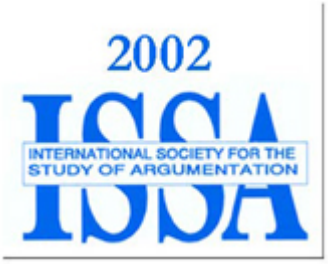
ISSA Proceedings 2002 – Argumentation Skills Of Secondary School Students In Finland, Hungary and United Kingdom



1. Introduction

One consequence of the strengthening integration in Europe is that people of different nationalities become closer to each other, sharing increasingly common interests in terms of both economical and cultural change and development. The rapidly developing information and communication technology, and the access to Internet network facilities in particular, has facilitated and increased international communication. The citizens of today's network society are increasingly required to critically examine current societal issues from different points of view, to form reasoned opinions and to engage in public debate relating to them. Many of the current societal questions are cross-national in nature such as protection of nature, building of new nuclear power stations, production of genetically modified food and gender equality. One important aim of current secondary school education is to assist young citizens, in the age just before they become real political actors, in acquiring the necessary knowledge and skills to be able to participate in debates concerning such societal questions (see SCALE-project, 2002). Argumentation and critical thinking skills are needed in order to successfully engage in debates by means of both spoken and written language. Thus, contemporary secondary school education should particularly emphasise the teaching of these skills.

According to van Eemeren and Grootendorst (1999), the aim of an argumentative dialogue is to resolve differences of opinion by reaching agreement through critical discussion about the acceptability or unacceptability of the various standpoints. When engaging in critical argumentative dialogue, one should be able to present well grounded arguments for his/her opinions, put forward counterarguments and refute criticism by other participants. In this study,

however, argumentation skills are investigated by focusing on skills that appear when secondary school students express their thoughts literary in non-dialogical situations. Previous research (e.g. Marttunen, 1994) has shown that argumentation skills can be divided into subskills which exist, at least to some degree, independently. Such skills are the skill to analyse argumentative texts and the skill to compose one's own arguments. Experiences gained from other studies have shown that in addition to analysis of argumentative texts (Oostdam & Eiting, 1990; Ryan & Norris, 1990; Marttunen, 1997) and composition of one's own arguments (McCann, 1989; Oostdam & Emmelot, 1990; Marttunen, 1997), commenting on argumentative writings (Marttunen & Laurinen, 2001), and judging the validity of an argument in multiple-choice tasks (Oostdam & De Glopper, 1998) are other appropriate ways of measuring argumentation skills.
This article **[i]** investigates secondary schools students' argumentation skill in Finland, Hungary and the United Kingdom. The aforementioned four task types representing various approaches to argumentation in non-dialogical situations were used in this study.

2. Argumentation in secondary school curricula in Finland, Hungary and the United Kingdom

Although argumentation skills are widely considered as important in order to educate school pupils to become active and critical citizens who are able to engage in public debate, the possibility for teaching argumentation to new generations is largely dependent on the school systems and emphasis in curricula in different countries. In Finland the national Framework Curriculum and the municipal level curriculum for secondary schools strongly emphasize the need for teaching students critical thinking and argumentation skills. One of the aims of the secondary school included in these documents is to educate students to become independently thinking critical citizens (see Framework curriculum…, 1994). The study system in Finnish secondary school is course-based and not bound up with year-grades. The system provides the individual schools with good opportunities to allocate teaching resources themselves and to concentrate on areas of their specialisation. The obligatory courses for secondary schools in mother tongue include studies and learning material significant from the point of view of argumentation. In addition to the exercises in oral debate and argumentative writing, the course contents include also studies relating to different aspects of the argumentative power of language in various areas of social life. Teachers can also freely select authentic teaching material from

newspapers and other sources. The central idea of the Finnish secondary school curriculum is flexibility, which provides the schools with possibilities to also organise cross-disciplinary studies of argumentation and critical thinking.

The general guidelines for Hungarian secondary school education have been defined in official national curriculum documents which, correspondingly to Finland, are also divided into different levels. The Hungarian National Curriculum includes clear expectations of providing students with critical thinking and argumentation skills in both speaking and writing. The Frame Curricula of different subjects define, however, less room for practising argumentation skills. According to the frame curricula, argumentation is taught in mother tongue, literature, and in subjects related to social studies. Other subjects' curricula do not follow the National Curriculum from this point of view (see Kerettantervek…, 2000; Nemzeti…, 1995). Finally, the teaching practices at the local level are far behind the expectations presented in official documents since there is a lack of suitable text books and other teaching materials for teaching argumentation skills. The teacher education also lacks systematic training of argumentation and rhetorical skills.

