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The Activity "At the Swallow's Nest" and Its Use in Developing Environmental Ethics in Primary School Pupils

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Abstract: *The theoretical part of the paper introduces environmental ethics and points out its most frequent issues. It shows that the objective of education is to support pupils in their autonomous decision making.* ***The objectives of this research study*** *were a) to implement the environmental activity "At the Swallow's Nest" with primary school pupils and to verify its functionality, b) to find out what decisions were taken by pupils and how these decisions were justified, and c) to discover what influenced the pupils' decision making. For these purposes,* ***the method*** *of action research was used, based on records of children's statements, a description of their behaviour, and a questionnaire survey. Overall, the author conducted the activity with 380 primary school pupils. The questionnaire was collected from 158 pupils. The results show that: (a) primary pupils can already discuss environmental problems and learn how to solve them; b) the pupils' decisions are influenced by a number of variables, c) there is no correlation between a decision and any of the controlled variables (age, family background, religion, etc.). A single dependency was detected, namely the dependency on the group (if it was a permanent group), which (given that the voting was anonymous) can be interpreted as the influence of the class teacher on their pupils' decisions.* ***Conclusions:*** *Although solving similar types of activities is not common in the conception of environmental education in Czech schools (let alone on the primary school level), similar pedagogical interventions seem to be a suitable tool in environmental moral education.*

Keywords: *environmental ethics, environmental education, decision-making processes, primary education.*

Introduction

Environmental ethics connects ethics with environmental education. It does not have a stable theoretical and terminological basis yet, as a) it is a relatively young discipline (that emerged in the second half of the 20th century in connection with the environmental (green) movement, b) its issues are solved by scientists with various theoretical backgrounds and education, and c) non-scientific approaches also intervene (according to the Stanford Encyclopedia of Philosophy, 2015, they are deep ecology, ecofeminism, new animism, and bioregionalism).

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Environmental ethics focuses on human relationships to nature, animate and inanimate systems, specific organisms, populations, ecosystems, and elements of inanimate nature. It points out that people should pay attention to the question "What is right?" or "What is moral?" not only in the context of human relationships, but also in the context of our relationships to animals, plants, and other natural elements, including ecosystems and the entire planet Earth (Brennan & Lo, 1984). It may be defined, for example, as "gentlemanship to nature" or "a set of principles and rules that indicate to humankind how they should behave in their communion with the whole non-human world" (Kohák, 2000) or "trying to tread the ground lightly", which includes respect for all living things, efforts to maintain the self-sufficiency of families and countries, and the promotion of community life and development of environmental sensitivity (Næss, 1973/1995). Environmental sensitivity is understood to be the fundamental objective of environmental education. It is described as an emotional aspect of the relationship to nature, a personality component of character consisting of a) a disposition, or predisposition towards an interest in nature – the desire to learn, observe, and look for patterns in systemic functions and structures, b) the awareness of damage to nature, c) the need to protect nature, and d) genuine activity targeted at environmental protection. It is a complex interaction between the amount of life experiences and their interpretation by an individual (Chawla, 1988; Franěk, 2004).

The boundaries of environmental ethics vary, depending on the cultural, environmental, and historical context. The concept of environmental ethics has undergone a similar development to the concept of environmental education, from "natural ethics", a term that was used at the time of nature conservation education, to ecological ethics at the time of ecological education, to today's environmental ethics at the time of environmental education. Modern authors even use the terms sustainable ethics or Ethics from Sustainability.

Environmental ethics philosophers define three major attitudes of humankind to nature: anthropocentrism, biocentrism, and ecocentrism. Anthropocentrism ("man as the master of creation") is linked to the use of nature for the well-being of humankind and is (with a few exceptions) perceived negatively, i.e. as an attitude whose result is the inconsiderate use of nature, its "conquering", etc. (White, 1967). Some philosophers, e.g. Kohák (2000) or Anker and Witoszek (1998), however, state that it is not thinkable that a human being (Anthropos) would actually act and think non-anthropocentrically, as it *is not natural to act disloyally to one's own species*. They suggest it is better to give the right direction to anthropocentrism than to condemn it and seek other (unnatural) attitudes. Anthropocentrism can manifest itself on a scale from arrogant anthropocentric, or "cowboy" ethics, to the ethics of "re-

sponsible custody", which is often close to theocentric ethics as described by the prominent Czech theologian Jan Heller (2002). Biocentrism ("compassion for every living creature") is associated with Albert Schweitzer's philosophy (Petrickij, 1990; Schweitzer, 1989). It inspired a number of movements, e.g. the Animal Rights movement or the book Eternal Treblinka: Our Treatment of Animals and the Holocaust (Patterson, 2002). It is taken both positively and with contempt. Ecocentrism ("efforts to preserve ecosystem and species diversity") is considered to be the peak of environmental ethics. It was founded by Aldo Leopold (1949) and is linked to what is called the deep ecology movement. Ecocentrists often believe in the might and natural strength of untamed nature. Tuncay et al. (2012) studied the moral attitudes of science teachers that they showed when solving local and global environmental dilemmas and found that their attitudes varied from anthropocentric or biocentric to ecocentric. These are likely to be passed on to their pupils.

The most discussed issues of environmental ethics are:

a) Who is responsible for it?
b) How can a person behave better (more morally)?

The never-ending discussions on "Who is responsible for the current environmental crisis" were launched by a short essay by the historian Lynn Townsend White, Junior. In this essay, he states provokingly that it is "Judeo-Christian thinking which is responsible for the crisis", since the Bible separates humankind from other creatures and states their domination over nature and – according to White's interpretation – it entitles humankind to abuse it (White, 1967). Discussions on whether White is right or not have in fact shaped the whole field of study and have been joined by historians, philosophers, theologians, biologists, and environmentalists. White's paper has become one of the most cited environmental papers ever. References are still made to it in the 21st century. For example, the Heltons point out that White's thesis is not based on any empirical research and that there is in fact very little research on the topic. They present their own research, which involved more than 500 students and which shows that "Christians have neither better nor worse pro-environmental attitudes than people of other religions or atheists (Helton & Helton, 2007).

There is no clear answer to the question of the relationship between Christianity (or other religions) and attitudes to environmental issues. That is why it seems to be much more meaningful to focus in depth on the other question, i.e. "How can a person behave better (more morally)?"

