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## Teaching for Our Times. New Technologies in Teaching Foreign Languages in Early School Education

### KEYWORDS

teaching foreign languages, early school education, digital world, information and communication technologies (ITC), primary school

### ABSTRACT

The aim of this paper is to present some ideas based on new technologies in order to teach foreign languages more efficiently in early school education. The ideas are derived from the reports and literature of the subject, on the basis of which I have presented a set of applications and websites dedicated to this age group. Taking into account the core curriculum and children's developmental abilities, I have described example activities with the proper tools. The role of the article should be informative and educational for the teachers who are in charge of lesson planning taking into consideration the contemporary technological facilities. The changes taking place in Polish schools allow us to use new methods in everyday teaching to support children's interest and attention. Schools should be the pioneers in discovering new possibilities of modern technologies to follow the guidelines of the core curriculum and enliven its content in the contact with students. In this way, Polish students should be able to develop communicative competencies which are crucial in a new, increasingly digital world. Being a *digital immigrant* or a *digital native* is a fact which, as the new generation of teachers, we can use to make teaching more conscious of civilization improvements.

## Introduction

All around the world, elementary education is changing along with the changes and needs of contemporary students. In pedagogical literature, an increasing number of texts are being dedicated to building relations with students, modernizing the physical space of schools, as well as the openness of teachers and parents to new technologies in the process of teaching. An increasingly digitalized world significantly influences the way in which lessons are conducted since, in their current, traditional shape, they fail to efficiently play their educational role resulting from the social functions of education. The teachers' task is no longer presenting children the contents included in handbooks; they have to present and complement such content with what is offered by modern devices. Thus, during a music lesson, we can look at a photo of a harp, but we can also listen to its sound or a melody played on a harp using the Internet. Foreign language lessons have also become more attractive, as teachers can now immediately check the pronunciation of a word, or play a dialogue in a restaurant after several clicks with a computer mouse. Presenting language material by the teacher, looking for information in handbooks and encyclopaedias, or doing homework in exercise books are activities that occur less and less frequently. Despite the tools available, new methodological instruments, such as applications, websites, e-books, coding programs, etc., we still feel more confident with a handbook and a multimedia board because they are the teaching aids we have become used to. Thus, do teachers lack knowledge and skills that make it possible for educational institutions to adjust to modern times? Do we need information and motivation to present the abilities of new technologies in a way that teachers know how to use them? According to the research within the project "A smartphone and a tablet in children's hands," 21 out of 30 teachers are sceptical about new technologies in schools. They emphasize negative trends related to technologies that "make children stupid" or "result in poor concentration" (Cackowska, Kopciwicz, Nowicki 2017). Such a reaction can result from the curricula of pedagogical studies that are not adjusted to the digital reality. Media education, programming and coding, and teaching languages through new technologies, are only a few examples of activities that may help teachers understand the advantages of using modern methodological instruments.

In the meantime, teachers search for knowledge on their own. They are supported by Teacher Improvement Centres which organize model lessons and training sessions for teachers throughout the country. The model lessons, which are often conducted with the use of pedagogical innovation, are connected with new technologies available at schools. Parents, teachers and researchers are aware of the fact that we can use new technologies, known to our students, to obtain the result which has been important

for us all the time. Such result is free and efficient linguistic skill that is necessary for us to function in the multicultural world.

What is more, at this stage, early education and foreign language teachers are to reinforce the student's linguistic skills and give him/her the foundations of language on which they will build their communicativeness in future. In the same report we can read that fear and the lack of teacher's control at school are the main arguments against mobile devices at school. On the other hand, however, the supporters of using smartphones at school believe that these devices may facilitate the development of both teachers and students, and that the cooperation between families and the school shall be better with them (Cackowska, Kopciewicz, Nowicki 2017). It is because we need a strong and responsible relation based on mutual understanding between *digital natives* and *digital immigrants*. Marc Prensky, while presenting his theory at the beginning of the 21<sup>st</sup> century, divided people into two groups which live and function in the same world, but have different problems and attitudes. The first group includes those who often use computer games, mobile phones and the Internet. Indeed, they actually use them most of the time. These people also use such devices to function in everyday life, which includes studying and communicating with the world.

