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The Role of Management Information in Education Management

Abstract

Objectives: In management processes, information is very important, but in the educational system its role is crucial. According to the author, decisions made in the current Polish educational system are not based on mechanisms derived from management science which includes the role of information. The aim of this article is to present the role of management information in the educational system, the main mission of which is to overcome the distance between the Polish educational system and modern, worldwide educational standards.

Research Design & Methods: The conducted quantitative research was based on critical analysis and interpretation of sources from literature as well as on the observation of specific phenomena, behaviours, and events. As far as qualitative methods are concerned, the author used Time-Driven Activity-Based Costing and an analysis of municipal budgetary accounts, which was treated as a credible and reliable source of information of the studied phenomena.

Findings: The results of the TDABC prove that the potential of the Polish educational system has not been fully exploited.

Implications / Recommendations: The system's time and financial reserves could be used to minimise the distance between the Polish education standards and modern educational requirements if the information channels were made more efficient.

Contribution / Value Added: The author points to potential further research on the role of management information in the educational system.

Article classification: research article

Keywords: management information, education, management, Time-Driven Activity-Based Costing (TDABC)

JEL classification: M540 Personnel Economics: Labor Management

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Introduction

The future of Poland, its place in the world, and its quality of life for future generations are increasingly dependent on the effects of broadly defined education system, which undoubtedly should occupy a prominent position in sustainable development. Looking back over the decades, the Polish education is half-way from a rigid system during the Polish People's Republic towards a flexible system which will not only follow a rapidly developing environment, but will also soon become an important driving force behind the necessary changes in all domains of social life. The distance between the Polish education and the requirements of today's modern world demands constant research in the field of education management on all its levels, as well as using the results of this research in managing educational processes. Closing the gap would be a skilful use of all available information as well as demanding and searching for deeply processed information for all the participants of education processes.

The author of this article has formulated the following main hypothesis: a proper use of the available information as well as searching and demanding information by all the participants of the educational process are essential for making a full use of the potential and resources, which will decrease the distance to the world's highly-developed education systems. In order to verify this hypothesis, the author has formulated a sub-hypothesis: the information demand on the part of school-supervising local governance, i.e. municipalities and poviats, is low also due to the discrepancy in goals.

The author's basic research question is: what is the role of information in the education system, whose main mission is to reduce the distance between the Polish education and the requirements of today's modern world? There is also a need to raise a question about whether the information gathered by researchers (e.g. from The Educational Research Institute, IBE) – such as the Boards of Education as the supervisory authority for the school, municipalities as the bodies responsible for its operations, and, finally, the schools themselves implementing the education process – is being used properly? Seeking answers to these questions, the author used qualitative research methods based on critical analysis and interpretation of sources from literature as well as on the observation of phenomena, behaviours, and events. As to quantitative methods, the author used Time-Driven Activity-Based Costing and the analysis of the municipal budgetary accounts, which was treated as credible and reliable source of information in the studied phenomena.

Management in education

Management is a complex and universal process, which Griffin (2002) defines as "a set of activities (including planning and decision-making, organizing, leading, and controlling) directed at an organization's resources (human, financial, physical, and information), with the aim of achieving organizational goals in an efficient and effective manner" (p. 38). Public management is a specific discipline in the field of management science and its fundamental research concentrates on the management of individual organisation from the public sphere, primarily public institutions and macrosystems (macro organisations), such as the national economy and the state, and also the mesosystems, e.g. regions and individuals areas of public life (Kożuch, 2004, p. 59). According to Kożuch, a **public organisation** is a socio-economic system consisting of subsystems: (1) goals and values, (2) psychosocial, (3) material and technical (4) structure, and, above all, management subsystem and interactions with external environment (2004, p. 96). The inherent characteristics of public organisations which clearly distinguishes them from other types of organisations is their 'public' character, which means that in public organisations the public goods are the object of transaction, while in private sector it is the private goods (Bednarczyk, 2001, p. 19).

School is a specific public organisation with local authorities as its supervisors. School is expected to provide both public education services and the effective use of public funds. According to Kobyliński (1996, pp. 167–168), school management (as well as any other educational establishment) might be defined as a mission to uphold the school statutory objectives (for which it was established) being a priority for the school staff.