Without any doubt, in recent years we have been able to witness worldwide the effects of what has been termed eco-consciousness on people's behaviour and their efforts in the area of not wasting and of sustainable development and lifestyle. Edward O. Wilson points out that this transformation is taking place on all

continents and across different cultures and religious systems (Roberts, 2006). Some of these changes in understanding what is and is not right have been accepted by the general public and are now also enshrined in legislation. Legislative measures, laws, decrees, regulations, and recommendations also force people with a lower level of moral development to be environmentally responsible. Logically, these changes are also reflected in the curricular documents. The Czech curricular document (Framework Educational Programme for Basic Education, 2004) defines "Respect for Life" as one of the objectives of environmental education, albeit without specifying its content (Jančaříková, 2007).

As a result of changes in the contemporary world, environmental issues are a very complex and changeable area. Taking this into account, programmes of moral education should be designed to support the autonomous decision making of individuals rather than to pass on isolated instruction. After all, the decision-making process has been studied by the professional environmental education community since the very beginning of the "green movement". Nicolaou et al. (2009) point out that the development of decision-making skills is a part of all environmental frameworks. With regard to educating adults and upper secondary and younger pupils, Haakonsen, Schaefer, and Smith (1977) focused on how to change the approach to making decisions about the use of the landscape and land and developed unique education programmes for adults and upper secondary school pupils. These programmes were then evaluated. Nicolaou et al. (2009) proposed computer-based scaffolding of the decision-making process in the environmental area for 11- and 12-year-old pupils, which they evaluated successfully. Moreover, pupils' performance on the environmental concern questionnaire correlated in interesting ways with the improvement of their decision-making skills. Mackey (2012) states that when young children are involved in making decisions that affect their lives, including those decisions regarding sustainability and the natural environment, they are capable of contributing to decision making that leads them to purposeful action. Schusler, Krasny and Decker (2016) describe how difficult it is for teachers to suppress authoritarian approaches and to let pupils decide freely. And this is what is really important here. Teachers are aware of the importance of this issue and try to guarantee freedom in the decision-making processes of their pupils. However, sometimes they fail. Činčera et al. (2019) describe, among other things, how teachers influence pupils more than they are aware of, and even when they do not want to influence them.

In general words, programmes that teach autonomous decision making are, according to Schlaefli's meta-analysis (Schlaefli, 1986, cited from Heidbrink, 1997) most efficient when targeting adults. Oser (1989, cited from Heidbrink, 1997) believes that this is

caused by "catch-up" or ceiling effects; in other words, programmes of moral education are most efficient with people whose moral development is delayed in comparison to their cognitive development. However, he admits that in some cases the ethical education of adults may be impossible if the "people are firmly anchored in the thought structure of their moral development and have probably built effective defensive and suppressive mechanisms against dissonant information" (Heidbrink, 1997, p. 144). This indicates the need to have programmes of moral education for pupils. In fact, Kohlberg himself made an appeal for active responsible enhancement of children's and pupils' moral development and demanded that teachers should support a child's individual moral development (Hart & Karmel, 1996). And it was Kohlberg who contributed most significantly to the development and the current form of moral education in the USA (Rest, 1996). Subsequent research studies investigating general morality and ethics show that interventions have a positive impact and that moral education should start during early school age, although its effect on some pupils might be very subtle. However, a teacher must always be aware of the relationship of moral consciousness and the development of cognitive skills, i.e. of the pupils' age (this means they should never look down on pupils at lower levels of moral development and favour pupils with higher levels of moral development).

Edelstein (1986, cited from Heidbrink, 1997) points out the risks of teaching morality at schools. Especially if it is established as a subject in the timetable, pupils might show higher moral values only in these lessons but not in everyday life. The research studies conducted after World War II may act as an inspiration for research into environmental moral development (Blumenthal, 2006). For example, Milgram's experiment revealed most people's lack of ability to resist evil if it comes as an order (Milgram, 2005). The problem of unresolved responsibility is also present in the relationships of people to nature. Many people of various professions (lumberjacks, drivers, farmers, livestock specialists, etc.) believe that they are not responsible for amoral behaviour towards animals or nature when "executing the orders of bosses" (see e.g. Seed et al., 1992, p. 99; Mowat, 2001). The use of moderated discussions in which problems, dilemmas, and open-ended stories are solved is one of the ways of moving from heteronomous to autonomous thinking. The idea of using discussions on how to solve problems or moral dilemmas in environmental education can first be found in M. D. Piburn, who in the 1970s published four moral dilemmas (The Environmental Activist, The Alaska Pipeline, The Starving Country, and Fast Breeder Reactors) designed for upper secondary school students (Piburn, 1973, 1974). Piburn (1973) draws attention to (a) the relationship between logical thinking and the degree of au-

tonomous decision making achieved and (b) the fact that most pupils do not reach the level of autonomous decision making they are capable of (and this is the group where intervention is conducted most effectively). One of his dilemmas, "The Starving Country", addresses the issue of famine in "a poor, overpopulated country", which has been suffering from drought for several years. Participants have to consider whether it is right a) to send aid to the people of this country, although clearly enough food will result in further unhealthy population growth and in fact deepen the original problem; b) to make food aid conditional on the use of contraception, or c) for the government to pretend it is unable to provide food aid for this country, and other complex issues. Unfortunately, the experience from implementing the activity is not included in Piburn's paper. We do not learn anything about the participants' discussion, about their opinions, and why they held these opinions.

There are not many authors who focus on moral education at the primary school level; e.g. Michael Littledyke (2004) focused on moral development and comprehension of science and environmental issues and Jolina H. Ruckert (2016) studied the moral attitudes of 52 primary school pupils to nature and wildlife. Littledyke (2004) pointed out that a) primary school pupils perceive environmental problems as serious and feel threatened by them; b) the link between scientific knowledge and its practical application is only partially understood. She also described the various levels of moral development she could observe. Ruckert (2016) compared the views of seven- and 10-year-old pupils on the issue of extinct and endangered animal species. The findings revealed that children think about and value endangered animals in deep and beautiful ways. Ruckert also showed the difference between age groups. Older children used a more complex standard of moral reasoning that integrated human models of moral thinking with different biological understanding.

Building on the two above-mentioned authors, an original environmental activity for primary pupils – "At the Swallow's Nest" (see the Appendix) – was developed (within the author's dissertation). For a detailed description of the activity, see the Appendix. Within this activity, pupils are introduced to a problem that came up at another school (nesting swallows pollute the hall), make decisions (by an anonymous vote) on whether or not one of the characters in the story – a pupil of similar age to them – should tear the nest down, and discuss the problem.

Research part

Research questions

Does the activity that was created, "At the Swallows' Nest", work? (i.e. Can it be used with primary school pupils? Will it open up sufficient space for discussion? What if the pupils' decision is unequivocal?

Will they be able to understand the problem presented to them? Will they be interested enough in solving it?)

