

Web-based assessment of 1-6 graders' civic knowledge: Results from a Hungarian pilot study

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Abstract

Democratic societies put an emphasis on the establishment and school-based development of civic competence. Its development is also enlisted among the goals defined by the Hungarian national curriculum, but studies assessing the acquired knowledge and skills are still rare. Nowadays, developmental tendencies of pedagogical assessments point towards computer-based assessment practices, however, the computer-based assessment of civic knowledge and skills is still regarded as innovative not only in Hungary but also globally.

During the spring of 2013, within the frameworks of a larger research program, civic knowledge were assessed with the help of the electronic Diagnostic Assessment System (eDIA) platform among grade 1-6 students (N=953). The aim of our study was (1) the piloting of the tests and (2) the assessment of students' civic knowledge.

Students on the different grade levels completed different tests, but three anchor tasks ensured both the comparison of the results both the assessment of the hypothesized development with age. Tasks of the tests were in line with the contents of the core curriculum, thus the assessment inform us about the level of acquisition of the curriculum contents.

Results show that the newly developed online tests are reliable (Cronbach-alpha indices are above .80). Average performances are between 50 and 60 percentage points, gender differences were observed only on grade 3. Correlations between test results and time spent on test completion are moderate in grades 1 and 6.

Our results confirm that civic knowledge can be assessed in an online test environment and with the help of this assessment method valuable background information can be gathered about the process of data collection.

Keywords: *computer-based assessment, civic competence, civic knowledge*

International studies on civic competence

Our study is related to measuring children's knowledge about society and their civic knowledge, which are important domains of civic competence. Our effort has to face with the challenge that this research field does not have paper-and-pencil based research traditions in Hungarian studies. However, psychological (e.g. Szabó, 2010) and educational studies (e.g. Kinyó, 2009) try to explore different aspects of civic competence. Measuring students' civic competence related knowledge is important because the Hungarian core curriculum fosters its school development.

Civic competence is intensively investigated in other countries and in international cross-national studies. These investigations are studying not only children's knowledge but their civic engagement, the factors influencing the engagement, and the studies strive for predicting children's prospective civic engagement, as well.

This paper gives a short look into the international studies of civic competence and the computer-based assessment possibilities of the domain are summarized. Then the measurement experiences of the first Hungarian computer-based assessment and its results are presented.

The first cross-national comparison of civic competence was conducted by IEA, involving nine countries, in 1971 (Báthory, 2003; Mátrai, 2002). Hungarian 14-year-olds first participated in 1999 in IEA CivEd study. At this time more than 90.000 14 year old students participated from 28 countries, and additional 50.000 17-19-year-olds from 16 countries (Kinyó and Molnár, 2012). Ten years later, the International Civic and Citizenship Education Study (ICCS) was organized without the participation of Hungary. The IEA studies assess several components of civic competence. Children's knowledge about democracy, about civil rights, their concepts about and trust towards democratic institutes and their attitudes towards different groups and their civic engagement are studied (Torney-Purta, Lehmann, Oswald and Schulz, 2001; Ainley, Friedman, Kerr and Schulz, 2012).

The research traditions of this domain are related to the United States where representative studies (the so-called NAEP studies) are conducted since more than three decades. Within these researches an assessment framework was developed in 1998 which served as a basis for the study conducted in 2010. The study of 9, 13 and 17 year-olds aimed to explore the level of adolescents' civic competence. Three domains were investigated: civic knowledge, cognitive and participatory skills and civic dispositions (Lutkus and Weiss, 2007). More than 1470 schools and 26.700 students were involved in 2010; students' achievement was compared to the results of the 1998s and 2006s. According to the outcomes, the 9 year old students mean scores were significantly higher than those of earlier years. The 13 year old students test performance did not changed over time, the 17 year old achieved significantly lower scores than in 2006 (NCES, 2011).

