ELECTRONIC REGISTERS IN THE SCHOOL AND DETERMINANTS OF THEIR EFFECTIVE IMPLEMENTATION

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***Abstract**: One of the assumptions of this article is the proposition that there is no turning back from tools such as electronic registers in schools, given current social and technological determinants, organisational, technical and humanistic aspects as well as the necessity to improve the quality of school management and educational processes. The article discusses selected results of a study into the functioning of the e-register as an electronic system designed to support management processes and to improve record-keeping of the educational process at educational establishments. The study was conducted among head teachers, teachers, students from selected schools in the Silesian province as well as their parents. The article comprises a discussion of theoretical issues, literature research, a review of software available in the market, and a statement of the objectives, the subject and results of empirical research.*

Keywords: e-services in education, electronic registers in school, management software, survey

INTRODUCTION

This article reports results of a study into the functioning of the e-register as an electronic system designed to support management processes and to improve record-keeping of the educational process at educational establishments. The subject discussed seems to be very relevant today, as electronic registers are becoming a very popular tool used in the educational sector. More and more teachers can be heard to say that traditional registers will soon be a thing of the past.

The main research problems are expressed in the form of the following questions:

- How is the e-register perceived in school communities?

- What opportunities and threats in respect of e-register implementation at school prevail in the dominant view of school stakeholders?

- To what extent are schools prepared for the implementation of such solutions?

One of the assumptions of this article is the claim that there is no turning back from such solutions as e-registers. One might even risk saying that in the nearest future all schools will switch to this method of keeping records of their activities. They will be made to do that by means of, e.g. a requirement to develop special reports analyses, which cannot be accomplished in a traditional manner or will be a time-consuming task. Relevant governing authorities have already introduced a requirement to submit records in a specific format, generated using specific software. This way they intend to standardise the activities of the establishments they supervise, which in turn will facilitate and streamline data processing. Such management software now used at schools as e-educational plan applications or e-administrative office applications will force the implementation of e-registers, as very often the former are interrelated to the latter.

This article also aims at assessing divergent opinions on the e-register tool, voiced by teachers during online meetings, training sessions and discussions. The number of those in favour and the number of those against the e-register are the same. A commonly held opinion among e-register enthusiasts is that e-registers allow teachers to perform their duties at a faster rate, facilitate their work, improve parent/school communication and enhance education quality. Opponents of this technology most often point to the issue of data security and insufficient infrastructure as well as lack of familiarity with the application.

The study was conducted among head teachers, teachers and students from selected schools in the Silesian province as well as their parents. For the most part the people involved in the study represented local authority schools run by the commune authorities. The article comprises a discussion of theoretical issues derived from primary sources and results of empirical research.

INFORMATION AND ITS TRANSMISSION

IT technologies are steadily increasing the range of human communication. Such expansion brings about numerous changes in organisations, including the necessity to use means of electronic communication. It has become an indispensable part of the functioning of each educational establishment, both in its teaching and administrative area. The Internet provides huge opportunities for obtaining and exchanging information as well as for learning. The world wide net has become a tool that is present in all areas of the economy, business, science and social interaction.

Communication-related issues appear to be very topical ones, because information exchange processes are an important component of activity in each organisation, including educational establishments. We witness modes of information transmission and communication tools change on a daily basis. In most organisations exchange of content is very intensive, with transmission being increasingly offered as digital products and services. There is every indication that in the nearest future the services of transmitting, processing and storing information will continue to expand. A fully operational communications system is not only an inherent part of an organisation but also a prerequisite for proper assignment of decision-making; such a system is directly related to major management functions: planning, organizing, motivating and controlling.

Due to the special nature of school activities, schools are required to generate, gather and store data. Increasingly such functions are performed using digital technology. Informational resources are being created (personal data, grades, student reports) about students, teachers and parents. What is more, there are clear signs that the process of informatization will continue at a steady rate. In this context, properly generating, processing, interpreting and disseminating data takes on added importance.