How will teachers and pupils react to programmes of moral education? Will their reactions not be negative?

How do pupils make decisions and how do they justify them?

What influences pupils' decision-making processes? (The variables that were controlled were age, family background, religion, the amount of time spent outdoors, the education of parents, the presence of pets, and the pupil's self-concept).[1]

Research methods and stages

The research was – with respect to its educational objective – conducted as action research in the following steps (according to McNiff, 2013):

a) identification of the area to be improved, namely the decision-making process in environmental problems,
b) reflecting on how to strengthen competences to make decisions in environmental problems, study of the literature, and consultations with experts,
c) development of the activity "At the Swallow's Nest",
d) design of the research plan,
e) school visits – first stage (collection of qualitative data),
f) evaluation of qualitative data,
g) preparation of the questionnaire (based on information from the previous phase, consulted with experts) whose aim was to quantify the frequency of the answers that were most often given and to find the connection between the answer and the age, family background, religion, amount of time spent outdoors, presence of pets, parents' education, and self-concept of the pupil),
h) school visits – second stage (collection of qualitative data and a questionnaire survey – the questionnaire "Evaluation of the activity At the Swallow's Nest" was filled in by the respondents twice, the first time after the anonymous voting and the second time after the discussion,
i) statistical data evaluation (correlation, logistic regression) and repeated qualitative data evaluation.

The respondents were primary school pupils aged six to thirteen. The activity was conducted in sixteen groups of pupils of the age of six to thirteen (out of which thirteen were classes, one was an after-school club, and two were random groups), i.e. with a total of 380 primary school pupils. Most of them were from the Czech Republic; one group (25 pupils) was from the Finnish Vääksy Upper Comprehensive School.[2] The number of girl and boy respondents was balanced.

The questionnaire was collected from 158 pupils from seven groups (from six pri-

[1] The formulations of individual questions about these variables were consulted with a sociologist to ensure that they were comprehensive and sounded friendly to primary school pupils.

[2] The Finnish pupils' answers were not different from the Czech pupils' decisions. Out of 25 Finnish pupils, thirteen (of whom four were girls and nine were boys) voted "yes, pull the nest down" and twelve (of whom four were boys and eight were girls).

mary school classes and one after-school club).[3]

All the evaluated interventions in the classes that were evaluated were conducted by one lecturer (the author of this paper).

Results

Qualitative findings and their analysis

The pupils enjoyed the activity, they understood the problem that was presented and the rules for the anonymous voting, they were happy and willing to cooperate with the lecturer, and took part in the discussion spontaneously. There was only one class whose participation in the discussion was almost non-existent (the pupils were silent most of the time, and only two bolder pupils dared to speak, but in fact they only echoed the last sentences of the lecturer). However, the pupils' reactions indicated that the pupils liked the activity, even if they did not participate, and that they were at least quietly thinking about the situation. Most of the pupils reported that they liked the activity. Three groups refused to accept the fact that the programme was over and wanted to continue their decision making and voting (the lecturer allowed them to vote on other problems the pupils proposed themselves).

In one class (3rd grade), the teacher organized, on her own initiative, a subsequent reflection on the oral evaluation of the activity in a circle. In this reflection, "a lot of positive comments could be heard". Some pupils saw the activity as "difficult" or "demanding". At the end of the programme, one boy (4th grade) said "Critical thinking is harder than mathematics or biology because it cannot be swotted."

The teachers in whose classes the activity was implemented reacted positively. Positive reactions also came from the Czech School Inspectorate, whose inspectors were by coincidence present at one implementation of the activity "At the Swallow's Nest".

The discussions imply that most of the pupils have seen a nest of swallows or martins and that the pupils have experience with nesting birds and are well informed about the situation outlined in the activity. Many pupils are unaware of the period of nesting and the fact that destroying the nest means killing the nestlings. One boy (4th grade) estimated the nesting time of swallows as five years. Another (3rd grade) asked how long the swallows nested: "It cannot take too long ... about a year." The same answer was given by a 5th-grade pupil. Others responded "don't know" or "long".

We were repeatedly able to observe that pupils were learning from each other. In each group, there were several pupils with very good ideas the others would adopt. E.g., "we could put a large piece

[3] Six pupils from the classes that participated were not able to fill in the questionnaire (problems with reading). The teacher of one of the classes (18 pupils) from the second research stage did not agree with their filling in the questionnaires.

of cardboard under the nest that should be changed every so often; this would solve the problem with cleaning" (girl, 4th grade). More children from different groups proposed similar solutions in different variants ("old newspapers", "paper", "some rag"). One pupil knew that the nesting period of swallows was three weeks, while another pupil reminded his classmates that swallows caught flies. Usually, the pupils collaborated to find the answer. E.g., one girl (5th grade) shared her experience with others and said: "We had swallows in the cowshed at the cottage and there were almost no flies." Her neighbour said, "This is because swallows hunt for flies." Some children (e.g. 3rd grade) managed to draw conclusions such as "Where there are swallows, there will be fewer flies, not more".

Some pupils accepted the adults' statements uncritically, others critically. For many, the idea that "adults do not always have to be obeyed" was a discovery. A discussion in the 3rd grade in a school in the Prague city centre on when adults have to be obeyed unconditionally showed that many pupils who commuted to school by public transport on their own had already had the experience of being approached and addressed by a stranger who had asked them to get off the tram with them and go somewhere with them. Their teacher said she was very surprised by this and that she would speak about this with her pupils' parents when she met them. Someone in the 4th grade said "the caretaker seems to have forgotten what he had learned about swallows at school", which made the other pupils laugh. They seemed to be pleased that even adults could be wrong.

As anticipated, pupils made their decision on the basis of their relationship to swallows. Those pupils who voted for "no, do not pull the nest down" empathised with the swallows and pitied them. Some of them, to persuade their classmates, used parables, e.g. "To pull down a nest is the same as if someone destroyed your house" (boy, 3rd grade) or "It is as if a giant came and killed all of us here in this school. This is what happens to swallows if someone pulls their nest down." (girl, 4th grade). Another frequent explanation was that a particular pupil regarded him/herself as a conservationist who "valued life". A relatively high number of pupils wanted to consult the issue with their parents (mainly their mother) before making a decision. A relatively high number of pupils "advised Joe" not to obey the caretaker.

