and present, one nation and another one and between ourselves and the world."*
In connection with the development of cooperating skills Barkóczi and Pléh experienced that children learning music were keeping the rules while working together, they were building personal contacts, they carefully observed the instructions, they accepted the goals of the community, they were willing to co-operate with the community, they were building an optimistic consciousness, their self-control was developing and they were able to work individually (Barkóczi & Pléh, 1977). The studies of social contacts highlighted that in special music classes the rate of marginalized children coming from impoverishing families was lower. The analyses also proved that cultural deficit caused by disadvantageous social status could be diminished by music education.

This can be enforced by changing the structure of intelligence and developing creativity while the correlation between creativity is intensified and the correlation between social status and intelligence weakens (Barkóczi & Pléh, 1977; Raffay, 2005).

Ferenc Mérei also conducted sociometric studies comparing special music classes and normal classes. They assumed that the sociometric composition of the two types of classes would differ. They observed that in the case of classes with the normal curriculum, several smaller groups with sharp distances were formed. Furthermore, rivalry between the groups was typical. Special music classes were proved to be "soft" communities with two or three distinct groups. The groups were helping and supporting each other and they were co-operating at a high level. Democratic leadership was developed and their choices were made according to objective criteria. These characteristics can be interpreted as the higher level socializing effect of intensive musical activities and playing music together (Gévayné, 2010). Altenmüller (2006) detected significant improvements in the social behavior of pupils learning music. In general it can be stated that there are fewer completely excluded children among them.

The study of the correlation between music education and the transfer effects cannot be closed yet. Therefore additional studies and approaches are necessary."It is worth paying heed to Kodály's words: *"If it is true that people with such heterogeneous cultures can meet in music, then the obvious reason can be that music is a means of expression for the human soul, which is accessible for everybody no matter how simplex a culture they are involved in. And indeed if we look back on the history of culture and the cultural peaks, we can find music in the leading position. It was so in the Greek civilization, during the Renaissance, it has been like that - and still is - in the Far East, in the Chinese, Japanese and Indian civilizations. Music loses its leading position if the given culture is declining and the splendid era is coming to its end."* (Kodály, as cited by Solymosi Tari, 2003).

Conclusion

Despite the above presented positive effects, music education is often pushed in the background; the values, which music education can bring up and intensify, are often neglected. According to the Magyar Ifjúság (The Hungarian Youth) 2016 research, only the 5-6 percent of the 15-29-year-old age group spend their free time playing music or performing other artistic activities (Székely & Szabó, 2016). It can be a problem that art is displaced not only from spare time activities but it is on the periphery in schools as well. This paradoxical phenomenon motivated us to present the social - economic and community effects of learning music. Through learning music pupils can acquire characteristics and skills, which cannot be defined in terms of money, but they have an outstanding social

impact. All this gives a new perspective for the importance of learning music, which is crucial in the present day profit oriented way of thinking.
Furthermore, it is worth considering raising the awareness of the abilities and skills brought about by learning music in broad layers of the society. Providing information in a proper and fair way plays an important role in it. That is why we presented these phenomena and gave an overview of how diversely music can be used in the development of children. It is important to share the objective facts and experience of the profession, which can shed light on the potential effects of learning music for professionals and non-professionals alike. The recent test results in public education are not promising. In theory music education cannot change it, but it can improve the child's motivation, learning methods, social skills, different basic competences through learning to play a musical instrument and learning music.

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Inquiry-Based Approach to Education

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Abstract:
Introduction: In the proposed study, the authors focus on the effectiveness of the application of inquiry-based approach in Slovak schools and present the results of an original research study focused on the impact of inquiry-based teaching on students' knowledge acquisition.
Methods: For the purposes of the research study, a pedagogical experiment was carried out on the sample of 150 6th-grade students and didactic tests (a pre-test and a post-test) were used to examine students' knowledge on the three levels of Niemierko's taxonomy.
Results: The results of the t-test confirmed the significance of differences between the experimental group's and the control group's cognitive performance.
Discussion: The obtained results indicate that inquiry-based teaching can lead to better knowledge acquisition in students than traditional methods of teaching and so, it appears to be an efficient alternative.
Limitations: The limits of the research study are given by the size and the composition of the research sample. The obtained results cannot be generalized to the entire population.
Conclusions: The research findings can contribute to improving the quality of the educational process and increasing students' motivation by using activating methods of teaching.

Key words: inquiry-based approach, technical education, experiment.

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Introduction

For the current society, rapid technological development is characteristic, which has both its positive and negative aspects. Undoubtedly, new technologies make people's lives easier, but on the other hand, a significant decrease in the quality of relationships and interactions can be observed. The undergoing changes have a significant impact on people's lifestyle, as well as their overall personal development. Emotional experiencing has weakened and in schools, it has come to a decrease in students' participation and passivity has penetrated the educational process.

As emphasized by experts, experiencing - i.e. experiential learning - can contribute to activating students. Inquiry-based teaching is a relatively new approach, which is - from the aspect of science - associated with a range of procedures, which researchers use for examining the world surrounding them and presenting their findings supported by scientific evidence. From the aspect of students, inquiry is based on activities helping them develop knowledge, understand scientific ideas, principles, etc., and it shows them the ways researchers work. It provides students with unique opportunities to discover the world around them, to solve problems, and to learn through experiencing.

In the framework of the inquiry-based approach, problem-solving competencies have a crucial role to play as they help students to find answers to their questions, to explore, and to discover. They are multidisciplinary and are not tied to individual school subjects and so, their development should be implemented in the curriculum for all subjects, i.e. in maths, technical subjects, science, humanities, language teaching, and in other subjects, but also in the realization of activities within cross-cutting themes, such as environmental education.

As pointed out by e.g. Li and Yuan (2022), Orosz et al. (2022), Al-Githami, Solangi, and Esmail (2022) and Mariegaard, Seidelin, and Bruun (2022) - inquiry-based education has shown to be a promising method of education. Therefore, it can be considered the basis for education in the future.

1 The need for a new paradigm in technical education

At the end of the 20th century, a need for changing the existing systems of education emerged as traditional schools were not able to prepare students for the new requirements related to social changes and technological development. A deep crisis in technical education was observed (Kožuchová, Barnová, & Stebila, 2022), which was the consequence of several factors, including the undergoing transition from the existing technological and technical society to an information and learning society. The applied transmissive approach to technical education, within the framework of which information is presented to students as definitive, infallible, and clearly proven, showed to be unsatisfactory as the

priority of developing craft skill was replaced by the need for developing skills in the field of working with information, searching, sorting, and critical evaluation. In the described context, Turek (2003) pointed out that it is not possible to prepare youth for the future by using the methods of the past and also Blaško (2011) emphasized the necessity of changing the culture of education and making a shift towards participative and interactive models of teaching providing space for students' activity and experiencing. So, it can be assumed that the new activating teaching methods are among the consequences of the rapid development of information and communication technologies, which have had a significant impact on education.

Another factor leading to searching for a new paradigm was students' decreasing interest in technical education, but also in science as such (Held et al., 2019), which can be considered an issue even currently. It has had a strong impact on the number of application forms submitted to technically oriented vocational schools and universities providing technically oriented study programmes, but also on the number of students who entered these schools and those who completed their technically oriented studies.

From the aspect of a modern society's needs and requirements, the above described situation represents a problem to be solved and so, decisive and critical spheres have introduced certain measures to improve the situation in the field and introduced programmes promoting technically oriented study programmes (Kožuchová, Barnová, & Stebila, 2022).

2 Experiential learning as a new approach

As it can be observed already at a very early age, experiencing is a natural and effective way of learning. Recently, experiential pedagogy has become popular and found its application in various learning contexts. Orosová (2020) accentuates that the principles of experiential education are applied in working with students, teachers, managers, etc., and there is a broad scale of organizations working with experiences and providing experience-based activities for diverse target groups.

Experiencing is a factor having a significant impact on individuals' development. Hlásna et al. (2013); Krásna and Svetlíková (2013); Hlásna (2012); Hlásna et al. (2012); and Hlásna and Dohnanská (2012a,b) point out the associations between experiencing and individuals' intellectual development (memory, attention, perception, logical thinking, tactical thinking, strategic thinking, combinatory skills, etc.), creativity (imagination, originality, innovative practices and approaches, etc.), social-emotional skills (communication, cooperation, teamwork, taking over responsibility, empathy, assertiveness, argumentation, reasoning, problem solving, etc.), motor skills and mobility (speed, strength,

endurance, agility, etc.), and personality development (patience, persistence, courage, self-control, self-confidence, autonomy, etc.).

Kapšová (2008) describes experiential education as based on the implementation of activities focused on gaining experiences. It leads to knowledge acquisition through integrating physical, cognitive, and emotional experiences into the existing system of knowledge. On the other hand, it must be pointed out that carrying out activities is not enough as learning is a process within which experience must be transformed into knowledge (Kolb, 1984).

From the aspect of learners, experiential learning brings several benefits. In the process of knowledge acquisition and developing learners' skills and competencies, activating methods are applied and learners are provided with opportunities for developing cooperative and communication skills as teamwork is frequently used. As emphasized by Gyurák-Babeľová and Vaňová (2008), methods of experiential education are based on interaction in groups and the focus is on group dynamics. Learners learn to adapt to various situations and learning environments, build social relationships, develop their problem solving skills, and can also try out a range of roles within their teams - including the role of a leader. By respecting diversity in groups, experiential education promotes creating inclusive school environments.

Based on the above, it can be assumed that experiential learning appears to be a suitable alternative for all age-groups both from teachers' and students' perspectives as it integrates sensory perception, cognitive processes, subjective experiencing, emotions, and actions. It changes the role of a leaner from a passive recipient of knowledge who memorizes new information to its active creator.

3 Experiential learning in Slovakia

Although there are several historically determined similarities between the Slovak and the Czech systems of education, in the field of experiential pedagogy, its development and application, significant differences can be observed. While in the Czech Republic, experiential pedagogy as a discipline of science started to develop as early as in the 1970s, in the Slovak republic, experiential education is still typically applied in the framework of informal learning (Orosová, 2020) and its implementation is a much slower process. On the other hand, the field of experiential learning cannot be considered a neglected field of research in the country. Since the method of experiential learning can be well applied in various learning contexts and with learners of all age-groups, it has been investigated into from various aspects and there is a relatively broad scale of research activities carried out in the Slovak educational environment. Ondrušek and Labát (2007) examined the role of experiential education in andragogy, Zahatňanská and Hudáková (2021) - as well as Vanková and Rác

(2021) - accentuated the importance of learning by experiencing in the educational process, and Švamberk Šauerová (2015) claims that experiential education is an efficient model to be applied in the educational process. Jirásek (2006, 2019) accentuates the importance of integrating experiences into existing structures as having an experience is not enough. Greksáková (2010) points out that experiential learning is based on the principle of lived experience and clearly is in contrast with the traditional methods of knowledge acquisition and memorizing facts.

The methods of experiential education are not only suitable for all age groups but also can be well applied in various school subjects, e.g. Uhrinová and Prachárová (2020) see their potentials in developing natural literacy, Rochovská and Krížová (2007) find experiential education an effective method to be applied in teaching Biology and also point out its positive effect on the quality of classroom climate. The quality of classroom climate was also dealt with by Orosová (2011), but in this case, from the aspect of using experiential pedagogy in the educational practice of class teachers. Fedorko (2019) deals with implementing the methods of experiential learning in environmental education and in co-authorship with Dzurilla (Fedorko & Dzurilla, 2018), they focused on its application in the context of teaching Ethics. Experiential education and its impact on social relationships and aggression in schools were investigated into by Kováčová (2020); and Bratková and Maková (2017) dealt with the opportunities for implementing experiential learning in health education.

4 Inquiry based education

Inquiry based education can be considered a method of experiential education. This approach represents a shift from traditional formal education and is in compliance with the constructivist theory of learning in the sense that the outputs of the educational process are diverse, often unpredictable, and the learners are in the centre of all educational activities.

The concept of inquiry-based teaching was developed as a reaction to the criticism regarding the situation in technical education and a number of unsuccessful reforms introduced earlier. This paradigm of education makes schools more open, accessible and liberal institutions providing students with opportunities for developing their personality and individuality. It represents a shift from memorizing mediated facts to developing competencies in various spheres.

Dostál and Kožuchová (2016) define inquiry as a teaching procedure based on one's own research, within which several activating methods are applied. As pointed out by Gunčaga, Koreňová and Hvorecký (2019), the purpose of inquiry-based teaching is to develop students' general ability to carry out scientific research. Inquiry-based education is targeted on questioning existing theories

and presumptions and their subsequent experimental verification, the results of which may lead to proposing new concepts. In the process of inquiry-based education, students become researchers and try to find meaningful alternatives. Since students learn through trials and errors, they do not achieve goals straightforwardly.

Inquiry-based teaching is more than a teaching method, it should be perceived as a teaching concept including inquiry in all its components. Stuchlíková (2010) describes the notion of "inquiry" as a target-oriented process of formulating problems, evaluating alternatives, planning research, its realization, formulating conclusions, but also searching information, developing models, leading discussions with others, and formulating coherent arguments. Inquiry-based teaching is a strategy of managing students' learning activities leading to active construction of knowledge by means of inquiry-based activities facilitated by teachers. Inquiry based activities allow students' active participation and provide them with opportunities to create their knowledge instead of memorizing information.

When an inquiry-based approach is applied, students also learn to collaborate, as they are usually divided into groups, which can be either mixed-ability groups or groups selected based on students' interests or abilities.

Undoubtedly, the most significant theoretical paradigm represented by the concept of inquiry-based teaching is pedagogical constructivism. Constructivism was founded on the work of Vygotsky (2004) and Piaget (1997). The concept of inquiry-based teaching attempts to apply the elements of spontaneous learning - especially ego-engagement in learning individuals - and other processes of building their knowledge (Hanushek & Woessmann, 2015). Newly gained information is actively integrated into students' cognitive structures and is interpreted through these cognitive schemas already constituted by individuals, but it must be noted that they can also be changed or modified. In the process of inquiry, the main activity is transferred to students, the teaching process is more student-centred, and the teacher has the role of a facilitator. Students do not passively accepted knowledge presented by the teacher, they are led to apply a critical approach and so, the focus is on the applied methods, procedures, processes, and understanding associations.

In the European environment, the concept of inquiry-based teaching is primarily applied in science education, but recently, it is becoming more and more popular also in technical education. Several Czech and Slovak authors have been carrying out research activities focusing on inquiry-based teaching for a long time, e.g. Dostál (2015), Kožuchová (2015), Dostál and Kožuchová (2016), Stebila (2016), Dostál, Nuangchalerm, Stebila, and Bal (2016), Stebila and Žačok (2019), Stebila and Hatvanyi (2022) and others.

5 Opportunities for inquiry-based learning

Even though experiential learning is not a novelty in Slovakia (Orosová, 2011, 2020), it does not receive as much attention in schools as it deserves. One of the reasons is that even though teachers' professional preparedness has a significant impact on the quality of education, they do not receive sufficient training in the field during their undergraduate studies and there are not many opportunities for in-service training focusing on the application of the inquiry based approach. This has been confirmed by Darling-Hammond's (2015), Rivkin, Hanushek, and Kain's (2005), Osborne and Dilon's (2008), and Orosz et al.'s (2022) research findings, which indicate that teachers lack competencies for implementing inquiry-based activities. As found out by Orosz et al. (2022), teachers also complain about a limited access to verified, easy to apply inquiry-based procedures that they could use in the classroom. The everyday educational practice shows that the inquiry based approach is mainly used by highly engaged and motivated teachers.

In general, it can be observed that in spite of the benefits that inquiry-based teaching brings, students lack space for inquiry, they are not provided with opportunities to carry out experiments or other inquiry-based activities. Although modern textbooks contain examples of problem-solving tasks and instructions for experiments and there are also other teaching materials at teachers' disposal, they find them insufficient. They call for more detailed instructions, step-by-step guides on using the activities in real classrooms but they often forget about the fact that their professional and classroom management skills, and ability to ask appropriate questions are among the determinants of the success or failure of inquiry-based activities and their impact on the outputs of the educational process.

6 Efficiency of inquiry-based teaching – students' cognitive performance

For the purposes of the presented research study, the experimental method was applied and 12 modules consisting of inquiry-based activities to be used in technical subjects were developed. The main goal of the study was to verify the developed modules and to compare the efficiency of the inquiry-based approach applied with the experimental group with the efficiency of the traditional approach used in the control group. Based on the main goal of the study, the following hypothesis was formulated:

H: The students in the experimental group will achieve statistically significantly higher scores in didactic tests than the students in the control group.

6.1 Methods

To examine student s' knowledge on the three levels of Niemierko's taxonomy (remembering, understanding, specific transfer) (Niemierko, 1979; Lapitka, 1996; Lavický, 2014), didactic tests were used and the participating students' cognitive performance was measured - a pre-test was administered to the participants both in the experimental group and the control group prior to the realization of the designed research activities and a post-test was administered following them. Both tests consisted of 16 items. The maximum score in both tests was 40. Satisfactory psychometric properties were earlier confirmed in a research conducted by Dostál and Kožuchová (2016).