Computer-based assessment of the components of civic competence

Nowadays, the conversion from paper-and-pencil (hereafter PP) tests to computer-based assessment (hereafter CBA) is in transition. International research centres are mapping the possibilities of CBA and developing the infrastructural prerequisites required, as well (see e.g. NAEP, 2013).

The researches of the Centre for Research on Learning and Instruction at the University of Szeged keep up with international trends and focus on CBA of different competencies. The research group started to adapt PP-tests into CB environment. They also study the media effect, the changes in performance depending on the media, the

equivalence of the instruments (Hülber and Molnár, 2013; Molnár, R. Tóth and Tóth, 2010; R. Tóth and Hódi, 2010).

CBA not only create a new environment for data collection, but also information about testing behaviour can be gathered using the log files, which contain hidden data about participants' time spent on item/test solving, student efficiency etc. These data can be used to investigate the exact circumstances of the test solving (Csapó, Lórinz and Molnár, 2012).

Assessment of the components of civic competence does not have computer-based research tradition. However, we only have knowledge of a series of studies which is mainly based on PP assessment but in the recent past CBA started to replace PP assessment.

In Australia, the National Assessment Program Sample Assessment Civics and Citizenship (NAP-CC) evaluates 6th and 10th graders' civic competence on representative samples (MCEETYA, 2006). The series of studies started in 2004 was followed by another assessment in 2007 (MCEETYA, 2009), and in 2010, as well (ACARA, 2011).

The studies investigate the following domains: (1) system of government, (2) national identity and culture (3) democratic processes (4) the judicial system, (5) the impact of communal and administrative stratification. A related questionnaire gathers information about students' participation in school and community services (e. g. school council, voluntary work, and charity organizations), their multicultural attitudes and their institutional trust (parliament, courts, police, media). First online survey was carried out in the autumn of 2013 involving 680 schools and 13.000 students.

Aims of the study

In 2010 paper and pencil tests measuring elementary school students (from 1st to 6th grade) civic knowledge was developed. In 2011 a pilot study was conducted to try out the tests to make sure they work properly (Kinyó, 2011). Part of a complex research project involving different research areas, the CB versions of the tests were created during 2012. The primary aim of this study is to test how the online items work and what research questions should be investigated in the further researches.

In our study we aimed to explore (1) children's achievement of civic knowledge in CB environment, (2) the possible connection between test results and the features of the testing procedures (e.g. time spent on test, stepping back to previous items), (3) the possible outcome differences between genders and grades and (4) the effect of psychological and background variables on students' achievement.

Methods

1. Sample

The cross-sectional data collection was carried out in three urban partner schools which are the partners of the Centre for Research on Learning and Instruction (University of Szeged, Hungary). 43 class, a total of 953 students participated willingly from 1st grade to 6th grade. The sample size was more than 100 pupils in every grade ($N_{gr1}=179$, $N_{gr2}=179$, $N_{gr3}=155$, $N_{gr4}=162$, $N_{gr5}=145$, $N_{gr6}=133$).

2. Instruments

The research was implemented by CB tests for different grades, which were measuring children's civic knowledge. The measured domains were in line with the contents of the core curriculum, thus the assessment inform us about the level of acquisition of the curriculum contents of the field called „Humanity and Society”. The framework of the study also exceeded the curricular contents and it was also measuring history, morality, ethics related knowledge and also knowledge derived from external sources. This effort agrees the results of the Hungarian political socialization studies which emphasize the role of informal sources (Szabó and Falus, 2000).

The test tasks were connected by common anchor items. In the whole sample (from 1st to 6th grade) one item, while in grade 5 and 6 three other anchor items were embedded. In the case of anchor items it was substantial to step over the curricular boundaries, so those tasks were chosen which measure not only students' school-related knowledge but also their knowledge stem from out of school sources. The task was assessing pupils' achievement in historical time perspective (how children navigate in historical time). In grade 5 and 6 the following three anchor items were embedded: knowledge about famous persons of Hungarian history, important historical events and civil rights and duties. These tasks are not representing how familiar children are with these facts, as a whole. These associated domains are capable to indicate students' essential civic knowledge.