The National Curriculum in the United Kingdom determines the content of what will be taught at school, sets attainment targets for learning, and determines how performance will be assessed and reported. Overall, there is limited provision in the curriculum for student group discussion and interaction. Provision for argumentation and debating skills is more evident in the teaching of *English*, and the range of aims includes teaching the students how to explore, hypothesise, debate and analyse what is being said during discussions, and how to take different roles in groups, such as organising or leading the discussion, supporting others, and enabling focused talk (see National Curriculum Online, 1999; Quarding Standards, 2001). The random approach towards developing argumentation and debating skills in the UK classrooms underlies some of the problems pointed out by teachers during curriculum studies in several UK schools (Backley, Saxton & Sillince, 1999). These studies show that argumentation and debating skills are being introduced in the context of verbal debate rather than essay writing, and that, as regards verbal debate, emphasis is placed on the importance of (a) providing sufficient evidence to support the claims being made, and (b) being equipped to consider and respond to counter-argument. These areas highlight particular weaknesses in students' ability to construct argument and

debate. Teachers agree that students are generally too quick to assume that a strongly-held claim will stand up without independent justification or support, and that specific instruction in this area is necessary. Backley, Saxton, and Sillince (1999) also report that there is an assumption that responsibility for teaching argumentation lies primarily with the English teachers. English teachers currently use a range of resources for teaching and practicing argumentation skills, ranging from exercises taken from English Studies textbooks, to a significant amount of self-prepared material (e.g. newspaper extracts, advertising media).

3. Review of research

Previous research on factors associated with argumentation skills has shown that the level of argumentation and critical thinking is associated at least with intelligence, (Perkings, 1985), gift (Voss & Means, 1991), age (McCann, 1989), gender (Litosseliti, 1999; Sargeant, 1993), the level of education (King, Wood & Mines, 1990), and the level and type of facilitation by the teacher (Pilkington & Parker-Jones, 1996; Ravenscroft & Hartley, 1998; Ravenscroft & Matheson, 2000). With regard to age, McCann (1989) indicated that students from grade 12 were significantly more skilful in argumentation than students from grade 6.

In terms of research on gender and argumentation, during the 'Argument' research project at Hull University in the UK (see Mitchell, 1994; Andrews, 1995), Sargeant (1993) examined the development of male and female secondary students' argumentation skills. Analysis of her students' journals revealed that the girls showed 'far more appreciation of the different types of argument, of argument as a two-way process, as sometimes simply a sharing experience or a weighing-up in oneself; as something which may not necessarily result in winning or beating an opponent, as many of the boys saw it.' (Sargeant, 1993, 10). On the other hand, boys' accounts were 'more reminiscent of a battle, a war to be won by confidence, boldness and expertise, a discourse missing from the girls' journals (ibid.). There is a growing interest in this area, and a wealth of interpretations of empirical work which seeks to answer questions about gender. Litosseliti (1999), among others, has argued that gender dichotomies (in terms of argumentation, and more generally) need to be treated with caution, because they construct gender as a binary and fixed category, instead of a dynamic process of identity construction and performance (see also Yates, 2001; Litosseliti & Sunderland, 2002).

There is a lack of studies in which international comparisons have been made in

argumentation skills of secondary school students in different countries, although students' educational achievements in various school subjects are tested rather regularly with international achievement measures (e.g. Purves, 1992). The most recent comparative study organised by OECD – Programme for International Student Assessment (PISA) – reports on findings relating to students' performance in reading literacy, mathematical literacy and scientific literacy across 32 countries (Välijärvi & Linnakylä, 2002; Knowledge and..., 2001). According to the results of PISA, the reading literacy of Finnish secondary school students is higher than in any other country (546 points, i.e. almost half of the international standard deviation above the OECD average of 500 points). Also the mean performance of the UK (523 points, the difference between Finland and the UK is statistically significant) is significantly above the OECD average, whereas Hungary (480 points) is one among the 14 countries which performs significantly below the OECD average. Although argumentation related activities are partly included in the measurements of PISA, comparative studies focussing especially on students' argumentation skills in different countries are not yet available.