The second group, i. e. the *immigrants*, includes the people who have been forced by the surrounding reality to learn the newest technologies and – what is more – to adjust to the digital conditions of life (Prensky 2001: 1-2). These groups may easily be referred to the students and teachers in the current system of education. Our students, digitalized teenagers, who were born in a digital reality, are born guides to this reality. In the Internet, they can check the way to solve a mathematical task, find the correct pronunciation of a foreign word, and download an application that will teach them what they need in a given moment. The other group includes us, teachers, who watch our students every day and learn how to function in the digital world, in which, just like in the reality, we want to be the partners of our students in gaining knowledge. Digital technologies do not only include equipping classrooms with IT devices, but they are a tool of the teacher's everyday didactic work (Nowicka 2018: 126). I am aware of the fact that language lessons require different kinds of attractiveness and efficiency than other components of elementary education. We want our students to have contact with a living language, which is hardly ever present at school in the form of a *native speaker*. I am also aware of the fact that the large degree of digitalization we all experience makes the interiors of our houses “resemble computer shops” (Hutner, Hauser 2014: 142). Nevertheless, I believe that the solutions presented in this article should help both foreign language teachers and their students improve linguistic education at the early educational stage. The solutions will help make lessons more attractive and diversified, so that the noticeable distance between *digital natives* and *digital immigrants* may gradually disappear.

## Learning languages in early education

The superior role of linguistic education at an early school stage is “creating situations that facilitate the development of the child’s communicative skills” (Murawska 2014: 38). This process, according to the concept by Jerome Bruner and David Wood, can be referred to the theory of Lev S. Vygotsky, which consists in using and supporting the child’s interest with a task prepared for the child. In this case, using a purposeful strategy of support allows the child to take up complicated activities so that he/she can learn the things that he/she can achieve on their own during the educational process. We can add that, within this strategy, it is important to gradually withdraw the teacher’s support so that the child can act on his/her own and naturally participate in communication expressed in a foreign language (Murawska 2014: 36). The so-called “immersion in a language” is to help the child master his/her linguistic competences, which takes place through various ways of experiencing the spoken and written language, and through creating one’s own utterances. Most of all, this includes tasks the objective of which is the integration of speaking, reading and writing with the support of physical activity to make the process attractive and stimulating in terms of the child’s senses (Murawska 2014: 41). Especially in linguistic education, at this educational stage the teacher must not forget that teaching methods have to be adjusted to the child’s features and developmental needs. Frequent physical activities, a curiosity about the world and the new contents, solving problems and manipulating with various things, are just hints for the teacher so that he/she can adjust their lessons to these children’s needs. Also, it is important to enable the child to link the knowledge they already have with new experiences, so that he/she can integrate the curriculum contents on their own. The methods, such as experimenting with new things at different levels of difficulty, learning through action in pairs and teams, and participating in projects based on fun and team games, with simultaneous communication with the teacher in English, make it possible for the child to identify with the teacher in a learning situation (Murawska 2014: 2).

Also, it is important to choose the proper method of teaching a foreign language: either a conventional or unconventional one. In this context, it is important to understand that using new technologies in linguistic education assumes a combination of both of these groups. This is the main challenge for a modern school which promotes the diffusion of knowledge, creative attitudes, as well as updating knowledge and applied methods. That is why, while introducing information technologies in language teaching at the first educational stage, we should pay special attention to:

shaping innovative attitudes that diminish the gaps between scientific-technological civilization and humanist civilization, facilitate technological preparation for

self-education, promote the use of both traditional and computer games, especially strategic and linguistic ones, shape the attitudes of taking responsibility for the future, introduce intercultural elements, and develop the students' individual predispositions in the light of the theory of multiple intelligences by H. Gardner (Hofman 2009: 258).

For example, the direct method, which speaks about the natural contact between a teacher and a student, enables starting even a brief talk about a new application or a task performed with the support of a computer. And the objective of the audio-lingual method is multiple repetition of a model sentence by the student so that, in the situation of a stimulus created by the teacher, he/she can present a particular linguistic response. We are often able to program or predict such responses in the tools mentioned in the further part of the article. Unconventional methods include TPR (total physical response), CLL (Counseling Language Learning) and the natural method. The objective of all the three approaches is to allow the students for natural communication which is supported by movement, team tasks and listening to foreign utterances in order to memorize and repeat them (Komorowska 2015: 25-33). The use of new technologies during foreign language lessons makes it possible for us to adjust the tool we select to the method of teaching a language, and to the form of working with the class. In this way, the teacher is able to increase the attractiveness and efficiency of the educational actions he/she carries out. Also, it is worth to consider the SAMR model (Substitution, Augmentation, Modification, Redefinition), which refers to the application of mobile technologies in education. This concept is meant to help understand educational technologies, the functions of which are specified in the following table. It shows the stages of integration of the new technologies with the current process of education at schools, and it can help us to evaluate the "role of mobile technologies in linguistic didactic tasks" (Gajek 2013: 28).

