

Estonian high-school students' increasing pessimism in predicting solvability of global problems

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Abstract

We live in a period of time when Estonian people, as citizens of the EU, sense instability in their everyday lives. The world's economic order has fallen into crisis and global problems surface as a consequence of civilization's progress, prefiguring a bigger and bigger threat to the continuation of humankind. In this study the attitude towards the global problems of high-school students, and the shift in the perception of these problems in the past two decades, are examined. The survey was conducted using A World Problem Questionnaire (Chlewiński & Zaleski, 1991) in which 32 global problems were listed. In 2012 we added seven statements describing global problems which may also become crucial in the future. The survey results indicate that global environmental problems are the ones that people were most concerned with both twenty years ago and today. Compared to the past survey, the present students were more worried about the exhaustion of energy resources, the continuous growth of the world population, and the issues of social inequality. Problems concerning folklore disappearance have become more important, whereas the danger of nuclear war and AIDS have become less important. There was a pessimistic outlook concerning finding solutions to crucial global problems in the future and that pessimism has increased in the course of years. It also appears that the results are affected by socio-demographic factors (gender, region and language of study). The majority of global problems deemed important were congruent with those discussed in the media, which allows us to state that the media amplifies the already crucial issues (e.g. environmental ones).

Keywords: attitude towards global problems, optimism and pessimism, future orientation

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1. Introduction

Our world has changed a great deal during the last quarter of a century. The modern world's environment is characterized by greater openness, increased communication and interdependency of nations and societies. This greater openness has also resulted in increased consciousness by the citizens of all nations that together we face a common set of global problems. What will the world's future be like? How probable is it that the next year will be horrific for the world? These are common questions for all of us.

Today Estonian people, as citizens of the European Union, sense instability in their everyday lives; the stability preceding the economic crisis has crumbled (Opinion of, 2013).

Events in the world surrounding us have made people contemplate fundamental issues concerning the existence of our planet. More and more the media is reporting the dangers that can cause global disaster. These scenarios attracted people's attention 40 years ago, in 1972, when the report *The Limits to Growth* by the Club of Rome was published (Meadows, Meadows, Randers & Behrens, 1972). Since then, there has been a conviction that the future of humankind is not predestined, but that all nations, and each individual, have a chance to contribute to creating a better future (Valge & Sepp, 2009). The solution to the world's problems has become dependent on each individual and is his or her co-responsibility.

In order to include people in processes of solving global problems it is necessary to find out to what extent these issues are important to individuals and what their perception of the potential solvability of global problems is. After acquiring this information and knowledge, we can then devise methods which will influence people's understanding of the importance of global issues and their own responsibility in solving these problems.

Why did we study adolescents? For many developmental psychologists, adolescence is seen as a period of preparation for adulthood (Call, Riedel, Hein, McLoyd, Petersen, & Kipke, 2002). Underlying this perspective is the assumption that adolescents are nurtured and shaped, intentionally and unintentionally, for the roles they will take on in the future (Beal, 2011).

Through this process, adolescents should gain experiences that help them shape their own expectations of the future, which include perceptions of possibilities and opportunities (Nurmi, 2004). These expectations will impact their decisions and the opportunities they pursue, placing them on trajectories that shape the rest of their lives.

Future orientation, defined in various ways, has been explored in literature and has consistently been found to relate to adult competence and attainment (Manzi, Vignoles, & Regalia, 2010), positive educational outcomes (Beal & Crockett, 2010), and delinquency (Oyserman & Markus, 1990), despite inconsistent measurement and varying definitions. In the sociological literature, adolescent future orientation is seen as an important predictor of adult attainment (e.g., education; Messersmith & Schulenberg, 2008). In the risk and resilience literature (e.g., Masten, Obradović, & Burt, 2006), future orientation is identified as a primary predictor of overcoming adversity. In the psychological literature, adolescent future orientation is often used to predict behaviour and planning (e.g., Beal & Crockett, 2010) and transitions to adulthood (e.g., occupation; Nurmi, 1994), and has been used in intervention research to identify children at risk for school failure (e.g., Oyserman, Bybee, & Terry, 2006). In all of this literature there is a shared understanding that some adolescents have higher levels of future orientation than others.

A number of studies and theoretical considerations (e.g., Zaleski, Chlewinski & Lens, 1994; O'Brien McElwee & Brittain, 2009,) suggest that, generally, people are more interested in their own future and that of their relatives (especially children), and that they rarely place a priority the universal issues. Wenglert and Rosen (2000) found that people are notably more optimistic for their personal futures than for the world's future. The rose-tinted glasses that many people wear when considering the future (Newby-Clark & Ross, 2003) seem to apply more to the personal future than to the world's future.