It was very rare that pupils would say in the discussion that they "did not care about the lives of the swallows". There were several classes that, immediately after being introduced to the situation, said "the caretaker will pull or shoot the nest down". A girl (4th grade) said explicitly in the discussion that she had voted "yes, pull the nest down" and she was trying to enforce this opinion on her classmates very assertively. It came up in the following discussion that her parents would pull down martins' nests to protect the façade of their house. In the discussion, she asked: "Aren't swallows protected?" Despite the answer that they were pro-

tected and pulling their nest down would be against the law, she would not change her opinion. Her classmates tried hard to persuade her to change her mind but she would not. Other two girls (from the 4th grade) acted in a similar way, claiming in the discussion that: "There are enough swallows; why should they be protected?" They tried to persuade their classmates that the law itself was bad. They laughed at their classmate who wanted to pull the nest down but take the swallows to a nature conservation station to save them.

Some pupils' decisions in the voting were influenced by other variables than their relationship to swallows. They often stated that "we must obey adults" or that they "did not realize the caretaker was not telling the truth". Some pupils' decisions were also influenced by worries, e.g., "I did not want Joe to get a fine" (girl, 5th grade) or "I was afraid Joe could fall down" (girl, 3rd grade). A relatively high number of pupils stated that the motivation for their decision was their sympathy with the caretaker – "I was sorry for the caretaker that he was so busy". Some pupils who had voted for "yes, pull the nest down" had not realized that the baby swallows would die once the nest was pulled down. In the following discussion, various solutions were proposed, e.g. "I will feed them". "I will take the nest somewhere else; the parent birds will find it", "I will take them to the zoo; they will take care of them there", etc. Many pupils were surprised that the nesting period of swallows was a mere 21 days.

Many pupils regarded the birds' nest as a dangerous source of infection and voted for "yes, pull the nest down" because of their fear "of the disease the birds spread". Most often, they mentioned avian flu.

One of the Finnish pupils said: "Yes. We will pull the nest down and eat them."

Some pupils proposed unreal solutions in the discussions, e.g., "I would take a helicopter, fly up, and knock the nest down with the helicopter" (boy, 1st grade) or "Joe should borrow a lion from the zoo and camp with it under the nest. The lion would help him protect the nest." (boy, 4th grade).

It happened several times that the best answers came from pupils who were perceived by their teachers as "rather lower-performing", for example, a girl diagnosed with dyslexia (4th grade) or pupils with behavioural problems. A boy (3rd grade) described by his teacher as "having behavioural problems" cleverly proposed at the very beginning of the activity (at the time when the problem had just appeared) that the caretaker should go to the principal and ask for help because he found himself in an unusual situation and needed help. Thus, the lecturer had to improvise: "It would certainly be the best solution, but that the caretaker did not choose this because he was very proud of being able to manage everything perfectly well on his own." At the end of the activity, the same boy was genuinely surprised that the caretaker would blame Joe. "Well, he obviously wasn't so perfect," he said to conclude the discussion.

Quantitative evaluation

The results of the voting of individual groups are balanced (with a slightly predominant decision "yes, pull the nest down". In one group, the pupils gave the same number of votes for both variants (indecisive result), in eight cases they decided "yes, pull the nest down", and in seven "no, do not pull the nest down" (see Figure 1).

Results of the questionnaire survey after voting

The main motives in pupils' decision-making processes after the anonymous voting (before the discussion) are shown in Figures 3 and 4.

Figure 3 shows that there was only a minimum number of pupils who had voted to pull the nest down because they "… don't care about the lives of birds".

The main reason for voting for the alternative "No, do not pull the nest down", i.e. leaving it in its original place, was pity (see Figure 4).

A correlation test (CORREL test Microsoft Excel) did not prove any dependence between the answers "yes, pull the nest down" and "no, do not pull the nest down" and other controlled variables (age, family background, religion, amount of time spent outside, parents' educational background, presence of pets, a pupil's self-concept).

Logistic regression led to the discovery of the only variable that had a significant

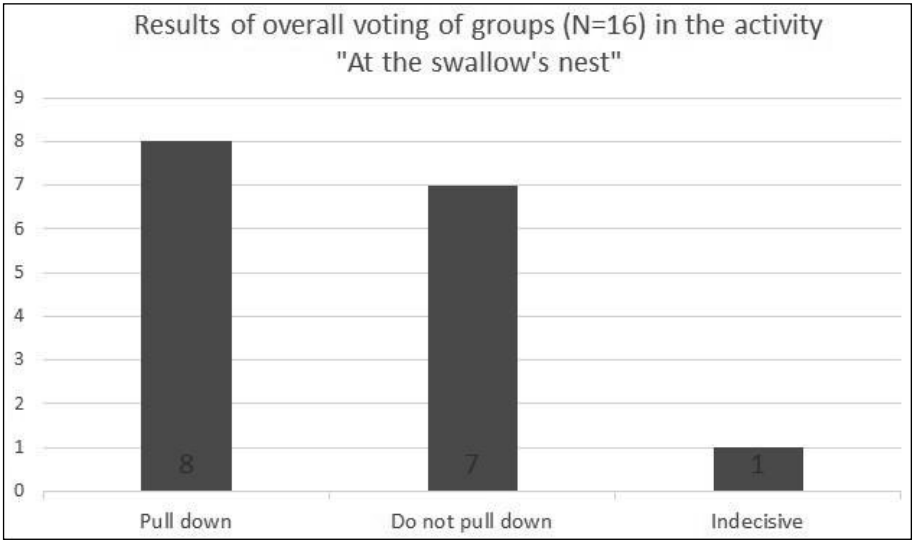

Figure 1 Results of voting of groups as a whole

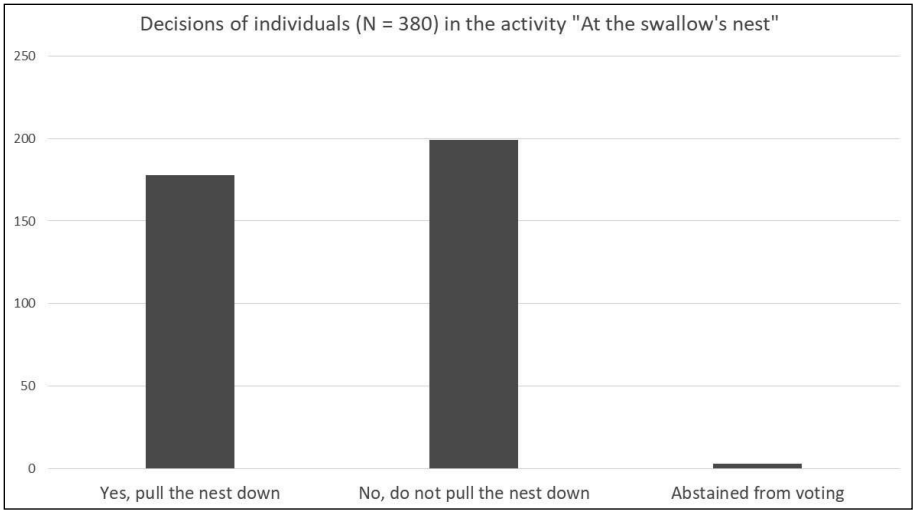

Figure 2 Results of individual pupils' voting in the activity "At the Swallows' Nest". 178 pupils voted to pull the nest down, 199 to not pull it down, and three pupils abstained