Modes of communication are evolving as technology advances. Communication within a school organisation and with its external environment is realised through multiple channels. There is no doubt that the latest means of information exchange have, to a large extent, modified traditional ways of communication. People less and less often engage in face-to-face conversations, as these are being superseded by various forms of electronic communication (email, communicators, forums, chats, discussion groups etc.) (Augustynek 2011: 69). An important development affecting the contemporary school is the gradual replacement of traditional forms of communication by digital transmission (e-registers, electronic parent/teacher meetings). Websites are popular means of imparting information; they have become an indispensable part of school infrastructure. Online communication and email are superseding traditional means of communication (the telephone, traditional mail, fax).

Nowadays such attributes as the speed of information transmission are acquiring enormous importance. The information and communication revolution, which is advancing at a fast pace, contributes to the development of technologies which are bringing about changes in virtually all spheres of human life. Above all, what has undergone changes is the social communication system, which has a significant effect on economic, political and social processes.

SCHOOL IN THE INFORMATION SOCIETY

The characteristics of an information society include: *information*, *knowledge*, *technology, communication and development* (Dąbrowska, Janoś-Kresło 2009:

13). A technological revolution is now underway in educational establishments, having an effect both on the educational and organizational sphere. Information exchange through digital transmission is an increasingly growing trend in contemporary educational establishments. It is also tangible evidence of an information society coming into being. This type of society is said to have started developing in Europe in 1994, when the European Commission published its report *Europe and the Global Information Society* (Dąbrowska, Janoś-Kresło 2009: 13). Such a society can be described by the following material attributes:

- information is the main raw material that constitutes and forms an information society;

- it is technologies that impact information and not the other way round (as it used to be the case during the industrial revolution);

- ubiquitous nature of new technologies and their intensive effect on the society (forming processes of individual and collective existence);

- a networking logic is being created i.e. a set of relationships in which new information technologies are used;

- the structures are flexible, which allows for changes, modifications and reconstruction of network components;

- constant changes and organizational liquidity;

- combining technologies into one, highly integrated system (technologies combine with one another, which facilitates their development) (Castells 2008: 79-80).

K. Krzysztofek and M. Szczepański hold the view that a society is in the process of becoming an information society if the degree of the complexity of the social and economic development is such that it is necessary to use tools without which it is not possible any more to gather, process and use the enormous "infomass", or to control information noise only by means of the brain and traditional information media and tools (Krzysztofek, Szczepański 2002: 178). On the other hand, M. Castells points to another feature of the information society, i.e. the networking logic of its basic structure, which is associated with another important concept - that of a "network society". This concept refers to a theory stating that societies are increasingly organized around networks. Networks constitute the new social morphology of our societies, and the diffusion of networking logic substantially modifies the operation and outcomes in processes of production, experience, power, and culture (Castells 2008: 467).

One of the key features of an information society is focus on personalised devices, interactivity, networking and a constant quest for new technological solutions that often make no financial or rational sense (Castells 2008: 23). In order for schools to be able to satisfy the needs of an information society, they need to be provided with an appropriate infrastructure. All members of school communities should have

guaranteed access to modern IT tools. In addition, it needs to be stressed that teachers and administrative personnel should have appropriate competencies to operate hardware and software; such competencies can be acquired by attending post-graduate programmes and courses as well as through informal learning (e-learning courses, MOOCs, self-study, etc.).

DEVELOPMENT OF E-SERVICES IN EDUCATION

A service is a non-material aspect of a good. One cannot acquire title to a service or see it prior to purchase. Emphasis is often placed on the unique role of human resources in the process of service provision; attention is also drawn to issues involved in the measurement of consumer requirements and difficulties in controlling the quality of service provision. Services can be classified according to various criteria. The European classification of economic activities distinguishes services for consumers, services for manufacturers and for businesses as well as general social service activities. Services for consumers are grouped into material and non-material services. Education is classified as a *non-material* service.