It is the latter which is the subject-matter of the present research. We mean to take into account not predictions about personal successes and threats, but the fates of entire human populations. This is in keeping with the fact that no group or nation can solve global problems on their own.

2. Method

In our survey we looked for an answer to the question – how important are global problems in the Estonian society in 2012 among high-school students and how has the importance of these problems changed during the past 20 years; what global problems do adolescents think will be important in fifty years, and how have the predictions of the future changed since the 1990s.

We had a hypothesis that if conditions change in the society the attitude of adolescence would also change.

In order to check out the hypothesis we conducted the survey among adolescents in autumn 2012 and the results were compared to surveys conducted between 1991 and 1995. In 1991 the survey was carried out two months after the Republic of Estonia regained independence. Those who participated in November–December 2012 had been born in an independent Estonia and grown up in the society with Western European values.

The survey was conducted by using A World Problem Questionnaire (Chlewiński & Zaleski, 1991) in which 32 global problems were worded by Professor Zdzisław Chlewiński from the Catholic University of Lublin, Poland to which Zbigniew Zaleski added “the scale of attitudes towards the future”. In 2012 Martin Talvik supplemented this survey (Talvik, 2013) and added seven statements describing world problems which may also become crucial in the future. The earlier 32 statements were kept the same in order to guarantee comparability. The seven additional statements were based on the opinion of qualified experts (Leonard, 2011; Seitz and Hite, 2012; Issues on, 2013).

In the questionnaire the global problems were presented as statements describing the worst possible scenario to happen when humankind does nothing to fight the problem. The survey participants had to evaluate how important the problem was for them at that moment on the 5-point Likert-type scale, and how the importance of the problem would change in the period of 50 years on a percentage scale from -100% to +100% by 10% step.

Responses on the percentage scale were regarded to reflect optimism or pessimism concerning the future (-100 to 0 = optimism; 0 to +100 = pessimism; Zaleski et al., 1994).

In 2012 the survey involved 1,391 high-school students at the age of 16.91 ± 0.88 ($M \pm SD$), 578 of the respondents were male and 813 female. This is 6.19% of all students in the high-school lists of Estonia (Alus- ja üldhariduse, 2013), which makes the reliance level (Reaves, 1992) 0.97, and thus the results can be generalised onto Estonian high-school students at large. Furthermore: since earlier surveys (Chlewiński, 1993) have indicated that the concerns of the adolescents reflect the concerns in the society as a whole, we can therefore use these results to make some generalizations about the total Estonian population.

From 1991 to 1995 1,943 high-school students from all over Estonia were questioned by Mati Talvik (Talvik, 1995; Talvik, 1998). The survey of that period was based on the aforementioned questionnaire of the 32 world problems translated into Estonian. Zbigniew Zaleski granted the permission for the translation and its use to Mati Talvik in 1991. Mati Talvik also obtained a database that contained similar survey results from Belgium, Western and Eastern Germany, Poland, Ukraine, and Lithuania.

In order to facilitate the analysis of the results, all problems described in the questionnaire were given brief titles: 1. Nuclear war, 2. Overpopulation, 3. Ecology, 4. Cancer, 5. Civilization diseases, 6. New diseases, 7. Natural disasters, 8. Psychological diseases, 9. Prejudices, 10. Religious conflicts, 11. Personal Alienation, 12. Unemployment, 13. Family crises, 14. Drug addiction, 15. Resources Exploitation, 16. Manipulation, 17. Alcoholism, 18. Interpersonal contacts, 19. Poor-rich conflict, 20. Life standard differences, 21. Women's role, 22. Family crises & delinquency, 23. Cultural & moral deterioration, 24. Conformism, 25. Industrial waste, 26. Professional diseases, 27. Folklore disappearance, 28. Nationalistic conflicts, 29. Illiteracy, 30. AIDS, 31. Secularization, 32. Violence & terrorism (Zaleski et al., 1994), 33. Global warming, 34. Demise of small nations, 35. Holes in the ozone layer, 36. Internet addiction, 37. Dangers of genetically modified organisms (GMOs), 38. Waste, 39. Space refuse (Talvik, 2013).

Taking the similarity of the global problems presented in the survey into account, we divided the described problems into four categories: environmental, health, social, and political problems. "Environmental problems" consisted of overpopulation, ecology, natural disasters, resources exploitation, industrial waste, global warming, holes in the ozone layer, waste, and space refuse. "Health problems" covered cancer, civilization diseases, new diseases, psychological diseases, professional diseases, AIDS, and dangers of GMOs.