Inquiry-based activities were only applied in the four experimental groups; in the control groups, traditional methods of teaching were used. In the experimental groups, students worked in teams of four. They were introduced to inquiry-based tasks from the thematic fields Electromagnetism and Electronics in the developed modules and, subsequently, were asked to propose various ways of solving task, including school experiments. They carried out experiments, evaluated their results, discussed occurring issues within and between groups, compared their results, and formulated conclusions.

6.2 Research sample

150 (67 male and 83 female) 6th-grade students from four schools providing primary and lower secondary education in the Slovak Republic participated in the research study. Students in each of the four schools were divided into two groups according to alphabetical order, and so, four experimental and four control groups were created.

6.3 Results

In the presented part of the research study, the input-output results of students in the experimental group and the control group were examined to find out about students' progress in the cognitive field (gained knowledge) in selected thematic units.

Table 1

Two-sample t-test for hypothesis H1

	Levene's Test for Equality of Variances		*t-Test for Equity of Means*						
	F	*P – value F test*	*T*	*df*	*P - value two-sided alternative*	*Difference of mean values*	*Mean value error*	*95 % confidence interval for variance*	
Equality of variance	32.662	0.000	24.39	75	148	15.7066	0.64378	-1.72731	0.03272
Inequality of variance	0	0	24.39	205.41	105.44	15.7066	0.64378	-1.72745	0.03285

By means of t-test, the existence of statistically significant differences between the experimental groups' and the control groups' performance was confirmed - the differences were statistically significant on the significance level $\alpha = 0.05$. It can be assumed that it is the result of using inquiry-based activities in experimental groups as a part of the experiment and these results suggest that using inquiry-based activities in the classroom influences students' overall performance in the cognitive field. For final analysis, the homogeneity of variance was examined, which was calculated using Barlett's and Cochran's tests for homogeneity (see Table 2).

Table 2

Test of variance homogeneity

	Cochran T.	*Hartley T.*	*Bartlett T.*	*P*	*Degrees of freedom*
Score	0.69874	1.367117	0.026354	**0.948322**	1

Based on the above results, it can be stated that the hypothesis was confirmed as the students in experimental groups achieved statistically significantly higher scores in didactic tests than the students in the control groups.

Conclusions

Inquiry-based teaching can be included in the category of experiential methods of teaching and appears to be an effective method of education, which is based on students' activity, their curiosity and their desire to explore and discover. One of the advantages of inquiry-based education is that it creates links between theory and practice as it allows students - regardless their age - to learn through experiencing, which makes it an attractive option. Another among its benefits is

that it can be easily implemented in teaching any school subject and no special equipment is required.

The main goal of the presented part of the research study focused on the application of inquiry based activities in the classroom was to examine whether implementing elements of inquiry-based teaching can lead to better outcomes in students and better knowledge. Since the obtained results indicate that the applied approach and methods of teaching have a significant impact on students' cognitive performance, for ensuring high-quality education, it is necessary to pay sufficient attention to selecting appropriate methods to be used in the classroom. Even though activating methods - including inquiry-based teaching - appear to be an effective option, in this context, teachers' preparedness, their pre-service training, in-service training opportunities and their professional skills are decisive. However, as experience shows, there is a lack of teacher training programmes focused on the application of innovative strategies and methods and their implementation into the teaching process, and as a consequence, teachers lack confidence in using them.

Although, given by the size and the composition of the research sample, the results of the study cannot be generalized to the entire population; we believe that they are significant from the aspect of increasing the efficiency of the educational process by using activating methods of teaching. The study also offers implications for the further direction of research activities in the field.

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Use of Technology-Supported Educational Tools in General Music Education and Its Contribution to the Process of Music Education

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Abstract:

Introduction: In our current century, technology continues to exist in almost all domains of human life. In this day and age, technological changes and developments make a great contribution to the rapid production of information and easy access to it. As a result of rapidly developing and changing needs, it is considered essential to organize education in line with these needs and to incorporate technology within the education system. In the present study, it was aimed to identify the use of technology supported educational tools in general music education and their contribution to the process of music education.

Methods: The convergent parallel design, which is one of the mixed research methods, was used in this study. Based on this particular point in mind, it was attempted in this study to establish the opinions of music teachers about the level of use of technology-supported educational tools in general music education through both closed-ended and open-ended questions. In this study, homogeneous sampling was used and it was attempted to reach out the teachers who taught general music knowledge in Turkey. The study group of the research was formed with 59 music teachers teaching at different institutions who agreed to participate in the study on a voluntary basis.

Results: In line with the data obtained, it was concluded that teachers found themselves partially sufficient and willing to improve themselves in terms of using the technology-supported educational materials more effectively and efficiently in the process.

Discussion: From the results of the research, it is seen that technology-supported applications are used especially in the listening and expression stages of the teacher, and it is preferred in the sampling, song teaching and showing and telling stages.

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In addition, it was determined that these applications were used by only 1 participant during the evaluation phase. It has been determined that technology-supported applications contribute positively to learning speed, permanent learning and the realization of more effective lessons. Throughout the music education process, which includes abstract concepts, the students' acquisition of the knowledge and making sense of this knowledge will contribute positively to their academic success. It is believed that it is essential to draw students' attention and include them effectively within the education process by getting them to gain new experiences. In this sense, it is crucially significant that teachers have the competence to use different applications in today's age of technology.

Limitations: The research was limited to 59 music teachers who voluntarily agreed to work during the data collection process. The research was carried out in the spring term of the 2020-2021 academic year.

Conclusions: In accordance with the findings obtained from the study, it was found that the participants utilized the technology-supported teaching tools especially in listening and lecturing, and they did not use these tools throughout the process. It was revealed that these tools had positive effects such as increasing students' attention and contributing to their permanent learning, as well as negative effects such as the tendency (to expect everything to be handed to one on a silver plate) and reducing the teacher's remedial role.

Key words: technology, educational tool, music education, general music education.

Introduction

In our current century, technology continues to exist in almost all domains of human life. In this day and age, technological changes and developments make a great contribution to the rapid production of information and easy access to it. As a result of rapidly developing and changing needs, it is considered essential to organize education in line with these needs and to incorporate technology within the education system (Crawford, 2017; Başak & Ayvacı, 2017).

In today's education programs in which the constructivist education approach is adopted, offering effective and productive learning environments to the individuals with different learning skills (Başak & Ayvacı, 2017) is considered crucial and indispensable for the students to acquire knowledge and new skills. In this context, the active use of technology in learning environments prepared by the teachers with this constructivist approach and presented to the students will greatly contribute to supporting the learning process and making sense of the knowledge acquired by the students (Bofill, 2013; Jacobsen, 2021), and the inclusion of technology in the teaching process will support the strengthening of the effect of the educational practices (Demirtaş & Mumcu, 2021). It is

considered that the incorporation of technology within the education process with a good planning will support the learning processes of students with different learning speeds and their access to higher quality learning environments (Burak & Çörekçi, 2021).

With the educational technologies (Ulaş & Ozan, 2010; Alkan, 2011), which aim to use the developments in science and technology and the inventions in education activities for the design, implementation, evaluation and development of learning and teaching processes, it was aimed to make these processes more efficient and enriched and offer various learning opportunities for students. In this context, it is considered essential to carry out music education, which is thought to play an important role as an educational factor in the lives of the society as well as the individuals in this society and which contributes significantly to the development of the individual's aesthetic taste and cultural level, with a well-organized program that includes today's technologies.

With the advancing technology, it is commonly recognized that technology is incorporated within the music education processes at all levels from pre-school all the way to university level (Burak & Çörekçi, 2021; Shi, 2021; Fu et al., 2022); the studies demonstrate that the use of information technologies in music education contributes significantly to the educational process and makes learning environments more colorful (Beşer, 2010; Nart, 2016; Çevik & Alkan, 2012; Talan, 2020; Zhao, 2022).

With the constructivist approach of today's education conception, the popularity of incorporating technology within the education process continues to increase, especially within the framework of global changes and technological developments (Qureshi et al., 2020; Zengin et al., 2018). In this context, it is commonly recognized that the technology-supported applications, which are also used in music education, contribute positively to students' active participation in the process, in terms of supporting their creativity, providing more opportunities for cooperation and sharing their existing capacities (Shi, 2021).

When the relevant literature is examined, it is clear that there are studies on the use of technology supported educational tools in music education and their contribution to the process of education. In his study, Doğan (2020) aimed to identify the opinions of music teachers on their ability to use technology in music education. As a result of the study, it was found that music teachers graduated without having sufficient knowledge in the field of music technologies in their undergraduate education, that the teachers did not have sufficient knowledge about online and offline music education programs, and that they partially used technology in music education. In his study, Kim (2013) aimed to establish to what extent the technology-supported teaching-learning approach in music lessons improved the creativity and musical perceptions of students in and out of the classroom. As a result of the study, it was revealed that the

technology-supported teaching-learning approach contributed positively to the creativity of the students, changed their musical perceptions and improved their musical creativity. Bannerman et al. (2021) aimed to establish the personal technology use of music teacher candidates, their views on the use of technology in music teaching and their experiences with music technology. They concluded that music teacher candidates used technology for various purposes on a daily basis and did not feel knowledgeable about technology for teaching music. Yi Lei et al. (2021) aimed to identify the contribution of social media use in instrument education in their study. They found that social media facilitated information sharing, attracted students' attention, supported communication, and created a virtual learning environment to support the face-to-face teaching. Furthermore, they concluded that social media-supported teaching-learning environments contributed positively to the development of students' techniques and musical styles.

It is believed that learning environments in which technological tools are incorporated contribute to the development of high-level thinking skills of the students, and they have the opportunity to better evaluate themselves in a more active and effective learning process (NETP17, 2017; Altunışık & Aktürk, 2021). Within this framework, there are many technology-supported applications that both students and teachers can utilize in the education process. It is considered essential to include these practices in the education process at a level that can be used effectively and efficiently.

The previous studies demonstrated that the inclusion of different technological applications in the education process had positive effects on the process of music teaching (Jong & Tan, 2021; Ortaakarsu & Sülün, 2022; Bilir & Özdilek, 2022). Therefore, it is considered crucial that the teachers, who have made great contributions to the organization of learning and teaching environments, can alter and develop their level of use of technology and their pedagogical approaches accordingly in the rapidly developing digital age. Similarly, in music education, which comprises many disciplines, it is considered essential to integrate technology in general in line with the structure of the course.

With this idea in mind, the purpose of the present study was to identify the use of technology-supported educational tools in general music education and its contribution to these tools to the process of music education. Therefore, in line with the question “What is the use of technology-supported teaching tools and what is the contribution of these tools to the process of music education?", answers were sought to the following questions:

1. What are the views of the participants on the use of technology-supported educational materials in the process of music education?
2. What are the views of the participants on the availability of technology-supported educational materials that can be used in the teaching process in the institution where they work?
3. What are the views of the participants on the use of technology-supported educational materials in the music education process?
4. What are the views of the participants on the effects of using technology-supported educational materials in music education?
5. What are the views of the participants on their competence to be able to use technology-supported educational materials?

1 Methods

The convergent parallel design, which is one of the mixed research methods, was used in this study. In this design, qualitative and quantitative data are obtained simultaneously but analyzed independently during the study process, and they are joined together in the section on obtaining and interpreting the results (Çepni, 2021). Data validation format, which is one of the basic forms of convergent parallel design, was utilized. In this type of questionnaire or interview form, there are both open-ended and closed-ended questions. The results of the open-ended questions are used to validate the results of the closed-ended questions (Creswell & Plano Clark, 2020). Based on this particular point in mind, it was attempted to establish the opinions of music teachers about the level of use of technology-supported educational tools in general music education through both closed-ended and open-ended questions.

1.1 Study group

The purposive sampling method, one of the qualitative research methods, was utilized in the sample selection phase of the study. The sampling enables the researcher to reach out participants with a sufficient level of knowledge for purposeful in-depth study about the situations of fundamental importance related to the subject studied (Patton, 2018). In this study, homogeneous sampling was used and it was attempted to reach out the teachers who taught general music knowledge in Turkey. The study group of the research was formed with 59 music teachers teaching at different institutions who agreed to participate in the study on a voluntary basis. The names of the teachers in the study group will not be revealed in the study, and Participant 1 (P1), Participant 2 (P2) etc. were coded accordingly. The demographic information of the participants is illustrated in Table 1.

Table 1

Demographic information of the participants

Gender	*n*	*%*
Female	46	77,97
Male	13	22,03
Age	*n*	*%*
25-30	6	10,17
31-40	10	16,95
41-50	35	59,32
51-60	7	11,86
61 years old and over	1	1,70
Working institution	*n*	*%*
Private School	3	5,08
Public School	56	94,92
Professional seniority	*n*	*%*
1-5	4	6,78
6-10	6	10,17
11-15	9	15,25
16-20	7	11,86
Other	33	55,94
Total	59	100

As seen in Table 1, it was established that 77.97% of the participants were female, 22.03% were male; 10.17% of the participants were 25-30 years old, 16.95% 31-40 years old, 59.32% 41-50 years old, 11.86% 51-60 years old and 1.7% were 61 years old and over. It was also established that 5.08% of the participants taught at a private school and 94.92% at a public school; 6.78% of them had 1-5 years of professional seniority, 10.17% of them 6-10 years, 15.25% of them 11-15 years, 11.86% of them 16-20 years and 55.94% had over 20 years of professional seniority.

Table 2 illustrates the findings related to the music departments which the participants graduated from.

Table 2

Participants' graduate program

Faculty/program name	*n*	*%*
Faculty of Education	54	91,53
Turkish Folk Music Conservatory	2	3,39
State Conservatory	1	1,69
Turkish Music State Conservatory	2	3,39
Total	59	100,00

As is clear in Table 2, it was established that 91.53% of the participants were graduates of the Faculty of Education, 3.39% of them graduates of the Turkish Folk Music Conservatory and Turkish Music State Conservatory and 1.69% of them graduates of the State Conservatory.

2 Results

In this section, the results obtained from the data collection tools are presented. Table 3 illustrates the results regarding the use of technology-supported education materials in music education by the participants.

Table 3

The use of technology-supported educational materials by the participants in music education

Use of Materials	*n*	*%*
Yes	53	89,83
No	6	10,17
Total	59	100,00

As Table 3 illustrates, it was established that the majority of the participants used technology-supported educational materials in the process of music education. Table 4 presents the results regarding the technology-supported applications used by the teachers during the lesson.

Table 4

Technology-supported applications used by the participants

Used of Technology-supported Applications	*n*	*%*
Youtube	56	91,94
Kahoot	10	17,74
Powerpoint	32	53,23
WhatsApp	38	62,9
Instagram	10	17,74
Powtoon	2	3,23
Google Drive	25	38,71
Flipgrid	1	1,61
Quiziz	1	1,69
Tindercard	1	1,69
Webex	1	1,69
Zoom	4	6,78
Google Meet	1	1,69
Camtasia	1	1,69
Cool Edit Pro.	1	1,69
Learnings App	1	1,69
Finale	1	1,69

As Table 4 illustrates, 91.94% of the participants used Youtube, 62.9% WhatsApp, 53.23%, PowerPoint, 38.71%, Google Drive, 17.74% Kahoot and Instagram applications during their teaching processes. Nevertheless, it was also established that some participants used different online applications throughout their process of music education.
Table 5 presents the findings regarding the technology-supported materials in the institution where the participants worked.

Table 5

Technological materials available in the institution where the participant teachers worked

Technological Materials	*n*	*%*[1]
Projector	24	40,68
Smart Board	56	94,92
Computer	40	67,8
Tablet	11	18,64
Sound Systems	18	30,51

As is clear in Table 5, it was established that 94.92% of the institutions where the participants worked had smart boards, 67.8% computers, 40.68% projectors, 30.51% sound systems and 18.64% a tablet. Based on this, it is possible to say that most of the institutions were equipped to use applications that could make the lesson process more active and contribute to effective and efficient teaching and learning.
In Figure 1, the views of the participants regarding the use of technology-supported educational tools in the process of music education are illustrated.

[1] Some schools have more than one technological material.