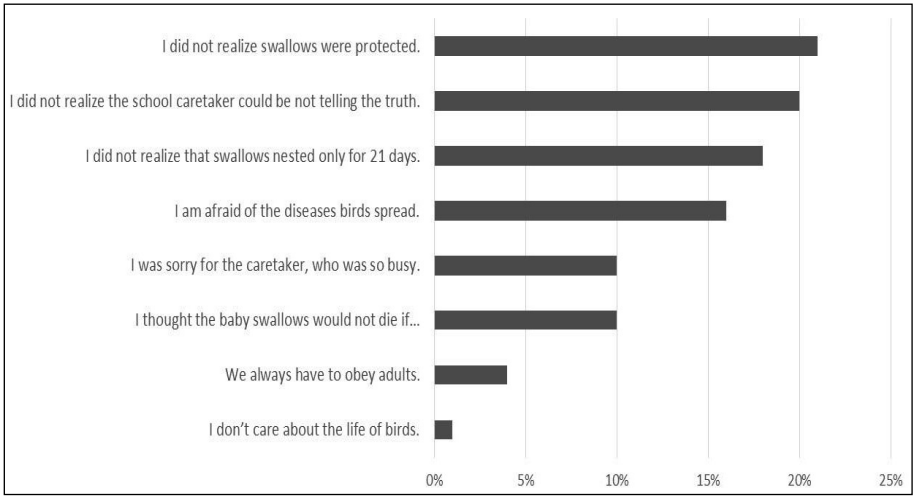

Figure 3 Reasons for pulling the nest down and their frequency in the replies of primary school pupils. The pupils could tick any number of answersa

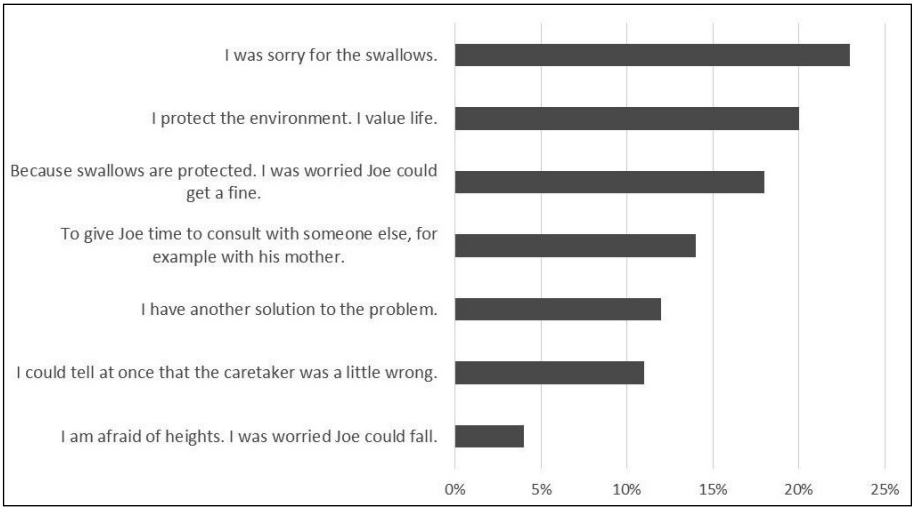

Figure 4 Reasons for not pulling the nest down and their frequency in the replies of primary school pupils. The pupils could select any number of answers

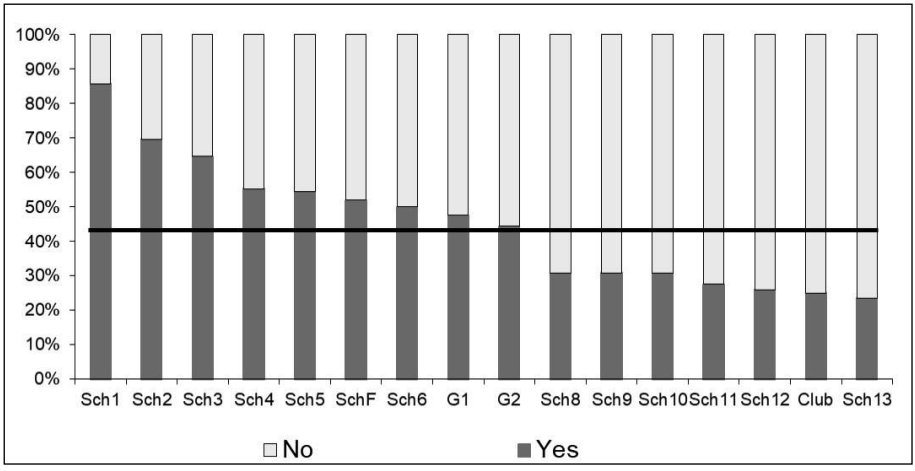

Figure 5 Logistic regression – results of the first ballot in schools (Sch), random groups (G), and the club. The only factor that has a significant impact on the first ballot is the class or group itself. The horizontal line shows the average

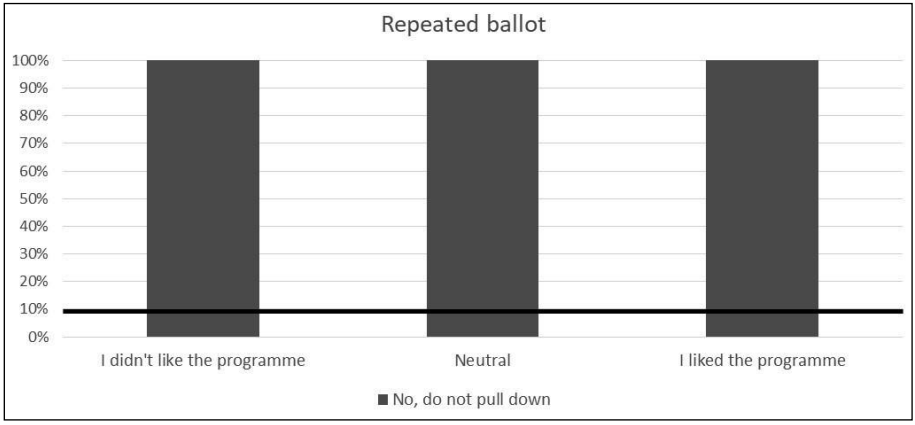

Figure 6 Logistic regression – repeated voting, dependence of YES/NO answers on evaluation of the project. The horizontal line shows the average

impact on the first voting, and that is the group itself. Pupils from the two random groups (i.e. pupils from one school but selected more or less randomly, referred to as "school trip" and home-schoolers) voted independently of each other (see Figure 5).