The expansion of the e-education phenomenon is a result of a rapidly changing reality. Changes happening in all spheres of life have enabled the majority of society to enjoy a relatively easy access to information resources. An information society that is thus coming into existence is contributing to the development of e-services. E-education is a new method for running training courses and for teaching, allowing learning to take place at any place, time and pace. Its advantage over other methods consists in shifting a focus in the teaching process: from the teacher to the learner (Dąbrowska, Janoś-Kresło, Wódkowski 2009: 80). In the e-education sector we have also seen the emergence of systems allowing instructors to track the broadly-understood student progress using IT tools.

LEGAL AND ORGANIZATIONAL FRAMEWORK

Provision for maintaining records in electronic format is made in the Ordinance of the Minister of Education of 29 August 2014 on Methods of Maintaining, by Public Kindergartens, Schools and Establishments, of Documentation on Teaching, Educational and Care Activities, and Types of such Documentation (Journal of Laws of 2014, Item 1170). This item of legislation also lays down rules for maintaining e-registers in schools. The following are the most important provisions of the ordinance in the context of this article:

"§ 22

1. The registers referred to in § 3, 10–14, 19 and 21, may also be maintained in electronic format; registers maintained in electronic format shall hereinafter be referred to as "electronic registers".

2. If the governing authority of a kindergarten, school or establishment gives its consent, the registers referred to in § 3, 10–14, 19 and 21, may be maintained exclusively in electronic format.

3. Where an electronic register is maintained, the following requirements must be satisfied:

1) selective access shall be allowed to data constituting an electronic register;

2) protection shall be provided for data constituting an electronic register against unauthorised access;

3) protection shall be provided for data constituting an electronic register against destruction, damage or loss;

4) change description and the authors thereof shall be recorded in the revision history;

5) parents shall be provided with free-of-charge access to the e-register to inspect their children's data.

4. An IT system used to maintain electronic registers shall have a feature allowing for exporting data to XML and for preparing the registers mentioned in § 3, 10–14, 19 and 21 as hard copy.

5. In the event the registers referred to in § 3, 10, 11, 13 and 21 are maintained only in electronic format, the teacher's entering, in the e-register, of the lesson topic mentioned in § 3 section 2, § 10 sections 3 and 5, § 11 section 2, § 13 sections 3 and 5 as well as § 21 sections 2 and 3, shall be synonymous with the teacher's confirmation that the class was actually taught.

§ 23

Within 10 days of the end of a school year, and in the case of post-secondary schools for youth and colleges of further education – within 10 days of the end of a semester, data constituting an e-register shall be recorded on a computer medium with their status as at the end of the school year or the end of the semester, respectively in such a way as to ensure that:

1) the integrity can be verified of the data constituting the e-register through the use of the electronic signature referred to in Article 3 Item 1 of the Act of 18 September 2001 on Electronic Signature (Journal of Laws 2013, Item 262);

2) the electronic signature or identification data can be verified;

3) data constituting an e-register can be read to the extent as provided for the storage of the registers referred to in § 3, 10–14, 19 and 21."

WHAT IS AN ELECTRONIC REGISTER?

An electronic register is software used to gather all and any information about the activities of a school. E-registers record lesson topics, attendance data, grades, information on the teaching and learning process, personal data etc. In addition, e-registers have various features - they can print school reports, student IDs, grade sheets, letters, can synchronise data with other applications. E-registers are no longer tools to merely record lesson topics and student attendance. Software developer companies are increasingly offering powerful tools to assist in school management processes, and these tools often support other computer applications.

Such factors as the speed of information transmission, universal availability, transmission channel capacity and relatively low costs determine, to a large extent, the popularity of electronic registers. Key advantages of such applications also include the absence of spatial and temporal restrictions, communication is not affected by the place where the sender and receiver are present. Usually such communication is of asynchronous nature, which means that the sender and receiver need not be online at the same time. A sender sends information that is stored in a buffer at a certain location and then retrieved from there by the receiver. Exchanging information or data by means of an e-register allows also for sending messages to multiple recipients at the same time. Such mode of communication records teachers' activities, which may be important from the employer's and employee's point of view. On the other hand, communication over the Internet can have adverse effects, such as decline in parental contact with the school, to name just one.