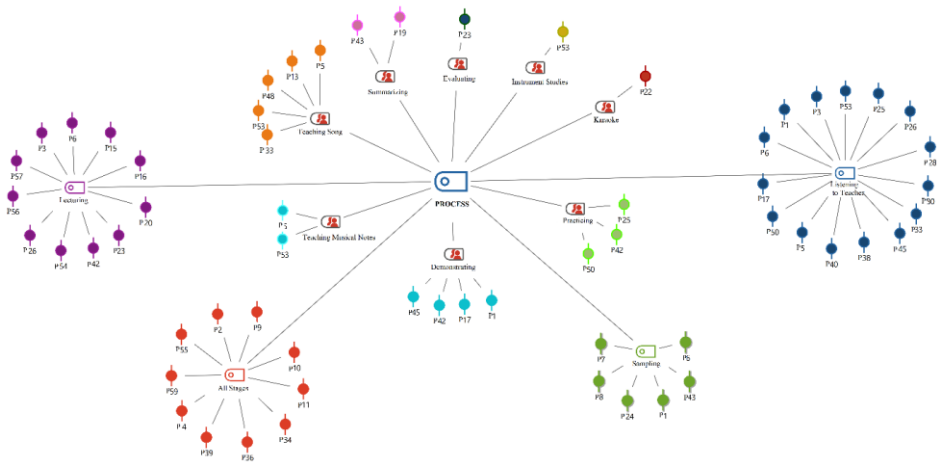

Figure 1. Participants regarding the use of technology-supported educational tools in the process of music education.

Figure 1 illustrates the participants who expressed their opinions on which processes of music education the technology-supported teaching tools were used. It was established that the participants expressed their opinions regarding the "process" theme of the participants such as listening to the teacher (15), lecturing (11), all stages (10), sampling (6), teaching songs (5), demonstrating (4), practicing (3), teaching musical notes (2), summarizing (2), evaluating (1), instrument studies (1) and karaoke (1). It is clear that the participants who used technology-supported the educational tools in the process of music education used these tools more in listening to the teacher and lecturing. Based on this, it is possible to claim that the teachers were unqualified in terms of using technology-supported educational tools at all stages of the education process.

Some of the views of the participants on this theme are presented below:

"I use technology-supported educational tools in order to support the lesson according to the characteristics of the subjects. For instance, I realize that showing the visuals and getting the students to listen to sound of the instrument in addition to explicating the subject in introducing an instrument positively supports the desired learning outcome (P7)".

"I use the technology-supported educational tools in lecturing and evaluation stages (P23)".

Figure 2 illustrates the participants' views on the positive effects of using technology-supported educational materials in music education.

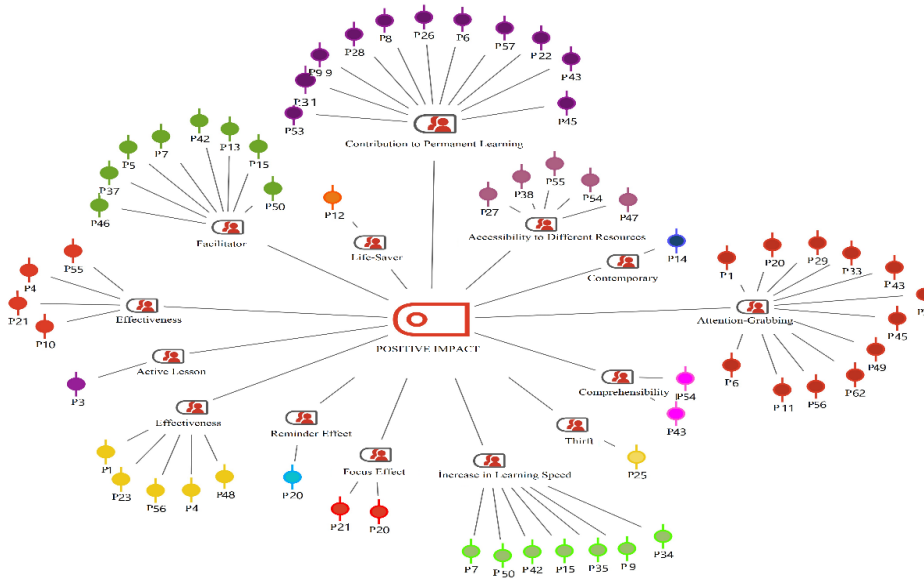

Figure 2. Participants' views on the positive effects of using technology-supported educational materials in music education.

As is clearly seen in Figure 2, some participants expressed their opinions on the positive effects of using technology-supported educational materials in music education. Regarding theme of "positive impact", it was found that the participants expressed their views with the words such as attention-grabbing (12), contribution to permanent learning (11), effectiveness (9), facilitator (8), increase in learning speed (7), accessibility to different resources (5), comprehensibility (2), thrift (1), reminder effect (1), contemporary (1), active lesson (1) and life-saver (1). It is clear that the use of technology-supported educational materials in the lesson process contributes to attention-grabbing and permanent learning. As far as this point of view is concerned, it is possible to say that the use of technology support at every stage of the learning process, in line with the necessity of the current era, is essential for the realization of permanent changes in learning.

Some views of the participants on this theme are presented below:

"Visually showing the instrument and getting the students to listen to its sound help to attract the students' attention more and enables them to learn more permanently. I constantly feel the need to turn on music and do activities such as dancing or playing games on it (P6)".

"It is lovely to be able to instantly access all kinds of supporting audio, visual, etc., materials related to outcomes and have the students to watch and listen to them. Sharing the activities prepared by the students with their friends, I think technology is beneficial in preparing and presenting their own projects (P55)."
Figure 3 illustrates the participants' views on the negative effects of using technology-supported educational materials in music education.

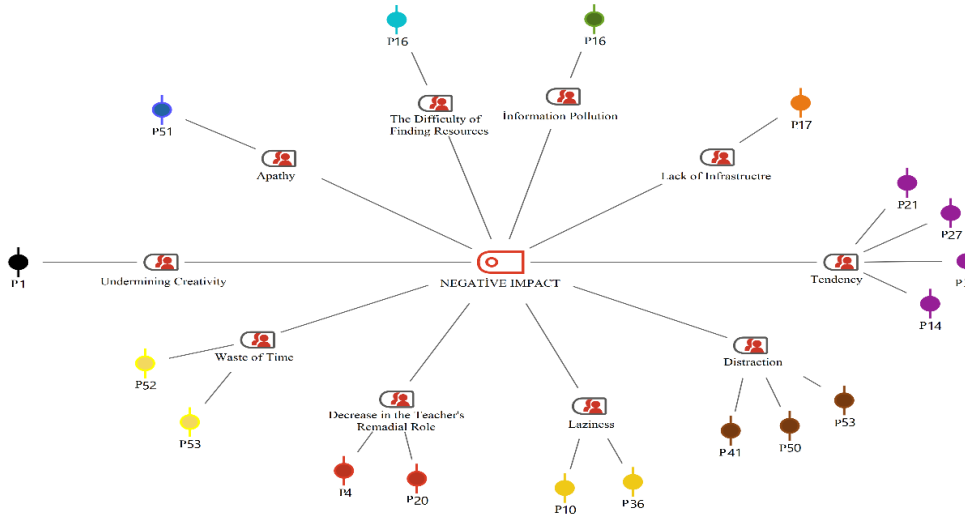

Figure 3. Participants' views on the negative effects of using technology-supported educational materials in music education.

As illustrated in Figure 3, some participants expressed their opinions about the negative effects of using technology-supported educational materials in music education. Regarding theme of "negative impact", it was found that the participants expressed their views with the words such as the tendency (to expect everything to be handed to one on a silver plate) (4), distraction (3), laziness (2), decrease in the teacher's remedial role (2), waste of time (2), undermining creativity (1), apathy (1), the difficulty of finding resources (1), information pollution (1) and lack of infrastructure (1). Based on this, it is possible to claim that the use of technology support in the education process may have negative effects in terms of the effectiveness of the process as well as the positive effects.
Some views of the participants on this theme are presented below:
"Sometimes we may deviate from the subject. Lesson time may not be enough (P19)".
"Using technology-supported educational materials makes students and teachers lazy (P36)".

"These materials can cause some students to be extremely distracted and tend to be interested in any application other than the lesson content. Furthermore, the applications connected with individual mobile phones, such as the kahoot application, can cause students to focus on their private lives during the lesson (P41)".

Figure 4 shows the participant's views on their ability to use technology-supported teaching materials.

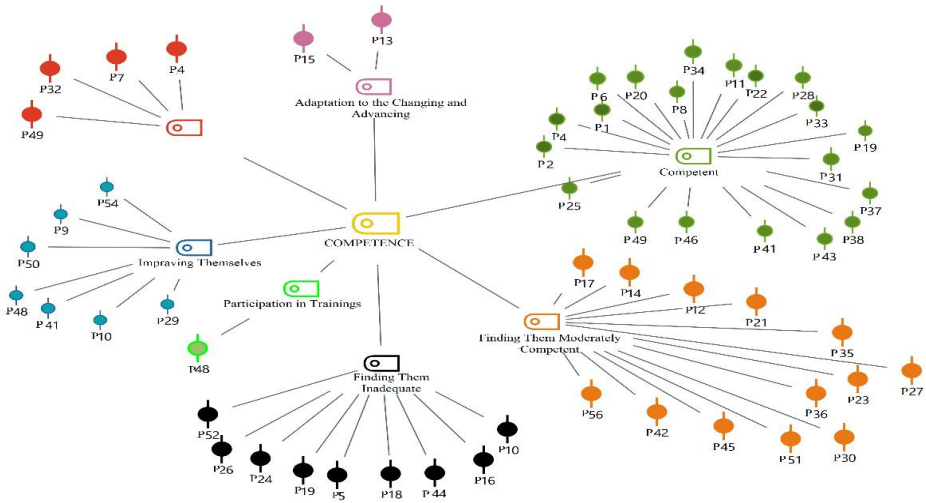

Figure 4. Illustrates the participants' views on their ability to use technology-supported teaching materials

As is clearly seen in Figure 4, some participants expressed their opinions about the ability to use technology-supported teaching materials. Regarding theme of " competence", it was found that the participants expressed their views with the words such as finding themselves competent (20), finding them moderately competent (13), finding them inadequate (9), improving themselves (7), the need to adapt (4), willingness to receive training (2), and participation in trainings (1). It was established that some of the participants considered themselves sufficient in using technology during the education process. Nevertheless, it is possible to say that the participants were willing to receive further training for the purpose of using the technology-supported educational materials more effectively during the education process and show improvement.

Some views of the participants on this theme are presented below:

"I do not have any difficulty in using the technological educational materials while teaching my lesson, but the applications and software used may change over time. Technology is a constantly changing and developing field and the teacher should be in the process of self-development in order to keep up with the current era (P7)".
"I have quite low proficiency. I have been trying to carry out with some external assistance (P18)".

3 Discussion, conclusion and recommendations

As far as the results obtained from the study are concerned, it was found that the majority of the participants used the technology-supported applications in their teaching processes, especially within the classroom practices, and they did not use different applications that would support the process outside the classroom. We are of the opinon that this particular state of affairs arises due to the fact that teachers do not have the competence to use these different applications. Similar studies also demonstrated that teachers were not sufficient to actively use the technological equipment in their education processes (Doğan; 2020; Erdoğan & Şerefli, 2021; Francom, 2020). Therefore, it is considered essential for teachers to incorporate the technology-supported educational materials, both inside and outside the classroom, in order to ensure active participation of the students within the teaching process and permanent changes in the learning/teaching process.

As far as the results obtained from the findings in the study are concerned, it was clear that there are different technological materials that the participants could use in the music lessons in the institutions where they worked, and the majority of the institutions had smart boards. Clearly, it was necessary for institutions to have sufficient technological equipment in order to ensure the continuity of the student's interest in the lesson and to be able to work more effectively and efficiently. Nevertheless, it was considered crucial to integrate these existing resources into the education process and create a learning and teaching environment in which both students and teachers were actively involved (Hew & Brush, 2007; Korkmaz et al., 2019).

It is commonly recognized that technology-supported applications support the education process in today's age of technology (Sarı & Akbaba Altun, 2015; Şahin & Güler, 2021; Turhan & Baş; 2017; Yang, 2022; Korkmaz & Biber, 2022). From the results of the study, it was established that the technology-supported applications were used especially in listening to the teacher and lecturing stages, and they were also preferred in the sampling, song teaching and demonstration stages. It was also established that these applications were used by only 1 participant during the evaluation phase. When the relevant literature is examined, it is clear that there are studies on the use of different applications in

the evaluation phase of the teaching process. In their study, Karadağ and Garip (2021) concluded that LearningApps application could be used in reinforcement and evaluation stages. On the other hand, studies stating that the use of technology-supported applications in different stages of teaching, including assessment, promoted the process, also supported the results of these studies (Hew & Brush, 2007; Bofill, 2013). As far as this point of view is concerned, it is crucially significant to utilize the technology (Fu et al., 2022) that supports the individuals to experience new information effectively and efficiently, in accordance with the projected target at every stage of the education process.

As far as the ensuing results are concerned, it was established that the technology-supported applications contributed positively to the learning speed, permanent learning and the realization of more effective lessons. Furthermore, it was also found that the lessons were more comprehensible and contributed to the student's active participation. In support of the results of the study, Şahbaz and Arseven (2022) found in their study that Scratch program-supported teaching had a positive effect on the academic success and learning levels of the students. Dikkartin Övez and Sezginsoy Şeker (2022), on the other hand, established in their study that students' motivation towards materials prepared with augmented reality technology and their attitudes towards these applications were at a very high level. Zhou (2020) found in his study, that technology-supported music education positively impacted the students' participation in the teaching process. Furthermore, there are some other different studies in the relevant literature on the positive effects of technology applications in the music education process (Okay, 2016; Karaöncel & Çiftçi, 2022; Hernandez Bravo & Cardona Molto, 2015; León-Garrido et al., 2022). Based on this, within the framework of the constructivist approach in today's education programs, clearly it is essential to prepare and present active learning environments in which technology is incorporated within the education process in order for the student to be involved in the process and make sense of the knowledge and information.

It was established that technology-supported applications offered the students the tendency (to expect everything to be handed to one on a silver plate), had a distracting effect, and negatively affected their creativity. There are studies in the relevant literature (Şahin, 2019; Öner, 2020) on the negative effects of technology within the education process, supporting this particular result of the study. It is essential to achieve the maximum positive contribution to the education process of the digital age we live in, in order to educate the next generations well-equipped. Therefore, it is of crucial importance that teachers arrange their lesson preparations and teaching practices in the most effective way in order to minimize the negative effects of technology within the education process.

It was found our study, that the majority of the participants stated that they had the competence to use the technological educational materials. However, it was also established that some participants thought that they improved themselves, while some participants stated that they needed to adapt to the new technology. Supporting the results of the present study, Can and Kekez (2022) revealed in their study that the physical education and sports teachers' levels of integrating web 2.0 tools into their lessons differed in favor of the teachers who took technology courses. Francom (2020), on the other hand, established in his study that teachers' existing personal competencies in using these tools negatively affected the use of technology in the education process. As far as this point of view is concerned, it is believed that it is not sufficient for teachers to have only the technological equipment; it is equally essential for them to integrate this equipment into their lessons at the same time. Furthermore, it is considered significant that teachers can actively use their equipment in in-class and out-of-class activities and include their students within the process (Ertmer et al., 1999; Carver, 2016).

In the light of the findings obtained from the study results, the following suggestions can be offered:

Throughout the music education process, which includes abstract concepts, the students' acquisition of the knowledge and making sense of this knowledge will contribute positively to their academic success. It is believed that it is essential to draw students' attention and include them effectively within the education process by getting them to gain new experiences. In this sense, it is crucially significant that teachers have the competence to use different applications in today's age of technology. Nevertheless, it is also commonly recognized that it is essential to identify the appropriate strategies for the subject with a good planning and be able to include different applications at the different stages of the education process. Therefore, it is recommended that teachers be supported with in-service trainings for the purpose of improving their personal competencies, being fully aware of the technological changes and developments, and using the technological materials in a planned and active way in the course process.

It is clearly evident that the use of activities carried out with different technological materials within the music education process based on creativity will contribute positively to the motivation, musical-oriented thinking, musical practices and musicality of the students. With this in mind, it is recommended to conduct experimental studies with the students at different grades on how the technological materials incorporated in the music education process through in-class and extra-curricular activities contribute to the student overall success.

It is equally essential for the schools to be supported by the institutions in order for the rapidly changing and renewed technological software and hardware to be able to work without any problems in order to use the technological materials.

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Online Educational Experiences in Some Majors of Eszterházy Károly University

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Abstract:

Introduction: In Hungary, as in many parts of the world, a crisis situation has arisen with the start of the quarantine period associated with the coronavirus, which presented the education system with a serious challenge. Social inequality (also in terms of network access and device availability) was expected due to, that differences will only increase the gap in education. Digital connectivity and the digital environment became the main arena for students and faculty over the course of a weekend. That's a real question, of course, can we talk about real digital education during this period? Was online education effective or was it rather a blind spot?

Methods: In our research, we examined it from the perspective of geography teachers, kindergarten teachers, and university students attending teaching courses learning and teaching „switching online" betweem March, 2020 and April, 2021 at the Eszterházy Károly Catholic University (then even EKE). Our sample consisted of 108 people. We used an online questionnaire study to assess students' experiences with the effectiveness of distance learning and the development of their digital competence, about the possibilities of implementing professional internships. We were looking for student answers to, how each segment of distance learning can be integrated into the normal education system. We compared our results with similar Hungarian and international research results.