This study focuses on two research questions:
1. What is the level of argumentation skills of secondary school students in Finland, Hungary and United Kingdom? and
2. Does gender and age of the students have an effect on students' argumentation skills?

4. Method

4.1. Students

The participants of this study (n = 443) are predominantly secondary school students from Finland, Hungary and the United Kingdom aged from 15 to 19 years. Some of the Hungarian participants (20 pupils) represent early post-secondary level. They were included in the data in order to increase the number of students aged 18 and 19 who otherwise would have been under-represented in the Hungarian data. In this way the comparability between the Hungarian and Finnish results was improved (see Table 1).

The Finnish students (n = 329) come from four schools located in urban, semi-urban, semi-rural and rural districts. Thus, they constitute quite a representative sample of Finnish secondary school students.

The Hungarian students (n = 73) study in two schools both located in Budapest.

Most of them (53 students) are students in a Telecommunications Technical Secondary School. There are three different kinds of secondary schools in Hungary – grammar schools, technical secondary schools and vocational secondary schools – the first two have a lot in common since they prepare the students for the general final exam needed for going to the higher education. In the telecommunications technical secondary school the studies of the two first years consists of general education, and the third and fourth years are for general and some professional studies relating mainly to information technology. The group of 20 Hungarian post-secondary students study in a post secondary vocational school (Szamalk) in which the studies relate closely to information technology and business.

The students from the United Kingdom (n = 41) come from a class of *General Studies* in a comprehensive secondary school located in London. Since General Studies is a subject taken by all secondary school students in the United Kingdom, the students in the class in question can be seen as representative of the average secondary school students in the UK. None of the students had received formal instruction in argumentation and debate. However, the particular school has a long tradition of debate through the *Debating Society* which is a popular voluntary extra-curricular activity among students. The Debating Society offers students the opportunity to engage in regularly arranged events in which they have panel discussions on various issues of current affairs. Some of the students may have been somewhat more informed in argumentation as a result of having been participants or observers in this Society.

The distribution of the students of the study is presented in Table 1.

Table 1 The distribution of the students in different countries by gender and age.

		COUNTRY						TOTAL	
		Finland		Hungary		United Kingdom			
		f	%	f	%	f	%	f	%
GENDER	Male	148	46	66	90	30	77	244	56
	Female	176	54	7	10	9	23	192	44
	Total	324[1]	100	73	100	392	100	436	100
AGE	15	47	14	-	-	-	-	47	11
	16	147	45	8	11	20	49	175	40
	17	96	29	33	45	21	51	150	34
	18	36	11	17	23	-	-	53	12
	19	3	1	15	21	-	-	18	4
	Total	329	100	73	100	41	100	443	100

[1]Information of five students is missing; 2 Information of two students is missing.

Table 2 The structure and content of the measurement instrument.

TASK TYPE	STRUCTURE OF THE TASK	STUDENTS' TASK
Text analysis	A passage from an authentic text split into numbered sentences	To identify • the main claim • the supporting grounds
Composing	A given theme on a controversial issue	To compose • own opinion and supporting grounds
Commenting	An argumentative text (a claim, four extreme or false grounds, and a conclusion)	To comment freely on the text
Judging	Part A): a claim and five grounds Part B): three grounds and three conclusions	To select the correct • grounds (in part A) • conclusion (in part B)

4.2. Data collection

The data of the study was collected by a measurement instrument including four types of tasks measuring argumentation skills: text analysis, composing, commenting and judging tasks (see Table 2).

The task concerning *analysing an argumentative text* was based on an extract from the book *The Hidden Curriculum* (Broady, 1986). The extract dealt with progressive pedagogy from the point of view of different social classes. Three pedagogical principles guided the selection of the text in question. *First*, the topic of the text, progressive pedagogy, concerned one of the main pedagogical reforms in the Western pedagogy during the last decade. Progressive pedagogy characterises also very well the current teaching practises in today's Western schools. Thus, the text touched upon the students' real life world making the task meaningful to them. *Second*, the text was a passage from an authentic book. Authenticity is important since the purpose of the task was to measure text comprehension and analysing skills. These are the kind of cognitive skills that the students need in their everyday school work when they work with different kinds of teaching material and outside school activities, as well as when they have to critically analyse information they encounter in various text books and Internet sources. Many authors (e.g. Macdonald, Heap & Mason, 2001; Chambers, 1999) have emphasized the need for teaching contemporary students information selection skills in order for them to be able to use new technologies effectively. These are skills that contemporary school teaching should particularly emphasise. *Third*, the text had a distinct argumentative structure including a clear main claim and supporting grounds which made it suitable to be used in a task concerning analysis of an argumentative text. The text was split into 24 numbered sentences. The students were asked to analyze the text by writing down the number of the sentence which they thought included the main claim in the text, and the numbers of those sentences that included the grounds in support of the claim.