“Social problems” covered personal alienation, family crises, drug addiction, manipulation, alcoholism, interpersonal contacts, women’s role, family crises & delinquency, cultural & moral deterioration, conformism, secularization, and internet addiction. “Political problems” consisted of nuclear war, prejudices, religious conflicts, unemployment, poor-rich conflict, life standard differences, folklore disappearance, nationalistic conflicts, illiteracy, violence & terrorism, and demise of small nations.

The internal reliability of the survey was checked by calculating Cronbach alpha. The value of the correlation coefficient between global problems listed in the survey was 0.94 on the importance scale, and 0.93 on the future scale. It means that the 39 statements represent the domain of global problems.

The internal reliability, in terms of the statements categorised as global problems presented in the survey, was also checked. All problems in the categories were in close correlative relation. The Cronbach alpha in the category of environmental problems was 0.81 on importance scale and 0.83 on future scale, in the category of health problems it was 0.78 on importance scale and 0.79 on future scale; in the category of social problems it was 0.81 and 0.83; and in the category of political problems it was 0.84 and 0.79.

In addition to the questionnaire, the handling of the global problems in Estonia’s daily paper *Postimees* online editions was investigated and the frequency of the global problems discussed in the articles was compared to the survey results.

3. Results

We realize that global problems are multidimensional and complex, and that our data is rich. For statistic data processing we used one- and two-dimensional data analysis methods, factor analysis and dispersion analysis methods ANOVA and MANOVA.

3.1. The importance of global problems among high-school students and changes over time

Listing the 2012 results by arithmetic mean, it turned out that industrial waste (M=3.90), resources exploitation (M=3.81), civilization diseases (M=3.78), life standard differences (M=3.78), ecology (M=3.78), and internet addiction (M=3.78) were problems that students perceived as the most important ones (see table 1).

Table 1. Problem importance and prediction of problem solution in 2012 (39 problems)

	Problem importance			Prediction of problem solution		
	Rank	Mean	SD	Rank	Mean	SD
1. Nuclear war	29	3.22	1.142	17	27.48	42.286
2. Overpopulation	9	3.74	1.079	1	47.78	44.390
3. Ecology	5	3.78	1.045	5	39.31	41.901
4. Cancer	7	3.75	1.132	29	18.90	49.258
5. Civilization diseases	3	3.78	1.085	12	31.64	40.655
6. New diseases	18	3.45	1.097	11	32.05	38.443
7. Natural disasters	25	3.30	1.187	19	24.85	41.958
8. Psychological diseases	33	3.07	1.142	31	18.10	36.391
9. Prejudices	34	3.06	1.247	39	-2.00	49.817
10. Religious conflicts	38	2.88	1.225	37	6.37	46.302
11. Personal Alienation	37	2.89	1.276	32	17.93	46.392
12. Unemployment	14	3.58	1.204	6	35.73	45.126
13. Family crises	24	3.31	1.210	27	21.15	40.527
14. Drug addiction	31	3.19	1.276	23	21.80	45.058
15. Resources Exploitation	2	3.81	1.106	4	41.15	48.406
16. Manipulation	28	3.24	1.218	26	21.21	42.671
17. Alcoholism	23	3.32	1.239	24	21.66	44.228
18. Interpersonal contacts	35	3.05	1.211	35	13.84	41.969
19. Poor-rich conflict	30	3.22	1.097	28	19.10	38.651
20. Life standard differences	4	3.78	1.079	7	35.25	43.128
21. Women's role	16	3.49	1.202	22	22.86	42.966
22. Family crises & delinquency	13	3.62	1.193	13	30.25	43.451
23. Cultural & moral deterioration	22	3.32	1.150	25	21.41	40.254
24. Conformism	26	3.27	1.144	30	18.59	40.512
25. Industrial waste	1	3.90	1.113	3	42.05	45.283
26. Professional diseases	21	3.37	1.207	34	16.28	46.910
27. Folklore disappearance	17	3.46	1.196	15	27.83	46.630
28. Nationalistic conflicts	27	3.26	1.161	33	17.55	42.837
29. Illiteracy	36	2.93	1.265	38	-1.57	48.771
30. AIDS	12	3.65	1.156	20	23.35	49.315
31. Secularization	39	2.76	1.272	36	8.87	44.797
32. Violence & terrorism	15	3.56	1.157	16	27.54	43.850
33. Global warming	11	3.67	1.146	9	34.51	44.131
34. Demise of small nations	19	3.45	1.161	14	29.18	42.820
35. Holes in the ozone layer	8	3.75	1.117	10	33.63	43.437
36. Internet addiction	6	3.78	1.161	2	42.06	45.406
37. Dangers of GMOs	20	3.42	1.180	18	25.36	43.227
38. Waste	10	3.70	1.093	8	34.79	44.525
39. Space refuse	32	3.18	1.219	21	23.04	45.669
Mean total		3.41	0.639		24.94	23.448
Environmental problems	1	3.65	0.708	1	35.72	28.686
Health problems	2	3.50	0.754	2	23.60	29.083
Social problems	3	3.31	0.720	3	23.50	25.427
Political problems	4	3.31	0.696	4	20.33	25.168