Results: Most students felt that online education was effective. The digital competence of students has evolved. Due to changed circumstances of traineeships, students could not gain enough experience, which could later affect their work.

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Discussion: The changes that have occurred can be highlighted as secondary benefits, this educational environment could be more sustainable in the future, than the traditional educational environment, however, the consequences of isolation cannot be ignored.
Limitations: The research shows data valid only for Hungary.
Conclusions: Consideration of the experience of students for the effectiveness of their education in the coming years.

Key words: online education, pandemic, efficiency, student experience, teacher.

Introduction

The Corona-virus pandemic in the spring presented the world, including higher education, with unprecedented difficulties (Crawford et al., 2020). Interpreting this difficulty as a challenge and opportunity for development ("COVID-19 as an opportunity") quickly spread in the public discourse about the pandemic; this rate encouragingactors in higher education to respond efficiently and immediately (Serfőző et al., 2020).

The need of the information society for the introduction of distance education has already appeared, however, preparedness is still in its infancy, both from educational and methodological point of view. The devices of both students and teachers, as well as network access, were not always suitable for maintaining perfect contact in the online space for the joint presence of groups of 20-30 people, and for using different applications in parallel. In addition, there were also great differences in individual competencies on both sides.

However, the use of ICT tools was not previously unknown in the field of education. The training and output requirements of Undivided Teacher Training were already published in 2013 (8/2013. (I. 30.) EMMI regulation, 2013), emphasizing the application of modern ICT in teaching and learning: effective and professional use of digital textbooks, teaching aids and other learning resources, methods of learning organization related to these, more important methods, knowledge and application of teaching and learning strategies, and the importance of critical attitudes (Cserné Adermann, 2020). The realization of this goal has been and continues to be influenced by many parameters, among which personal attitudes and an individual protest in the use of digital devices is also included.

According to Éva Gyarmathy, the psychologist (2021), there is something that can be highlighted as a benefit in this forced situation. New learning activities could also take shape in higher education, which inspired students to explore individual and social learning pathways. However, in addition to some

pedagogically valuable consequences, we should mention serious psychological problems.

The dormitories were also closed during the pandemic. This affected university students as an additional problem. It wasn't just their housing that came into question, but in many cases, their employment opportunities have also been reduced (Lee, 2020). Thus, in addition to the psychic, financial troubles were also a serious burden. In terms of our mental health, Gyarmathy has divided the psychological consequences of the pandemic into five categories:

1. „anxiety caused by the pandemic;
2. the psychological effects caused by the quarantine situation;
3. impacts of the transition to online education;
4. direct effects on the nervous system;
5. the spiritual effects of chaos" (Gyarmathy, 2021).

These consequences may vary in terms of student populations. The question legitimately arises: if we look only at higher education institutions, where did they deal with these effects after the institutions reopened their doors? Are there any specific assistance programs available to deal with these problems? It is likely that these effects will have a negative impact in the long run, perhaps only in their world of work. In our opinion, it is not too late to handle this in the educational arena. In the case of Eger, we must say that university psychologists are colleagues (e.g., Institute of Psychology), and other departments of the university (e.g., Peer Support Mental Health Counseling Office) also provided support in this area to our students; naturally, to those who gladly took advantage of this opportunity. In addition, we discussed a lot about it with our students during our classes and at other times, even online.

At EKKE we examined several forms of educational experience during the first quarantine period. With the help of the information obtained during our research, we would like to highlight the positive elements that may be suitable for later integration into the normal education system. This idea is confirmed by the energy crisis announced in 2022, when universities faced a serious challenge in maintaining institutions.

The questions covered:

- to assess the development of individual digital competence;
- the difficulties and ways in which traineeships can be carried out;
- exploring the potential of distance education.

Furthermore, we explored the Hungarian views on the concepts developed during the pandemic, how to define the newly appeared form of education.

1 Materials and methods

For the compilation and evaluation of the questionnaire, we used the research methodological works of (Babbie, 2001) and (Lengyelné Molnár, 2013), as well as the joint work of (Falus & Ollé, 2008).

We reached the students of EKKE with the help of an online questionnaire. Our sampling base was kindergarten teachers, teachers, Geography BSc¬ students, and students of geography and natural history teacher majors both full-time and correspondence classes. The survey dates were March and April 2022. The online questionnaire was completed by 108 students. The number of fill-ins was lower than expected, perhaps due to the fact that students already had less energy to complete the online tests because of the workload of online education. We wanted to observe differences between the sections, possibly undergraduate and master's students. The data of the received responses were evaluated using basic statistical indicators, considering the type of work schedule in some places. We looked for significant relationships between certain indicators by cross-examination. We checked the null hypothesis with the chi-square test. If the significance level for the chi-squared value was lower than 0.05, then we rejected the null hypothesis, otherwise we kept it, this was the value we have applied.

2 Results

2.1 The educational experience

The proportion of students, who have completed work schedules, has become interesting: exactly 50% of the students were correspondence and 50% were full-time. The p=0.98>0,05 based on value, there was no correlation between the studied data and the section in most cases, but we have observed a connection in some specific issues.

Among the respondents, 37 people (34%) were teachers, 47 participant (43%) were kindergarten teachers and 25 respondents (23%) were science students. The p=0.16>0,05 there was no correlation between the data studied and the major.

According to the number of semesters spent in training, the pandemic in the sample mostly affected the first half of the training of respondents, 1-3 semesters. This means that the initial phase of their training was affected by online education due to the pandemic. They started their studies at our university in 2019 and 2020 their rate was about 58-58%. The proportion of seniors was less than 5%. Freshmen may have had more difficulty with online instruction in that they did not yet know the instructors in person, they could not get used to the style and expectations of the instructors. Due to the lack of contact provided by the online space, social life has also been minimized. Due to the changed

circumstances, a new trend has emerged, according to which more and more people are opting for non-full-time courses in higher education. The number of students increased by approximately 1.3 thousand people among non-full-time students compared to the 2019/2020 academic year in 2021 (Hungarian Central Statistical Office, 2021). Several people have dealt with the definition of the established work schedule. Is digital education or distance education really the phenomenon to be named? Capitalizing on results can become an important factor for the education of the future. According to the results of an international research, the usual learning-teaching practice will change to this effect by turning on certain online elements, as has happened since then (School Education Gateway, 2020).

Based on the responses, most instructors in the previously mentioned majors chose Microsoft Teams (48%) (Figure 1), after all, the university (EKE) preferred this during the trainings. Computer scientists automatically imported courses and students into the interface in the first year of the virus, but this was no longer realized later, but the instructors had to add students to the courses one by one. There were also students who could not get involved in education for several months, although their rates were low. As a result, there were no dropouts in the named majors. In addition to Teams, respondents also marked Google Classroom (7%) and Google Meet (7%) as contact platforms.

In contrast, in public education, in institutions where the use of a particular platform was not mandated, the biggest winner in introducing a digital work schedule was Google Classroom. In addition, Facebook, Messenger and email were used by educators, where they typically tried to implement traditional teaching methods using ICT tools in an online space (Kovács, 2021).

In the recent period, teachers have received a relatively large amount of IT and other trainings from which we can conclude that they have been doing a good job for teaching in the digital space. Despite this, they lack methodological knowledge in the field of online education (Malatyinszki, 2020).

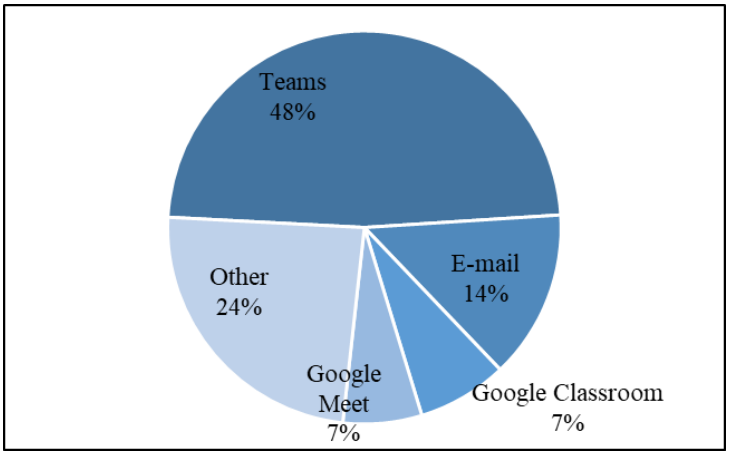

Figure 1. The digital place of online education.

In addition to the interface chosen as the digital arena of education, it is worth examining what we mean by digital and online education. What we call digital education in everyday life is more of a digital work schedule, where the instructor communicates with his students online, thus avoiding face-to-face contact. During real digital education, teachers use ICT tools as a methodological element in real space.

Digital education is a cognition process with consciously designed scientific needs that is based on faculty and student activity. The instructor only plays a guiding role, with students sorting, interpreting, and processing important information. This procedure improves the students' information management skills and information literacy (Szőke-Milinte, 2020).

The concept of online education is already more closely related to the situation that has arisen. By online education we mean net-based, virtual education. Under this form of education, its technological presence is essential: it includes computers, smartphones, virtual classrooms, digital systems (Urdan & Weggen, 2000).

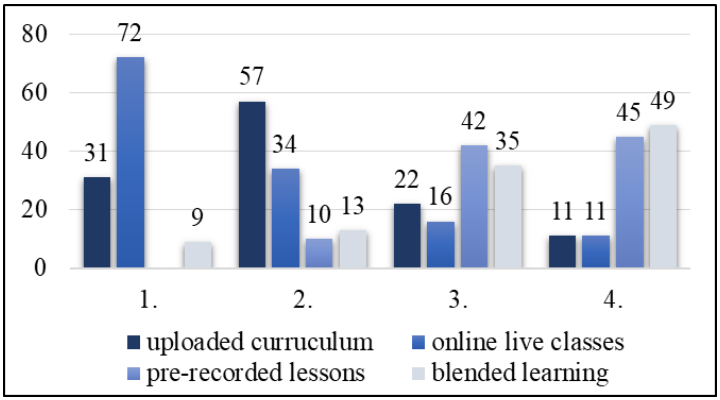

Figure 2. Frequency of lesson types (%).

Figure 2 shows the frequency of lesson types during the period under review on the Likert scale. According to this, the instructors prioritized "uploaded material" and online live lessons (Figure 2). Apparently, few instructors have chosen the blended learning method (when traditional classroom instruction is complemented by online content). On the plus side, the blended learning method has already appeared in higher education. This provides a good basis for the subsequent use of this method.

According to most students, the amount of curriculum to be completed was not more or less than the normal educational schedule (Figure 3). Only 40% of students sensed a change in the direction of surplus. In contrast, the number of papers to be submitted increased (Figure 4). The measurement-evaluation process, which can be implemented into online space similarly to traditional accountability, is still an unresolved problem. In Hungary, we are currently not aware of any online interface that would exclude the use of unauthorized aids while students write a test online (Réti, 2021).

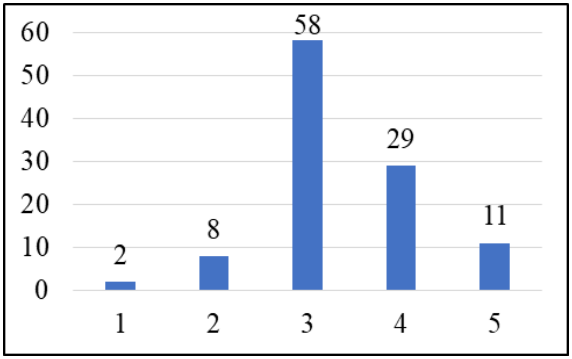

Figure 3. Increase in the amount of curriculum (person).

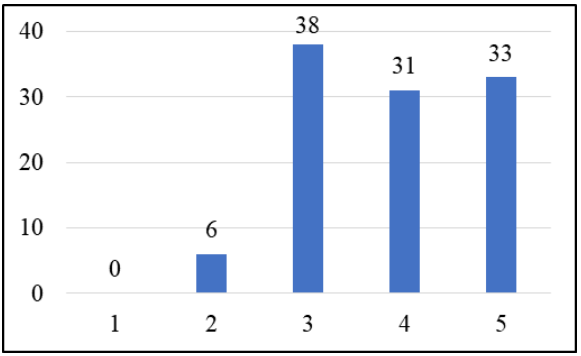

Figure 4. An increase in the amount of papers to be submitted compared to normal education (person).

Despite all the difficulties, our survey revealed that 75% of students felt that learning the curriculum during distance learning was effective.
In terms of technical equipment, 29% of students had to buy a new device, mostly laptops and then phones. Most of them had a stable internet connection, so they had no problem with that when they had online classes. However, during the textual assessment, several people highlighted (11% of the students who came out of it) that they had switched to a larger internet package or mobile internet. The purchase of a new device was mainly for students studying kindergarten teachers and teaching majors.

Unfortunately, there were students who could not be included in the dynamics of online education. There may be a shortage of tools here, but perhaps it is less so, it is rather the competences provided by the digital space that can occur to students in higher education as the reason for their dropout.

According to previous research, one of the biggest drawbacks of online training can be cited as the high dropout rate. The causes of attrition can be different: forms of life management, lack of motivation, not the expected curriculum/content. An international 2016 survey measured an 18% completion rate within the online education system. Early school leaving rates in forced digital education could be similar (Semenova & Rudakova, 2016). As already mentioned, this was not observed in the case of our majors, at least not at a higher rate than in the previous or subsequent period.

European and North American literature try to research the future effects (McMorris-Santoro, 2021). Early school leaving can also be a serious problem in developed countries. The pandemic made it easier for students to fall behind. In the United States, there was a steady downward trend in dropout rates in the pre-pandemic period. During the pandemic, however, the number of turnout and enrollments declined sharply, and the downfall rate increased. Teachers say the closure of classrooms has caused the most difficulty. Isolation from public spaces has mainly affected disadvantaged pupils. Due to economic difficulties, students' priorities have changed. They find existential security in the world of work instead of studying (McMorris-Santoro, 2021).

When asked if there was a subject that they had not been able to complete due to the difficulties of distance learning, there was a connection with the student's section ($p=0,03<0,05$). In the case of correspondence students, they had several subjects that they did not complete in that semester.

Table 1

Percentage of subjects not completed

Contingency Tables

Course		*is there an unfulfilled subject*		
		no	*yes*	*Total*
full-time	Count	52.00	2.00	54.00
	% of total	47.71 %	1.83 %	49.54 %
correspondence section	Count	46.00	9.00	55.00
	% of total	42.20 %	8.26 %	50.46 %
Total	Count	98.00	11.00	109.00
	% of total	89.91 %	10.09 %	100.00 %

Chi-Squared Tests

	Value	Df	p
X^2	4.81	1	0.03
N	109		

Since there was a higher proportion of geography majors among correspondence students, even the correlation study shows a slight relationship with the major in this matter (p=0,0000887). Out of the 25 geographer respondents 8 had unfulfilled subjects, while the number was 3 for the teachers and there was no kindergarten teachers (Table 1).
Closely related to the problem of measurement-evaluation, there is the issue of meeting the deadline. Even in normal educational order, the deadline is a big ordeal for most students. During online education, organization and adherence to the agenda have become more valuable. However, based on the responses, we did not find a significant relationship between meeting deadlines and gender distribution (Table 2). Only 10% of respondents did not cope with this task.

Table 2

Meeting deadlines

		Deadline keeping		
		no	*yes*	*Total*
male	Count	3	17	20
	% of total	3 %	16 %	18 %
female	Count	7	82	89
	% of total	6 %	75 %	82 %
Total	Count	10	99	109
	% of total	9 %	91 %	100 %

During the epidemic situation alone, effective communication between student and teacher was a serious problem. According to the results of a qualitative study, many educators identified assessment and the true value of grades as the most problematic issues (Monostori, 2021). On the student side, there was a drastic decrease in feedback. It is from this phenomenon that educators have preferred online test preparation applications for quick feedback. This proved to be a quick solution to assess students' level of knowledge, but it did not prove to be a solution for implementing continuous improvement assessment (Digital Comenius Annual Report, 2021). Of course, there are many factors behind the lack of feedback. Talking to colleagues, we concluded that the increase in time spent in front of the device, the care of the rest of the family, the teaching of their children and their need for equipment are also behind this. It is not necessarily disinterest that characterizes the explanation of this phenomenon.

2.2 Experience with traineeships

Based on the responses, internships have not been left untouched by the pandemic period. 64% of the respondents had an internship during this period (in school, kindergarten). It was mainly during the open-ended response options that

the students addressed the problems that arose. Abbreviated school internships and reduced programs were reported by students. By reducing the duration, they were able to comply with epidemiological regulations, reducing the risk of infection. This situation was further complicated by the unpredictability of the timing of the exercises, as a significant part of the students, or the mentor teachers, were often missing. All this occurred at a very sensitive time for prospective teacher candidates, as in the absence of experience and routine, they would have required more preparation time during their practice school activities. Because of this, anxiety was perceived; however, several people felt that the obligation was coupled with an increased risk to health.