The implementation of e-registers in schools is intended to:

- make management more efficient (assisting head teachers),

- improve the documentation of the teaching process,

- improve communication with parents,

- increase student attendance rates,

- facilitate the work of the teacher,

- make it more difficult for students to get around the rules.

The review of e-registers presented below is illustrated with two examples of the software that the majority of the school representatives surveyed identified. The software selected was that developed by the companies Vulcan and Librus.

In order to encourage schools to use the software, the developers are designing solutions that integrate multiple educational systems. The application developed by the company Librus can serve as a good example. Figure 1 below shows the structure of the solutions offered.
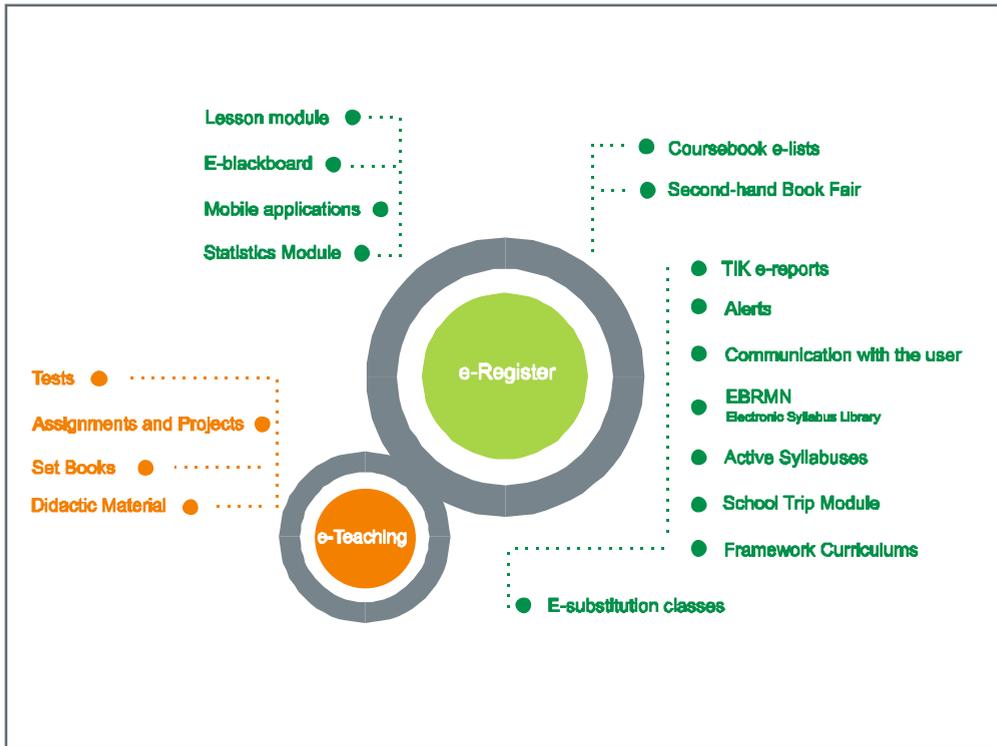
Figure 1. Librus' integrated information and communication technology

Source: own research based on https://dziennik.librus.pl/informacje /integracja (accessed 24 July 2015)

The Librus company advertises itself not only as a software supplier but also as a leader championing an innovative approach to enhancing education quality. The company promotes a comprehensive strategy of the individualization of learning at school, providing tools, training courses and sources of inspiration for work with students. The project is intended to combine findings of modern neuro-didactics with hands-on school practice, and innovative technological solutions with broad expertise.

The company's mission is to support educational development by delivering state-of-the-art solutions facilitating educational processes and education management.