In the years 1991 to 1995 the four most important global problems were listed as ecology, industrial waste, AIDS, and terrorism and violence. In 2012 of these only industrial waste was perceived as one of the four major problems.

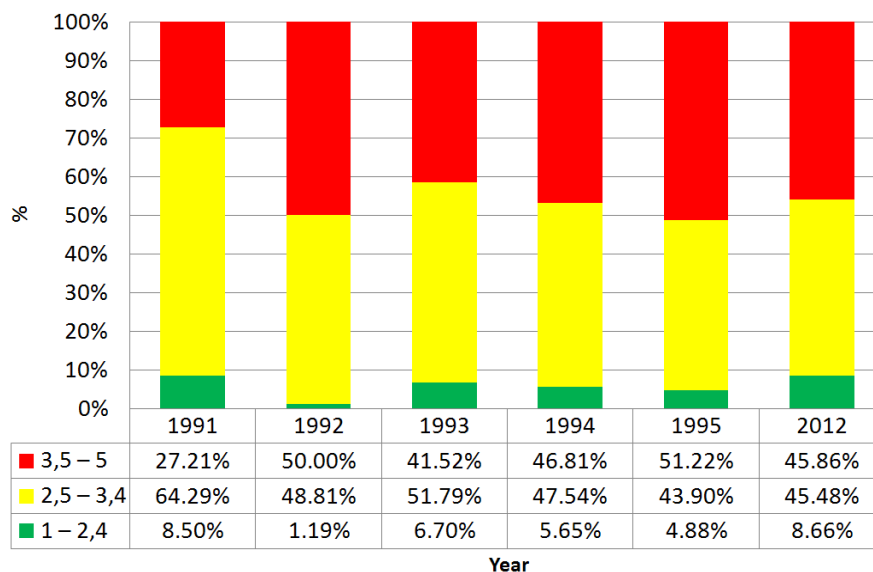
In 2012 students scored low problems such as secularization ($M=2.76$), religious conflicts ($M=2.88$), personal alienation ($M=2.89$), and illiteracy ($M=2.93$). There were no changes in these problems when compared with the 1990s. However, students have started to recognize the mass media's manipulation of people, which was seen as one of the least important problems in the 1990s. ($M_{1991-1995}=2.76-2.90$; $M_{2012}=3.24$).

Summarizing the afore presented we can state that in 2012 high-school students perceived as important different problems from those they did in 1991–1995. The results analysis (ANOVA) indicates that there also exist problems the importance of which has not changed in the course of time, such as family crises ($F=0.62$ $p=0.685$), interpersonal contacts ($F = 1.68$ $p = 0.135$), women's role ($F=3.51$ $p=0.004$), cultural & moral deterioration ($F=1.37$ $p=0.232$); professional diseases ($F=3.01$ $p=0.010$); secularization ($F=1.46$ $p=0.098$). The mean values of other problems have varied by years ($p<0.0001$).

The survey results also indicate (see figure 1) that in 2012 global problems were deemed to be important by 45.86% of the respondents ($M=3.5-5$); 45.48% of the respondents were indifferent ($M=2.5-3.4$), and for 8.66% of respondents global problems were of little importance ($M=1-2.4$).

Comparing the results of 2012 with those obtained in the early 1990s we can see that the greatest shift in perception occurred in 1992 (in respect to 1991). In 1991 a smaller number of students perceived global problems to be as important as they were considered to be in later years. In 1992 the share of students who deemed global problems important increased on account of the indifferent ones, and it has remained proportionally the same until today. In 2012 the proportion of those seeing global problems as unimportant was similar to the one in 1991, whereas the proportions of indifferent ones and those perceiving global problems important have become more or less equal (see figure 1).