The biggest differences between students' opinions by work schedule were related to these two issues (Table 3). A higher proportion (1970-1999) of older students were born before 2000 and 100% felt that learning knowledge during distance learning was effective. 48% of students born after 2000 stated that this learning knowledge was effective. It can also be seen from this that correspondence students are self-absorbed; they felt they had more time left over during the online education period. Thus, in correspondence training hybrid solutions dominate nowadays. Lectures are more online, and hands-on classes are done in person. Or, in case of illness, it is also possible to turn on the missing students in contact classes if they require it.

Table 3

Differences between full-time and correspondence sections

Work schedule	*Did you feel it was effective to acquire knowledge during online education?*		*Which educational option would you choose in the long run?*	
	yes	no	contact	online
full-time	65%	35%	67%	33%
correspondent	91%	9%	31%	69%

In examining the effectiveness, full-time students shared several negative experiences: they had trouble concentrating in online classes, they noticed a serious loss of motivation on themselves, and they had a hard time managing their time well. In contrast, correspondent students expressed several positive thoughts: individual pace, time, and cost-effectiveness, as well as more flexible schedules (Table 4).

This is in contrast to the research of ELTE-TÓK undergraduate – infant and early childhood educator, kindergarten teacher, teacher in full-time and correspondence classes, where, according to students, the advantages of distance education include flexible schedules (62%), and the convenience of learning from home (60%). This is perceived more strongly by full-time students than by correspondents. They believe (44%), it is useful in online communication that

written answers to their questions can be retrieved later, shared content (40%) can be used at any time (Serfőző et al., 2020).

3 Discussion and conclusion

Online education has proven that the work of a teacher is very complex. In addition to knowledge transfer in the classical sense, mentoring learning, supporting students, and facilitating social learning processes have risen to the main tasks of reducing the sharpened social disparities (Perjés & Héjja-Nagy, 2017).

Based on the results, it was confirmed that the education system, forced into the online space, is capable of independent change. If it could react so quickly to critical situations, it would also be able to adapt to the needs of the information society, so that it could achieve real efficiency gains. The first step is merely to assess the experiences of students and to examine the positive and negative qualities of online education.

After this, we must not forget this difficult period and be contented it is finally over, and the system before the pandemic can be restored. We must rethink and reform the system that can finally serve the needs. We need to be prepared for similar situations in the current uncertain economic and social space (e.g., Ukrainian War).

First, it is worth highlighting the positive elements from the experience. Our natural environment is also crying out for serious help, so it should definitely be mentioned that the online educational environment seems to be more sustainable comparing to the one before the pandemic. In addition to the current economic crisis, it can also reduce the financial burden on students with possible travel and accommodation costs. The energy crisis, in which we are currently living, raises further questions about online education. Hybrid education could be considered as a solution. However, this would require methodological preparation of teachers, which is currently not sufficiently prepared. As surveys in Hungary show, digital competence in teachers is constantly evolving. With the right methodological trainings, real progress could be achieved, the integration of which into education could alleviate the need to weather crisis situations. However, several training opportunities offer only semblance solutions.

The human social factor is necessary for a full life, and this was sidelined during the pandemic. The metal health of students suffered the most because of this shortage, but this was not in the focus of our investigation. However, we examined the development of students' digital competence during that period. 89% said they had improved or significantly improved their digital competence. According to a previous survey of teachers, teachers also noticed the development of their digital competence. They had to keep up with the expectation of the situation that the pandemic and online education required. For

example, those who did not have digital literacy went to catch up (Homoki & Nyitrai, 2022). It is an interesting observation of the potential for development of the forced situation. There is already a generation in higher education who have learned to use the tools in a self-taught. Many students have learned to use ICT tools. In several cases, the problem was the use of applications and online interfaces. This was unknown to them; and it took time for them to learn how to manage the platform. Not all majors had the same online interface, so there was an extra burden on students. Unification would be an important step, thus creating a simpler, cleaner situation next time, which would be better for students. Although our students are slowly being born with mobile phones in their hands, the use of ICT tools covers a narrow area. Work software is not used, so their development is also necessary during the training period. However, this also requires a well-functioning and software-well-equipped educational arena not only at EKKE, but also in all higher education institutions.

The traineeships for teachers did not go as usual. The main task of students is to gain experience, and this has also been a serious difficulty during the pandemic. They could not gather the right amount of experience or did not have enough time to practice. They can no longer be replaced, so it is necessary to fill in the gaps after entering the work.

These experiences should be seriously evaluated and, if possible, resolved for a possible next difficult period.

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Examining Types and Duration of Teachers' Professional Development Activities and Their Relationship with Job Satisfaction

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Abstract:

Introduction: The aim of the study was to describe the teachers' views on the professional development activities, the frequency of the teachers' participation to such activities and effectiveness of these professional development (PD) activities. What's more, it was aimed to analyse the relationship between PD activities that the teachers participated and their job satisfaction (JS).

Methods: The sample of the study comprised of 357 teachers. In order to seek the answers to the research questions, correlational research models were used in addition to survey. The data was collected through implementation of two different instruments. These were Participation to PD Activities Questionnaire (survey) and Job Satisfaction (JS) Scale. These instruments were developed within the scope of the study.

Results: The findings of the study could be summarized as follows: the teachers' frequency of participation to peer coaching-based PD activities, participated PD activities, number of individualized and self-directed PD activities was at a lower level; however, the teachers restated that they experienced positive effects at higher or moderate levels from PD activities in their teaching practices. Within the scope of the existing study the hypothesis was tested that PD activities would increase the teachers' job satisfaction and the findings were supported. It was seen that there was a positive relationship between the PD activities participated by the teachers and the teachers' job satisfaction.

Discussion: In the study it was noticed that more than one third of the participant teachers did not perform PD based peer coaching and observations, but more than one third of the teachers accessed virtual platforms and watched videos and related feed on lecturing and techniques for PD. In TALIS study done at OECD countries, it was noted that almost half of the teachers participated to peer coaching-based activities.

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Limitations: Data were collected from teachers that research is limited with teachers' perceptions. Research is limited with teachers' professional development activities and their job satisfaction.
Conclusions: It was found out that very few teachers attended educational congresses to present their activities/scientific studies. Therefore, it might be recommended to improve teachers' study skills in terms of scientific studies, and they might be encouraged to present their studies at conferences.

Key words: professional development, human development, job satisfaction, teachers, path analyses.

Introduction

Education is a phenomenon which starts with birth and continues until death. By force of today's modern world, formal education institutions have been founded and become widespread. Children improve their innate potential mostly at schools under the guidance of their teachers and they try to gain the necessary skills they need to have in the 21st century. Teachers are essential for formal education system and teacher's quality has vital influence on educational outcomes. In today's world with the advance of information and communication technologies, continuous professional development (PD) activities are of indispensable elements of teachers' professional lives to provide quality educational facilities needed by their students. PD is approached so comprehensively that it is designed to improve generally teacher's (or school principal's) professional skills or knowledge and includes all the trainings even the ones experienced during teacher training process (Turkish Education Association, 2019, p. 49). Teachers' gaining knowedge, developmet of abilities, skills and creation of opinions, attitudes, and of the orientation of the needed value for deal with a variety of real teaching life situation (Geršicová & Barnová, 2018). PD come along with continuos improvement, gaining knowledge and mastering skills (Noga, 2016). Along with teachers faculties use open educational e-resources like Tweeter for their PD activities (Karataş et al., 2022). Teachers achieve the objectives like improving their professional skills, noticing about latest advances in their fields, adapting their competences with the organization through continuous professional development (Reese, 2010). Calvert (2016) states that professional development starts with teacher's motivation and it should be teacher centered. He claims that it would be appropriate to benefit both from their intellectual capacities and their experiences and suggested "professional learning" concept. In order to convey the teacher's role to large number of people Calvert suggests that teacher's leadership qualities

should be used both during professional development and learning process; interaction between teachers themselves and between teachers and students or other stakeholders should be supported; teachers should be given chance of making selections between professional development activities which they would like to participate in; and the activities with limited scopes should be the ones to be the initial ones to start with. Thus, the permanence of teachers' success connected with professional development activities. Teachers are supposed to have necessary skills and proficiency levels in diverse fields. However, it is essential that teachers should be provided with personal and organizational professional development facilities to equip them with the defined qualifications. Existing teachers must be equipped with the specified skills permanently and effectively through in-service training (Can, 2019). During in service training activities designed for teachers in Turkey, including like seminar, conference, distant education and training course which do not involve teachers' active participation (Zepeda, Parylo, & Ilgan, 2013). According to TALIS 2018 report (OECD, 2019), it was indicated that permanent professional development activities attended by teachers and school principals were face to face trainings/ seminars (teachers' average: 86.0%, school principals' average: 83.8%) and reviewing professional literature (teachers' average: 69.2%, school principals' average: 71.6%). Teachers in OECD countries allocate 38.8 hours of their weekly working for professional activities; 20.6 hours of this period are devoted to in-class-training. As for Turkey, teachers stated that they allocated 24.5 hours for classroom activities out of 31.6 hours of their average weekly working time. It makes approximately 78% of their total weekly working time. Within the scope of TALIS 2018, Turkey is one of the countries where the teachers allocated most of their working time for classroom activities. Besides, teachers in Turkey spent 1.9 hours of their weekly working time for teamwork with their colleagues; and it is stated that Turkish teachers are the ones who spend the least time interacting with their colleagues after Estonian teachers.

Cognitive part of teaching profession consists of background knowledge, pedagogical context and general knowledge. A teacher needs to show higher productivity in the field of art and artistic skills in addition to cognitive domain to demonstrate higher performance in the profession. It is not possible to improve teachers' artistic skills during preservice period since university education weighs theoretical knowledge and gives less chance for practice. Therefore, it is vital for teachers that they have in-service-training when they start teaching in order to have professional adaptation and improvement, keep up with the professional developments and supply their own professional needs (Özen et al., 2019). It is also necessary for teachers that the school principals provide them with professional development possibilities and organize educational atmosphere accordingly. Due to not planning the teachers' weekly

schedule well and not organizing school atmosphere and facilities in a way to encourage the teachers for professional development and participation to PD facilities would cause somewhat decrease in the number of teachers showing interest to participate such facilities. In a number of studies (Can, 2019; Drage, 2010; OECD, 2019) similar results are seen describing that the most important obstacles for teachers' PD were not having sufficient time for participate in such facilities, insufficient school budget for professional development and professional development facilities being incapable of serving teachers' expectancies and needs. There are also a good number of studies on how to design efficient PD facilities. To illustrate: in a comprehensive study (Garet et al., 2001), it was pointed out that the most essential issues which must be noticed were the content of the course, the duration, active mass participation to the course, active learning and the consistency of PD facilities instead of the education model.

In the studies carried out in Turkey, generally the aspects like major topics of in-service training needed by teachers based on their branches and teachers' attitudes towards in service training were studied. It could be stated that more comprehensive studies and analyses are needed beyond teachers' branches. For instance, in a study done on 110 science teachers (Ayvacıl et al., 2014), it was seen that teachers mainly needed current developments related with teaching profession and professional development based on science and technology. What is more, it was restated that regular PD activities could be organized but making these activities obligatory might cause teachers' development potential negative attitudes. In the study carried out by Kaçan (2004) on elementary school teachers, it was pointed out that most of the teachers prefer to get in service training on teaching methods and activities for students, human relationships, communication, effective time management, special education activities and shaping behaviors. The issues which were seen as problems preventing teachers' professional development could be sorted respectively as: Economic problems, heavy course loads, crowded classes, political pressures not believing in the essence of professional development. PD activities are basic for teachers to provide their students with quality education: Lots of activities are organized each academic year within this context: It could be emphasized that it is necessary to reveal the types and frequency of such activities, to show if they have positive influences on teaching process and point out their relationship between the teachers' job satisfaction. Thus, the purpose of the study could be stated as followed.

1 Purpose of the study

The purpose of this study was to analyse the relationship between the participation to PD activities of the teachers who work at preschool institutions, elementary schools, middle schools, general high schools and vocational high schools and their job satisfaction levels. In the related literature there are studies on the relationship between teachers' participation in PD activities and teaching practices (e.g. Hall, 2007; Tyagi, 2010; Whitehead, 2006); but the studies on the relationship between PD activities and their influence on teachers' job satisfaction are limited (Song et al., 2018). Hypothesis of the research could be formulated as follows: PD activities that teachers participate in increase their job satisfaction levels.

Based on the purpose of the study, research questions were formed as the following.

1.1 Research questions

1) What were the descriptive statistics related with the teachers' peer coaching based on PD activities, participated PD activities? The umber of individualized and self-directed PD activities and quantities of engaged PD activities?
2) Did the teachers' participation to PD activities significantly differ in terms of the variables like gender, school types that they worked, professional seniority, educational status and the branches they teach?
3) What was the level of the teachers' job satisfaction?
4) Did the teachers' level of job satisfaction significantly differ in terms of the variables like gender, school types that they worked at, professional seniority, educational status and the branches they teach?
5) Were the teachers' PD activities significant predictors of their job satisfaction?

2 Method

In this part of the study scientific method of the study was explained, research model and the information was given on the population and sample of the study, data collection instruments, analyses related with validity and reliability and data analysis.

2.1 Research model

The research model of the existing study was correlational research model as it aimed to reveal the relationship between the PD activities participated by the teachers and the teachers' job satisfaction. Relational screening model is original

since it proves cause and effect relationships together with the variance of two distinct variables (Fraenkel et al., 2012).

2.2 The population and the sample

The population of the study comprised of the teachers working at public preschools, elementary schools, middle schools and high schools located in the city center of Düzce province. The sample consisted of 357 teachers who were randomly selected from 27 schools located in the city center. Schools were defined as clusters using simple random sampling method, the teachers who were willing to participate to the study were counted in the sample.

2.3 Data collection instruments

The data were collected through implementation of two different instruments. These were Participation to PD Activities Questionnaire (survey) and Job Satisfaction (JS) Scale. These instruments were developed within the scope of the study. For the pilot study (done with 44 teachers who were not involved in the main implementation of the survey and who taught diverse branches at different school levels) considerations of the experts were taken into account; then the number of the items were reduced to 31 in Participation to PD Activities Survey and to 16 in JS Scale. JS Scale was a 5-point Likert type scale: Exploratory and confirmatory factor analysis was done for structural validity to measure its validity and reliability, internal consistency coefficients were measured for reliability. Participation to PD Activities Survey was not suitable for validity and reliability analyses as it measures the frequency of realization of definite behaviours. Considerations of the experts were taken for content validity, some of the items of the survey were revised and some of them were excluded afterwards. Factor analysis was not done for Participation to PD Activities Survey, the items were categorized under four headings and titled as follows: Between 1-5 as “peer coaching based PD activities”, between 7-14 as “participated PD activities”, between 16-23 as “number of individualized and self-directed PD activities”, between 24-30 as “quantities of engaged PD activities”.

Path analysis in an attempt to predict job satisfaction of teachers based on participated PD activities of teachers’ were managed by Lisrel 8.8 statistical package. One of assumptions of path analysis is normal distribution of data. Examining to normal distribution of the data skewness and kurtosis were examined and results were given in Table 1.

Table 1

Skewness nnd Kurtosis results

	Instruments					
	Professional Development				*Job Satisfaction*	
	Peer coaching based PD activities	*Participated PD activities*	*Number of individualized and self-directed PD activities*	*facilities provided by the school and crediting personal achievements*	*Sense of Satisfaction Provided by Teaching Profession*	*facilities related with career and personal development provided by teaching profession*
Skewness	.363	.372	.761	-.860	-.965	-.085
Error for Skewness	.129	.129	.129	.129	.129	.129
Kurtosis	-.960	-.827	-.114	.279	1.201	-.182
Error for Kurtosis	.257	.257	.257	.257	.257	.257

Seen in Table 1 skewness and kurtosis value ranged between -1 and +1 means that data were supposed to be normal distributed (Fraenkel et al., 2012). Regarding of path analysis since the data was normally distributed, Maximum Likelihood estimation method was used.

3 Findings

Descriptive statistics related with the teachers' participation to PD activities were given in the Table 2.