In the task relating to *composing one's own argument* the students were asked to formulate an opinion on a controversial theme that was given to them, and to write grounds in support of their claim. The theme was *Driving in city centers*. Two pedagogical principles guided the selection of this theme. *First*, the aim was to find such an intercultural theme that would be equally applicable to different countries and cultures, and *second* the theme was current and controversial in such a way that it was easy to form a personal opinion about it.

The task concerning *commenting on an argumentative text* consisted of a provocative opinion, four extreme and false grounds that were provided in support of that opinion, and a false conclusion. The students were asked to comment freely on the text. The text concerned equality between genders in school. Gender equality is a current theme in most Western countries, and therefore it provided the instrument with a suitable focus.

The *judging (multiple choice) task* consisted of two different subtasks. In the first task the students were given three grounds and three conclusions. They were asked to evaluate the conclusions and to choose the one they judged to be the right one. The topic of the task was *Usefulness of studying foreign languages*. The second task included a claim, two correct alternatives and three catch trials. The students were asked to evaluate the grounds and to choose the ones they thought supported the claim. The topic of the task was *Evaluation methods at school*. The themes were, again, selected so that they would be relevant in different countries and cultures.

The students in all countries completed the test in a controlled situation in their own classroom during a normal school day. This took place during fall term 2001 in Finland and in Hungary, and in January 2002 in the United Kingdom. It took about 45 minutes to fill in the test. The testing instrument was originally written in Finnish and then translated into English and Hungarian by the researchers involved in these studies in each country. The Hungarian students' answers to the instrument were translated into English for the analyses that were carried out in Finland.

4.3 Data analyses

The students' answers to the task of analysing an argumentative text were analysed by scoring the *claims* and supporting *grounds* separately. With respect to the analysis of the claims, the text included one correct sentence which included the main claim of the text, and two partly correct sentences. The correct option was scored to give two points and the partly correct options gave one point. If a student had selected some other sentence s/he did not get any points. The grounds the students had selected to support the claim were analysed through three phases. First, the number of both relevant and irrelevant grounds in terms of the selected claim was calculated. Second, the score indicating the general relevance of the selected grounds in terms of the claim was calculated according to the following formula: [Relevancy score = R – I/2] in which R is the number of relevant grounds, and I is the number of irrelevant grounds. Third, if

the relevancy score of a student was one or less, no points were given, if the score was from 1,5 to 3 a student got one point, and the scores from 3,5 and upward gave two points.

The analysis of the task composing one's own arguments was, accordingly, based on separate analyses of *claims* and *grounds*. The analysis of the claims clarified whether the claim a student had composed was clear and understandable, and whether it focused on a single sharp statement. If the claim was clear and the meaning of it understandable, one point was given, and for a well-focussed sharp claim a student got another point. Thus, the range of scoring of the claim was from 0 to 2. The analysis criteria for the students' grounds were relevancy and sufficiency (see Bacig, Evans, Larmouth & Risdon, 1990; Walton, 1989). The students' groundings were classified into three categories:
1. the grounds were mainly irrelevant and too few (0 points);
2. the grounds offered narrower support, and the grounds may overlap (1 point);
3. the grounds were relevant to the claim and offered a wide scope of support for it (2 points).

The analysis of the students' comments on a short biased argumentative text clarified how analytical their comments were. The students' comments were seen to reflect their understanding of appropriate ways to comment on and analyze an argument. In an analytical comment (2 points) a student had responded to most of the elements of the argument: to the claim, and at least to three of the four grounds. The answers classified as in-between (1 point) included responses to two or three elements, and in a non-analytical comment (0 point) none or only one element was responded to.
In the analysis of the judging tasks, the different possible choices were scored. In the task relating to the choice of correct grounds (Part A, Table 2), two of the five grounds were formulated to support the claim. The range of the scoring was from 0 to 2. In the analysis one point was awarded for a correct choice and one point subtracted for an incorrect choice. In the task in which the students were asked to choose the correct conclusion (Part B, Table 2), the correct alternative (2 points) was the conclusion that was supported by all of the three grounds. A partly correct conclusion (1 point) was supported by two of the grounds, and a false conclusion (0 points) by none of the grounds.
Previous studies have indicated that the use of corresponding analysis criteria to those described above is a reliable method to evaluate the level of students'

argumentation (see Marttunen, 1997; Marttunen & Laurinen, 2001).