The other company that enjoys a strong market position is Vulcan. It offers a package called *Organizacja Optivum* comprising such modules as: *education plan, timetable, substitution classes, students, e-register, human resources, payroll, finances, procurement, inventory, MOL* (library) (Figure 2).
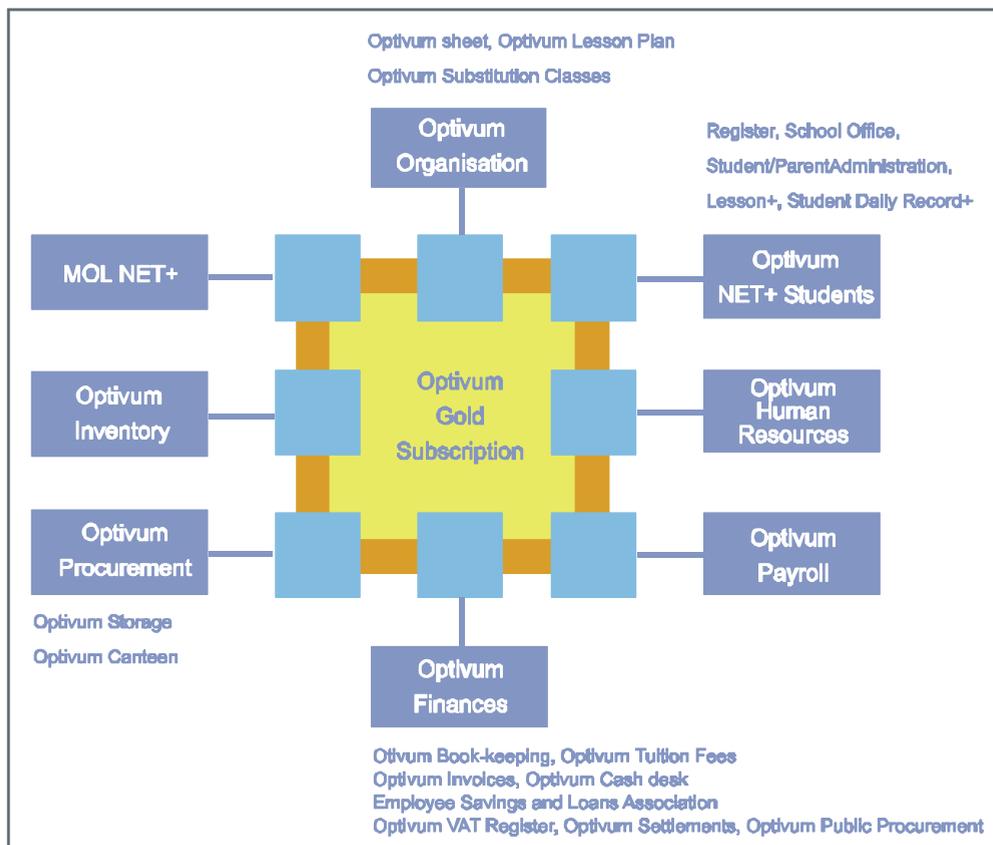
Figure 2. **Vulcan's integrated information and communication technology**

Source: own research based on https://www.vulcan.edu.pl/ program.php/49_zloty_abonament_optivum.html (accessed 24 July 2015)

In order to give an example of the operation and features of e-registers, below a description is provided of the e-register developed by the company Vulcan. The application comprises 3 modules: *Register, School Office, Administration*. Each user has specific privileges. Privileges include those of an administrator, a head teacher, a teacher, a librarian, a school secretary. The *Register* comprises the following tabs: *lesson, form register, syllabuses, register of classroom observations, student grade sheets*. The *Printouts and statements* comprises: *printouts, grade sheets, school certificates, head teacher's statements, form teacher's statement, teacher's statements*. The *Help* tab comprises: *manual, knowledge base, revision history, updates*.

The *School Office* module is very extensive. After the user clicks the *Card indexes and books* tab, the following sections open: *students in forms, students register,*

children register, candidates register, students nit promoted. Furthermore, the application offers: *dictionaries, register, printouts,* and each of these tabs has further functionalities.

The *Administration* module comprises the following components: *structure of the school, forms, employees, non-working days schedule, lesson plan. U*sers can configure the features according to their needs.

