CASE STUDY

TEACHING TOOLS DATABASE

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European Commission

KEYCONET
Key Competence Network on School Education

European Schoolnet

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ABOUT KEYCONET

KeyCoNet (2012 – 2014) is a European policy network focused on identifying and analyzing initiatives on the implementation of key competences in primary and secondary school education. It is a constantly growing network of more than 100 members from 30 countries gathering together Ministries of Education/ related agencies, universities/research institutes, European organizations, and practice related partners.

On the basis of the evidence collected through literature reviews, case studies, peer learning visits, country overviews, videos and exchanges between network members, the project's final objective is to produce recommendations for policy and practice regarding the enablers and obstacles to a holistic implementation of key competence development.

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ABOUT THIS CASE STUDY

Part of a series

This case study is part of a series of case studies being produced by KeyCoNet, to highlight various initiatives concerning key competence development, taking place across Europe. Each case study analyzes the initiative's implementation strategies in depth, and will feed into the network's recommendations for policy and practice on how to implement a key competence approach in schools most effectively.

How and why was this case selected?

Each year, the KeyCoNet network identifies initiatives concerning key competence development across Europe, and a case note is produced providing basic information about each one. Following this, network partners participate in an online selection according to pre-established criteria, as well as an in-depth face-to-face discussion, in order to select the most interesting initiatives to develop into case studies. The Teaching Tools Database was considered a particularly interesting initiative by the network due to its focus on teachers and teacher training, and particularly in providing teachers with useful tools and resources for developing students' critical thinking and problem solving skills.

Which methodology has been used?

Case studies are the main tool used by the network to probe beneath the surface of each selected initiative and provide a rich context for understanding the implementation issues involved. The initiatives selected by the network differ in many ways, according to the nature of the key competences addressed, the implementation process used, the number of students and teachers directly concerned, the type and number of actors involved and the duration and stage of development etc. A multiple-case study design, whereby each initiative generates its own case study but uses one single prism for a common analysis, was therefore chosen. This method makes it possible to explore diversity, as well as the enablers and obstacles to the initiative's implementation, as perceived by the initiators and stakeholders interviewed. Moreover, through a multiple-case study design it is possible to identify choices, strategies, characteristics, situations or contexts leading to success or failure in a recurrent manner. This will particularly contribute to fuelling the set of recommendations for policy and practice at institutional, local, regional, national and European level, for the effective implementation of key competences in school education.

Each case study included interviews with the initiative's coordinators and stakeholders, as well as desk research. In some cases, where considered feasible and fruitful, focus groups were also organized. For this particular case study the two coordinators of the initiative and three stakeholders were interviewed altogether. The coordinators are Educational Research Institute employees. One of the coordinators deals with the formal and technical side of the initiative as well as being responsible for history and social science tasks included in the Teaching Tools Database. The other coordinator is in charge of science subjects, which in the case of Poland are four separate subjects: biology, geography, chemistry and physics. Stakeholders included one Polish teacher, one geography teacher and a 16 year-old student. After careful consideration we decided it would be relevant to interview stakeholders from three groups: teachers, parents and students as the most important beneficiaries of the initiative. However, it was not possible to find a parent who was willing to participate in the interview. The difficulty with recruiting a parent for the interview may suggest that parents, in general, are not familiar with projects such as the database and do not possess enough knowledge of the initiative to be able to answer detailed questions. This is in line with our general observation that despite the fact that the Teaching Tools Database is intended for the general public, its closest focus is, however, on teachers mostly. This is the crucial target group of the initiative.

BASIC INFORMATION

Country:	Poland
Title of initiative:	**[PL]** Baza Narzędzi Dydaktycznych, Baza Dobrych Praktyk; od grudnia 2013 Baza Narzędzi Dydaktycznych została włączona do szerszej bazy nazwanej Bazą Dobrych Praktyk **[EN]** Teaching Tools Database; Good Practices Database; since December 2013 the Teaching Tools Database has formed part of a bigger entity called Good Practices Database
Coordinator/ Organization:	**[PL]** Instytut Badań Edukacyjnych (IBE) **[EN]** Educational Research Institute
Key competences addressed:	**[PL]** Rozwój krytycznego myślenia **[EN]** Critical thinking **[PL]** Umiejętność rozwiązywania problemów **[EN]** Problem solving **[PL]** Porozumiewanie się w języku ojczystym **[EN]** Communication in the mother tongue **[PL]** Porozumiewanie się w językach obcych **[EN]** Communication in foreign languages **[PL]** Kompetencje matematyczne i podstawowe kompetencje naukowotechniczne, **[EN]** Mathematical competence and basic competences in science and technology
Type of initiative and channels used for implementation (e.g. curriculum reform introduced through legislation etc.)	Support for the implementation of the new core curriculum that has been used in Polish schools since 2009. The new core curriculum emphasises the importance of higher order skills: critical thinking, scientific reasoning and problem solving, interpretation and argumentation.
Partners:	Not applicable
Scope: (student/teacher/school level; local/regional/ national)	· Teachers, teacher trainers, students · National level
Learning context: (formal or non-formal)	Formal
School education level/s: (primary, lower secondary, upper secondary)	Primary, Lower secondary schools; Upper secondary schools
Target groups:	Teachers, teacher trainers, students
Time frame: (start and end date)	5 October 2011– 30 June 2015
Relevant links:	*www.bnd.ibe.edu.pl* *www.bdp.ibe.edu.pl*