Children also completed a joint background questionnaire from grade 3. The questionnaire gathered information about gender, student achievement (several school grades), desired educational qualification, attitudes towards attending school, the type of school class syllabus, the perception of one's positions in the class community. Data were also collected about family background: the number of family members, leisure time activities, parents' educational qualifications. Besides these variables, test taking time, a special indicator was also measured.

3. Data collection

Our study was conducted in the spring of 2013. The research was based on the application of CB tests via internet by using computers' facilities available at schools. The tests were constructed and delivered by the eDIA platform (Electronic Diagnostic Assessment System), which already was applied to test more than 30.000 students from grade 1 to 6. The structure of the applied tests were linear, no time-limit was assigned.

Students had the chance to turn over pages by navigation buttons. They could return to the previous task screen by using the appropriate button.

Results

The internal consistency of the tests was calculated by using classical and modern (item response) test theory (see Table 1). According to the reliability coefficients (Cronbach's α) the tests' reliabilities were acceptable, however the EAP/PV (coefficients used by item response theory) remained lower, showing that test used in grade 3, 4 and 5 should be improved.

Table 1: Reliability indices (Cronbach's α and EAP/PV)

	Grade					
	1.	2.	3.	4.	5.	6.
Cronbach's α	0,81	0,85	0,80	0,81	0,85	0,85
EAP/PV	0,82	0,81	0,76	0,76	0,72	0,81

The EAP/PV coefficients were lower than expected, so we decided to check the functioning of the items using the dichotomous Rasch model. During the analysis of items we focused on the fit of the parameter estimates (weighted MNSQ and t values) and the discrimination indices. In our analysis we first did not involve regression variables, and then the analysis was run with the application of regression variables (e.g. gender). The model, which contains the genders, fit significantly better to our data from grade 2 to 5 ($\chi^2_{gr2}=26,00$, $\chi^2_{gr3}=30$, $\chi^2_{gr4}=29$, $\chi^2_{gr5}=52$; $df=1$; $p<0,01$), in contrast with those of the basic models. In grade 1 and 6 we applied the initial model which only depends on students' ability level.

The results show that in grade 1, 3, 4 and 6 two items, in grade 2 three items, in turn, in grade 5 seven items did not fit properly to the theoretical model, and the parameter estimates (weighted MNSQ values) are outside the confidence interval. Further item analysis resulted several low discrimination indices from grade 2 to 6, the values of indices remained below 0.20. In the grade 5, three items, which measured knowledge about famous historical persons resulted low discrimination indices. The fit of the rest of anchor items were adequate.

Since our study was online and computer-based in nature, this circumstance can promote more precise data administration. From datasets more information can be gathered about students' achievement. During the testing process the page return was allowed, therefore, we can analyse how the return to the previous screen influenced students' achievement. In favour of log files it is easy to approach the data about item return and item scores. These can be used to investigate how children solved the items. For example, we can explore both the responses students gave first, both the response they finally accepted. At this point we have to make two important remarks. Student achievement based on their first response (which they marked but they didn't strengthen) is considered to be hypothetical results. Since children had the opportunity to give answers as many time

they wished, their return to previous items was not restricted. On the other hand these results cannot regard equivalent with those results when the return would not be allowed.

In every grades, students' achievement based on their final answers are strongly correlated to their hypothetical responses ($r_{gr1}=0.92$; $r_{gr2}=0.85$; $r_{gr3}=0.89$; $r_{gr4}=0.87$; $r_{gr5}=0.91$; $r_{gr6}=0.92$). Students' achievement according to their final responses was significantly higher, respectively (see Table 2). The possibility to return to the previous screens eventuated 6.37 percentage point higher achievement, on an average.

