



## Cross-Curricular Connection in Art in the 4<sup>th</sup> Grade of the 9-Year Elementary School

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### 1. Introduction

Many times, we hear parents who frighten their children by school enrolment where there will not be play anymore, but mere study. This kind of thinking is totally wrong, as small children, but not only them, teenagers as well, and even adults, learn most just through play. Through play, small children gain the basis for further higher forms of learning and the development of thinking [1]. Through play, small children gain sensory impressions and social skills.

By activities such as observing, touching, tasting, smelling and listening sensory impressions are gained, when pupils knead and form dough for rolls, and then, they eat them when they are baked, when they decant differently dense juice from the bigger container to the smaller ones, and connect the colour of the juice with its taste, when they build a town out of the waste material and talk about the form and hardness of materials, when they close their eyes, and, only by using the smell, they find out what fruit they hold in their hand, when they make a telephone out of a yoghurt cup and listen to what their friend is talking on the other side etc.

Social skills, such as showing tolerance, negotiating, making compromises, accepting different points of view etc., are gained when they play different didactic plays, e.g. Don't get angry, dominos, memory, where it is necessary to respect certain rules and non-written rules, to be patient and tolerant, even if you are not being good at them, when they participate in different role plays, where it is necessary to agree who will take which role and how they will act them out, when difficulties arise in class, e.g. arguing, calling names, which need to be solved in a peaceful, tolerant way.

Through the described examples, children learn things that can be transferred by the right kind of teaching in similar situations. They can connect roll baking with the changing of things in a certain time period, they can connect decanting of differently dense juice with containers' volume, they can connect building of a town out of the waste material with the waste segregation and recycling, they can connect recognising fruits by their smell with the kinds of fruits, they can connect a telephone made out of a yoghurt cup with the sound transit etc.

They use social skills consciously or subconsciously in all forms of group work, pair work etc., which arise in different school situations.

This kind of connection or this kind of transfer of the known to the unknown eases children's learning, on the lower and on the higher lever of learning as well. This process is called transfer. To understand the mentioned notion easier, let us have a look at some definitions given by different authors.

*"Transfer is the transmission of the learning effect from the previous to the further learning, from one field to the other, but also from the known circumstances, e.g. school ones, to the new ones – life ones and professional ones [1]"*.

*"Transfer means the transmission of the learning effect from one learnt activity to the learning of the other activity [2]"*.

Kadum characterises transfer as structures which were learnt in some previous situation and function in some other or new situation [3].

Lipavic Oštir defines the teaching portfolio or the teacher's folder as *"an authentic instrument of tracking the teaching process in a defined time period [4]"*.

Perkins and Salomon argue that we talk about the learning transfer when the learning of something influences the success of learning something else [5].

If we summarise the above quoted authors, we can say that the transfer is something extremely positive, desired in class, something which eases the individual's further learning. But is the transfer really always positive and desired?

#### Transfer types:

- a. Positive transfer ⇒ positive influence of the previous experiences on further learning
  - b. Negative transfer ⇒ negative influence of the previous experiences on further learning
  - c. Vertical or specific transfer ⇒ experience transfer within the same field, subject
  - d. Horizontal or general transfer ⇒ experience transfer between subjects, between theory and practice, between school learning and life situations
- a. Point-of-view transfer ⇒ point-of-view transfer from one school subject to all subjects
  - b. Knowledge transfer ⇒ the transfer of general and specific knowledge from one subject to the other
  - c. Motor transfer ⇒ influence of one motor skill on learning the other motor skill
  - d. Emotional transfer ⇒ transferring emotions from parents to a teacher [1, 2]



A look at described transfer types shows that we cannot always talk about the transfer as something positive, desired in class. The transfer can sometimes be present also as something undesired. The example of undesired transfer is a negative transfer, when previous experiences negatively influence an individual's further learning.

If we think of the period we experienced in kindergarten, elementary school, secondary school and even at university, we can certainly remember the situation when some unpleasant experience influenced how we accepted something new. Maybe something similar happened as it did to my ex fourth-grade pupils who waited for me in front of the classroom every day in the morning when there was Italian on the timetable and asked me if the teacher maybe got ill, and when they learnt that she did not, they asked me to stay with them in the classroom during class. This negative transfer of theirs was going on since the first grade and was connected with the teacher as a person, but it, unfortunately, during the years, became connected with Italian as a school subject. When the teacher was, to their great joy, absent and I substituted her, it was very difficult to motivate them to learn what the Italian teacher asked. They preferred long tedious calculation dictations to starting speaking a few simple words in Italian. At every teacher's tutorials or parents' meetings, parents warned me that they do not know what to do, as their children did not want to watch Italian programmes, even though we live in a bilingual area, and there are a great number of Italian channels.