SUMMARY

Experience and research show that supporting students and teachers while introducing changes into the system of education is crucial for the benefit of education. The new curriculum reform of 2008 in Poland underlined the concept of critical thinking and problem solving in teaching at all school levels. The Educational Research Institute developed a tool for teachers representing primary, lower secondary and upper secondary schools aimed at supporting their preparation for work with students. The Teaching Tools Database is shaped in such a way that helps teachers understand how the tasks for students should be prepared in order to get them involved in reasoning and searching for best solutions to problems. In addition to being a bank of ready-to-use materials, the database is supposed to serve as a learning platform for teachers aimed at stimulating them to create their own materials and share the idea of incorporating key competences into their teaching practice. The tasks included in the Teaching Tools Database measure and assess scientific reasoning, critical thinking, concluding, interpretation, argumentation, experiment design etc. They focus on shaping skills not just testing pure knowledge. The tasks are accompanied by real-life texts, examples, maps, tables and graphs.

A special website was constructed and is open for everybody wishing to participate. Although mainly addressed to teachers, students and parents can also benefit from it. It is worth mentioning that teachers and other website users can exchange their views on the tasks included in the database as well as provide administrators with useful comments. Opinions collected via the Internet show that the database is well evaluated by teachers as a helpful instrument that supports them in their everyday work with students. Up until December 2013, 249,494 unique users visited the Teaching Tools Database website with 343,494 visits and 2,047,496 page views. At present, it comprises approximately 700 tasks and 30 examples of good practices accessible on-line. The specific subjects concerned are history, Polish language, mathematics and science. The tasks and good practices included in the database are prepared by subject experts at the Institute. The Subject Teaching Unit is responsible for the content of the TTD. The Unit consists of a Polish team, maths team, science team, history team and foreign languages team, each led by a leader, usually a renowned expert in the subject matter.

The Teaching Tools Database is a living initiative – in December 2013 it was incorporated into a bigger entity called the Good Practices Database, and is constantly being developed. The updated website contains not only tasks directed at teaching and developing key competences in education, but also examples of good practices identified during the Institute's research. Those good practices are also centred around key competences and higher order thinking skills and are real-life examples.

1. CONTEXTUAL INFLUENCE

Which contextual factors have been perceived as enablers to the implementation of the initiative and why?

The new Core Curriculum was introduced in lower secondary schools in Poland in 2009. The Curriculum underlines the importance of higher order skills and key competences in teaching and learning. With the change of approach in the Curriculum itself, new kinds of tasks and tests had to be created. In 2012, a new format of lower secondary school leaving exam was implemented. Under the previous exam regime, students had to sit two parts –

humanistic and scientific. With the new exam format Polish language and history parts were separated as was maths from other scientific subjects. However, at that time neither the new exam type questions nor tasks actually making students develop key competences were easily available for teachers. As a consequence, tasks that could assess skills not just pure knowledge were demanded. As the Educational Research Institute started its EU co-funded project "Education Enthusiasts" in 2009 the decision was made at the Institute to create a database with new kinds of tasks. It was supposed to be aimed mainly at teachers but available to the general public. It is worth mentioning that already in 2009 and 2010 Institute experts were preparing the new format tasks for their research studies and most of those tasks were being piloted in schools. The tasks in the database are of a very good quality and have the best psychometric parameters.

Which contextual factors have been perceived as obstacles to the implementation of the initiative, and why?