Table 2

Descriptive statistics related with the teachers' participation to PD activities in the recent year

	None		*1*		*2*		$\bar{X}$ *3*		*4 and plus*		$\bar{X}$
PD Constructs	*f*	*%*	*F*	*%*	*F*	*%*	*F*	*%*	*F*	*%*	
Peer coaching based PD activities	143	40.4	62.2	17.4	46.8	13.1	18.2	5.1	86.8	24.3	1.56
Participated PD activities	135.1	37.8	71.9	20.1	41	11.5	21.6	6.06	87.4	24.5	1.59
Number of individualized and self-directed PD activities	156.1	43.7	63.7	17.8	51.4	14.4	21	5.9	64.9	18.1	1.4

The arithmetic mean related with "peer coaching PD activities" which is the first subscale of PD questionnaire was found out to be $\bar{X}$ =1.56. The subscale had 5

items and it was stated that mainly classroom observations and meetings upon classroom observations were "never" done. In other words most of the teachers did not join any observations or meetings intending PD. The arithmetic mean related with "participated PD activities" which is the second subscale of PD questionnaire was found out to be $\bar{X}$=1.59. Regarding general average of the activities mentioned in seven statements of the questionnaire such as the number of the books and articles read by the teachers, congress, symposium, meeting, workshop etc., it was also revealed that the teachers' average was quite low in the recent year concerning their personal development initiatives and participation in activities aiming at PD. The arithmetic mean related with "individualized and self-directed PD activities" which is the third subscale of PD questionnaire, was found out to be $\bar{X}$=1.4. It was seen that general average of eight statements was low involving the teachers' distinctive method and techniques, produced projects, exhibitions, teaching materials developed by them, relations with internal and external stakeholders.

Furthermore, it was determined that there were significant differences in "individualized and self-directed PD activities", which is the third subscale of the questionnaire based on the participated teachers' branches [F (6,350)=4,459; p<.05]; that is to say, teachers teaching vocational branches ($\bar{X}$=15.75) participated more PD activities than elementary school teachers ($\bar{X}$=9.47) and PE teachers ($\bar{X}$=6.00), art and music teachers ($\bar{X}$=14.08) participated more PD activities compared to PE teachers ($\bar{X}$=6.00). Once again, in this subscale there were significant differences based on the teachers' seniority [F (5.351)=4.557; p<.05], the teachers with 21 years professional seniority or above ($\bar{X}$=15.20) participated more PD activities than the teachers with lower seniority levels. Furthermore there were significant differences between the teachers based on the school types that they work [F (4.352)=4.890; p<.05]; namely, the teachers working at elementary schools ($\bar{X}$=9.54) performed individualized PD activities less frequently compared to middle school ($\bar{X}$=10.22) and vocational high school teachers ($\bar{X}$=13.25). When the teachers' PD activities were compared based on their educational status, it was noticed that there were significant differences in all the subscales of the questionnaire as peer coaching based on PD activities [t (355)=-2,218; p<.05], participated PD activities [t (355)=-4; p<.05] and quantities of engaged PD activities [t (355)=-4,56; p<.05]. Specifically, teachers with postgraduate degrees participated more PD activities than the ones with bachelor's degrees.

Additionally, it was observed that there were significant differences in "the quantities of engaged PD activities" which is the fourth subscale of the questionnaire based on the participated teachers' seniority [F (5.351)=2.753; p<.05]; therefore it might be stated that the teachers with 3-5 years seniority ($\bar{X}$=101.61) participated in more PD activities in terms of duration compared to

the ones with 21 years or above seniority levels ($\bar{X}$ = 59.50). Descriptive statistics related with JS scale were given in the Table 3.

Table 3

Descriptive statistics related with JS scale

Subscales	$\bar{X}$	*Sx*
Facilities provided by the school and crediting personal achievements	4.49	.66
Sense of satisfaction provided by teaching profession	4.36	.76
Facilities related with career and personal development provided by teaching profession	3.72	.97

Seen in the Table 3, it was found out that descriptive statistics related with the subscales of JS scale was high. In the study, it was seen that average scores of "facilities provided by the school and crediting personal achievements" and "sense of satisfaction provided by teaching profession" subscales were quite high; as for "facilities related with career and personal development provided by teaching profession" subscale, the average score was seen to be just above the average.

3.1 Structural equation modelling related to the prediction of the teachers' job satisfaction affected by the frequency of pd activities participated by the teachers

Four diverse analyses were done on the prediction of "job satisfaction" which was the dependent variable through PD activities participated by the teachers which were the independent variable. The first three analyses were done on each subscales of job satisfaction, the last analysis was done on total scores of both dependent and independent variables. In this context: Independent variable had four diverse subscales, dependent variable had three subscales, higher scores for PD activities expressed more activities in terms of number, higher scores from JS scale expressed higher job satisfaction levels. Upon doing the analysis for the prediction of the first subscale of JS scale which was "facilities provided by the school and crediting personal achievements" through PD activities participated by the teachers: It was seen that t-values were insignificant related with peer coaching based PD activities which was the first subscale of professional development. Thus, the mentioned subscale was excluded from the model, the results were shown in the Figure 1 analysis which was redone after excluding the subscale from the model.

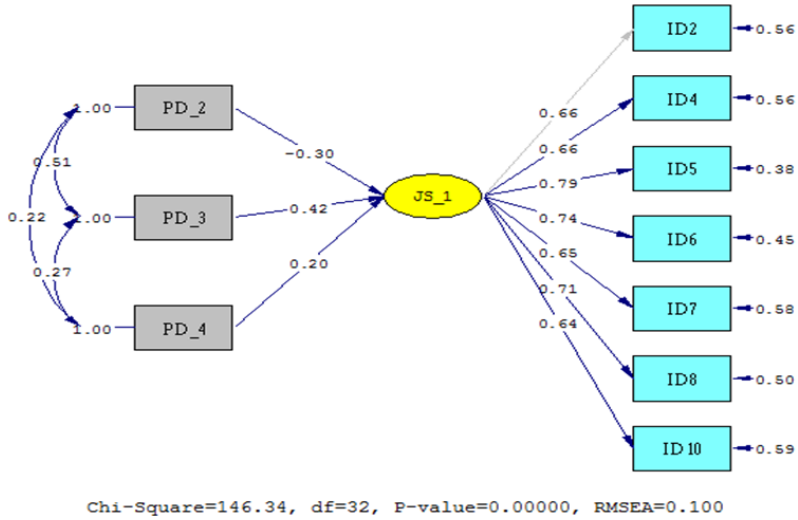

Figure 1. The results of path analysis related with the prediction of facilities provided by the school and crediting personal achievements as the first subscale of JS scale through PD activities participated by the teachers.

Seen in the Figure 1, it was found out that factor loads of the indicators in JS scale were high and varied between .64 and .79, both items from job satisfaction to related indicators as latent variable and t-values relating PD subscales to job satisfaction were all significant. Both the subscales of professional development and t-values of the items of the first subscale of JS scale were significant. Fit indices related with the model were given in the Table 4.

Table 4

Fit indices related with the prediction of facilities provided by the school and crediting personal achievements as the first subscale of JS scale through PD activities participated by the teachers

X^2	SD	P Value	CFI	NFI	AGFI	IFI	GFI	SRMR	RMSEA
146.34	32	0.000	.95	.93	.87	.95	.92	.048	.10

Seen in the Table 4, fit coefficient was X^2/sd=4.57 and at a medium level. Besides, CFI, NFI, IFI, GFI and SRMR2 showed acceptable fit indices, but RMSEA and AGFI gave fair fit indices. Taking all the values between model

and data set into account, it could be stated that model had acceptable indices.
Considering the values in the Figure 1, it was disclosed that the standardized coefficients between subscales of teachers' PD and the first subscale of JS scale were: Negative between 'participated PD activities' (PD_2) and ƛ=-0.30; positive and at a low level between 'individualized and self-directed PD activities' and ƛ=0.42 (PD_3), 'quantities of engaged PD activities' (PD_4) and ƛ=0.20. Regression equation regarding the model was as follows:
The first subscale of JS scale, "Facilities Provided by the School and Crediting Personal Achievements"=-.30* +.042 individualized and self-directed PD activities +.20 quantities of engaged PD. Error Variance=.80; R^2=.20. PD activities as the independent variable explained 20% of the variance in facilities provided by the school and crediting personal achievement which was the subscale of JS scale as a dependent variable.
In the analysis done in order to predict "sense of satisfaction provided by teaching profession" subscale of JS scale through PD activities attended by the teachers, t-values related to peer coaching based PD activities which was the first subscale of professional development were seen to be insignificant. Thus, the subscale was excluded from the model. The results of the repeated analysis were given in the Figure 2.

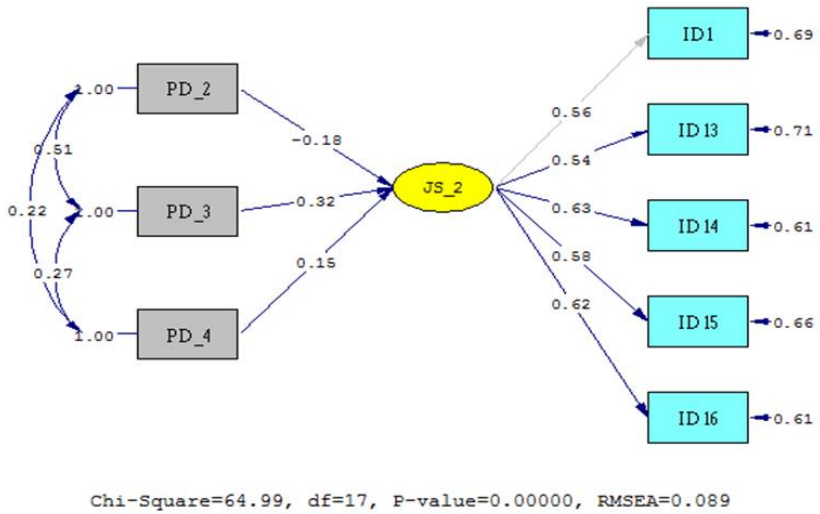

Figure 2. The results of path analysis related with the prediction of sense of satisfaction provided by teaching profession subscale of JS scale through PD activities participated by the teachers.

Seen in the Figure 2, it was found out that factor loads of the indicators in JS scale were varied between .56 and .63 and they were at reasonable level. The items leading to the relevant indicators from job satisfaction which was the latent variable were all significant as well as the t-values for the "sense of satisfaction provided by teaching profession" which was one of the JS subscale. Fit indices related with the model were given in the Table 5.

Table 5

Fit indices related with the prediction of sense of satisfaction provided by teaching profession subscale of JS scale through PD activities participated by the teachers

X^2	SD	P-Value	CFI	NFI	AGFI	IFI	GFI	SRMR	RMSEA
64.99	17	0.000	.93	.90	.91	.93	.96	.060	.089

Seen in the Table 5, fit coefficient was X^2/sd=3.82 and at medium level. Besides, CFI, NFI, IFI, GFI, AGFI and SRMR2 showed acceptable fit indices, but RMSEA gave fair fit indices. Taking all the values between model and data set, it could be stated that model had acceptable indices.

Considering the values in the Figure 2, it was found out that the standardized coefficients between subscales of teachers' PD and the second subscale of JS scale were: Negative between 'participated PD activities' (PD_2) and ƛ=-0.18 and positive and at a low level between 'individualized and self-directed PD activities' and ƛ=0.32 (PD_3), 'quantities of engaged PD activities' (PD_4) and ƛ=0.15. Regression equation regarding the model was as follows:

The second subscale of JS scale, "The Sense of Satisfaction Provided by Teaching Profession"=-.18* + participated PD activities +.032 individualized and self-directed PD activities + .15 quantities of engaged PD. Error Variance=.15; R^2=.11. PD activities which was the independent variable, explained 11% of the variance in the sense of satisfaction provided by teaching profession which was the subscale of JS scale as a dependent variable.

In the analysis done in order to predict "facilities related to career and personal development provided by teaching profession" third subscale of JS scale through PD activities atanded by the teachers, t-values related to peer coaching based PD activities, which was the first subscale of professional development, and quantities of engaged PD activities which was the fourth subscale, were seen to be insignificant. Thus, the subscales (PD_1 and PD_4) were excluded from the model. The results of the repeated analysis were given in the Figure 3.

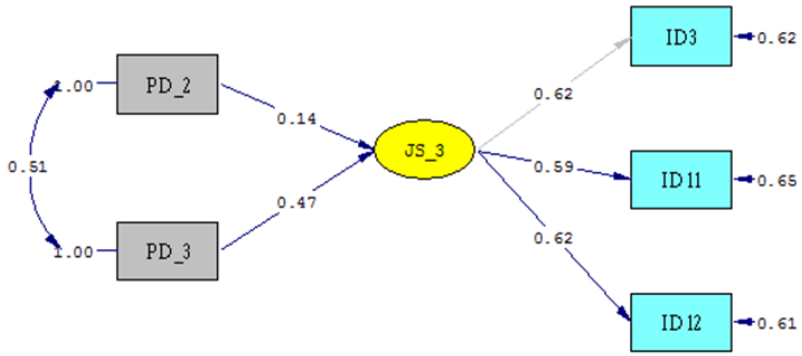

Figure 3. The results of path analysis related with the prediction of facilities related with career and personal development provided by teaching profession subscale of JS scale through PD activities participated by the teachers.

Seen in the Figure 3, it was found out that factor loads of the indiciators in JS scale were varied between .59 and .62, both items from job satisfaction to related indicators as latent variable and t-values relating PD subscales to job satisfaction were all significant. Both the subscales of professional development and t-values of the items of the career and personal development provided by teaching profession subscale of JS scale were significant. Fit indices related with the model were given in the Table 6.

Table 6

Fit indices related with the prediction of career and personal development provided by teaching profession subscale of JS scale through PD activities participated by the teachers

X^2	SD	P-Value	CFI	NFI	AGFI	IFI	GFI	SRMR	RMSEA
40,86	4	0.000	.91	.90	.84	.91	.96	.058	.161

Seen in the Table 6, fit coefficient was X^2/sd=10.22 and at a medium level. Besides, CFI, NFI, IFI, GFI and SRMR2 showed acceptable fit indices, but RMSEA and AGFI gave fair fit indices. Taking all the values between model and data set into account, it could be stated that model had acceptable indices.
Considering the values in the Figure 3, it was found out that the standardized

coefficients between subscales of teachers' PD and the third subscale of JS scale were: Positive and at a low level between 'quantities of engaged PD activities' (PD_2) and ƛ=0.14 and 'individualized and self-directed PD activities' (PD_3) and ƛ=0.47 Regression equation regarding the model was as follows:
The third subscale of JS scale, "Career and Personal Development Provided by Teaching Profession"=+.014 * + quantities of participated PD activities +.047 quantities of engaged individualized PD. Error Variance=.69; R^2=.31. PD activities which are the independent variable explained 31% of the variance in the career and personal development provided by teaching profession which was the subscale of JS scale as a dependent variable. The results of path analysis related with the prediction of total score of the JS scale through PD activities participated by the teachers were given in the Figure 4.

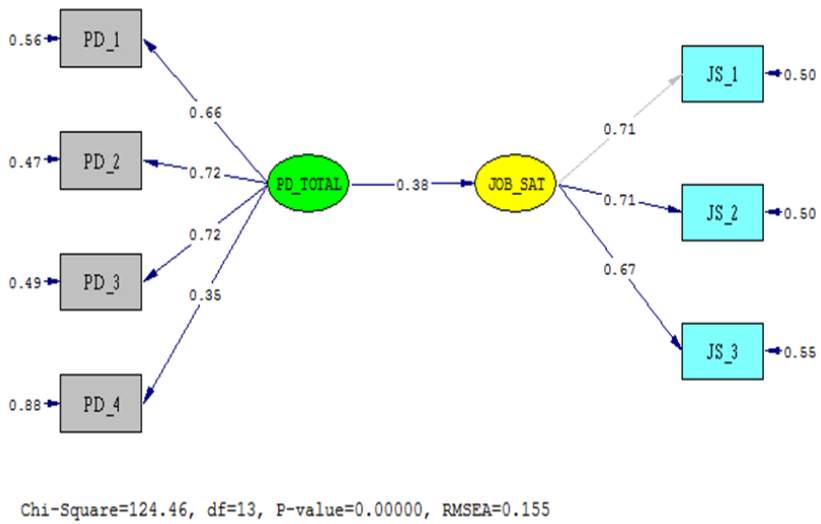

Figure 4. The results of path analysis related with the prediction of the teachers' JS through PD activities participated by the teachers.

Seen in the Figure 4, it was found out that the relationships between factor loads of the indicators (factors) in JS scale and the total score of the scale varied between ƛ = 0.67 and 0.71; the relationships between the indicators of the PD questionnaire and total score of the scale varied between ƛ= 0.35 and 0.72. Both the t-values of the items from the job satisfaction as latent variable to the indicators and t-values from PD questionnaire to the related factors were all significant. Fit indices related with the model were given in the Table 7.

Table 7

Fit indices related with the prediction of the teachers' job satisfaction through PD activities participated by the teachers

X^2	SD	P-Value	CFI	NFI	AGFI	IFI	GFI	SRMR	RMSEA
124,46	13	0.000	.85	.84	.80	.86	.91	.091	.155

Seen in the Table 7, fit coefficient was X2 / sd = 9.57 and at a medium level. Besides, IFI and GFI showed acceptable fit indices, but CFI, NFI, SRMR, RMSEA and AGFI gave fair fit indices. Taking all the values between model and data set into account, it could be stated that model had acceptable indices.
Considering the values in the Figure 4, it was found out that the standardized coefficients between subscales of teachers' PD and JS scale were .38; Error Variance was .86; R2 = .14. PD activities attended by the teachers which was the independent variable explained 14% of the variance in job satisfaction as the dependent variable.