Table 2: Students' achievement (%point) in different grades based on their first and final solution

Grade	Students' achievement (%point)		Difference (%point)	t	Sig.
	First solution	Final solution			
1	45.48	49.78	4.30	7.64	p<0.01
2	54.35	60.01	5.66	8.12	p<0.01
3	46.40	51.74	5.35	9.03	p<0.01
4	44.46	59.07	14.61	25.36	p<0.01
5	48.61	53.65	5.05	10.35	p<0.01
6	44.01	47.26	3.25	6.09	p<0.01

1. Gender differences

We analysed gender and achievement interaction in all grades. There were only significant correlations between the achievements of girls and boys in grade 3 and 4 ($r_{3.évf.}=0,21$, $p<0,02$; $r_{4.évf.}=0,20$, $p<0,02$). However, only low correlations were found: the gender explains only 4% of the results. In order to reveal the achievement differences between girls and boys in all grades, independent sample t-tests were applied (see Table 3).

Table 3: The gender and grade differences of students' achievement on the test measuring knowledge of society

Grade	Boys			Girls			Levene		Two-tailed t/d	
	N	Mean (%point)	SD	N	Mean (%point)	SD	F	p	t/d	p
1	80	49.68	18.38	99	49.87	17.09	0.13	ns	-0.07	ns
2	89	61.45	14.91	90	58.58	17.49	0.54	ns	1.18	ns
3	67	48.10	16.17	88	54.51	14.81	1.09	ns	-2.56	0.01
4	77	56.03	14.41	85	61.82	13.91	0.14	ns	-2.60	0.01
5	82	52.05	14.11	64	55.70	13.21	1.18	ns	-1.59	ns
6	69	46.84	16.27	64	47.71	15.74	0.05	ns	-0.31	ns

Significant gender differences were only found in grade 3 and 4. In both grades girls have slightly better achievement: 6.41 percentage points in grade 3, and 5.79 percentage points in grade 4. Girls better performance is not surprising, it is in line with our

previous findings which showed girls better achievement in grade 7 and 11, too (Kinyó, 2013).

2. The results of culture independent anchor items

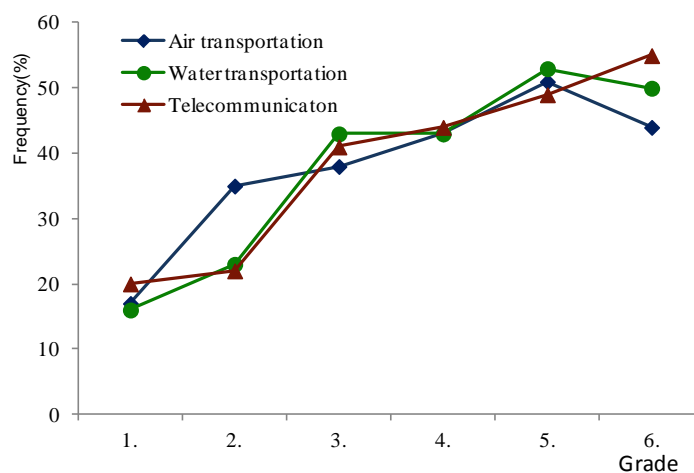
In this chapter the results of anchor items are presented. These items are related to general domains: children's historical time perspective as well as civil rights and duties. We emphasize these results because they offer an insight into the hypothesized development of these culture independent phenomena in the studied ages.

2.1. Development of technological inventions

Studies based on cross-national comparison (e.g. Youth and History project in 1995) investigate students' historical awareness and their chronological knowledge. These studies ask children to settle everyday life, science and technology related objects (e.g. dressing in different ages, ship-types of different historic ages) into chronological order (Körber, 1997).

In our research we ask children in every grade to sort vehicles and communication agents into the appropriate chronological order (see Figure 1). Students' performance in this task was transformed into a scale running from 0 to 100. The results are shown in Figure 1, the grade differences are displayed in Table 4.