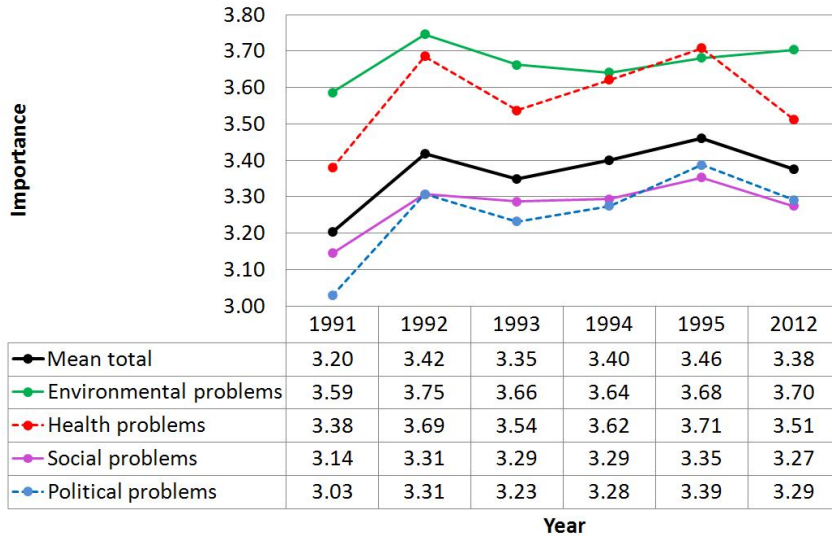
Figure 1. The change in perceived importance of global problems among high-school students (32 problems)



By taking into account the matters outlined above we can conclude that though the share of students considering global problems important has not been changed since 1992, there are differences in the problems deemed important. In 1992 there was a shift in perception compared with the year 1991 when the share of those deeming global problems relevant rose.

Comparison of the problem categories (see figure 2) indicates that in different years environmental problems have been deemed important most of all, except in 1995 when health problems became more prevalent. Social and political problems were perceived as less crucial. The two latter categories left high-school students indifferent ($M_{1991-2012}=3.03-3.39$) whereas environmental and health problems were seen as essential ($M>3.5$) in all years except 1991 when health problems left students indifferent ($M=3.38$). The mean values of environmental problems have not changed significantly over the years ($F=1.95$ $p=0.082$).

Figure 2. Changes in perceived importance of problem categories on the basis of arithmetic mean (32 problems)



By analyzing the results of the 2012 on the 39 global problems by using the MANOVA method it turned out that the students' gender influenced their perception of the problems (Wilks Lambda=0.77 $F(39, 1017)=7.92$ $p=0.00$).

The survey showed that women accounted more importance to global problems than men ($M_{men}=3.17$; $M_{women}=3.57$; $F=112.51$ $p=0.000$). For women 23 global problems were important ($M>3.5$) whereas for men the figure was 5. It is also noteworthy that for women 15 problems were more important than for men their most essential one – resources exploitation ($M=3.74$).

The students' study language also affected their responses (Wilks Lambda=0.72 $F(39, 1320)=13.42$ $p=0.00$). It turned out that though students of both Estonian and Russian language schools attached importance to global problems similarly ($F=0.008$ $p=0.928$), the problems themselves were different. Thus for students studying in Russian, health problems were the most important ($M=3.62$), followed by environmental ones ($M=3.48$), while the environmental issues ($M=3.70$) were perceived most important by students studying in Estonian.

The biggest difference, however, lay in attaching importance to such issues as the demise of small nations ($F=77.46$ $p=0.000$) and folklore disappearance ($F=89.84$ $p=0.000$).

For students studying in Russian these problems were listed as least important whereas for students studying in Estonian these problems were attached to the 19th and 17th places respectively.

These differences are similar to the results of 1991 when the importance of global problems was surveyed in various countries. The results indicated that folklore disappearance was the least important problem among the Belgians, West-Germans, and the one before the least important for Americans and East-Germans. For people from Poland this problem was put on the 30th place, whereas the Indians placed it 14th, Ukrainians 15th, Lithuanians 20th and Estonians 22nd in 1991 (Zaleski et al., 1994).

This can be summarized in the following way: folklore disappearance is a world problem important for Estonians, Ukrainians, Lithuanians and Indians. Russian youth living in Estonia identify themselves as a big nation and thus value this problem less.

3.2. Results of the prognosis on the optimism-pessimism scale and changes over time

Responses on the percentage scale we understand as optimism or pessimism concerning future of the world (-100 to -21 – extreme optimism; -20 to -6 – moderate optimism; -5 to +4 – there is no change in the importance of the problem; +5 to +19 – moderate pessimism; +20 to +100 – extreme pessimism; Zaleski et al., 1994).