Table 1. The SAMR model

<b>Model stage</b>	<b>Characteristics of the stage</b>
Substitution	A new tool replaces another tool that used to be applied to perform the same task
Augmentation	Technology slightly improves basic and routine activities
Modification	Technologies are applied in new tasks which change the way of studying
Redefinition	At this stage, students create new tasks and didactic materials on their own and without realizing this

Source: (Gajek 2013: 28).

## The assumptions of the curriculum in the context of the language that is taught

The core curriculum, which was created in 2017 by the Ministry of National Education, includes the list of skills and vocabulary areas that the student has to learn to improve his/her linguistic competences at the further educational stages. The teacher's role is to plan the contents to be taught within a three-year cycle of foreign language learning, so that the students can learn and reinforce the skills such as: understanding the utterances of a teacher, a speaker in an application or another student, and responding to instructions, as well as creating a simple and brief spoken utterance with the use of the words and expressions that the student had learnt. Also, the document provides the information that the student should (on his/her own) "use various sources of information in a foreign language (e. g. picture dictionaries, books), including information and communication technologies" (ORE 2017: 36). Sometimes educational institutions cannot afford to buy picture dictionaries or books in foreign languages. In such situations, the teacher should find some Internet sources offering free online materials. Nevertheless, in the report *Poland in the Digital Era* of 2017, the authors indicated that, according to 50% of the surveyed people, no digital technologies are used at their schools, and multimedia are just an addition to some classes, and not a school reality (Plebańska 2017). Moreover, most of the materials available on the Internet refer to the cultural aspects of language learning, due to which the student learns that people speak different languages and it is worth knowing basic information on the countries in which people speak a given language. It is also important for the student to be aware of what he/she learnt while working with a book, participating in a project or doing online tasks. If the child is able to specify this, we can evaluate the efficiency and functionality of the solution we chose.

In my opinion, the general scope of the topics provided at the beginning of the section dedicated to linguistic education should be extended by a separate list of useful expressions the child can use in specific situations, e. g. when he/she gets lost, needs help, or wants to learn more about the places he/she visits with their parents. It is necessary to teach the students how to deal with a linguistic problem on their own, i.e. how to use a traditional and online dictionary, and how to use *Google Translate* which may be useful in everyday life. All the guidelines presented in the core curriculum can be fulfilled on the basis of new technologies. It takes time for a teacher to find and master these instruments, but it is satisfactory. Their use is to aim at the achievement of a particular objective, and it should refer to the students' linguistic skills we want to develop. In the next part of the article, I shall present example applications and websites that are useful in the fulfilment of the ministry's assumptions. What is important, their level of difficulty can be adjusted to the age and proficiency

of each group of learners. Using them resembles the CLIL method, i.e. Content and Language Integrated Learning, within which the students, together with the teacher, may use foreign websites and applications to study mathematics, geography, and even music. Such tools can support the teacher in the correlation of contents from different subjects, the improvement of the students' cognitive development, and the development of the potential of talented students.