The software company highlights the following advantages and features of its product:

- a feature allowing for automatic calculation of average grades and attendance figures, in order to improve communication with parents or just to see if the e-register will work in a given establishment,

- electronic development and management of comprehensive educational plans,

- a feature allowing users to print all standard documents that form the basis for approving draft comprehensive educational plans, amendments to such plans as well as complete draft financial plans,

- automatic and on-going monitoring for possible inconsistencies: verifying data in terms of completeness and integrity,

- professional support for the head of an educational establishment in fulfilling key obligations associated with organisation and preparation of the financial plan,

- electronic comprehensive educational plan, capable of being adapted to suit any educational establishment,

- comprehensively supported management processes at educational establishments,

- electronic development and management of comprehensive educational plans,

- a feature allowing users to print all standard documents that form the basis for approving draft comprehensive educational plans, amendments to such plans as well as complete draft financial plans,

- automatic and on-going monitoring for possible inconsistencies: verifying data in terms of completeness and integrity,

One of the major advantages of e-registers is contribution to improved student attendance rates. The software allows the user to immediately notify parents of their children's failing to attend school. Most software companies offer applications for smartphones, so, if a teacher regularly records attendance, parents can track, in real time, their children's attendance at school, their grades or teacher's entries in a student's daily record about the student's conduct. It should be stressed that recently such tools have become a fad. School using e-registers are said to be superior, to a certain degree, to other schools.

Why are traditional paper registers doomed? The features described above seem to point to unequivocal conclusions.

ORGANIZATION AND RESULTS OF THE STUDY

According to the provisions of the afore-mentioned ordinance, neither head teachers nor teachers' boards have powers to decide independently to use e-registers at schools. Where an educational establishment wants to maintain registers in electronic format only, it must secure the approval of its governing authority. On the other hand there are no contraindications to using e-registers as a complement to traditional registers.

What is important in the context of the study conducted is the fact that the ordinance also lays down methods for eliminating hazards associated with maintaining records in this way. Many software companies are now offering tools for electronic record-keeping. Customers are voicing legitimate concerns about the degree of professionalism of such businesses, about the methods of ensuring data security etc. These concerns were expressed by means of questions asked by teachers during the survey. The most common concerns were as follows:

- What guarantees do we have that in a few years' time a given company will still be around?

- What about data storage, data submission in the event a company goes bankrupt?

- What are the guaranties regarding data security?

- To what extent are personal data safeguarded (protected)?

- How is data archiving carried out?

- How will the school cope in the case of a system failure, if the Internet connection is lost?

The survey was completed via the www.ebadania.pl website during the period 5-15 June 2015 by a sample of 80 representatives of school communities from all types of state-run schools in the Silesian province. The survey was a pilot study – the results of the pivotal study will be presented and analysed in the doctoral dissertation. The study was carried out using the diagnostic poll method, and the data collection technique was that of a survey questionnaire. The study was supplemented by interviews with teachers from local authority schools in the Skoczów commune (Cieszyn county). These schools are now implementing the system supplied by the company Vulcan.

The questionnaire was completed by 18 students, 8 parents, 34 teachers, 17 head teachers, 3 school administrative staff. 54 of the questionnaires were filled out by women, 26 - by men.

Table 1.

People who took part in the poll

Respondents	Number	%
Students	18	22.5
Parents	8	10
Teachers	34	42.5
Head teachers	17	21.25
Support staff	3	3.75
Total	**80**	**100%**

Source: Own research

The request was sent out via the e-register to 140 parents, and the questionnaire was completed by only 8 of them, which might be taken to indicate that such communication is not very effective. Due to the insufficient size of this sample, no detailed analysis of this group is provided in this article.

Only 18.75% of the establishments polled have used the e-register for more than three years, while 62.5% have used it for less than 3 years. The teaching process is recorded exclusively in electronic format in 32.5% of the schools. 40% of the schools use paper-based registers and electronic registers at the same time. The other schools did not respond.