The results of the questionnaire survey after the discussion

In the second round of voting (after the discussion), 91% of the pupils voted for "No, do not pull the nest down", while only 9% of the pupils voted for "yes, pull the nest down". The variable of the group was no longer conclusive.

The proportional contingency table (Table 1) shows how the pupils acted in the first and the second rounds of voting.

One third of the pupils changed their minds in the discussion, but the vast majority (94.3%) changed their mind from the original "yes, pull the nest down" to "no, do not pull the nest down". Logistic regression shows no significant impact of any of the controlled variables (age, family background, religion and its practising,

Table 1 Contingency table (%)

	Second round of voting after discussion		
First round of voting	No, do not pull the nest down	Yes, pull the nest down	Total
No, do not pull the nest down	59.5	1.9	61.4
Yes, pull the nest down	31.6	7.0	38.6
Total	91.1	8.9	100.0

the amount of time spent outdoors, parents' education, the presence of pets, and a pupil's self-concept). It had no impact on changing the pupils' opinion from YES to NO.

Discussion and conclusions

The activity "At the Swallow's Nest" was designed to make pupils look for ways of solving the problem autonomously or, more precisely, together in a discussion. In none of the classes did we come across a pupil who knew everything but in cooperation with other pupils the group managed to find answers to most of the questions. The activity offers space to all pupils (in several cases the pupils who excelled in the discussion were pupils who had been described by their teacher as special needs pupils).

The activity provides space for pupils' personal development, for the development of critical thinking, for acquiring respect for life, and for learning on the pupil-pupil level. It leads to the development of key competences, namely communicative competence and the competence of solving problems (pupils take an active part in discussions, formulate their opinions, take other people's opinions into account, and accept responsibility).

The problem situation was well chosen. The pupils understood the problem that was presented, were able to imagine it, and had the competences needed for its discussion.

The activity "At the Swallow's Nest" was appreciated both by the teachers and school inspectors, which contradicts David Blumenthal's (2006) experience. He reports extremely negative reactions of American university teachers from Emory University. They did not want their students to discuss with them, to challenge their "truth". This contradiction can be partially explained by the fact that only progressive teachers invite a lecturer with an innovative activity into their lesson. However, the fact that both Czech teachers and Czech school inspectors evaluate this activity positively indicates that Czech teachers are progressive and that their objective is to develop a pupil's individuality and critical thinking.

Most of the pupils also liked the activity. Many of them enjoyed the opportunity to vote and make decisions. Others liked the opportunity to learn to solve problems. A correlation was found between the evaluation of the activity and voting for "yes, pull the nest down" in the questionnaire completed after the discussion. There are two possible reasons for this: pupils who did not like the project deliberately voted for "yes, pull the nest down", even though they would behave differently in a real situation, because they sensed this was the solution to the problem situation that the lecturer was heading for, or pupils who were really determined to pull the nest down rated the project that offered an alternative solution negatively.

The study of the motives and factors in the decision-making process brought some very interesting findings that deserve more attention in follow-up studies. First of all, the research study proved the dependency of decision making on the class (group). This means that pupils' attitudes and decisions are

influenced by their school education. Since the voting was anonymous and the pupils could not consult their decision with anyone, the significant factor affecting pupils' voting must have been the class teacher or the leader of the after-school club. This result is very significant, especially as it proves the teacher's influence on their pupils (similarly to Činčera et al., 2019). On the basis of this finding, it can be concluded that environmental moral education of pre-service and in-service teachers is meaningful as they exert a strong influence on their pupils.

The fact that no dependency was found between "no, do not pull the nest down" or "yes, pull the nest down" and any of the controlled variables (age, family background, religion and practice, the amount of time spent outdoors, parents' education, the presence of pets, and a pupil's self-concept) corresponds to Milgram's experiments, in which the decision to terminate the experiment and save the person behind the screen correlated with no similar variable (Milgram, 1974).

From the point of view of monitoring autonomous moral development, the most interesting factor seems to be a pupil's selection of the answer "I could tell at once that the caretaker was a little wrong", which was selected by 11% of the pupils. Is it possible that these pupils have already reached the autonomous stage of moral reasoning? Or were the reasons for selecting this answer different? A similar discovery of unexpected autonomous decision making in primary school pupils is described by Jolina H. Ruckert (2016). This issue should be subject to future research.

In contrast, the answer "Adults should always be obeyed" (4% of pupils) corresponds to (according to Kohlberg, quite usual at this age) the level of dependent moral judgment (Rest, 1996). Similarly, the most frequently selected answer "I did not realize swallows were protected" (21% of the pupils) shows a natural tendency to obey authorities and laws at this age. A relatively large group of pupils (18%) defied the caretaker's advice and marked "because swallows are protected. I was worried Joe could get a fine." This points to the emerging hierarchy in understanding authorities (the law is more important than an individual – the caretaker).

Some typical obstacles that prevent pupils from solving problems were identified. First of all, it is their lack of knowledge (the assumption that baby swallows can be taken care of after nesting, wrong estimation of the nesting period). Emotions, environmental sensitivity, and empathy are not enough to solve the problem well; knowledge is also needed. Another obstacle is the dramatic projection – some pupils suggested unrealistic "fairy tale" solutions (I would take a helicopter and…, I would borrow a lion from the zoo and…). According to Gesell and Klein, dramatic projection prevents children with great imagination from learning to read and write (Kučera et al., 2005, p. 31). Similarly, dramatic projection prevents children with great imagination from solving environmental problems well.

A really surprising answer was the answer of a Finnish boy (13 years old) who wanted to eat the baby swallows. This so-

lution is more acceptable from the point of view of environmental ethics than just pulling the nest down and killing the birds, because their death will be given some meaning. Unfortunately, because of the circumstances (the activity with this group was shown to Finnish, Croatian, and Israeli teacher colleagues during their internship), it was not possible to discuss this topic in more detail with the boy.

In real life, people (even primary school pupils) have to face similar problems quite often. Therefore, pedagogical intervention in the form of environmental moral education seems appropriate. The research that was conducted, as well as the literature, suggests that, using similar activities, primary school pupils (aged 6-13) can be supported in their acquisition of the decision-making skill. However, it is necessary to respect pupils' individual and social background and not to put pressure on those pupils who are not (yet) capable of moral development. The activity "At the Swallow's Nest" was designed for the "free niche" in environmental education of (not only) Czech pupils and students, which is the absence of environmental moral education and development of critical thinking and decision-making.