## Applications useful in teaching a foreign language

Our times offer a whole range of applications, websites, and other modern materials that can be used by foreign language teachers. Due to such materials, lessons are no longer so predictable, and students experience the feeling of surprise, as a result of which they are more willing to participate in the classes. Lessons, during which teachers used to refer to handbooks only, are no longer the same. For today's students it is not enough. This is confirmed by the Polish research EU KIDS Online, according to which 82% of students aged 9-17 use a smartphone with the Internet on a daily basis. Most students use mobile phones to watch movies and play games, but as many as 63% play with a smartphone or a tablet without a particular objective (Pyżalski, Zdrodowska, Tomczyk, Abramczyk 2018). Therefore, the world which is changing rapidly provides children with various stimuli, as a result of which studying only from books becomes less effective. In order to maintain the students' attention and interest, we should introduce modern technologies, including mobile phone applications, into our daily work. According to Shuler (2012), it is the market of mobile applications for children that is increasing the most rapidly. The report of 2014, which is discussed by Katarzyna Mararuk and Szymon Wójcik in their article (2015: 84), shows the diversity and number of applications for children. According to *Back to School* (Adjust 2014), in 2014 more than 300,000 applications were available for schoolchildren only in the *Google Play* store. And, according to the research by Chau (2014), only a little more than a half of the applications in the *Apple* store are adjusted to preschoolers in terms of graphics and sound. Nevertheless, in the collection of all those offers we can find valuable tools that will facilitate learning a language not only in the classroom but also at home where children can study on their own.

The first application I would like to mention is WordCloud, with which we can revise vocabulary and practice making sentences with particular words or phrases. The application can be used in group/pair work to do exercises that consist of filling gaps with proper words. This tool is good for language warm-ups to stimulate the children at the beginning of the lesson and encourage them to do the next activities. I successfully use it during my English lessons, but it can also be used with any other language.

The teacher fills in the interior of this “cloud” himself/herself, so he/she influences its contents, as well as its appearance, colour, shape, etc. The contents included in the cloud can be perfectly adjusted to the lesson that has been planned.

Another useful application is TextingStory. In terms of the appearance and content it is similar to the popular Messenger. It encourages the users to make dialogues. You can use one phone to make a dialogue between two people. It is useful in pair work; moreover, you can use it to revise some language material, give homework or make a brief test. After each created dialogue, one can save it and then play in the form of a brief film. The application is suitable for all age groups, it is simple, and the students can name the people participating in the dialogues. Moreover, the application imitates the sounds of writing and receiving text messages, which even more resembles the original version of that tool.

Another application that is worth mentioning is Quizlet. This is a typical tool for storing and reinforcing vocabulary. It works like small flashcards – in this case, virtual ones. As teachers, we can create some folders with particular words, e. g. after a particular lesson or before a test. Also, the students can add more words, depending on their needs. The application makes it possible to revise the vocabulary in several ways: you can record the words you heard, create a *memory* game or simply repeat one word after another. This is a great alternative for those who do not want to spend time on creating paper flashcards. The application makes them for us, and we can store them in various folders, which helps us systematize our knowledge.

The fourth and fifth applications I recommend are Meme Generator and Comica, which enable us to create memes and comics. They can be used by teachers who create didactic aids for the classes. Such materials are great as a warm-up, homework or introduction to the lesson.

Thus, the use of interesting applications depends on the teacher’s commitment and his/her selection of the method of work, which may be reflected in the students’ degree of involvement and curiosity.

## Websites that support teaching foreign languages

Apart from applications, we can also use numerous websites that support language teaching/learning. However, it is good to check the content of these websites so that we avoid learning incorrect language. Websites for learning English, both on one’s own and in a group, are the most popular, but we can use the methods they offer to teach other languages as well. Nevertheless, some of their aspects cannot be applied in teaching other languages because of their grammar which determines a different approach to teaching.



While working in a Finnish school, I had the opportunity to watch the work of foreign language teachers with the *Muzzy in Gondoland* materials. The children were willing to watch the films and do the exercises that required understanding the recording and the teacher's instructions. After each part, the teacher asked the students to give examples that illustrated particular thematic contents included in particular sections of the film. When the part dedicated to speaking and asking about nationality was played, the teacher repeated the questions and asked them to the students. This became easier when the creators of the popular movie made an online platform, *Muzzyclub*, on which people can learn not only English, but also Spanish, French, German, Italian or Korean. The website offers two levels of proficiency and a special interface for the teacher. Each section includes a piece of a part, games that help to practice vocabulary, as well as pronunciation exercises to be done with a microphone. The children are delighted with the kinds of tasks, the quality of games and films, and the figure of Muzzy who motivates them to discover new levels of the game.