After the request to take part in the survey was emailed, many schools sent in replies with the following content: "…*our school does not use an e-register*"; "*..we have only just begun implementing an e-register*"; "*...unfortunately, as of now we have no experience in using e-registers*"; "*...I am afraid we have not started using an e-register yet*"; "*...our school does not maintain records in electronic format*".

One of the replies read as follows: "*...Hello, I teach in a secondary school of general education in which e-register based Vulcan software has been implemented. In a nutshell – this application is pathetically bad, instead of facilitating work – it makes things more difficult as all operations are carried out very slowly, it keeps freezing, and in class it is really a waste of time to wait for the next page to open (or fail to open)...*"

Table 2 sets forth statistical data on school locations. The subsequent tables provide data on the ages of the persons polled (Table 3), the type of school (Table 4.), level

of professional advancement of teachers (Table 5), years of service in education (Table 6), types of e-registers in schools (Table 7).

Table 2.

Location of the school

Location of the school	Number	%
Rural area	26	32.5
Towns up to 20 thousand residents	17	21.25
Towns with 20 - 50 thousand residents	18	22.5
Towns with more than 50 thousand residents	19	23.75
Total	80	100%

Source: Own research

Table 3.

Age of people polled

Age of people polled	Number	%
11-20 years	18	22.5
21-30 years	8	10
31-40 years	24	30
41-50 years	30	37.5
Over 50	0	0
Total	80	100%

Source: Own research

Type of the school

Type of the school	Number	%
Primary	18	22.5
Middle School	12	15
Secondary	33	41.25
Vocational	17	21.25
Total	80	100%

Source: Own research

Level of teacher's professional advancement

Teacher	Number	%
Trainee teacher	1	1.9
Contractual teacher	6	11.7
Nominated teacher	4	7.8
Certified teacher	40	78.4
Total	51	100%

Source: Own research

The number of teachers (34) and head teachers (17) add up to a total of 51.

Table 6.

Length of service in education

Teachers' length of service	Number	%
0-5 years	5	9.8
6-10 years	5	9.8
11-15 years	8	15.6
16-20 years	7	13.7
21-25 years	13	25.4
26-30 years	8	15.6
Over 30 years	5	9.8
Total	51	100%

Source: Own research

Table 7.

Types of e-registers in schools

Type of e-register	Number	%
Vulcan	19	23.75
Librus	17	21.25
Mobidziennik	4	5
iDziennik	3	3.75
Eszkola24	2	2.5
Wywiadówka.com	2	2.5
No response	33	41.25
Total	80	100%

Source: Own research

Most of those surveyed could not name the application used in their school.

HOW IS THE E-REGISTER PERCEIVED IN SCHOOL COMMUNITIES?

Over 86% of those surveyed believe that mass-scale implementation of e-registers in schools is a good solution, and of this group, all the head teachers (100%) were in favour of electronic record-keeping (agree and strongly agree). Most of the teachers are optimistic about the e-register – 94.11% of them are strongly and fairly in favour. Only two of the respondents think that the e-register is definitely not a good solution. 70% of the respondents praise the e-register, but 41.25% say that nowadays a school can function without this method of electronic record-keeping.

Asked if the e-register can replace personal contact between parents and the school, 95% of those surveyed clearly say that it cannot. It is interesting to note that all of the students hold the view that the e-register can guarantee that.

77.5% of the respondents believe that the e-register contributes to improved quality of the operation of schools. As far as the head teachers are concerned, they are unanimous in their opinion – 100% believe that such solutions enhance the status of schools.

The majority of those surveyed think that e-registers contribute to improved communication between teachers and parents – 71.25%. When asked if the e-register is useful in teaching, 78.75% of the respondents say that it is, while 72.5% say that it enhances comfort at work. As for the teachers, almost 95% reported that e-registers are useful. 76.25% indicate that e-registers can successfully replace traditional paper registers.

In the group of teachers with the longest service (over 25 years) 85% view the tool favourably. 100% hold the view that extensive implementation of e-registers in schools is a good solution, while 82.5% believe that the informational revolution will soon force all schools to use e-registers.