Figure 1: The ratio of correct answers in the task measuring children's concepts about technological inventions from grade 1 to 6



In the case of all three items it is true that 15-20% of 1st graders could put the technical objects in the right order, but not more than 55% of 6th graders could answer correctly to these items. Figure 1 shows that the item curves often overlap each other in different grades; the results only differ in the case of air transportation. Although, linear

achievement development cannot be noticed, the item related to air transportation (Table 4) seems to be the only one which develops in line with the supposed development of historical awareness.

Table 4: The grade differences among items asking children to put the technological/technical inventions into chronological order

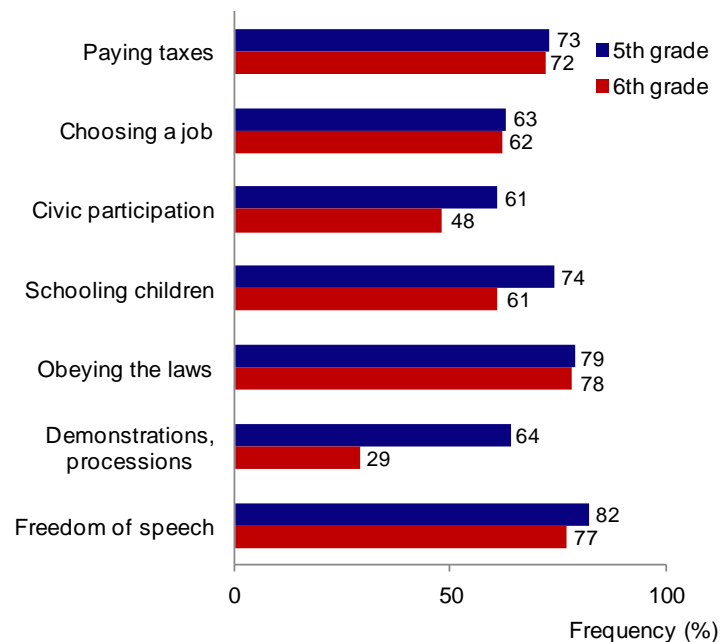
Item	Descriptives	Grade						ANOVA		Subgroups
		1	2	3	4	5	6	F	p	
Air transportation	Mean	0.17	0.35	0.38	0.43	0.51	0.44	10.21	p<0.01	{1}<{2;3;4}<{5;6}
	SD	0.38	0.48	0.49	0.50	0.50	0.50			
Water transportation	Mean	0.16	0.23	0.43	0.43	0.53	0.50	17.16	p<0.01	{1}<{2}<{3;4;5;6}
	SD	0.37	0.42	0.50	0.50	0.50	0.50			
Telecommunication	Mean	0.20	0.22	0.41	0.44	0.49	0.55	15.15	p<0.01	{1;2}<{3;4;5;6}
	SD	0.40	0.42	0.49	0.50	0.50	0.50			

The comparison of the responses of different grades in the case of means of water transportation and the inventions of communication points at an important phenomenon. The ratio of correct answers does not differ from grade 3 to grade 6 (see Table 4.). If we consider the transition between the initial stage of elementary school and the higher grades, and the appearance of history in 5th grade this outcome is surprising.

2.2. Civil rights and duties

In grade 5 and 6 children had to sort different elements into the appropriate category of civil rights or civil duties (see Figure 2). The ratio of correct answers is quite high in both grades. Most of the students classified correctly the freedom of speech (82% and 77%) as a civil right. The ratio of the correct answers was high in the case of obeying the laws (79% and 78%), and paying taxes (73% and 72%), too. Nearly two-third of the participants marked schooling children and choosing a job also properly. 6th grader children achievement was lower than 50% in the case of civic participation and participating in demonstrations, processions.