The described negative transfer, the now seventh-grade pupils managed to overcome, but not entirely. In the fifth grade, they got a new Italian teacher, who was trying for a whole school year to achieve a bit smaller resistance in them, which enabled more or less normal communication in Italian. Now, the pupils accept also this subject, but not the teacher who taught them for four years. They still feel a great resistance towards her.

The described transfer could have led to another transfer that could have become negative, i.e. the point-of-view transfer, where the pupils could have generalised their negative points of view on Italian to all languages that they learn in elementary school, but fortunately, they had not had. They like English since the third grade when they first got to know it.

The presented examples of undesired transfer lead us to the third transfer, which can prove to be undesired, and that is the emotional transfer, where a child's emotions transfer from parents to a teacher. I remember a boy who enrolled in our school in the middle of December in the fourth class because his parents divorced and the single mother decided to move to the coast. The lady colleague who got the boy had many experiences with similar situations, at least she thought so. The boy projected all the anger which he felt for his mother and which was manifested upon their first arrival to school and the class on his new teacher. This anger directed to her and later to the whole class continued for long. A great deal of energy, effort and cooperation with other professionals was necessary, so that the state in the class got a bit better and that the boy started to accept himself and the people around him normally. When this finally happened, his knowledge in individual subjects also got better, the knowledge that the boy maybe had already before, but that he could not show, due to the problems he had.

The mentioned examples of undesired transfer show, as we could see, how the transfer of something negative can influence how we react in new situations. So that we do not talk only about negative sides of the transfer, let us look at the desired forms of transfer.

The first such example is definitely the positive transfer, when previous experiences positively influence further learning. If we teach pupils in the third grade multiplication – which is, let us admit, boring, as it covers the automation of repeated figures – in a way that will make sense of the multiplication learning, the multiplication becomes something which pupils will learn easily and joyfully, as they will see in it something that they will make a good use of in their life.

The described multiplication learning leads us to another transfer, vertical or specific transfer, which covers experience transfer within the same field, subject. Acquired knowledge of multiplication – which made sense by connecting it to fascinating shells, in which on the bottom of the sea, really genuine pearls are created – will ease to the pupils in the fourth grade written multiplication and division. We can also connect multiplication learning with the horizontal or general transfer, which covers experience transfer between subjects, between theory and practice, and not the least, between “superficial”, school learning and “real” life situations. The acquired knowledge of multiplication will enable pupils in the higher grades easier calculations in Chemistry, Physics, Statistics, and the like.

The transfer that follows is the motor transfer that is connected with learning in which learnt motor skills influence the other motor skill. A typical example of the subject which is connected with that transfer is Physical Education, in which previous abilities influence further ones. Let us have a look at the jump over a vaulting box. At first, pupils exercise jumping on the vaulting box. When they master jumping on the vaulting box, they squat over and straddle over the vaulting box.

The transfer that is still left to us is the knowledge transfer and it represents a pupil's general and specific knowledge which is transferred from one subject to the other. We can understand this transfer as the sum of all desired transfers that we encountered so far.

We have already mentioned that the transfer is something which should be included in a school system, despite undesired forms which can appear in individuals, but the researches show that learning rarely enables desired transfer effects, which is the consequence of the fact that education is structured in such a way that pupils do not see any connection between the knowledge they acquire at school in different subjects and everyday life [1, 6]. The education that does not enable students to see these connections is present in class a great deal. This is the education which covers mostly a teacher's talk to a whole class, in which the pupil is merely a recipient of



information provided by the teacher, the education in which the subject matter is covered in a too abstract way and is, due to that, distant from pupils, the education which is directed only towards the matters within some chapter, subject.

The presented teaching style must go to oblivion if we want to enable the real transfer by pupils. It has to be substituted by teaching which will be based on the fact that:

- pupils will understand what they learn,
- pupils will be actively involved in a process,
- examples from real life that are close to pupils will be used,
- all or majority of sensory systems for information reception will be included,
- pupils will use the covered subject-matter in different areas, in different subjects,
- continuous revision and knowledge application will be present, also after pupils acquired something.

[2,6,7,8]

Only when teaching will include all the above mentioned characteristics, pupils will see the connection between knowledge which they acquire at school in different subjects and every-day life. And when they see it, we will be able to start talking about the transfer effect in the real sense of the word.

## 2. Cross-curricular connection in the fourth grade

The cross-curricular connection is a method that is discussed a lot, but is rarely used. The ones that use it use it in a wrong way. We can see this wrong way of usage most times in Art, where teachers abuse subjects such as Slovenian, Science and Technology, Society merely for the sake of defining the motif pupils will use. Just because of these numerous wrong approaches, I decided to show a way in which we can structure a correct cross-curricular connection that in this case originates in Art, but is intersected with all subject that the fourth grade pupils have got and enables the pupils to transfer learnt knowledge from one field to the other, from one subject to the other, and not the least, from the "superficial" school situation to "real" life situations.