4 Discussion, conclusions and recommendations

In this part of the study, conclusions were reached as a result of the study, discussion and recommendations in accordance with the findings were mentioned.

4.1 Results related with PD activities

In the study it was noticed that more than one third of the participant teachers did not perform PD based peer coaching and observations, but more than one third of the teachers accessed virtual platforms and watched videos and related feed on lecturing and techniques for PD. In TALIS study done at OECD countries, it was noted that almost half of the teachers participated in peer coaching based activities. In a study which lasted two years and was carried out in South Africa (Cilliers et al., 2019), reasonable improvements were observed in the students' reading skills whose teachers participated in PD activities. Similarly, secondary school teachers participated to an education program in Brazil as a part of Ceara Program. As a result of the program, teachers reduced the time that they spent for classroom management, increased the time they allocated to instruction, they also used interactive strategies which increased student engagement more frequently. Eventually, it was monitored that the students' academic outcomes were improved at local and national level (Bruns et al., 2018). In another study done on Turkish and American teachers (Zepeda et al., 2013), it was stated that Turkish teachers paid classroom visits to their colleagues in terms of peer coaching once a year on the average, while American teachers visited their colleagues three times or more on the average.

Reviewing the related studies done in Turkey on peer coaching, the studies were seen to include teacher candidates and instructors teaching in the field of foreign language (Hatip, 2006; Şen 2008). These studies mentioned positive aspects of peer observations; for instance, in the study carried out by Şen (2008) it was asserted that peer observations were of the basic instruments for improving teaching skills. In another study done by Hatip (2006) it was indicated that peer observation helped the teachers to improve their awareness, notice their strengths and weaknesses, increase communication between colleagues, improve professional development, share experiences, improve their professional relations and keep their professional skills up-to-date.

It was stressed that Sharing and disseminating good teaching practices, within the scope of coaching, through actual dialogues between colleagues contributed to teachers' professional development, as a result of peer observation teachers' self-confidence (Bell & Mladenovic, 2008), collegiality, self-awareness and respect were all improved, and these were the aspects which would enhance the quality of education (Bell & Mladenovic, 2008). According to the results obtained from TALIS 2013 (OECD, 2014), OECD countries frequently made use of peer observation as a kind of PD activity. It was determined that 29% of the secondary school teachers participated in TALIS 2013 Questionnaire were participants of PD activities in the recent year like mentorship, peer observation or peer coaching. The results of TALIS Questionnaire were similar to the existing study in this respect. Likewise, Bozak and Demirtaş (2017) concluded in their study that peer coaching supported teachers in terms of motivation and pointing out their own strengths, increasing cooperating and helping each other.

In addition to its positive aspects, peer coaching has some restrictions. It was found out in a study (Jacobs et al., 2018) conducted on 71 teachers that individualized coaching was not considered in a positive way by all the teachers. One fifth of the participant teachers put up resistance to peer coaching approach. There are studies which stressed that peer coaching could not be generalized, sometimes it could be unclear and some problems could arise in terms of objectivity (Lomas & Nicholls, 2005). It was stated in some of these studies that having emotional changes or changes in terms of manner between colleagues (like being touchy and sensitive about critics) after observations, not treating in a constructive manner during or after observations (Hammersley-Fletcher & Orsmond, 2005; Lofthouse & Hall, 2014) influenced peer observations in negative ways.

Analysing findings of the study in terms of teachers' participation to PD activities, it was identified that the most frequently participated PD activities were group meetings, reading books or articles, organizing meetings with school managers to improve teaching activities at school and participating in service training courses respectively. Participating in congresses or symposiums as

auditors was not frequent. Presenting their own papers or scientific studies was seen to be low as an activity. It was found that 75% of the teachers of OECD countries participated in activities like courses or seminars; almost half of them participated to conferences and less than half of the teachers participated in professional networks, one third of them participated in virtual courses or seminars. Moreover, it was restated that 90% of the teachers from Australia, Latvia, Lithuania, Singapore and Slovenia who participated in courses or seminars in the recent year; 70% of the teachers from Alberta (Canada), Croatia, Latvia and Shanghai (China) participated in educational conferences and presented their papers.

Within the scope of the study, it was inferred that the teachers read a bit more than two books on the average in the recent year, one third of them read four or more books, and one fifth of them did not read any books. Whereas, it was revealed that more than 70% of the teachers from OECD (2019) countries read professional/academic books in the recent year. In the report by Ministry of National Education of Turkey (2019), on analysing teachers' reading culture working at elementary and secondary schools, it was stated that almost half of the teachers (51.3%) read between 4-12 books a year. More than half of the teachers were determined to share between 1-100TL for books in a year, most of these teachers emphasized that they considered the cost of the books as expensive, they also stated that they allocated 1 hour (half of it during weekdays and half of it during weekends) or less to readings books.

In the existing study, it was seen that the teachers with post graduate degree participated more in all of the subscales of PD activities compared to the ones with bachelor's degree. Therefore, it might be stated that post graduate education considerably contributes to teachers PD. Moreover, in the study by Toprak and Taşğın (2017) the teachers' motivation for postgraduate education was low as this process was backbreaking and excessive for them. Noga (2016) suggest that teachers should be interest to develop their own skills along with knowledge in order to influence and affect positiveley improvement of students they teach. Besides, economical costs of the education, adapting weekly schedule to post graduate courses, negative feedbacks from their colleagues, not finding the suitable program for education, difficulties of being admitted to a program, lack of information on the educational process, misconceptions about its contributions to professional development were sorted as the limitations of post graduate education.

In the study it was found out that arithmetic mean of individualized and self-directed PD activities, which was the subscale of PD, was low. It was detected that almost three third of the teachers used one or more typical methods and techniques; more than one fourth of them did not. It was also ascertained that more than one third of the teachers took part at least in a project throughout their

professional career, but the number of the teachers who took part in four or more projects was relatively low. The average of the exhibitions organized by teachers in their career concerning educational affairs per year was below one; the number of teaching materials designed by them was almost three for previous calendar year. It was seen that the average of the actions like cooperative projects, joint work or request for help from external stakeholders (like universities, nongovernmental organizations, municipalities) per years was really low, it was found to be below one for previous calendar year.

Examining TALIS 2013 report (OECD, 2014), it was highlighted that participating to courses and workshops (71%) had the highest rate among the teachers' individualized PD activities. Courses and workshops were followed respectively by teachers presenting their studies to their colleagues and making discussions on them (44%), joining special networks designed for teachers (37%), individualized or collaborative studies depending on the teachers' field of interest (31%). Mentorship/peer observations or coaching (29%), professional visits to neighbouring schools except for their own (19%), in-service training courses organized by external stakeholders (14%) (commercial, public or non-governmental organizations), follow-up visits to public institutions, nongovernmental organizations or workplaces (13%). Teachers of OECD countries were reported to be participated individualized PD activities more frequently compared to Turkish teachers who were the participants of this study.

According to the questions regarding the time spent on PD activities by teachers in the previous calendar year, the following responses were obtained: Almost 40% of the teachers spent 21 hours and 20% of the teachers spent 61 hours or more to internet based PD activities; 77% of them spent 10 hours or less for collaborative professional activities with colleagues; similarly, 77% of them spent 10 hours or less for workshops, in service training courses, conferences, symposium etc. More than 95% of the teachers spent less than 10 hours separately in the previous calendar year for i) meetings with parents ii) meetings on educational issues with upper managers iii) PD based supports for novice teachers iv) PD based activities with colleagues. It could be deduced that the mentioned period of time is not sufficient for teachers to provide quality educational services.

As it was reported by the Turkish Ministry of National Education (2019), 1.114.956 teachers participated in 35.374 in-service training activities which were organized locally or nationally in 2018 (It is possible for a teacher to attend in more than one activity). Each teacher participated 38 hours in service training activity on the average. In Turkey, 52.944 teachers (it makes 4.48% of total number of current teachers) participated in 9050 different PD activities across the country. These activities included; teachers' leadership and classroom management, competence, management of instructional affairs, measurement

and evaluation, material adaptation, communication, using technology effectively, foreign language education, professional ethics. Akçay-Kizilkaya (2012) found out in the study carried out on teachers that 74% of the teachers participated in courses and workshops, 10% attended postgraduate education programs, 21% made school visits, 44% did individual or group researches, 26% made classroom observations and mentored their colleagues.

4.2 Results related with relationship between participated pd activities and job satisfaction

As a result of the first path analysis done to analyse the relationship between job satisfaction and professional development, it was found out that there were negative significant relationships between "facilities provided by the school and crediting personal achievements" as the first subscale of JS scale and participated PD activities, and there were significant positive relationships between "facilities provided by the school and crediting personal achievements" and number of individualized and created PD activities and the quantities of engaged PD activities. It was seen that PD activities explained 20% of the variance in "facilities provided by the school and crediting personal achievements". In the second path analysis done to analyse the relationship between job satisfaction and professional development. It was found out that there were negative significant relationships between "sense of satisfaction provided by teaching profession" and participated PD activities; and there were positive significant relationships between "sense of satisfaction provided by teaching profession" and number of individualized and created PD activities and the quantities of engaged PD activities. It was seen that PD activities explained 11% of the variance in "sense of satisfaction provided by teaching profession". In the third path analysis done to analyse the relationship between job satisfaction and professional development; it was found out that there were negative significant relationships between "facilities related with career and personal development provided by teaching profession" and participated PD activities, and number of individualized and created PD activities. It was seen that PD activities explained 31% of the variance in "facilities related with career and personal development provided by teaching profession". The explanation rate of the variance in the subscale was relatively higher. As a result of the forth path analysis done to analyse the prediction of total score of job satisfaction through professional development activities attended by the teachers; it was found out that the standardized coefficient between PD activities and job satisfaction was .38; as a result of the analysis it was concluded that "PD activities attended by the teachers" which was the independent variable explained 14% of the variance in "job satisfaction" which was the dependent variable.

Hypothesis of the research was given in Figure 4. In addition to the research done by OECD on teachers in a good number of countries, there are some other studies supporting the findings of the existing study. Whitehead (2006) found in the study done on 300 urban and 300 suburban elementary teachers that there were positive relationships between PD and job satisfaction. In another qualitative study done by Hall (2007), it was pointed out that collaborative PD activities positively influenced teachers' job satisfaction. Inyoung and Loadman (1994) revealed that PD actives were among the factors which highly influenced teachers' job satisfaction. In the study carried out by Akçay-Kızılkaya (2012), positive relationships were found between teachers' participation in PD activities and their job satisfaction. Furthermore, in a study, done on employees working at research and development department of a high technology company (Chen et al., 2004), it was found that job satisfaction had high influence on PD (.78 regression coefficient value); PD level was seen as a mediator variable between job satisfaction and productivity. It was also found in this study which was carried out by sampling the teachers that duration of the attended PD activities predicted the teachers' job satisfaction even if it was at a lower level. On the other hand, there are studies which were done on the workers of some other sectors, such as Acker (2004) on social workers, Rowden (2002) on employees of small sized enterprises, Meagher (2011) on teachers, stated that there were no significant relationships between duration of PD activities and job satisfaction. Similar to these studies, Bennet (2006) analysed the relationship between duration of PD activities and job satisfaction on the workers of information technology departments at higher education institutions. As the result of the analysis significant negative relationships at a lower level were found between upper managers' job satisfaction and courses attended at college. However, no significant relationships were found between all kinds of PD activities and job satisfaction. As for the analysis for the ones who did not have any managerial positions, any significant relationships were not found between all types of PD activities and job satisfaction; so, it could be emphasized within the scope of mentioned study that the relationships between PD activities and job satisfaction mainly based on the type of attended activities and professional position (having a managerial position or not), the results of the study could not be generalized to include all the participants.

4.3 Suggestions

1. Some arrangements could be recommended for the encouragement of teachers to support peer observations and peer coaching, share their experiences with their colleagues; teachers weekly schedules might be planned at the beginning of the academic year and such arrangements might be disseminated.

2. It was found out that very few teachers attended educational congresses to present their activities/scientific studies. Therefore, it might be recommended to improve teachers' study skills in terms of scientific studies, and they might be encouraged to present their studies at conferences.
3. Economical supports might be provided, and in-service training courses could be organized for teachers to improve their teaching material adaptation skills.
4. Experienced and successful teachers' weekly schedules could be arranged to give them the possibility of mentoring to novice teachers in order to improve their teaching and material adaptation skills. Moreover, novice teachers could be monitored through a PD system which might be created within the school.
5. Social and educational meetings could be organized regularly after school in order to increase communication between teachers, to enhance the exchange of information between colleagues and to evaluate educational outcomes.
6. It could be recommended that training needs analysis might be done for each branch based on teachers' considerations to provide teachers attending to PD activities. Practical trainings could be planned depending on teachers' branches.
7. In addition to traditional PD activities (course, seminar, conference), teachers' participation could be encouraged to individualized PD activities which might increase teachers' job satisfaction, and which might positively influence their professional expectations.
8. Teachers' participation in PD activities could be encouraged to increase their job satisfaction.

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Roma Mentor Project: The Roma Intellectual Friend Model

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Abstract:
Introduction: The Roma Mentor Project has originally been the experimental educational model of Open Society Institute for multiply disadvantaged Roma and non-Roma youth in the period 2006-2013. Following the closure of OSI's experimental and alternative educational projects, it has been run further, during the 2016/17 academic year, with the support of the Norway Grant, by the Bhim Rao Association (located in Northern Hungary).
Purpose: The Roma Mentor Project aims to establish the pedagogical model of the intellectual Roma friend in order to effectively overcome the sociocultural disadvantages of the Roma and non-Roma children with multiply disadvantages.
Methods: Throughout the program a Roma mentor may be a Roma intellectual, artist or well-known figure from the media, whose primary goal is to act as a role model for the Roma children through presenting their own personal and professional life, as well as to become a friend of the mentored.
Conclusions: A mentor from Roma origins appears during the project as a Roma intellectual friend in multiply disadvantaged Roma and non-Roma children's lives, which is especially true considering that the Roma mentor draws tools of socialization from Roma culture.

Key words: Roma, education, pedagogy, innovation, mentor.

Introduction

The Roma Mentor Project has originally been the Open Society Institute's experimental and alternative educational model in Budapest for Roma and non-Roma disadvantaged children. Its primary aim has been the diminishing of prejudice towards Roma communities (through developing narratives about Roma culture at school) and to shape and strengthen Roma children's identity

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(through getting to know to the values of Roma history, literature, folk dance, music and arts).

The Roma Mentor Project has been launched by Open Society Institute and coordinated by the Pressley Ridge Hungary Foundation in the 2006/07 academic year, at this time exclusively in Hungary. In the 2007/08 academic year as well the Roma Mentor Project has been implemented by the Pressley Ridge Hungary Foundation again, somewhat orienting towards international locations too (Macedonia, Romania, Bulgaria, Slovakia and the Czech Republic[2]). Eventually, in Hungary, the project has been coordinated by the Bhim Rao Association (located in Northern Hungary) from the 2008/09 academic year on, while the Pressley Ridge Hungary Foundation has been handling the RMP internationally.

In the 2009/10 academic year – due to lack of financial resources – the Roma Mentor Project has not been operating. In academic years 2010/11, 2011/12 and 2012/13, the Bhim Rao Association has also been a coordinator, followed by the termination of resources by Open Society Institute.

In the 2006/07 academic year, the project operated at 21 locations altogether (19 of which were educational facilities, while 2 of them were non-profit organizations). While there are no available data about the 2007/08 academic year, it is certain that from the 2007/08 academic year, Open Society Institute has only been able to finance 10 locations as part of the experimental project.

After a one-year-long hiatus, in 2010/11 as well as the 2011/12 academic year there were 15 RMP locations, while in the 2012/13 academic year there were 12 locations.

Following a three-year-long pause, the program has been re-launched in the 2016/17 academic year, this time with the support of the Norway Grant, focusing exclusively on Hungary, but after that, as the national and international fundings ran out, the financing opportunities became more limited, that is, the Roma Mentor Project ceased to exist as an extracurricular program.