Figure 2: The ratio of correct answers in task related to civil rights and duties in grade 5 and 6



However, it is an unexpected outcome that 5th graders achieved better than 6th graders did. The differences are significant in the following cases: civic participation ($t=2.16$, $p<0.03$), schooling children ($t=2.34$, $p<0.02$), demonstrations, processions ($t=6.27$, $p<0.01$), freedom of speech ($t=0.98$, $p<0.05$). Higher achievement in 5 grade 5 is not necessary the result of real group differences, rather it can be explained by the non-representative data collection. Therefore, a repeated measure would be useful to confirm or reject our current finding.

3. Factors influencing students' civic knowledge

Our rich and multi-faceted system of variables allowed us to explore factors influencing students' civic knowledge from grade 3. In order to explore the possible connections we applied multiple linear regression analysis. Students' achievement was involved as a dependent variable while the independent variables were the variables of online background-questionnaire, and test-taking time from one of the log files. Involving time on task into the data analysis is a novel effort in educational science (e.g. Csíkos, 2013; Vainikainen, 2014, Vidákovich, 2014).

Factors influencing the achievement are summarized in Table 5 and 6. In the lower grades 41.20% (grade 3) and 44.90% (grade 4) of the variance can be explained by the independent variables. 28.16% (grade 5) and 43.34% (grade 6) can be estimated with the independent variables. Our system of variables is able to explain higher variance of the achievement in lower grades than those of 5 and 6 grades, on the whole.

Table 5: Factors explaining the variance of test achievement in grade 3 and 4

Independent variables	Grade 3				Grade 4			
	r	β	$r^* \beta^*100$	Sig.	r	β	$r^* \beta^*100$	Sig.
Math mark	0.49	0.31	15.18	$p<0.01$	0.54	0.35	18.90	$p<0.01$
Literature and grammar mark	0.47	0.21	9.88	$p<0.02$	0.45	0.27	12.15	$p<0.01$
The syllabus of the class	0.20	0.22	4.39	$p<0.01$	0.34	0.13	4.42	$p<0.05$
Social connection (loneliness)	0.36	0.21	7.77	$p<0.01$	ns	ns	ns	ns
Number of family members	-0.09	-0.16	1.57	$p<0.02$	ns	ns	ns	ns
Desired educational qualification	0.18	0.13	2.40	$p<0.05$	ns	ns	ns	ns
Test-taking time	ns	ns	ns	ns	0.18	0.19	3.42	$p<0.01$
Housework at home	ns	ns	ns	ns	0.12	0.17	2.04	$p<0.01$
Mother's highest qualification	ns	ns	ns	ns	0.17	0.16	2.72	$p<0.02$
Attitude towards attending school	ns	ns	ns	ns	-0.05	-0.13	0.65	$p<0.05$
Total explained variance (%)			41.2				44.9	

The regression analysis showed that the related independent variables are strongly connected to school in grade 3 and 4. Math and literature and grammar marks explain most of the variance and the syllabus of the class is also has an effect (4.39% and 4.42%). Though, the effects of school marks seem unexpected their presence can be even interpreted. Maybe their effect is due to that they both mediate the knowledge necessary to solve the tests tasks. The other related independent variables differ in these grades but it can be established that they all can be derived from school and family related factors.

Only one variable (time spent on test) has an effect in both grade 5 and 6. It means that the factors explaining the variance are different in both grades.

Table 6: Factors explaining the variance of test achievement in grade 5 and 6

Independent variables	Grade 5				Grade 6			
	<i>r</i>	β	$r^* \beta * 100$	Sig.	<i>r</i>	β	$r^* \beta * 100$	Sig.
Test-taking time	0.16	0.26	4.34	p<0.01	0.55	0.53	29.04	p<0.01
Social connections (being liked)	-0.04	-0.26	1.06	p<0.02	ns	ns	ns	ns
Math mark	0.40	0.47	18.54	p<0,01	ns	ns	ns	ns
Number of family members	-0.04	-0.16	0.60	p<0.05	ns	ns	ns	ns
Watching TV with family	0.16	0.23	3.62	p<0.04	ns	ns	ns	ns
Internet access at home	ns	ns	ns	ns	0.16	0.16	2.56	p<0.03
Desired educational qualification	ns	ns	ns	ns	0.39	0.30	11.74	p<0.01
<i>Total explained variance (%)</i>			28.16				43.34	