At the very beginning, there was a lot of discussion about the actual look of the Teaching Tools Database. What researchers dreamt of was the creation of a database that would make use of the latest technology, very modern, with multimedia elements and animations etc. However, finally it was decided to opt for a much more classical approach as we realised that it would be best for teachers to become familiar with the content first while the improved modernised form could come later. In addition, as the Institute wanted to create a tool that everybody could easily use either in the classroom or outside it, it made the Database available to everybody, even to those teachers who might be less proficient with the latest technology. After the decision was taken, another one on the outlook that the user should see had to be made. The way the Database looked was important in promoting the philosophy behind it; in other words, transferring a message about the Core Curriculum to teachers and other Database users.

In some way, it was and still is the duty of the Institute's researchers to make public all teaching tools that are prepared within the "Education Enthusiasts" project and therefore it was decided to do it in a teacher-friendly way by creating the Teaching Tools Database.

Some difficulties were encountered with creating socio-economic geography tasks assessing key competences as students usually need to express their views on the social or economic situation in some countries or regions so it is difficult to create multiple choice tasks. As geography teachers underlined this problem, the TTD tried to address it. In the updated Database good practices connected with Geoportal were uploaded.

Neither technical nor financial obstacles were met while implementing the initiative.

2. SUBSTANCE-RELATED ISSUES

Which substance related issues have been the most difficult ones to fix when deciding on the content of the initiative, and why?

First of all, the first educational level that was touched by the Core Curriculum Reform 2009 in Poland was lower secondary school. The new curriculum was introduced in the first class of lower secondary school and at the same time at the lowest educational level,

which is primary teaching (first class of primary school).

It might be worth mentioning that education is divided into four main stages in the Polish system – the first stage is primary teaching (from age 6-7 to 10; from September 2015 education will be compulsory in the first grade for all 6-year-old children), the second stage is still at primary school but for older children (ages 10-13). At this stage, the division into subjects is first made and this educational level terminates with the primary school leaving exam. The third stage is lower secondary school (called *gimnazjum* in Polish) – ages 13-16. It ends with a junior high school leaving exam and marks the end of obligatory education in Poland. The final, fourth stage is upper secondary school. It lasts 3 years and finishes with secondary school leaving exam, which entitles young people to study at a chosen faculty.

Since the new Core Curriculum was implemented in lower secondary schools first, this educational level was chosen as the starting point for the Database. A focus was made on the guidelines in the Core Curriculum referring to key competences and tasks were developed according to those guidelines. The new Core Curriculum is constructed in a two-tier way – the general requirements and the detailed requirements, which are an extension. A more detailed description of what should be achieved was developed for general requirements, which usually refer directly to key competences in different subjects.

Tasks in the Database undergo a few stages of verification – they are reviewed, piloted, checked statistically and also need to be approved by heads of research subject teams at the Institute before they are published in the Database.

As the Database has turned out to be a success and a useful tool for teachers, the Institute has started to develop tasks for different educational levels and they are systematically uploaded onto the Database, together with examples of good teaching practises.

Students interviewed pointed out that the tasks are unique, different than in textbooks and revision books. They measure student's reasoning and it is fairly easy to make a mistake. The analyses of results and explanations came in handy as well. The students stated that standard materials just gave the right and wrong answers without any comments about what to do to improve.

Which substance-related issues have been the most difficult ones to fix when deciding on the content of the initiative, and why?

Consistency among subject tasks was the biggest issue. The tasks can be found according to Core Curriculum requirements or according to subjects. Each school subject has its characteristic features, a slightly different approach to content matter, and focuses more on different aspects of teaching and learning. The authors wanted all tasks, no matter what subjects they refer to, to be constructed in the same way and in a similar format. The key issue at the beginning was to come to an agreement how to make the tasks consistent, especially given that the authors of the tasks come from different teaching and subject traditions and from different regions of Poland and have varied backgrounds. An attempt was to be made to find a consensus not only about the way of thinking about the tasks and the way of presenting them but also about simple matters like task descriptions and what should be included in comments for each task.

The second issue is the fact that the Database is still addressed mainly to lower secondary school teachers and most tasks are de-

signed for this educational level. It is difficult now to create a similar volume of tasks for the second and fourth level and to pilot them in schools, mainly due to the lack of time. Also, research efforts concentrated mostly on the third educational level as the most problematic one, so plenty of material for this educational level was developed. At present, the Institute should do its best to make up for this disproportion.

Another pending issue is the promotion of the Database among teachers. The Institute realises that its website is not the typical place where teachers would look for materials that they could use in their everyday work. They would rather search special websites and portals that are dedicated especially for this purpose. Various attempts to promote the Database were made, also with the help of a professional PR agency. An example of an activity that was designed to make the Database known to the general public is the Good Practice in History lessons competition. It was designed for teachers to come up with good practices in real school situations. Simultaneously, the Database was promoted on the radio and in national newspapers. The authors of the tasks wrote articles for educational newspapers, always with examples of tasks in the Database. We also published comments to the exam tasks and always took the opportunity to direct people to the Database. However, it cannot be said that the Institute is a hundred percent satisfied with the results of these promotional activities. It is aware that there are many teachers who do not know about the existence of the Teaching Tools Database and there is still some work to be done.

