PRIMARY SCHOOL FOURTH GRADE STUDENTS' ECOLOGICAL ATTITUDE DIAGNOSTICS

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Abstract

Ecological attitude education in primary school is both important and special. That way fundamental moral values of a young person are formed. Every day increasing ecological problems become much more diverse. It is important to develop a man able to perceive the current ecological situation and able to live in a harmonious interaction with nature. It is sought that ethical, aesthetical, psychological, juridical person's relationship with nature would become the criterion of culture. The formation of a positive relationship with the surrounding world, the environment remains a very significant element of education in a primary school.

It is hopeful that the attitudes with respect to nature formed at this ontogenesis stage will remain for the whole life. In this context, it is very important to appropriately diagnose the current attitude structure and on the basis of diagnostics correspondingly organise the education process. In April 2019 a pilot research was carried out, in which 127 primary school fourth class students took part.

It was stated that in the attitude structure of this age children, the aesthetic attitude was prevalent. The last according to the ranking was the ethical attitude. Correspondingly, in the second position was the cognitive, and in the third – the pragmatic one.

Keywords: *diagnostic research, ecological attitudes, pilot research, primary school*.

Introduction

Ecological education is an inseparable part of natural science education in all general education system. This is especially important in the primary school stage. One of the main aims of natural science education is the person's natural science literacy. One of this literacy components is the ecological attitudes. Seeking to develop students' ecological attitudes, International Nature Conservation school programme is carried out in Lithuania, which since 2004 has been coordinated by Lithuanian Green movement. The main aims of this programme are – to raise students' consciousness in nature conservation sphere, to educate unconsumerised attitude towards nature and to unite children and young people for the nature conservation activity. The researchers state that ecological education is one of the decision ways by which providing knowledge and information about human and nature relationship, it is sought to improve the country's environmental situation (Judson, 2010; Stevenson, Brody, Dillon, & Wals, 2013). On the other hand, ecological education comprises not only environmental knowledge transference, but also cognitive and emotional values, which encourage people to change

their attitude to the environment and to foster an appropriate environmental behaviour (Pandey, 2007).

Attitudes are evaluative schemes which determine the disposition to positively and negatively react and evaluate concrete people, things, phenomena or situations (Legkauskas, 2008). The main attitude function is to help the individual to meaningfully orientate himself in his social environment. The attitudes develop depending on age, cognitive activity period, social experience. The attitudes are based on a value system. Personality values reveal themselves through these attitudes. The attitudes form in the socialisation process (Berns, 2007). Attitudes have different sources. 7-11-year-old children watching and interacting with the environment form the attitude to macrosystem: watch television, hear adult conversations, observe their behaviour. The attitudes of this age children develop when they follow attractive and honourable models. Beside the family, school and peers have a very big influence on the formation of attitudes. The children of this age still do not have much life experience; therefore, when environment or evaluative schemes change, the attitudes very often change as well.

Four main ecological attitude types are usually distinguished: a person perceives nature as a beauty object/source (aesthetical attitude), as cognition/knowledge acquisition object (cognitive attitude), as a safety/conservation object (ethical attitude) and as a benefit source (pragmatic attitude). The researchers claim that usually not one any type, but two attitude types prevail (Jasvin, 2000). Realising natural science education in a primary school, it is important to know how the students' attitudes are distributed. Thus, one can purposefully organise the education process itself. Therefore, the aim of this research was to ascertain the prevailing type of ecological attitude to nature, also to perform a preliminary methodological verification of the diagnostic instrument.

Research Methodology

General Background

The research was of a pilot type, carried out in the months March to April 2019. Research type was diagnostic. The research was grounded on a quantitative social research paradigm, holding the attitude that educational diagnostics allows evaluating rather accurately the analysed features. On the other hand, information derived from such research can be useful in developing educational practice. It is important to assist teachers to improve their teaching practice, because many teachers have difficulty in using assessment (diagnostic information) to improve their teaching (Sun & Suzuki, 2013). The researchers were holding an opinion that a pilot study is a small sized study which may be used before larger scale study of any type.

Research Sample

Fourth form students from 5 Lithuanian primary schools participated in the research. A convenience sampling which is one of non-probability sampling procedures was used. In the research, 127 students took part. Out of them 70 girls (55.1%) and 57 boys (44.9%). Before the research, a verbal respondents' agreement was received to carry out the tasks. Such sample is considered sufficiently representative for the pilot research (Viechtbauer, et al., 2015).

Research Instrument and Procedure

In the research, verbal association technique was used for personality ecological attitude identification (Jasvin, 2000). The measurement instrument was made of 12 blocks, each of them comprised stimulus word and five association words (see appendix). Four of the presented words corresponded to the concrete attitude type, the fifth word "rubbish" was for attention distraction. The respondents carried out the tasks in written form.

Original technique (Jasvin, 2000) was translated from Russian to Lithuanian and later to English. Two researchers individually carried out translation validity. Later certain concepts were discussed, and after the discussion with two experts some of them were changed (e.g., the concept "silage" /rus. „силос"/ was changed into the concept "fodder"; the concept "incisors" /rus. „резцы"/ was changed into the concept "teeth").

Data Analysis

For the obtained data analysis, the measures of descriptive statistics i.e. absolute and relative frequencies, standard deviation, mean were applied. In order to ascertain possible differences among variables, non-parametric Mann-Whitney criterion *U* was applied (comparing rank mean differences between the two groups of respondents).