4.4 Statistical analyses

Table 3 Variables used in the statistical analyses.

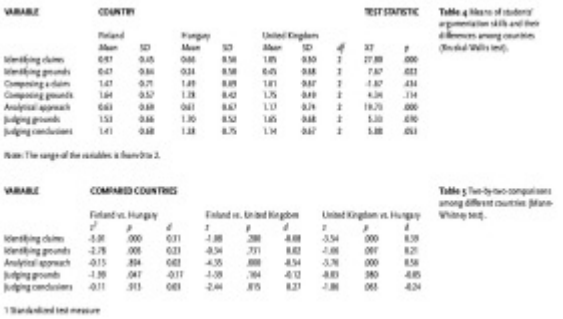
DEPENDENT VARIABLES		INDEPENDENT VARIABLES	
Variable name	*Categories*	*Variable name*	*Categories*
Identifying claims	0) Poor	Country	1) Finland
Identifying grounds	1) Moderate		2) Hungary
Composing a claim	2) Good		3) United Kingdom
Composing grounds		Age	1) 15 and 16 years
Analytical approach			2) From 17 to 19 years
Judging grounds		Gender	1) Male
Judging conclusions			2) Female

The statistical analyses investigated the associations between independent and dependent variables. Seven dependent variables concerning argumentation skills derived from the students' answers to the measuring instrument, and three independent variables were used in the analyses. For analysis purposes, the *Age* variable was classified into 2 categories: *15 and 16 years* and from *17 to 19 years*. The basis for the selection of these age limits was the unequal distribution of pupils of different age in different countries (see Table 1).

In the statistical analyses Univariate Anova variance analysis was used to determine the possible interaction effects of the independent variables on the dependent variables. The analyses were specified by utilizing Kruskal-Wallis, Mann-Whitney and Independent samples t-tests. These methods were used in determining the main effects of the independent variables on the dependent variables.

5. Results

The results of the Univariate Anova variance analysis showed that there were no interaction effects of the independent variables on the dependent variables. Thus, this analysis did not reveal any such interaction structure between the independent variables that would have necessitated the further use of multifactorial analysis methods in explaining the variations of the dependent variables. In order to clarify further the associations between the independent and dependent variables, the independent variables were tested one by one by using unifactorial analysis methods. The test of homogeneity of variances in the case of the *Country* variable indicated that the variances of the three different countries in most of the dependent variables differed from each other. Therefore, Kruskal-Wallis variance analysis was used in testing the differences between the different countries (see Borg & Gall, 1989, 356). The differences between the categories of the dichotomous variables *Age* and *Gender* were tested by the Independent samples t-test.



5.1 Differences between countries

The results in Table 4 indicate that the means of variables *Identifying claims, Identifying grounds* and *Analytical approach* differed among countries. The two-by-two comparisons of these variables were carried out by using Mann-Whitney test. Since the sample sizes of different countries differed from each other (see Table 1) and most of the dependent variables were not normally deviated, the results of the Kruskal-Wallis test were interpreted to be mainly suggestive in nature. Thus, two-by-two comparisons were also carried out with variables *Judging grounds* and *Judging conclusions*, the results of which indicated nearly statistically significant differences between the examined groups. The results of the two-by two comparisons are described in Table 5.

The results in Table 5 indicate that the Finnish and British students' skill to identify claims from an argumentative text was better compared to the Hungarian students. The Finnish students were also more skilled in identifying grounds from the text than the Hungarian students were. The Hungarian students, in contrast, performed slightly better than the Finnish students when the task was to judge grounds and to select the right ones from different options. Furthermore, the results show that the students in Finland were more skilled in judging alternative conclusions compared to students in Britain. The British students were, in turn, superior in putting forward analytical comments on an argumentative text compared to both their Finnish and Hungarian counterparts.