3. PARTNERSHIP RELATED ISSUES

Which key aspects should be taken into consideration when defining the partnership?

The crucial issue is the inclusion of active teachers in the development of task content.

Researchers cooperate mainly with practising teachers while preparing tasks for the Database. Some of the subject teams employed teachers intentionally for writing tasks. Workshops dedicated for them and periodic training have been organised. Some cooperation with the Centre for Citizenship Education was established while preparing social science tasks. However, what brings the biggest value is the work of practising (professionally active) teachers as they have the insight and knowledge about what is easy for students, what is difficult, what works better in the classroom, etc.

The teachers play a vital role in testing the solutions used in the TTD. Their comments are invaluable. All tasks are first tested by

practising teachers and then standardised on a large number of students. If it happens that a task does not achieve high statistical parameters, it is not uploaded onto the Database.

4. STRATEGY RELATED ISSUES

Which aspects of the strategy implemented for the initiative have proved to be particularly effective, and why?

When the initiative was first put forward the Educational Research Institute had some new format tasks that were of a good quality and wanted to share them with teachers. The tasks had to be published quite a long time before the changed format of the lower secondary school leaving exam was introduced. This is what was managed to be done successfully as the first new exam was administered in April 2012 and the Database was launched in October 2011.

Another issue connected with the timetable is the number of tasks uploaded in the Database later on. The intention of the authors was to create high quality tasks and show diverse tasks formats rather than present just a high volume of tasks. The goal was to inspire teachers rather than bombard them with just another source of ready-to-use materials. That is why carefulness about the commentaries for all tasks was expressed – attention was paid to the description of the purpose of the task, the competences and skills covered and the task structure. Statistics on right and wrong answers are provided in order to make teachers aware of what they should pay attention to in their further work with students.

Another objective was to encourage teachers to ask questions and give comments about the database and the tasks (there is an option to comment on each task separately). In the first months of the Database's existence many questions appeared, not only about the content of tasks themselves but also about how the tasks are constructed to measure competences. The authors are always very happy to receive these kinds of questions as they mean that teachers are trying to write tasks themselves and one of the general goals of the database is to inspire and train teachers. At present, the strategy is to publish news tasks regularly. The Institute publishes a newsletter that is sent to subscribers and people interested are informed about new materials that are ready and waiting for them online (of course, there is always an option of just printing the tasks).

Meetings with teachers while promoting the Database proved to be most effective. Although the Database is really an online tool and there is no need to meet face-to-face with the initiative's target groups, the Institute organises meetings with teachers to present the Database. Special meetings with teachers and parents were held especially when it was first launched. Those meetings were very productive as they gave the teachers' perspective and they in turn received the researchers' perspective and the philosophy of the tool. Even sceptical teachers usually left meetings convinced that the Database is worth having a look at.

Teachers interviewed while preparing reports pointed out that they appreciate the statistical data that is published under tasks and references to Core Curriculum guidelines. They underlined that the Database is very useful for exam preparations and extra classes. What they also liked was the idea of including the TTD in the Good Practices Database and showing a wider context of tasks and other materials being put together in one place. It seems to be a practical solution as they have easy access to a wider range of

materials and they do not need to waste time looking for interesting ideas on different websites.

Teachers of Polish language and literature stressed that the manual guides teachers through teaching students writing argumentative essays and interpretation.

Which aspects of the strategy implemented for the initiative have proved to be most problematic, and why?

It seems that the belief that the Database will become very popular among teachers thanks to its high quality proved to be wrong. The creators of the new Core Curriculum are very often the authors of Database tasks and the Institute thought that those names and these people's experience would attract teachers to the new initiative. It turned out that the Teaching Tools Database, just like every product on the market, requires the standard promotional, commercial activities – Facebook page, radio and newspaper advertising. So it was decided to use those marketing strategies to promote the Database, and it brought results. The Database always attracts most attention at exam times when people – teachers, parents and students – are looking for tasks that they can use while preparing for exams. That is why the Institute is usually busy promoting the Database at those times.

The teachers raised an important issue: it is not always easy for them to use the TTD during lessons. The reasons are twofold: teachers do not always have access to the Internet in their classrooms, and they do not know how to make use of the Database in a meaningful way in the classroom. So there is room for more teacher training and presenting in real life how the Database could be attractively used during lessons. The teachers pointed out that it would be useful to also publish more materials for educational levels other than lower secondary school.