Research Results

Having analysed the obtained data, the respondents' options spread into four main attitude types (Table 1).

Table 1. Respondent option distribution (N(%)).

Stimulus word	Attitude type			
	Aesthetic	Cognitive	Ethical	Pragmatic
FOREST	30 (23.6)	46 (36.2)	20 (15.7)	31 (24.4)
DEER	76 (59.8)	37 (29.1)	8 (6.3)	6 (4.7)
GRASS	60 (47.2)	31 (24.4)	25 (19.7)	11 (8.7)
LAKE	51 (40.2)	25 (19.7)	9 (7.1)	42 (33.1)
BEAR	21 (16.5)	6 (4.7)	7 (5.5)	93 (73.2)
TREE	35 (27.6)	47 (37.0)	20 (15.7)	25 (19.7)
SWAMP	30 (23.6)	38 (29.9)	20 (15.7)	39 (30.7)
DUCK	7 (5.5)	28 (22.0)	19 (15.0)	73 (57.5)
FISH	19 (15.0)	73 (57.5)	11 (8.7)	24 (18.9)
GARDEN	62 (48.8)	10 (7.9)	14 (11.0)	41 (32.3)
BEAVER	13 (10.2)	95 (74.8)	7 (5.5)	12 (9.4)
NATURE	79 (62.2)	22 (17.3)	10 (7.9)	16 (12.6)
Option sum	483	458	172	411
Mean	3.80	3.60	1.35	3.24
SD	1.65	1.59	1.46	1.52

Having evaluated option sums, one can see that aesthetical attitude got the strongest expression and the ethical - the weakest one. Cognitive attitude was in the second position. The attitude that had the weakest expression to nature objects and animals was ethical. It is obvious that the children of this age do not have much relationship with nature experience, therefore, inner moral norms are not settled.

Possible differences were analysed according to the respondents' gender using *U* criterion. The obtained results are presented in Table 2.

Table 2. The respondent attitude differences according to gender.

Attitude type	Gender	*N*	Mean Rank	Sum of Ranks	*U*	*p*
Aesthetics	Girl	70	68.28	4779.50	1695.500	.139
	Boy	57	58.75	3348.50		
Cognitivism	Girl	70	67.30	4711.00	1764.000	.252
	Boy	57	59.95	3417.00		
Ethics	Girl	70	57.39	4017.00	1532.000	.020
	Boy	57	72.12	4111.00		
Pragmatics	Girl	70	62.98	4408.50	1923.500	.724
	Boy	57	65.25	3719.50		

It can be seen from the table that only in one case the respondents' attitude type statistically significantly differed. The boys' ethical attitude rank (72.12) was statistically significantly higher than the girls' rank (57.39). One can claim that ethical attitude is more characteristic of boys: respect to nature, care, safety and so on. Though statistically significant difference was not fixed, however for the girls (68.28) more than for boys (58.75) were characteristic aesthetical attitudes to nature objects and animals. A hypothetical assumption can be made that boys follow behaviour rules, norms and requirements more in the relationship with nature and in the girls' relationship with nature aesthetical attitudes are prevalent.

Conclusions and Implications

Research results allow asserting that the strongest expressed attitude to nature objects and animals of the fourth form students was aesthetical, and the ethical attitude got the weakest expression. Cognitive attitude was in the second position, and the pragmatic – in the third one.

Research results revealed that ethical attitudes to nature objects and animals are more characteristic of boys than girls.

With regard to education process in primary school, it is necessary to form positive attitudes of the children to nature. Various sources: books, television, communication with the adults and other can help form positive attitudes about nature. Direct experience and one's own behaviour observation can particularly form the attitudes. Therefore, it is necessary to form conditions for the children to more often practically cognise nature, listen to interesting narratives about nature, to help them understand nature importance

to man. Children tend to listen more to those attitudes, which are constantly spoken about, publicly declared. Attitudes which are acquired from your personal experience have a bigger influence on behaviour /conduct in general.

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Appendix

Verbal association technique

Example: word BALL: red; football; big; rubber; children's. As an answer you can mark e.g., the word "rubber". You should answer quickly, because your first reaction will reflect your option best.

So, we can start!

FOREST	Clearing (A)	Anthill (C)	Reserve (E)	Firewood (P)	Sand
DEER	Traces (C)	Forester (E)	Trophy (P)	Stones	Antlers (A)
GRASS	Watering (E)	Fodder (P)	Bark	Dew (A)	Stem (C)
LAKE	Treat (P)	Wool	Islands (A)	Mollusc (C)	Cleaning (E)
BEAR	Cobweb	Master (A)	Raspberries (C)	Rare (E)	Fur (P)
TREE	Autumn (A)	Tree rings (C)	Growing (E)	Furniture (P)	Hay
SWAMP	Tadpole (C)	Reserve (E)	Peat (P)	Apples	Fog (A)
DUCK	Prohibition (E)	Steak (P)	Dawn (A)	Branch	Ringing (C)
FISH	Gills (C)	Silver (A)	Spawn (E)	Frying (P)	Feather
GARDEN	Den	Blooming (A)	Pollination (C)	Care (E)	Harvest (P)
BEAVER	Swiftness (A)	Teeth (C)	Settling (E)	Fur coat (P)	Mushrooms
NATURE	Beauty (A)	Cognition (C)	Safety (E)	Use (P)	-

Note: A – aesthetic attitude, C – cognitive attitude, E – ethical attitude, P – pragmatic attitude.