Table 6 Differences in students' argumentation skills (Independent samples t-test) in terms of gender.

VARIABLE	GENDER				TEST STATISTIC		
	Male		Female				
	Mean	*SD*	*Mean*	*SD*	*df*	*t*	*p*
Identifying claims	0.92	0.52	0.93	0.45	434	-0.30	.763
Identifying grounds	0.43	0.63	0.44	0.63	422	-0.07	.948
Composing a claim	1.48	0.69	1.50	0.72	430	-0.29	.769
Composing grounds	1.63	0.56	1.71	0.52	424	-1.50	.133
Analytical approach	0.60	0.70	0.78	0.71	424	-2.64	.009
Judging grounds	1.56	0.66	1.57	0.62	427	-0.12	.902
Judging conclusions	1.37	0.69	1.37	0.70	421	-0.03	.975

Table 7 Differences in students' argumentation skills (Independent samples t-test) in terms of age

VARIABLE	AGE OF THE STUDENTS				TEST STATISTIC		
	15 and 16		From 17 to 19				
	Mean	*SD*	*Mean*	*SD*	*df*	*t*	*p*
Identifying claims	0.94	0.46	0.91	0.52	441	0.79	.433
Identifying grounds	0.40	0.59	0.46	0.66	429	-1.00	.316
Composing a claim	1.47	0.71	1.51	0.69	437	-0.51	.609
Composing grounds	1.63	0.55	1.71	0.53	431	-1.64	.102
Analytical approach	0.65	0.69	0.72	0.72	431	-0.98	.328
Judging grounds	1.54	0.65	1.59	0.63	434	-0.84	.401
Judging conclusions	1.37	0.70	1.39	0.69	428	-0.31	.754

5.2 Differences in terms of gender and age

The results in Table 6 indicate that female students' comments towards an argumentative text were more analytical than the comments of male students (0.60 vs. 0.78). The differences in other variables were not statistically significant. It should, however, be noted that although only one variable showed statistically significant difference in favour of females, the scores in all the variables were also higher among females, with the exception of the *judging conclusions*

variable, where males and females performed equally. Furthermore, Table 7 shows that the students of the different age groups performed equally in all the skills measured. However, it is again worth noting that although statistically significant differences between students of different age were not found, the older students got higher scores than the younger students in all the variables except one (*Identifying claims*).

6. Discussion

Although some general observations are published concerning variations of conversation and argument cultures in different countries (e.g. Crismore & Markkanen, 1993; Samovar & Porter, 1996) comparative cross-national studies on argument skills of secondary school students are not yet available. However, the recently published first results from OECD Program for International Student Assessment – PISA – (Välijärvi & Linnakylä, 2002; Knowledge and..., 2001) give some light on students' argumentation skills as part of literacy. In this report literacy is defined in a very broad way, i.e. as the capacity to understand, use, interpret, and reflect on written texts (Knowledge and ...2001, 22). The most demanding tasks at the highest level of reading proficiency required students to draw hypotheses or write grounded arguments on the basis of specialised knowledge (p. 37). In addition to that, scientific literacy was defined to be dependent on the ability to relate evidence or data to claims or conclusions and on the ability to produce an argument based on a situation given, expressed in a manner that is appropriate and clear to the intended audience (p. 83).

From the point of view of argumentation, the PISA results of the three separate scales of reading scores are more informative. The Finnish students were significantly better in retrieving information from texts and in interpreting texts than the students in any other country. However, the UK students were as skilful as the Finnish ones in reflection and evaluation when the means were compared. Consequently, the profiles of the most proficient readers are reversed in Finland and the UK. In the separate reading scales the percentage of the Finnish students at the uppermost level of proficiency is 26 % in retrieving information, 24 % in interpreting texts and only 14 % in reflective and evaluative reading, when in the UK the respective percentages are 16%, 14 % and even 20 %. The results of scientific literacy were along the same lines; both in Finland and in the UK the performance of the students was high above the OECD average but the Finnish students were near the average in the most difficult tasks which required them to

assess evidence and write conclusions. These findings are consistent with the results of the present study, as the UK students were superior to the Finnish ones in writing analytical comments on the provocative argumentative text with extreme or false grounds and a wrong conclusion.