58.75% of those surveyed speak favourably of e-registers, claiming that the e-register neither causes them to stay longer at work nor disrupts their work. The same number of the respondents say that e-registers facilitate work and improve record-keeping of the teaching process.

OPPORTUNITIES AND THREATS IN RESPECT OF E-REGISTER IMPLEMENTATION AT SCHOOL

According to the respondents, opportunities afforded by the e-register include: improved access to data – cited by 58 respondents (72.5%), making work easier – cited by 50 respondents (62.5%), increased control – indicated by 43 of those polled (53.75%), improved consistency – cited by 37 respondents (46.25%), less time taken up by work tasks – indicated by 29 respondents (36.25%), more effective management – cited by 36 respondents (45%).

The respondents also perceive a positive potential in the features allowing for better school attendance control. 61.25% of the respondents believe that the Internet-based attendance management system contributes to improved attendance rates.

The threats listed in the survey drew the following responses from the respondents: hardware and Internet issues – cited by 51 respondents (63.75%), data security – indicated by 30 respondents (37.5%), inability to operate the software – cited by 29 of those surveyed (36.25%), more time taken up by work tasks – indicated by 14 respondents (17.5%), increased oversight by head teachers – cited by 7 respondents (8.75%), lack of support, lack of training – 6 respondents (7.5%). Fifteen of the respondents saw no threats (18.75%).

The key problems that the teachers cited included Internet issues (disruption in Internet service, lack of access) – these were cited by 81.25% of respondents.

PREPARING SCHOOLS FOR THE IMPLEMENTATION OF E-REGISTERS

It should not be a surprise that all the head teachers say they are familiar with the legislative act that governs the implementation of electronic record-keeping. As far as the teachers are concerned, familiarity with the legislation is cited by 76.4% of the respondents; in the other respondent groups - 75%.

48% of all respondents say that schools are ready to implement e-registers, while 45% hold the opposing view. The other respondents did not have any opinion. School employees view the situation slightly differently. Only two teachers are of the opinion that schools are very well prepared for the implementation of the e-register (strongly agree), 18 (35.2%) of them agree moderately, 14 (27.4%) expressed moderate disagreement and strong disagreement. The head teachers are decidedly less optimistic. Nearly all of them hold the view that schools are not ready for this new challenge (disagree and strongly disagree). Only one of them says that the opposite is true. As for the degree of preparation in rural schools, there are as many optimists as there are pessimists.

If asked about the technical requirements for operating the e-register, 60% said the requirements were met, 15% were sceptical, while 25% could not express an opinion.

CONCLUSIONS

As the survey indicates, school employees are ready to embrace novel solutions. They believe that new technologies contribute to improved quality of work and enhance the status of schools. The respondents hold the view that e-registers are useful in the teacher's work and improve communication between teachers and

parents. They also indicate that there is not turning back from the digital school - the informational revolution will soon force schools to use e-registers.

The implementation of e-registers in schools should be accompanied by the provision of technical support. It is important that schools should have an adequate quantity of computers, a secure and reliable Internet connection (most of the respondents clearly identified lack of a stable connection and insufficient amount of computer equipment as threats). If a school has a Wi-Fi network, it has to be password-protected. The same is true of computers in classrooms. It is also necessary to ensure teachers have access to professional technical support and can consult IT specialists.

It would also seem important to ensure that appropriate software is selected that matches the requirements and capabilities of the school so that it can be fully utilised (to print certificates, sheets, ID cards etc.). It would be advisable to arrange a transition period so that teachers should have adequate conditions and ample time in which to learn to use the application. Training should be run for teachers and parents, in the traditional form and as a distance course, to make them aware of the advantages of e-registers, with permanent access to learning materials and documentation.

Functioning in contemporary schools requires the ability to seek, filter and analyse information. In order to meet the demands of today's world all members of a school organisation have to acquire the ability to effectively use modern technologies. These technologies constitute necessary support for all processes taking place in schools, as competent use of ICT tools increases the effectiveness of the performance of work tasks, enhances quality of education and makes communication more efficient.

Acknowledgments

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