5. MAINSTREAM RELATED ISSUES

The Teaching Tools Database was created by the Educational Research Institute, whose main objective is to carry out research in the field of education. The employers and experts of the Institute felt there was a need to create such a database but it never was supposed to become an initiative that would be used by all teachers or a project that would be implemented in every school. It is meant rather as a source of inspiration targeted at a specific group of people, not as a venture where a high number of recipients is the most important and ultimate goal. However, the idea is to reach as many teachers and as many schools as possible.

If the key competence initiative aims/aimed at mainstreaming, what are/have been the major obstacles encountered to generalise it?

Teachers are used to exploiting certain materials and specific websites for their teaching needs and it is quite difficult to change those habits. It takes time to change teachers' second nature. It is the major obstacle that was encountered when promoting the Database. According to what the teachers interviewed said, the promotion of the TTD still seems to be limited and is not reaching

a lot of teachers. They suggested that the Database could be made known by promoting it in teachers' newsletters, magazines and during teacher training workshops. It was also mentioned that links to the TTD might be added on websites devoted to specific subject teaching. Also, students stated that the Database is not very popular among students and could be promoted more. They were not able to suggest any special ways of promoting it. Using word-of-mouth was proposed.

6. SYSTEMIC ASPECTS

To which extent has the initiative been designed as a systemic one from the starting point, i.e. introducing changes in several areas related to the student curriculum [such as teacher training, assessment, school organisation, etc]?

The Teaching Tools Database was intended to show the new Core Curriculum guidelines in a practical way. Sometimes, as research shows, the guidelines are complicated and not very practical for teachers; teachers do not know how to make use of them in the classroom. So it was decided to show them how to teach and assess the key competences that the new Core Curriculum focuses on. In the Database there is always a reference to a specific requirement/point in the Core Curriculum (general and detailed), so this way teachers know that the curriculum is a document that can be practically implemented in their everyday work. In this respect, there is a systemic change behind the Database: promoting the new Core Curriculum among teachers and making it easier for them to understand. Going a little bit further, there was an intention to promote the content of the curriculum, especially the general requirements that consist mainly of key competences. The idea was also to show teachers how those key competences can be taught and assessed by multiple-choice tasks in a friendly way.

What have been the enablers encountered during the implementation because of the systemic aspect of the initiative?

The Teaching Tools Database has not been designed with the systemic aspect in mind. It turned out in practice however that it does have a systemic aspect.

Have some parts of the original design of the initiative [from the systemic point of view] been abandoned and why?

No parts of the original design of the initiative have been abandoned.

7. EVALUATION RELATED ISSUES

In case a simultaneous/real time evaluation process has been part of the initiative: What have been the obstacles to implement it, and why?

Evaluation has been taking place all the time and no major obsta-

cles have been encountered. Constant monitoring of the number of users is the simplest method of verifying the utility of the Database. Another method is responding to comments on the Database collected via the Internet. In the course of this process some really useful comments have been made by teachers and they have partly been taken into account and applied. It has, however, not been possible to implement all the ideas resulting from evaluation process because of formal requirements connected with public procurement law.

What have been the difficulties or risks that have been solved/avoided thanks to the simultaneous evaluation process, and why?

The construction of the Database and the way searching for tasks is done has been altered thanks to comments received during the evaluation process. This has been modified in order to be more user-friendly.

8. ACHIEVEMENT OF INITIATIVE'S AIMS

Have the original aims of the initiative been achieved?

As was mentioned before, the original aim was to present the new format tasks for the altered lower secondary school leaving exam. This aim was achieved fully. As it turned out later, it was not only teachers who took advantage of the Database but also publishing houses preparing new textbooks and the authors of exam tasks. Some forms of tasks that first appeared in the Database were later used in textbooks, some for regional student competitions and even for final exams.

9. NEXT STEPS

What is planned next for the initiative?

The plans include:

- Re-building the Database – it has already become a part of the Good Practices Database (a wider project also focusing on the promotion of key competences)
- Uploading more tasks for levels other than lower secondary school
- Using database tasks in a new project launched by the Institute – the tasks will be used by a greater number of teachers during lessons in the next school year; teachers will write reports on the tasks used and their usefulness for their teaching practice
- Introducing more multimedia tasks

10. ADDITIONAL INFORMATION

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We are happy to hear whether you are interested in receiving further information or providing us with suggestions. Contact us at: *keyconet-info@eun.org*

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