Teaching with the support of these materials can be carried out on a regular basis, which can help the students acquire communicative skills faster and, through the diversity of the exercises, understand and acquire English easier. Moreover, online learning platforms have many advantages resulting from the use of interactive exercises within language lessons. Due to such exercises,

the student is given feedback after each response, which is not always possible during traditional lessons. The student cannot check the solution before he completes the task, so he/she cannot do it in a dishonest manner. Wrong answers are accompanied by comments and guidelines, which helps the student to correct them. The student can use various kinds of information and support, which may be useful in solving the tasks. Usually, even after finishing the work, the student is given the opportunity to check the statistics of errors and analyse them again. Thus, the student can work in a pace that is adjusted to his/her needs and abilities (Chudak 2003: 58).

Also, it is worth mentioning the platform for studying German: <https://www.dw.com/de/themen/s-9077>. This website is a great source of materials, both for the teachers and for the learners. It offers the series "Jojo sucht Glück" for A2/B1 level students. In further parts of the series, the linguistic level of the movies is gradually increasing. The story told in the series is consistent and interesting. Each part includes several tasks, a manuscript and a dictionary (in German only). The students really like these materials. Moreover, the website offers vocabulary learning ("Sagt man so") and many articles that can be reviewed, read or listened to. Each article is accompanied by online exercises. The website offers more opportunities; I have only mentioned some of them. While learning a language, it is important to combine all four linguistic skills, i.e. reading, writing, listening and speaking. Each skill is important and should

be developed properly. It is good if we know our students and we are able to adjust the didactic materials to their level, needs and interests. In this way, we make it possible for our students to understand and acquire what we teach, and we do not make them feel discouraged, which is also very important. The student has to feel challenged with the tasks. What he/she is learning has to be at least slightly more difficult than what he/she already knows. That is why, the most frequent mistake, which is not only made by beginner teachers, is using accidental didactic materials during the lesson. In doing so, we can discourage the students from learning and from cooperating with us, which can badly influence their further years of education.

It is also useful to refer to the blogs of experienced teachers who want to share their passion for teaching. Some of them are teachers, others – just lovers of a particular language, and what they have in common is the love of the language, novelties and new technologies. They want to know the expectations of contemporary students and they try to meet these expectations. The blogs I recommend include <https://blog.tyczkowski.com/>, <https://niemieckasofa.pl/>, and <https://majsterszykjezykowy.pl/>. Their authors are people who are not only interested in the language itself, but also in the culture and interesting facts about Germany.

Lastly, another excellent resource are the numerous Facebook groups for German language teachers. One is run by Anna Życka, the founder of “Deutsch im Trend – a bank of ideas for lessons with teenagers” and is a particularly inspiring resource. Its members share materials they have prepared, and they often post information on interesting workshops and conferences for foreign language teachers. They ask questions, cooperate with one another, and use the experience of others. In our times, with Internet access, it is not difficult to find valuable didactic materials in the web. Let us be open to diversity and remember that we can also create materials on our own. Every leaflet, picture, or object can become a teaching aid we shall use during our lessons to facilitate or students’ process of learning.

## Conclusion

Contemporary teachers need support with using modern information technologies. Their doubts and fear of using them result in the fact that they conduct traditional foreign language lessons even though they could use the Internet. The above-mentioned reports show that children and young people use new technologies every day, and that school without such technologies is a problem for them. In the research “Teenagers 3.0” carried out by NASK, 40% of the students expressed the opinion that school education does not prepare them for functioning in a world based on modern technologies (Bochenek, Lange 2019). The teachers of grades I-III have to face the

challenge of the child's digital world. They are to make relations with their students in the world which constantly provides young people with easily available stimuli and attractions. I do not claim that foreign language lessons should be conducted with the use of modern technologies only. However, I am for implementing those contents that, due to new technologies, may become even more attractive and interesting for the child. As early education teachers, we should support the students in discovering the world. Such a discovery may be even more fascinating with the knowledge of a foreign language the presence of which is experienced wherever we are. Also, I have a vision of modern Polish education that uses information and communication technologies in the school's didactic space to make the school "synchronized with the dynamic changes that are taking place outside its walls and permeate them" (Sarnat-Ciastko 2018: 108). Thus, I strongly believe that the ideas presented in this article may support children's linguistic independence at the early stage of education, and that they may reinforce the children's sense of competence so that, in the future, students can become linguistically fluent citizens in the digital world. I think that soon we will witness common hybrid teaching which will once again significantly change the way we teach foreign languages.