The present text has not been previously published and has not been offered for publication in any other journal. It is an original text. However, the research that is reported was conducted and its results published in Czech in the dissertation of the author (Jančaříková, 2008). It has not been published in English yet. I am convinced that the research and its results (in a slightly extended form in comparison to the dissertation work) are worth publishing in English. The research from the dissertation is set in a different, more specialised context in this paper. The activity "At the Swallow's Nest", with preliminary results, was published on the methodological portal RVP (Jančaříková, 2007) and in the publication Učíme se v zahradě (Let's Learn in the Garden; Burešová, 2007). It was also introduced during several seminars for lecturers of Ecocentres.

The English version of the activity is included as an Appendix.

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Appendix

Activity "At the swallow's nest"

The whole activity (storyline) is based on communication, using elements of drama and the lecturer's role-play (the puppet Joe, a hat for the lecturer in the role of the school caretaker, etc.). It is dependent neither on the environment (it can be implemented indoors or outdoors) nor on the equipment and facilities. Pupils only need a pen to write a single word (yes or no). Although the course of the activity was authentic in each of the classes (depending on the specific group of pupils, their cooperation with the lecturer and with each other, their ideas, etc.), the basic structure was the same. The structure is described in the following paragraphs.

Children's parliament

The topic of the initial discussion is the parliament; what it is for, how decisions are made. Today "we will play children's parliament" – pupils are told they will hear a story whose continuation will be decided on by their children's parliament. Each pupil gets a voting cardand a pencil. The pupils are drawn into the story during the whole activity. The lecturer asks stimulating interactive questions such as "What is the Parliament?", "Has anyone ever been to the Parliament?", "Does anyone know how MPs work?". The process depends on the particular group of pupils and cannot be planned precisely. The discussion makes pupils ready for voting and also draws their attention away from the area of environmental education (the pupils are deliberately not told that the activity is part of environmental education so that their voting is not affected by it).

Figure 1 Documentary photograph "Beautiful School" for the storyline of the activity "At the swallow's nest". If the storyline is conducted in a classroom with a data projector, the picture is projected onto the screen or wall; otherwise it is shown by the lecturer

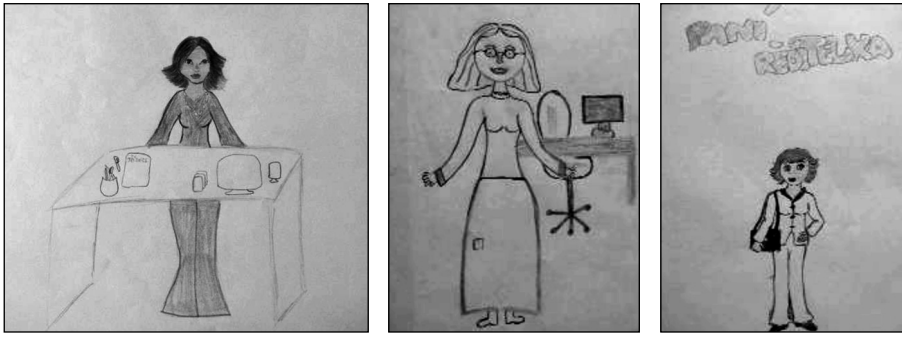

Figure 2 Principal. Selected drawings made during the storyline of the activity "At the swallow's nest"

Figure 3 Caretaker. Selected drawings made during the storyline of the activity "At the swallow's nest"

A story of one school

Using simple puppets and a picture of the school (see Fig. 1), a short story is dramatized. The plot is set in front of the school and in the school. The protagonists of the story are the principal, school caretaker, pupils, and also swallows, or their nest.

Principal

The principal introduces herself to the pupils briefly and describes how beautiful the school is. She stresses that it would not be so beautiful were it not for the hard-working school caretaker: "The caretaker is my right hand. What would I do without him? I can rely on him completely." The principal, who only has a supporting role, is represented by a drawing. First, it is a drawing made by the lecturer, later by various pupils (Fig. 2), which is explained by saying there are different many ways the principal of the school could look.

Caretaker

The caretaker introduces himself to the pupils and describes what he does – he is always busy, never stops working, and often works overtime but he does not mind that as he lives in the school and likes his work. He likes this school and its pupils very much. The role of the caretaker is played by the lecturer – whenever the lecturer speaks in the caretaker's role, he or she puts on a hat (what is termed a role-play). Also, pictures drawn and painted by pupils in preliminary research are shown (see Fig. 3).

Figure 4 Swallow's nest. The photograph was used for documentation of the problem when conducting the storyline "At the swallow's nest" (photo taken by M. Hanyšová)

Problem

The caretaker (played by the lecturer) shares with the pupils his current problem: swallows have built a nest above the main entrance to the school.[1] That would not bother him, he says; let the nest be there. But the baby birds have hatched and are making a mess around the nest. White droppings are piling up beneath the nest (see Fig. 4) and he has to clean the mess up. It takes a long time to clean and the caretaker does not have enough time for his usual work. First, he is overworked and tired, later desperate and angry. (The pupils are encouraged by the lecturer to describe the emotions the caretaker experiences.) The caretaker simply does not know what to do and so he decides to pull the nest down. The window through which he can get to the nest is too narrow and the chunky caretaker cannot climb through it.

Joe

Joe[2] (represented by a puppet – see Fig. 5) is introduced as an "ordinary boy, a bit of a scamp". Sometimes he is late for school; sometimes he forgets to clean his shoes. He meets the caretaker quite often and would like to get on better with him so that his minor misconduct is not reported to anyone. The caretaker explains the situation to Joe and asks him to climb up to the nest (there is no danger of falling) and pull it down. The caretaker speaks from the position of authority of an adult person and a member of the school staff. There are three statements of the caretaker's that are important.

1. He explains truly how hard and time-demanding cleaning up the droppings is.
2. He argues, using the debatable information that the droppings are a source of dangerous bacteria, that he fears diseases.
3. He uses the untrue argument that droppings in front of the building mean more flies (carriers) in the classrooms. (On the contrary, swallows catch flies!)

In the end, he repeats to the pupils that he is a nice person. He explains that he loves swallows and all living organisms. But, since the poor swallows chose the place for their nest so badly, above the entrance to the school, he cannot help it and the nest must be pulled down.