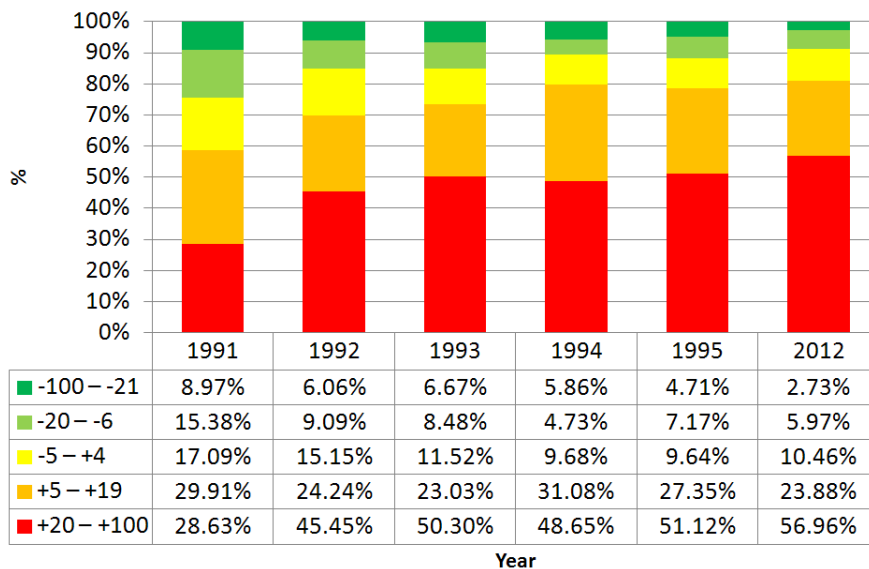
The results of 2012 demonstrate that when compared to the present situation, adolescents believed that the importance of illiteracy ($M = -1.57$) and prejudices ($M = -2.00$) wouldn't change during the next 50 years. While in 2012 there was no optimism ($M < -5$) towards any problem, in 1991 the number of problems expected to be solved was six. In 1992 the number of problems expected to be solved was three, in 1993 one, in 1994 two, and in 1995 one problem was expected to be solved in 50 years time.

In 1992 high-school students were most pessimistic about finding solution to overpopulation ($M = 47.78$), whereas in 1991 and until 1995 the greatest pessimism concerned the issue of ecology.

In 2012 (see table 1) students were also highly pessimistic about finding solutions to internet addiction ($M=42.06$), industrial waste ($M=42.05$), resources exploitation ($M=41.15$), and ecology ($M=39.31$). Of the mentioned problems industrial waste has been the only problem about which no significant changes on mean value have occurred ($F=2.91$ $p=0.013$) within the years.

We can deduce from the above that the pessimism and optimism of the different survey periods regarding finding solutions to global issues in the future, were expressed about different problems. The 2012 results indicate that 5.97% of the respondents were moderately optimistic about finding solutions to global problems in the next 50 years; 23.88% were moderately pessimistic; 10.46% did not see changes in the actuality of problems in the future. 2.73% of the respondents were extremely optimistic and 56.96% were extremely pessimistic (see figure 3).

Figure 3. Differences in students' prognosis on the optimism-pessimism scale (32 problems)

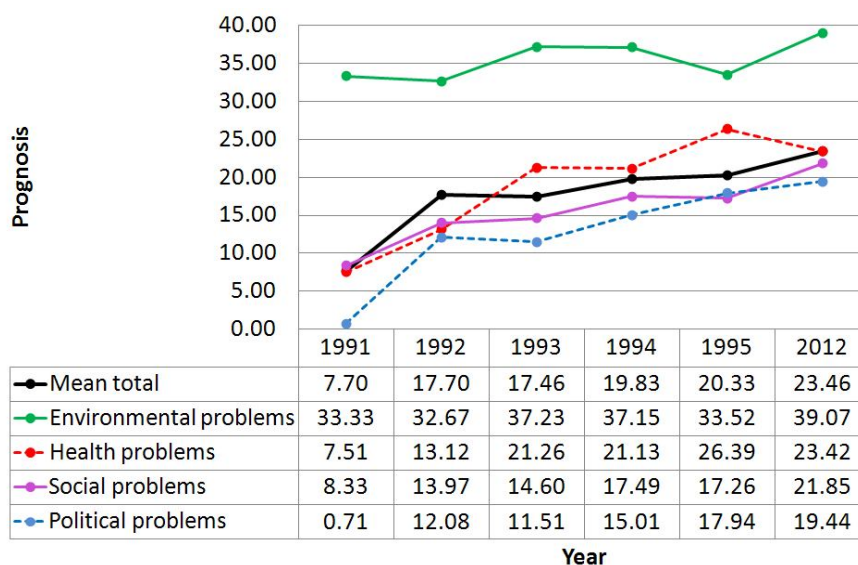


When comparing the results of the two survey periods on the optimism-pessimism scale we see that throughout the years the share of pessimistic students have risen and that of optimistic ones has fallen. The year 1991 is extremely visible – the students of the freshly re-independent Republic of Estonia were much more optimistic towards future than those surveyed in later years.