The least explained variance appears in grade 5 showing that measured variables cannot contribute to the deeper understanding of the processes behind children's achievement. In this grade math mark has the highest effect (18.54%). This variable is also present in lower grades except in grade 6. Sixth graders achievement is strongest related to test taking time and desired educational qualification, together they explain 94% of the total explained variance. It is remarkable that test-taking time has more and more significant role from grade to grade. It first appears among independent variables in grade 4 (3.42%), its role is present in grade 5, too (4.34%). In grade 6 it is responsible for 68% of the total explained variance. In sum we can establish that including this variable in the analysis was useful.

Summary and further directions

In this paper we presented the findings of the first Hungarian computer-based assessment of children's civic competence. Our study highlighted new connections related to the context in which the assessment was implemented. We found connection between time spent on task and test achievement from grade 4 and beyond. At this time we are not able to verify empirically the variables behind this phenomenon. We can just formulate some assumptions. It is possible that (1) children's interest in the CB-environment, (2) factors related to achievement-motivation, or (3) applied tasks were interesting for children and the tasks sustained children's interest more easily.

The results of the answers children finally responded to the tasks were higher than hypothetical results in all grades.

In our study we applied the method of modern test theory to analyse how items function. In further researches we plan to utilize this approach more thoroughly. This method makes it possible to compare different age groups by using anchor items.

We suppose based on the effective computer-based data collection that other components of civic competence would be assessed using CBA.

References

- ACARA (2011) National Assessment Program Civics and Citizenship Years 6 and 10 report 2010. Sydney: Curriculum, Assessment and Reporting Authority
http://www.nap.edu.au/verve/resources/NAP-CC_Report_2010_251011.pdf
- Ainley, J., Friedman, T., Kerr, D. and Schulz, W. (2012) *Assessing the intended participation of young adolescents as future citizens: Comparing results from 26 European countries*. Paper prepared for The European Conference on Educational Research (ECER). Cádiz, 18-21 September.
- Báthory, Z. (2003) Rendszerszintű pedagógiai felmérések. *Iskolakultúra*, **13**, 8, pp. 1 - 19
- Csapó, B., Lőrincz, A. and Molnár, Gy. (2012) Innovative assessment technologies in educational games designed for young students. in Ifenthaler, D., Eseryel, D. and Ge, X. (eds) *Assessment in game-based learning: foundations, innovations, and perspectives*. New York: Springer New York. 235 - 254
- Csikós, Cs. (2013): A fejben számolás stratégiáinak vizsgálata háromjegyű számok összeadásával negyedik osztályos tanulók körében. In: Molnár, Gy. and Korom, E. (eds) *Az iskolai sikerességet befolyásoló kognitív and affektív tényezők értékelése*. Budapest: Nemzedékek Tudása Tankönyvkiadó pp. 31 - 46
- Hülber, L. and Molnár, Gy. (2013): Papír and számítógép alapú tesztelés nagymintás összehasonlító vizsgálata matematika területén, 1-6. évfolyamon. *Magyar Pedagógia*, 113, 4, pp. 243 - 263