## 3. Example of cross-curricular connection

At the beginning of the first lesson, we played Brainstorming with pupils, where the pupils wrote/drew their answers to the questions What is rhythm? and What are all the places in which we see rhythm? on coloured sheets of paper. When the pupils drew/wrote the answers, I collected sheets of paper and stuck them to the board by magnets. I used the thus created presentation as an introduction to the coverage of the notion of rhythm, and that was in such a way that we read aloud what was written/drawn and commented it together. The answers of all the pupils were correct, and they covered mostly the matters connected to the rhythm in music – they mentioned different instruments, tones, pauses, triple meter, quadruple meter, singing in a choir, and the like. When we commented the last sheet of paper, I mixed the sheets of paper on the board and created the visual rhythm out of them. I asked the pupils what was created on the board. When the pupils found out that the rhythm was created, we discussed in which subject we can find such a rhythm. The pupils quickly found out that we find it in Mathematics. I used these findings of theirs and invited them to draw an example of Mathematical rhythm. When the pupils drew their Mathematical rhythm, they presented it. The rhythms they drew were really incredible. The pupils created the rhythms as an exchange of differently big or differently coloured shapes, as an exchange of figures, as an exchange of differently long lines, as an exchange of letters, and the like. In the next step, I read a short fairy tale to the pupils by using pictures and I asked them if they saw the rhythm in it. Immediately, they noticed it, and not only one, and that shows their very precise listening and observing. In the fairy tale that presents multipliers in the multiplication of the number 2, they noticed the rhythm in animals that always appeared in pairs (male and female mates), in the pairs that acted at the beginning and reappeared at the end of the fairy tale, in the animal pairs that were ordered according to their size (the first five followed each other from the smallest to the biggest, and the next five as well, from the smallest to the biggest), in the number of animals that was always bigger by 2. In the next sequence, I presented a hundred square to them. At first, they looked at it in surprise, then, they started giving interesting statements. The pupils said about the figures in the hundred square that they represent an exchange of even and odd numbers, that every next number in the row is by one bigger from the previous one, that every next figure in the column is by ten bigger than the previous one. As I wanted to encourage them a bit more in observation, we added the figures in individual rows and columns. When we did that, we found out that every previous result in the row is by 100 smaller from the following one and that each previous result in the column is by 10 smaller than the following one. Some pupils were so enthusiastic that they said they would show the secret to their parents. Work with parts of the whole followed. I showed the pupils shapes divided in parts, but not only that, some parts were coloured, too. The pupils were puzzled at first, thus, I asked them to imagine that the shape had not got coloured parts. When I told them that, they immediately noticed the rhythm. They saw that the big square is divided in small squares of the same size, that there are four in the first row, four in the second row, again, and four little squares in the third row, and that if we coloured all the shapes, as some parts were, we created the colour rhythm. In the concluding part of coverage, I showed them a colouring sheet, in which you have first to connect figures to get an image that you then colour. Even before I could ask them the question, one of the pupils said that the figures presented the rhythm, as you have to connect figures from 1 to 61, in which it is clear that every next figure is by one bigger from the previous one, and that



even and odd figures are being exchanged. I was satisfied by the answer, as the response of the pupils made it clear that they learnt a lot about the rhythm in this subject. To consolidate the notion of the figure even more, I gave envelopes to the pairs, in which there were little bits of coloured paper. The pupils showed here as well a lot of imagination, as they composed amazing works, which were supported by even more amazing explanations. The composed works were in the last part of the lesson cut in halves, as each pupil in the pair received their part. They put their works in a ready portfolio, in which they put, for their homework, the hand outs that they used in the lesson and the examples of the rhythm that they found.