## Bibliography

- Adjust (2014). *Back to School. Apps for Primary School Children and Younger*.
- Bougsiaa H., Kopciewicz L. (2016). *Dzieci w kulturze mobilnej. Partycypacja, uczenie się i emancypacja pokolenia "cyfrowych tubylców,"* [in:] H. Bougsiaa, M. Cackowska, L. Kopciewicz, T. Nowicki, *Smartfon i tablet w dziecięcych rękach*, Gdańsk: Wydawnictwo Naukowe Katedra.
- Chau C.L. (2014). *Positive Technological Development for Young Children in the Context of Children's Mobile Apps*, Tufts University. [https://ase.tufts.edu/DevTech/resources/Theses/CChau\\_2014.pdf](https://ase.tufts.edu/DevTech/resources/Theses/CChau_2014.pdf) (access: 24.02.2020).
- Chudak S. (2003). *World Wide Web jako źródło interaktywnych ćwiczeń w nauce języka niemieckiego*, "Języki Obce w Szkole," no. 5, pp. 54-63.
- Gajek E. (2013). *Technologie mobilne w edukacji językowej – na przykładzie języka angielskiego*, "Mazowiecki Kwartalnik Edukacyjny," no. 4 (31), pp. 27-33.
- Hofman A. (2009). *Interdyscyplinarne nauczanie języka angielskiego z zastosowaniem technologii informacyjnej*, Gdańsk: Wydawnictwo Uniwersytetu Gdańskiego.
- Hutner G., Hauser U. (2014). *Wszystkie dzieci są zdolne*, Słupsk: Wydawnictwo Dobra Literatura.
- Komorowska H. (2015). *Metodyka nauczania języków obcych*, Warszawa: Fraszka Edukacyjna.

- Makaruk K., Wójcik S. (2015). *Aplikacje mobilne dla dzieci w wieku 3-6 lat. Diagnoza potrzeb i możliwości wsparcia dla rodziców*, "Dziecko Krzywdzone. Teoria, Badania, Praktyka," no. 14 (3), pp. 53-73.
- Murawska B. (2014). *Edukacja wczesnoszkolna. Niezbędnik Dobrego Nauczyciela*, Warszawa: Instytut Badań Edukacyjnych.
- Nowicka M. (2018), *E-podręcznik jako multimedialny środek dydaktyczny w świetle wypowiedzi studentek wczesnej edukacji*, [in:] M. Nowicka, J. Dziekońska (ed.), *Cyfrowy tubylec w szkole. Diagnozy i otwarcia*. Volume I: *Współczesny uczeń a dydaktyka 2.0.*, Toruń: Wydawnictwo Adam Marszałek.
- Plebańska M. (2017). *Polska szkoła w dobie cyfryzacji. Diagnoza 2017*. [https://www.cyfrowobezpiecni.pl/uploads/filemanager/raporty/RAPORT\\_CYFRYZCJA\\_SZKOL\\_2017.pdf](https://www.cyfrowobezpiecni.pl/uploads/filemanager/raporty/RAPORT_CYFRYZCJA_SZKOL_2017.pdf) (access: 24.02.2020).
- Pyżalski, J., Zdrodowska, A., Tomczyk, Ł., Abramczuk, K. (2019). *Polskie badanie EU Kids Online 2018. Najważniejsze wyniki i wnioski*, Poznań: Wydawnictwo Naukowe UAM.
- Podstawa programowa wychowania przedszkolnego i kształcenia ogólnego dla szkoły podstawowej z komentarzem (2017). Warszawa: Ośrodek Rozwoju Edukacji.
- Prensky M. (2001), *Digital Natives, Digital Immigrants. Part 1*. "On the Horizon," no. 9 (5), pp. 1-6. DOI: 10.1108/10748120110424816.
- Sarnat-Ciastko A. (2018). *Szkoła dla dziecka – cyfrowego tubylca. Postrzeżenie szkoły przez uczniów edukacji wczesnoszkolnej – uczestników projektu "Wychować człowieka mądrego"*. "Problemy Wczesnej Edukacji," no. 2(41), pp. 108-116. DOI: 10.26881/pwe.2018.41.11
- Tanaś M., Kamieniecki W., Bochenek M., Wrońska A., Lange R., Fila M., Loba B. (2017). *Nastolatki 3.0. Wyniki ogólnopolskiego badania nastolatków w szkołach*, Warszawa: NASK.

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