When summarizing the above it becomes clear that the new generation of high-school students (as EU citizens) are more pessimistic than the students who had just undergone the process of Estonia regaining its independence.

While comparing the results on the basis of problem categories (see figure 4), it turns out that the greatest pessimism concerns the area of environmental problems. When comparing the mean values of environmental problems we see that there are no significant differences over the years ($F=3.90$ $p=0.002$).

Figure 4. The changing prognosis on global problem categories by year on the basis of the arithmetic mean (32 problems)



According to the arithmetic mean the shapers for the persistent growing trend of pessimism towards global problems are not environmental problems but rather health problems ($M_{1991}=7.51$ and $M_{2012}=23.42$), social ($M_{1991}=8.33$ and $M_{2012}=21.85$) and political problems ($M_{1991}=0.71$ and $M_{2012}=19.44$).

We also investigated relationships between gender and optimism-pessimism about the solvability of global problems. More specifically, we investigated whether women, who usually score higher on anxiety scales (e.g., Hang & Hauser, 1991), would report greater pessimism about the solution of global problems in the future.

Analyzing the 2012 survey results of high-school students about their attitudes about 39 global problems with the MANOVA method, it turned out that the respondent's gender affected the response towards future prognosis (Wilks Lambda=0.82 $F(39, 1007)=5.63$ $p=0.00$).

Women were more pessimistic about future prognosis than men ($M_{\text{men}}=16.87$; $M_{\text{women}}=30.56$; $F=91.09$ $p=0.000$). If men were extremely pessimistic about 14 and moderately pessimistic about 22 global problems then the corresponding figures of women were 33 and 5. Women believed that there was only one problem – prejudices – that would not change in the future; neither moderate nor extreme optimism concerning any problem was found among women. Men, however, were moderately optimistic about two problems: prejudices ($M= -8.03$) and illiteracy ($M= -12.79$). Men believed that in the future only one global problem – religious conflicts ($M=0.48$) – would not change.

Pessimism among women was higher in 2012 than in the 1990s ($M_{1991}=11.27$; $M_{2012}=29.06$). Pessimism among men, however, had slightly decreased when compared with 1995, but was proportionally the same of the years 1992, 1994 and 1995. Both men and women were most optimistic in 1991 when Estonia became free from the Soviet regime.

4. Conclusion and Discussion

The present survey is based on the notion that problems reflected in the concerns of the youth are actual in the society at large. Therefore the results of the survey grant us knowledge not only about global problems important for the young, but allow to draw conclusions about the vitality of global problems in the whole community – Estonia. Knowledge gained via the survey is essential because the present high-school students are the problem-solvers of the future.

The results also offer vital feedback for teachers in Estonia. The current high-school curriculum in Estonia (valid from 1996) states that students must be aware of the global problems, take co-responsibility for resolving them, and value and adhere to the principles of sustainable development. Social studies, physics and geography should facilitate students noticing and understanding global problems and attaching importance to a responsible and sustainable life style.

The survey indicated that high-school students attached importance to global problems and it can be stated that they have obtained the first half of the competence described in the curriculum – to be aware of the global problems. On the other hand, the survey also suggested that high-school students were pessimistic about future solvability of global problems. They did not believe that they could help in this matter, though it is up to them to be responsible for finding solutions. Thus the second half of the competence described in the curriculum – to take co-responsibility – has remained unachieved.

Based on the surveys conducted earlier (Dodds & Chong-de, 1992) we set up hypothesis that if conditions in the society change, adolescents' attitude towards global problems will also change since they are a social group that can be most readily influenced.

The survey demonstrated that global problems were generally important for high-school students, but changes have occurred in the issues deemed important. In 2012 they attached importance to different problems than in the early 1990s.

Former surveys have shown that high-school students obtain knowledge about global problems either from school or via the media (Rickinson, 2001), knowledge does not grow in vacuum. Each bit of knowledge or notion should be treated as a social, and not individual, phenomenon. People adopt the values of the social group into which they belong, and this way build up the system of their value judgements and meanings (Bourdieu, 1993). Thus people evaluate certain issues as citizens of one or another society, observing the existing norms and evaluate problems according to their social roles.