In PISA research the Hungarian students performed below average on all separate reading literacy scales (478 in retrieving information from texts, 480 in interpreting texts, and 480 in reflection and evaluation). Also the percentages of the students in the uppermost level of proficiency in separate reading scales were rather small in Hungary; 8 % in retrieving, 4 % in interpreting and 6 % in reflecting and evaluating scale. The poor results in retrieving information from texts are worth noticing because ten years ago Hungary succeeded fairly well in tasks of this kind when reading skills were assessed by International Association for the Educational Achievement (see Knowledge and…, 2001). Furthermore, in scientific literacy, the mean scores (496 points) of Hungarian students did not differ statistically significantly from the OECD average although they scored lower than the Finnish and the UK students. The poor performance of the Hungarian students in reading literacy shows similarity with the results of the text analysis the students were asked to do in this study. Namely, the two tasks of which the text analysis was constructed were pure reading tasks. In the first task the students were asked to read the text and indicate the main claim. This task type is widely used when measuring text understanding. In the second task the students were asked to select those sentences from the texts that supported the main claim. This task required analytical reasoning and was thus more difficult than the first task. The differences in difficulty are clearly seen when comparing the means in Table 4.

In the multiple choice tasks, the Hungarian students were more skilful than the Finnish ones in judging grounds and as good as the Finnish students in judging conclusions. The multiple choice tasks are widely used when measuring reading comprehension and retrieving information from texts. The idea of the right answer without any possibilities to argue about it is always implicit in these tasks. Unfortunately, when it comes to learning, multiple choice tasks are criticised because they easily invite students to use memorisation strategies instead of more comprehensive and constructive learning strategies like elaboration and metacognitive monitoring. The Hungarian students in PISA survey, in which the students were also asked some simple questions about their learning approaches, stressed most of all the use of memorisation strategies. Nevertheless,

memorisation strategies were not significantly correlated with the reading literacy, whereas the elaboration strategies were. The active and selective use of elaborative and metacognitive reading strategies is especially emphasized and even taught in student-centered instruction. Due to political and historical reasons, student-centered instruction is not yet as widely used in eastern Europe as in the USA, western Europe and the Nordic countries. The variations in teaching approaches among the countries of the present study could be one factor affecting the differences in argumentation skills.

In the present study, the female students were more proficient than the male students in analysing the incoherent argumentative text. This is consistent with the results of PISA survey that reported the largest differences between genders in reflective and evaluative reading. Thus, female students were superior to male students in each of the 32 countries that took part in that research. Female students' high analytical skills may be due to their appreciation of different types of argument and of argument as a two-way process rather than a battle to be won (Sargeant, 1993), although we would not want to reinforce limiting gender stereotypes, which often view girls as caring and emotional and boys as aggressive and competitive (see Litosseliti & Sunderland, 2002 for a discussion on this).

The small and statistically not significant gender difference in the other tasks in this study can be related to the design of the tasks. In the composing task, the students were asked only to state their opinions and give grounds for it but not to analyse or reflect anything. In the identifying and judging tasks, the responses were not verbal at all as the students were asked to respond by giving numbers or putting crosses on the right places. Thus, the tasks did not provide opportunities for the most talented students to use their verbal argumentation skills very effectively. Since no interaction effects of the dependent variables (country, age, and gender) in this study were detected, the results suggest that the better performance of female students in the analytical text commenting task is to a far extent culture independent phenomenon.

In this study the age of the students in the two age groups, i.e. 15 – 16 and 17 – 19 years, did not affect the level of their argumentation skills, although consistent but not statistically significant differences in favour of older students were found. McCann (1989), however, studied younger pupils of grades from 6 to 12 and found age to be a determinant factor affecting their argumentation skills. The results of the present study suggest that within the age limits of secondary school

students, age is not an important explaining factor in terms of argumentation skills but, given the results of McCann (1989), when the age deviation of the students is wider the determinant nature of age becomes visible. These results are also in harmony with the findings of Terenzini et. al (1995) who studied university students and found that argumentation skills develop during long time periods.

Although the results of this study suggest that pupils' argumentation skills are somewhat better in Finland and the UK, compared to the situation in Hungary, it is important to note that the pedagogical value of and culture for teaching argumentation in schools is still under-developed and recent in all European countries. More research and development work is needed in order to foster the development of suitable teaching materials and appropriate learning environments for studies on argumentation. Towards that direction, the constantly developing information and communication technologies can increase intercultural communication and can provide both researchers and teachers with many technologically challenging and pedagogically useful resources.

NOTE

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