1 Literature review

The author of this paper is in a special position as there is no existing international literature about the Roma Mentor Project in English (with the exception of one handbook published by Open Society Foundations in English) – the scholarly publications about this topic are almost exclusively written in Hungarian. These are on the one hand Open Society Foundations' publications (Roma Mentor Project – Mentor Database, 2008; Gáspár, Gruber, Kubicskó, Liddle, & Rózsa, 2011) and on the other hand, the author's own publications and

[2] The Roma Mentor Project has come to realization from the 2008/09 academic year in Romania, while the Czech Republic has joined in 2011/12.

those of written with his colleagues (Bogdán, 2009; Bogdán, 2012; Mészáros, Bogdán, & Csereklye, 2012; Bogdán, & Némethné Végh, 2016).
Open Society Foundations' 2008 Roma Mentor Database contains Roma mentors' professional biographies, including photographs, who were nominated in 2008 for invitations to act as mentors for an academic year or as a guest mentor for a few occasions. Open Society Foundations' 2011 Training Handbook reports about the ideal circumstances and methodological background the Roma Mentor Project operates in general.
Firstly, the previous publications of this author provide a thorough overview of the Program's primary principles, main aims and methods of implementation and the role of Roma mentors and non-Roma coordinators' (teachers) role. Secondly, the author discovers the RMP-characters and types that were formed between 2006 and 2013 in terms of the Roma mentors' professional background and areas of interest. Thirdly, they aim to illustrate the author's cooperation in a Northern Hungarian school with his coordinator, Judit Némethné Végh, and their inter- and multicultural pedagogical concept that have for three years compensated for the students' pedagogical, sociological and sociocultural disadvantages, complemented by a half-year experience in the capital city, Budapest, as a substitute Roma mentor.
Due to the lack of relevant scholarly literature, publication of valuable research and information about the Roma Mentor Project is feasible only in case the author collaborates with the implementers (Open Society Institute, Pressley Ridge Hungary Foundation, Bhim Rao Association) in order to get access to relevant annual documentation that serve as basis for outlining the Roma Mentor Project's most significant pedagogical features and content.

2 Methodology

As highlighted above, documentation from all existing Hungarian RMP-locations is necessary (pedagogical missions, pedagogical aim, pedagogical content, learning content, annual activity planning, visual and written activity process documentation, mid-annual and annual professional reports, training descriptions, promotional issues, information regarding Roma mentors' qualifications and professional areas of interest, Likert-scale attitude observation documentations) to draw pedagogical-educational conclusions, based on which qualitative (content- and document based analysis) as well as quantitative (data-based) analysis can be applied. It is essential to note that Likert-scale attitude observation tests have been applied on students in the period between 2006 and 2013 (at the beginning and end of the year) that occasionally produced spectacular quantitative results, while another times the results were not comprehensive due to lack of data.

Mainly for the latter reason (lack of data) and considering that Likert-scale attitude tests have not been applied in the academic year 2016/17 (primarily because of the partial conceptual change in the Roma Mentor Project), for the sake of unified analysis, this paper does not apply quantitative analysis, rather focuses on qualitative (content- and document-based) analysis as it is applicable to all academic years. As the author of this article has already analyzed the period between 2006 and 2013 in previous publications, the present study does not focus on this period, rather the 2016/17 academic year. The study presents this RMP version and thoroughly analyzes it as the most current version of the Project.

3 Roma Mentor Project

In the majority of cases, the program focused on primary school students, occasionally including high school students too.

The main aim of the Roma Mentor Project is to support Roma children in developing their self-understanding and confidence and to broaden their awareness and knowledge about Roma culture. Besides, its primary goal is to offer opportunities for Roma children to meet well-known Roma figures who have succeeded in their lives and whose personal way of live, academic background or professional career may be beneficial and exemplary for the children.

The Roma Mentor Project connects Roma intellectuals, professionals and artists who have flourished in their own life trajectories and who focus on Roma culture during the after-school sessions with – in most of the cases – Roma children.

During these sessions, the Roma mentors help Roma children with their expertise and share their life experiences with them, socialize them and actively aim at diminishing the socio-cultural boundaries and disadvantages of Roma children.

The programs take place 16 times throughout the academic year. In average, Roma mentors meet the mentored students once in a fortnight (in an interval of 2-4 hours, although there are opportunities for multiple-day excursions or camps).

Within the Roma Mentor Project's framework, the Roma Mentor Database contains the professional CV and photograph of well-known Roma public figures who offered to act as guest mentors to enrich and diversify the annual program provided by the permanent Roma mentor at the given RMP location. Until now, such well-known public figures have decided to be guest mentors as Laura Baranyi, editor and reporter at Radio C; Csaba Báder, president of RomNet Media Foundation; György Makula, former spokesperson of the Hungarian National Police Headquarters; Henrik Kállai art- and cultural

manager; Ferenc Kunhegyesi artist or Sándor Radics psycho-pedagogue, public education expert.

In general, based on the Roma mentors' qualifications and their areas of interest in Roma culture, 3 types of RMP programs can be identified in the period 2006-2013[3]: "1. Activities focusing on strengthening Roma identity and lifestyle advising; 2. Programs targeting on strengthening Roma identity almost exclusively; 3. Sessions with core attention paid to self-knowledge and skills development.

Within the framework of the first category, Roma mentors serving as role models have held activities where mentored Roma children could get familiar with Roma history, fine arts, gastronomy, folk dance, language, the advantages of studying and the educational system, the relationship of Roma people with police, law-abiding behavior and various types of discrimination and prejudice.

In terms of the second category, special emphasis was put on Roma history, literature, religious life, mythology and folklore. As part of the third category, children were given a chance to come to know numerous arts techniques, skills- and practice-based development, self-identification and orientating in the legal world, as well as getting to know to societal processes (Bogdán, 2012)"

Open Society Institute's program has changed significantly in its content: from the academic year 2010/11 on, more emphasis has been paid on the involvement of non-Roma disadvantaged students besides the consolidation of Roma students' identity. Thus, the Roma Mentor Project has moved towards the management of inter-ethnic relations and the application of multi-and intercultural toolbox.

The latter program component has remained significant in the 2016/17 academic year – financed by the Norway Grants – with one main distinction compared to the previous versions of the project. Hereby the Bhim Rao Association – having the absolute freedom in constructing the program - decided to pay special attention to the third RMP-type outlined above. Therefore, the Association invited Roma artists (fine arts, actors and musicians) exclusively as Roma mentors, so that non-Roma students could also get familiar primarily with the artistic areas of Roma culture and ethnography.

10 RMP locations received financial support in the 2016/17 academic year, focusing on the age group 10-14 exclusively – although this criteria has been handled quite flexibly, in case of divergences the Roma mentors and non-Roma pedagogue coordinator were not held against.

With regard to the 2016/17 academic year, when the project was managed single-handedly by the Bhim Rao Association, three RMP-types can be identified as well: 1. Performing arts, 2. Filmmaking, 3. Fine arts (Bogdán, 2013)

[3] In Macedonia has also been developed type 4: type of field exploration.

Out of the 10 RMP locations, four have been heavily involved with performing arts, one with filmmaking while five were focusing on fine arts. An interesting motive of the RMP programs focusing on performing arts is the feature that two subgroups have been busy with musical performance while two other subgroups focused on acting.

In each group, Roma mentors have been working with project-based methodology as besides the cognitive- and skills-based development, a final artistic product (play, musical piece of art, fine arts exhibition) has also been central to the 16 sessions so that they could later (as the closure of the program) be presented for the local audience (parents, pedagogues, classmates) at each of the RMP locations and those interested in the RMP project in the capital city.

3.1 Performing arts[4]

In 2016/17, the performing arts division of the RMP has been represented by György Lakatos, leader of the authentic Roma music group 'Romano Glaso'; Zsolt Farkas Roma dance teacher and leader of the authentic Roma music group 'Khamoro'; as well as Dávid Csányi and Kristóf Horváth actors.

1. Musical subgroup

György Lakatos' sessions taking place in Biharkeresztes have included playful contests about Roma ethnography (Roma history, traditions, habits), besides learning about Roma folk dance, folk music, contemporary dance, pop- and child songs. The primary goal of the sessions was learning by heart and presenting a Holocaust dance ballad ("The girl who danced 'til death"), memorizing songs and poems, thereby developing reading and comprehension skills, musical abilities, basic movement and dance skills, social and self-understanding competencies. The program has included activities that aimed at providing knowledge and raising awareness about Hungary and the European Union in the form of playful contests. Memorizing songs and getting familiar with traditions, customs in Christmas time has also been part of the program.

2. Musical subgroup

At the sessions held by Zsolt Farkas in Nógrádmegyer, traditional Roma dances and songs have been in the center, as well as developing basic motion and dance skills and practicing playing musical instruments. The main aim of the subgroup has been to produce a stage-play until the closure of the program – with the mentor's help – that includes Roma dances and music as its foundation.

During the sessions, children could learn about rhythm instruments, the esztam beat, the use of kettles, wooden spoons, rattles, drums, claps, the single and

[4] The presentation of RMP activities is based on the Roma mentors' annual plans.

partner dances, the basic steps of Roma dances, the Gypsy csárdás dance, the Balkan and Egyptian belly dance, the Gypsy dance from Szatmár (single and partner dance versions), the "botoló" Gypsy csárdás dance, as well as about famous Gypsy musicians and dancers. Above all this, students were encouraged to practice elocution, played jaw-breakers and tongue-twisters, do basic motion moves and practice the choreography of the dance-musical play.

3. Acting subgroup
The main goal of Dávid Csányi's sessions in Mátraverebély has been to create a stage play by the end of the project that can provide mentored students an insight into the theatrical world besides developing their collaborative, cooperation and communication skills, as well as their self-awareness and self-confidence. Speaking techniques, theatrical movement skills and memory development practices were all part of Dávid Csányi's occasions besides the rhythm drills, improvisation exercises, dubbing and playing. Also, the sessions provided knowledge about Roma authors' and poets' work, Roma history, Gypsy language idiosyncrasies and Roma habits and customs. Within the framework of the program a Santa Claus and Christmas ceremony also took place.

4. Acting subgroup
During Kristóf Horváth's sessions in Jászkísér, the superhero existing in the children's mind was built upon through poetic and acting elements. As Kristóf Horváth is a slam poetry champion, the children got to learn improvisation techniques. An advantage of this technique is that it provides self-confidence to mentored students so that they are able to react quicker than average in every-day situations and to invoke changes in their direct environment. The main goal of the mentor was to establish and train attentiveness and body awareness, the development of active vocabulary, the training of imagination and tools of self-expression (speaking, movement) besides deploying writing skills, poetic analysis and general literacy. The main goal that was set for the project was an improvisatory play for students to perform by the closure of the program.

3.2 Filmmakings[5]
There were two mentors at the RMP-location in Sajókaza: Máté Balogh and Anikó Kenéz. This group of children was busy learning the basics of filmmaking. The latter served as the main goal of the local program, at the end of which children have created a short film and a werkfilm about the making of the original short film.

[5] The presentation of RMP activities is based on the Roma mentors' annual plans.

Mentored students had the chance to develop their collaboration and self-expressions skills in shooting a film and learnt about key figures in Roma culture, Roma myths, dramaturgical foundations of storytelling and the basic practices in filmmaking.
Activities involved movies about well-known Roma figures, script-writing, interview-making. Children also rehearsed movie scenes and then participated in the shooting, editing and cutting stages of filmmaking.

3.3 Fine arts[6]
In 2016/17, the fine arts section of RMP was represented by András Kállai sculptor, Henrik Kállai artist, Klára Lakatos artist, János Amígó Bogdán artist and Ferenc Kunhegyesi artist.

Group 1
András Kállai Roma mentor was mainly active in getting students familiar with fine arts, Roma culture and identity through the application of fine art techniques in Nagyrábe. His main goal was to develop students' visual and manual skills, open communication and networking abilities, with a special focus on social sensitivity and tolerance. In practical terms, the mentor primarily focused on Roma-Hungarian common culture and history with mentored children.
The activities involved leisure time programs (garden grill parties, barbecuing), discussions about identity, Roma culture, Henna-painting, landscape-art, pastel drawing, action painting, abstract painting, photo montage formation (in the topic of environment, media, tolerance, human, love, friendship), portraying, statuette, creation of clay sculptures about traditional Roma professions, crayon drawings about Roma participation in the Hungarian Revolution of 1848/49 and fresco-painting. The children participated at a Christmas party and in the creation of a Carnival mask. The main goal of András Kállai Roma mentor was to successfully set up an exhibition by the end of the program.

Group 2
Feren Kunhegyesi Roma mentor was active in Szendrőlád, where mentored students got to know poetry, prose, music, dance and numerous other alternative forms of self-expression. He applied techniques of drama-based pedagogy or theatre-pedagogy in order to develop students' self-expression, creativity and imagination, as well as to strengthen their aptitude to literature. At the same time, they created sceneries and costumes, got familiar with brush-work and color application discovering the diversity of self-expression. Roma myths, tales of origins and fables were also part of the discussions.

[6] The presentation of RMP activities is based on the Roma mentors' annual plans.

The activities that took place in Szendrőlád all involved elements of drama-based pedagogy. One of the most significant parts of the program was the students' visit to the National Theatre in Miskolc, where children had the opportunity to talk to the director, actors, scenery designer and technicians.
The analyzed subgroup is referred to as part of the "fine arts" even though the RMP located in Szendrőlád closed the project with a stage play. The labelling has been justified by various activities that involved features of fine arts, as well as due to the fact that Ferenc Kunhegyesi is a well-known artist in Hungary. The scenery of the stage play was also designed and painted by the children together with the mentor, which provides an example of such activities.

Group 3
János Amígó Bogdán Roma mentor applied techniques of fine arts in Kerecsend to develop children's communication skills, way of thinking and creativity, as well as their ability to work independently, cooperatively and collaboratively. The mentor provided a chance for children to learn about the theoretical and practical background of fine arts. He focused on basic concepts of fine arts, attitudes and way of thinking, as well as use of tools.
The Roma mentor trained the children in visual language, self-expression skills and the basics of using materials. The main goal of the program was the construction of an art performance involving various areas of arts and the performance itself in the form of an exhibition as the closure of the project.
Throughout the sessions, students participated in patchwork workshops, drawing and brushwork activities in a topic by their decision, introduction to the "tree" as the main attraction of the performance, voice recordings for the performance with a guest mentor, as well as the planning of the exhibition.

Group 4
Henrik Kállai Roma mentor in Lucfalva developed children's creativity using fine arts techniques. He focused on highlighting and synthetizing, as well as developing basic ways of thinking through abstract concepts. For this, he taught students how to use mixed forms and alternatives of painting and graphical techniques, the application of compositional tools, forms and proper coloring techniques. Another focus of his activities was to get students familiar with fine arts concepts, the history of wall-painting, Roma fine arts and traditional Roma types of decoration. The main goal of the program was to produce a fresco at the RMP location.
Activities involved stain painting, wallpaper glue painting, imprint painting, claying, embossment, Henna-painting, monotypes, glass painting, texturing, montaging, collaging, pastel use, tempera use, installations about traditional Gypsy lifestyle, wall painting, brushwork and liquation.

In terms of Roma folklore, mentored students got familiar with Gypsy fine arts, work of Roma sculptors, Roma family values, family presentation of Roma painters and Roma myths, tales of origin.

Group 5
Klára Lakatos Roma mentor in Ároktő advanced students' aesthetic conscience and artistic skills, but her goals included establishing the basis of communication, trust and networking skills. Besides, the Roma mentor aimed at acquiring self-discipline competencies (success and failure management, persistency, responsibility and tolerance towards others).
With regard to Roma values, the mentor aimed at strengthening children's Roma identity through analysis of Roma culture, but also paid special attention to tolerance and values of diversity. In terms of the latter, she introduced various tales of Hungarian minorities in the center of which was the topic of the "tree", which children created a "fable tree" in connection to.
At each occasion throughout the program, mentored students learnt a Roma song, while related to tales and myths, they had discussions about Roma tales of origin, as well as Boyash Gypsy and Hungarian fables and myths besides Slovakian, Swabian, Armenian, Ruthenian, Polish and Ukrainian folk tales. At the end of the program, the Roma mentor and mentored students organized an exhibition from the fable trees.

Conclusions

"In general, the alternative and innovative features of the Roma Mentor Project differ from formal education in a way that the project completely breaks away from traditional educational content, embraces and broadcasts aspects of Roma folklore that are rarely present even in experimental educational locations. Learning about these aspects is essential for Roma children to realize that their Roma identity is not something to be ashamed of, rather it is just as valuable as their Hungarian identity. Therefore, the Roma Mentor Project – as opposed to formal education – contributes to the development of personality traits in children that are features of someone with double-identity. Thanks to these features, children value both their majority and minority identities, grow to harmonized adults and to adults who are able to function as valuable Hungarians and Roma people without complexes but with results and successes in collaboration with non-Roma peers, without prejudices and racism.
The alternative and innovative features of the program are reinforced by the fact that the central figure of the personal cognitive processes is a well-known and successful Roma mentor who is not only an intellectual but who grew to be successful and integrated into society from profession to profession coming from the same poverty, misery, depressive, hopeless and futureless situation as the

mentored Roma children. The program signals a way out for children if they follow the mentor in the learning activities, acquiring knowledge and general attitude, as well as the development of various skills. (Bogdán, P. (2012)"
The Roma Mentor Project could generally be described as an intra-educational project that has a direct impact on the local educational staff and pedagogues, as well as local educative work in a way that a mentor from Roma origins appears in the faculty as a colleague and as a Roma intellectual friend in multiply disadvantaged Roma and non-Roma children's lives, which is especially true considering that the Roma mentor (together with the non-Roma pedagogue-coordinator) draws tools of socialization from Roma culture.

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