At the beginning of the second lesson, the pupils presented the examples of the rhythm that they found. They found different Mathematical patterns composed of figures and/or shapes, multipliers of the remaining multiplications, a wooden fence, trees by a road, windows in a block of flats, tiles on a roof, and the like. The play Class concert followed. The pupils created the rhythm by the help of their own instruments, and that was in such a way that one pupil after my sign started creating sound by his body. After some time, after my sign as well, another pupil joined him, and he had to create the sound with another part of his body. When all the pupils were creating the sound, I interrupted the game. Discussion followed on what we were doing. The pupils said that we were creating the rhythm by our body and that in such a way they accompany the songs in Music and sometimes dance, too. I used this statement of theirs to introduce the rhythm in two songs that the pupils knew. We had a look at the musical notation of both, and found out that one of them was written in triple meter, and the other one in quadruple meter, meaning that, as they said it themselves, the conductor shows them differently by using hand movements. In the next step, the pupils divided themselves in groups of four and they got ready to present one of the two songs that they got to know, and that was in such a way that they sang a song, accompanied it and danced. After five minutes that they had at their disposal for preparation, presentations followed. It was interesting that all the groups prepared three presentations, in the first one, they only sang, in the second one, they sang and played their own instruments, in the third one, they included dance, too. All presentations were well prepared, as the pupils, despite the short time they had at their disposal, managed to harmonise singing, playing and dancing. Only one group had got some problems, as they changed the song into rap, and they were a bit confused when they were singing, but we still congratulated them, as they invested a lot of effort in changing the existing song. As some of the groups used gymnastic elements in their dance, we started to talk about the rhythm in Physical Education after the presentations. We found out that the rhythm is present in Physical Education in gymnastic exercises, jumping over hurdles, running, fast walking etc. For their homework, the pupils inserted in their portfolio again the hand outs which they received in the lesson and the example that they found.

At the beginning of the third lesson, the pupils presented the examples of the rhythm they found. They found different songs' notes, people who walk, run, cycle, and the like. In the next step, I motivated the pupils to think in groups and write/draw where the rhythm appears in Science and Technology, Society. I gave them some books to help themselves and skim them. The groups presented the rhythm that we find in the calendar (months repeat every year, days repeat every week, holidays repeat every year, the number of days in an individual month repeats, except for February, seasons), in the traffic lights (red, yellow, green light), in cycling, driving a car, a bus, a train. In the next lesson sequence, we supplemented their images of the rhythm in these two subjects by short animations and/or the photos of the calendar, day and night, tide and ebb, water circle, man's walking, a heart's beating, breathing, a clock's ticking, five meals that a child should have, their class's timetable. When we finished, I handed out to the pupils the photos which presented what we covered in that lesson. The photos were on purpose different from those that we encountered in coverage, so that we revised the rhythm once more in a funny way by a short play Find a photo that shows ... For their homework, the pupils inserted in the portfolio the hand outs that they received in the rhythm lesson and the examples of the rhythm they found.

At the beginning of the fourth, the last lesson, the pupils presented the examples of the rhythm they found. They found faster and slower breathing, faster and slower heart beating, fast walking, the sun's transit, imprints of autumn leaves, and the like. In the next sequence, I showed them a poem that we read together and found out that some words repeat in it. I coloured the word repetition that they noticed first. Individual work followed. The pupils had to colour all the words in the poem that were repeated in the same way. When they did that, I projected on the board all the coloured parts of the poem. From the look at it, we recognised the rhythm in it. When we recognised the rhythm, I showed them another secret. I reversed the poem, each stanza became a little tower, and I divided it into two parts by the help of a line, and we found out that there was symmetry present in the poem, apart from the rhythm, as the left and the right part of the stanza were completely the same. In the next step, I projected to the pupils a poem in which words did not repeat, and I asked them if that poem also presented the rhythm. Their answer was no. Due to that, I read the poem to them and helped myself by clapping. The pupils recognised the rhythm that I was creating by my way of pronouncing the words. Pair work followed. In the poem collections that I brought with me, the pupils found a poem that they liked and they learnt to read it by using the rhythm. In all presented poems, the rhythm was prominently recognisable. The most interesting thing to observe it was how some pupils helped themselves by snapping and beating on the floor by their foot. In the final part of the lesson, the pupils and I shortly revised what we learnt about the rhythm. It was amazing to listen how they remembered it, also the pupils with special needs. It was enough only to ask them what we learnt about the rhythm, for example in Maths, and the answers were already coming from their mouths, and that is the proof that they learnt a lot in those few lessons. At that time, too, for their homework, the pupils inserted in the portfolio the hand outs that they received in the lesson and found the examples of the rhythm if they wished.



#### 4. Conclusion

The purpose of the paper was to show that, despite the existing school system, it is possible to implement the education that motivates pupils for work and keeps a high level of their motivation throughout a whole learning process by the use of different learning techniques, such as cooperative learning, information search from different references, the Internet, portfolio creation ... and in such a way, it enables the knowledge transfer from one field to the other, from the "superficial" environment to the real life. The paper reached its purpose, as the activities by which the presented cross-curricular connection was carried out motivated the pupils for work and all the time kept their desire to research and discover new things. It is true that the preparation of such a kind of teaching takes a lot of the teacher's time, but a look at the pupils who enjoy such lessons, and especially learn a lot, as it was shown in this example, pays off all the invested effort, at least mine.

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