Secret ballot

The story is stopped at this point and the pupils are asked to write on their voting cards what they think Joe should do. Either "YES – pull it down" or "NO – do not pull it down". The pupils are told to

[1] Swallows build nests in buildings; martins, which they are often confused with, outside buildings. Swallows have their nests less closed, martins more. Swallows were chosen for the decision-making activity as representatives of the animal kingdom after long hesitation for the following reasons: they are protected, and in fairy tales and folk literature they are referred to as "birds of happiness".

[2] If there is a pupil called Joe in the class, a different name is used for the puppet.

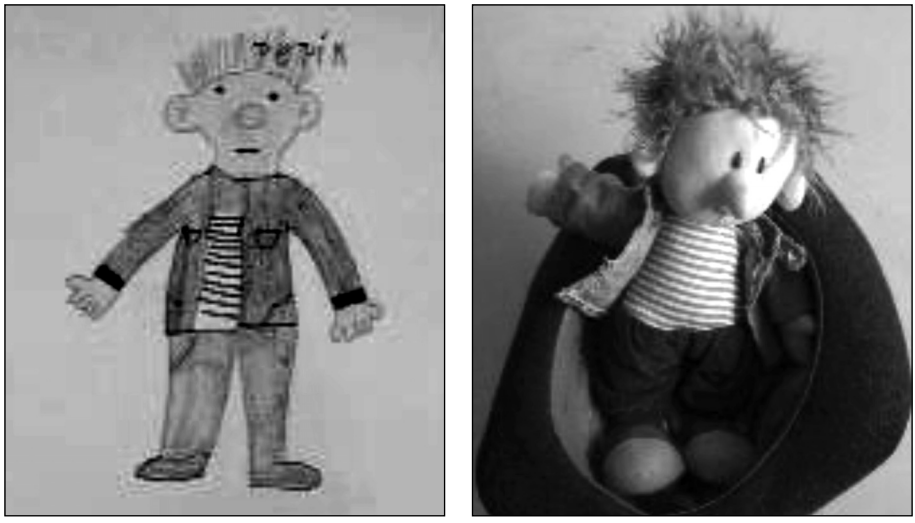

Figure 5 Pupil Joe. Painting and puppet "Joe" in a hat into which pupils put their voting cards during the storyline of the activity "At the swallow's nest"

write their answers "secretly, so that no one else can see it" and to fold the card and put it in a box, where the cards are mixed. The number of YES and NO votes is then counted.

It proved to be essential to tell the teacher at the beginning of the ballot that the decision is made by the children's parliament and that she should say nothing and wait with her comments for the discussion that follows. The words the teacher uses have a great impact on the ballot – pupils will react differently to words such as "get rid of the problem!", "pull the nest down!", or "get rid of the source of dangerous infection" and to the instruction: "kill the babies of the beautiful and protected swallows." The lecturer uses the same words in all classes so that the votes of different groups of pupils are comparable.

Announcing the result

The lecturer announces the number of pupils voting YES – Joe should pull the nest down – and NO – Joe should not pull the nest down. The story with the puppets is role-played according to the result. If the nest stays in its place, the children help the caretaker clean up and observe and photograph the baby swallows. Within a relatively short time (three weeks) the young swallows fly out of the nest. The children write about it to the local newspaper, win the prize for the best story, etc. The following year the children and the caretaker look forward to having

swallows back at the school and get ready for it. If the nest is pulled down, the parent swallows fly around the nest sadly and Joe's classmates find the dead baby birds and feel sorry for them. When parents and conservationists find out about the nest, they start to look for who is guilty. The caretaker says it was Joe who had done it, etc. Joe feels remorseful, he did not want it that way, etc.

The possible consequences of the decision are thought up by the pupils, guided by the lecturer.

Discussion of the result

At the beginning of the discussion, the pupils learn how the story would end if the decision had been the contrary. In other words, the discussion starts after the analysis of both situations.

The discussion is the most substantial part of the storyline. It is interactive. The lecturer guides the pupils to interaction with each other. In most cases, there will be pupils who are able, under the lecturer's guidance, to explain their attitudes and opinions to the others. The pupils are led to realize the following:

1. There are situations in which children have the right to refuse to obey, even if an adult asks them or orders them to do something (this does not apply to cleaning up the children´s room). Primary school pupils should learn to "resist evil", and not only because of the future, but also of the present. Even at this age, they can be in danger (e.g. from paedophiles) or can be asked by other children to take part in bullying. In the discussion, pupils make up or give examples of situations when it is necessary to disobey an adult.
2. Even adults can be wrong. An analysis of the caretaker's three sentences (truth, half-truth, untruth).
3. Sometimes it is very difficult or almost impossible to find out whether some statement is true, half-true, or untrue. Even adults often fail to do so without additional information (laboratory examination of bird droppings). The dangers of avian flu cannot be assessed objectively, but experts assume that sick birds do not reproduce, do not lay eggs, and are unable to care for their young. So, these swallows are very likely to be healthy.
4. Even adults do not always make the right decision. Pupils are asked to look for the reasons for wrong decisions (tiredness, overwork, fear of being blamed for not doing work properly).
5. Life is a very precious and unique gift. There are situations when it is right or possible to terminate the lives of animals and birds (we look for examples), but then some expert (veterinarian, butcher, or firefighter) should do it, not Joe.
6. Swallows, martins, and other songbirds (as well as other animal and plant species) are protected by the law of the Czech Republic and other countries.
7. If Joe is not sure what he should do, it is better to choose NO in the sense NOT YET, that is NO, UNTIL I GET MORE INFORMATION. While it

is possible to postpone destroying the nest, once it is done it cannot be reversed.

8. A polite refusal. Pupils should learn to say NO to adults politely, in a way that does not offend them. e.g. "I am sorry but I am in a hurry today, I promised to…". In the case of the problem of the swallows' nest, the pupils should be equipped with the key competences that would help them propose a non-conflict solution: "No, I will not pull the nest down, but what if I help you with the cleaning?"
9. Sometimes adults offer money or some other benefits for carrying out morally dubious orders. Children should learn to say NO in these cases.
10. What is most important is that nobody should feel guilty after the activity. The pupils should not feel guilty for having made a wrong decision. The teacher must not feel guilty that their pupils were not well prepared. The ballot is secret and its results must not become the basis for condemning those who have been seduced by the caretaker's manipulation or for condemning the quality of the teacher and their work. After all, pupils at this level acquire competences and learn how to make the right decisions. That is why the lecturer reminds the pupils at the end that they are only learning to think and decide independently and that some have gone a bit further than others, similarly to how some pupils were able to read before they started school but now all of them can read books. What matters is that they gradually learn to think and decide independently and will be able to do it as adults. The lecturer expresses the belief that everyone will have mastered it one day.