It turned out that the greatest affecting factor of the results was respondent's gender. Women deemed problems more important than men. We can ask whether women consider global problems more important because they score higher on anxiety scales (Hang & Hauser, 1991) or whether the reason is that they respond to social expectations. Z. Chlewinski (1993) explains female pessimistic judgment by women's lower fear threshold. Our former survey (Talvik, 1995) has suggested that subjects who deem global problems important score high on social desirability on the EPQ survey score (Eysenck, 1975). Though the survey was anonymous, it was conducted in an official institution – school.

Women felt that they should be concerned about one or another global problem and respond according to expectations. Females of the 12th grade considered global problems more important than they did it in the 10th grade, whereas in males the case was vice versa. Social desirability, increasing in females and decreasing in males by grades, is just a suggestion that can explain the matter.

Another influencing factor was nationality. Responses of students whose mother tongue is Russian differed from those of native Estonian speakers. This proves again that individual thinking processes are affected by cultural and general models existing in the corresponding national group. Cultural environment determines the importance of problems and prognosis, especially about these which have become essential in the given society.

The interpretation of the whole world is based on former experiences. These could be from our personal lives or obtained from parents, teachers, the media, etc. We also investigated if there was a connection between global problems deemed important by high-school students and those most reflected by the media (Talvik, 2013). It turned out, as expected, that the majority of global problems perceived important were the same as those discussed in the media, which allows us to state that the media amplifies the already crucial issues (e.g. environmental ones).

Our other research question was: what global problems do adolescents think will be important in fifty years and how has future prognosis changed in 20 years time? The survey indicated general pessimism about solvability of global problems.

Why in autumn 2012 did Estonia's youth see world's future in a pessimistic way? As the general growth of pessimism is mainly caused by the pessimistic prognosis of social and political global problems, the increased pessimism among the young can be explained by the overall disappointment and depression caused by global economic crisis.

The optimism of 1991 can be justified by sudden and unexpected liberation from the totalitarian regime which brought along a general wave of optimism in the society. The prevalent opinion was that everything could become only better. The selected sample expressed optimism in connection with the atmosphere of the "spring of democracy".

In regards to political problems, the prognosis of 1991 after the “singing revolution” foresaw no changes for the future. Everything expected in connection with the liberation was achieved and obviously nobody believed that things could grow worse. The year 1992 witnessed the increase of pessimism even in those issues. 1992 was the year of monetary reform when roubles were exchanged for Estonian kroons. Purchase power decreased together with natural growth of population which achieved the bottom line in 1994 (-8036) (Statistics Estonia, 2013).

Thus in the years between 1992 and 1995 the general background in the society was rather pessimistic one and that could affect pessimism concerning the future of finding solutions to global problems. The same could be claimed about the year 2012 with its general negativistic background emerging from the economic depression and crisis in the European Union. The young read and hear constantly about negative events in the world via the media and it is suspected that this influences their attitude to global problems described in the survey. As a result the 2012 survey results indicated further deepening of pessimism.

The survey claims that high-school students from South-Estonia were more pessimistic than those living in Tallinn; there were also some differences between Tallinn schools. This enables us to conclude that in addition to knowledge general pessimism is also affected by experience obtained from direct living environment. About one fifth of children in Estonia – in 2011 the figure was 16.2% – live in relative poverty, most of them in rural districts (Suhteline vaesus, 2013). Influence on different appraisals can be attributed to the factor of material wellbeing that could affect the results of our survey. Nurmi (1987) and Beal (2011) have referred in their research that future-oriented cognitions may vary across socio-economic statuses. Opportunities available to adolescents, and their expectations for success, vary by social class.

A person’s pessimism regarding the solvability of global problems is expressed when people have direct contact with them (Zaleski et al., 1994). Issues distant to Estonian high-school students, such as prejudices and religious conflicts or about which they have little knowledge like illiteracy, were seen in more optimistic manner.

The young are oriented towards achievement and they are optimistic towards personal goals, potential gains and losses (Wenglert and Rosen, 2000), whereas their attitude towards the global future is pessimistic. Nevertheless, an individual's future contains not only his or her own individual aims and aspirations that are more or less dependent on their own efforts, but also the whole humankind's future with its threatening dangers and problems. Many of those are of long-term nature and by accumulation begin to endanger humankind more and more. It is difficult to live a happy life in a generally miserable world.

Is it good to be optimistic about world's future? In many ways, yes. As Wenglert and Rosen (2000) suggested, if one foresees a negative future, it may be hard to work to improve it. On the other hand, if the future does not look too bad, perhaps there is no need to take precautions (Hatfield and Job, 2001). So, the essential questions emerging from our survey are: is it good to be optimistic or pessimistic about world's future? And how can the high-school curriculum support taking co-responsibility for fighting global problems? We encourage further research on these topics.

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