- Kinyó, L. (2009) *The views and beliefs of students in different forms of Hungarian vocational education on societal and economic participation*. Paper presented at 13th European Conference for Research on Learning and Instruction, Amsterdam, Netherlands, August 25th - 29th
- Kinyó, L. (2011) 6–12 éves tanulók állampolgári ismereteinek diagnosztikus mérése. in Hegedűs, J., Kempf, K. and Németh, A. (eds) *Közoktatás, pedagógusképzés, neveléstudomány – A múlt értékei and a jövő kihívásai. Program and összefoglalók*. Budapest: MTA Pedagógiai Bizottság pp. 107
- Kinyó, L. and Molnár, E. K. (2012) Történelem and társadalomismeret, állampolgári kompetenciák. in Csapó, B. (ed) *Mérlegen a magyar iskola*. Budapest: Nemzeti Tankönyvkiadó pp. 289 - 326
- Kinyó, L. (2013) 7. and 11. évfolyamos tanulók állampolgári tudásának vizsgálata a dél-alföldi régió általános and középiskoláiban. in Molnár, Gy. and Korom, E. (eds) *Az iskolai sikerességet befolyásoló kognitív and affektív tényezők értékelése*. Budapest: Nemzedékek Tudása Tankönyvkiadó pp. 123 - 142
- Körber, A. (1997) Chronological knowledge, historical association and historico-political concepts. in Angvik, M. and Borries, B. (eds) *Youth and history. A comparative European survey on historical consciousness and political attitudes among adolescents*. Hamburg: Körber-Stiftung pp. 106 - 152
- Lutkus, A. D. and Weiss, A. R. (2007) *The Nation's Report Card: Civics 2006*. U.S. Department of Education, National Center for Education Statistics. Washington, D.C : U.S. Government Printing Office
- Mátrai Zsuzsa (2002) A nemzeti identitás konfliktusai and az állampolgári nevelés. *Iskolakultúra*, 12, 2, pp. 52 - 64
- MCEETYA (2006) *National Assessment Program – Civics and Citizenship Years 6 & 10 Report 2004*. Carlton South: Ministerial Council on Education, Employment, Training and Youth Affairs
http://www.nap.edu.au/verve/resources/2004_NAP_CC_Public_Report.pdf
- MCEETYA (2009) *National Assessment Program Civics and Citizenship Years 6 and 10 Report 2007*. Carlton South: Ministerial Council on Education, Employment, Training and Youth Affairs
http://www.nap.edu.au/verve/resources/2007_NAP_CC_Public_Report.pdf.
- Molnár, Gy., R. Tóth, K. and Tóth, E. (2010) *Developing online diagnostic assessment - Experiences of a large scale national case study in public education in Hungary*. Workshop, EDEN, Budapest, 2010. October 24-27. pp. 186 - 187
- NAEP (2013): *NAEP: Looking ahead – The NAEP-state partnership*. Washington D. C : National Center for Education Statistics
- NCES (2011): *The Nation's Report Card: Civics 2010*. Institute of Educational Sciences, Washington, D. C: U. S. Department of Education
- R. Tóth, K. and Hódi, Á. (2010) Olvasási képesség mérése számítógépes környezetben. in Kozma, T. and Perjand, I. (eds): *Új kutatások a neveléstudományokban 2009. Többnyelvűség és multikulturalitás*. Budapest: Aula Kiadó pp. 145 - 155

- Szabó, É. (2010) Semantic Selection Test – A new methodological approach towards the exploration of children’s views on social issues. In P. Cunningham, P. and Fretwell, N. (ed) *Lifelong learning and active citizenship. Proceeding 12th Children's Identity and Citizenship in Europe*. London: London Metropolitan University, pp. 445
- Szabó, I. and Falus, K. (2000) Politikai szocializáció közép-európai módra. A magyar eset. *Magyar Pedagógia*. 2000. 100, 4, pp. 383 - 400.
- Torney-Purta, J., Lehmann, R., Oswald, H. and Schulz, W. (2001): *Citizenship and education in twenty-eight countries: civic knowledge and engagement at age fourteen*. Amsterdam: IEA
- Vainikainen, M-P. (2014) Learning-related attitudes, support needs and performance in learning to learn assessment. Paper presented at 12th European Conference on Educational Assessment. Szeged, Hungary, May 1st - 3th
- Vidákovich, T. (2014) Students’ task response times and task solving efficiency on online foreign language vocabulary tests. Paper presented at 12th European Conference on Educational Assessment. Szeged, Hungary, May 1st - 3th