Although knowledge management is universal, the simple transfer of theories and rights as described and used in the field of economic governance is not possible due to the specificity of management in education. The thoughtless transfer of strategies used by the New Public Management concept to the field of education management remains a serious problem for the emerging field of management in education; it prevents the emergence of theories and knowledge which would allow one to properly understand some education processes and at the same time manage these processes in a better way (Dorczak, 2012, p. 40). From the organisational and social point of view, school belongs to those institutions which are difficult to manage.

In modern education systems, two main models of school management are on the rise: the socialised form of management and the innovative management. Answering the 'who runs the school?' question is not simple. Certainly, a head teacher is the main manager of a school. However, they also have superiors, namely a minister for education, a school superintendent, as well as representatives of social organisations, members of trade unions, etc. They co-create, *inter alia*, social, material, and technical working conditions; they assign the tasks and evaluate them, etc. In this way, they influence school work effects (Pielachowski, 2002, pp. 113–114). The Polish regulations and laws impose several hundred obligations on a head teacher; primarily, it is about orderly and systematic work. The local government, as a supervisor, is expected to improve resource efficiency in the context of the expenditure on education. In addition, the education system is not free from political pressure, which prevents schools from adapting their curricula and teaching methods to the needs and capabilities of their students, as well as from creating opportunities for teachers, parents, and students to participate in decisions concerning the functioning of the education system.

The management of schools should mainly focus on building human capital and managing its resources, since the role of teachers and other school actors – such as students and parents – is crucial and cannot be underestimated. There are three main doctrines in the science of human resources management that vary according to the process of involving and encouraging employees to work. These are: 1) Taylorism – traditional doctrine of motivation; 2) 'human relations' doctrine of motivation (human relationships); and 3) modern doctrine of motivation in human resources (Szczupaczyński, 2004, p. 77). The motivation concept, which is widely used in modern organisations, is the two-factor theory also known as the Herzberg's motivation-hygiene theory, which states that there are certain factors that result in job satisfaction and productivity at work, and then there are those which cause employees' dissatisfaction. In their essence, all these concepts focus on various material motivators (such as earnings and working conditions) and non-material ones (individual fulfilment, promotion opportunities, personal development). In the Polish reality, a salary still remains the most important motivator and as such it is not satisfying. It may be that work conditions, especially those connected with working hours (as a material motivator influencing the teachers' satisfaction level), can be treated as a compensation for a lack of a decent wage. Certainly, research in this field provides some information on education sector. However, the following questions arise: is this information used, and how? And do the actors participating in the education processes put considerable effort to use information in the decision-making processes? When the information reaches the authorities, it should be processed in a way that allows and facilities management, thus rationalising the administrative processes.

Information in organisation management

The meaning of the term 'information' is very broad. Essentially, anything that can be digitised – i.e. encoded as a stream of bits – is information (Shapiro & Varian, 2007, p. 15). In other words, information is a dataset which is properly arranged in a sequence to facilitate the cognitive processing, which is the beginning of the deduction process for making decisions. There are many definitions of information in the literature. In terms of management science, information means knowledge necessary for reaching the goals of an organisation (Penc, 1997, pp. 81–82).

The **information system** of an organisation which possesses a wide range of information pieces from different areas of its activities performs management functions by ensuring input, processing, and transfer of data. As a consequence, owing to the feedback it enables the management to respond to the current and future changes both inside the organisation and in its environment. As Zając et al. emphasise (2012, p. 50), management information system results from the management's demand for accurate, timely, and useful data in order to plan, analyse, and manage the company's work, thus optimising its development. Building information systems that simplify and facilitate a company's management is an important challenge faced by the leadership. However, the effective provision of relevant and up-to-date information is essential for effective management (Vollmuth, 2007, p. 237). Information is regarded as a factor of production. In this context, the role of information is crucial for social and economic development.

Nowadays, the economic standing of a country is not determined by natural resources. The key role is played by information resources of a given society. In modern countries' economies, the information field is an increasingly important and rapidly growing sector of the national economy. These observations justify the statement that information, both in the economic theory and in its practical dimension, should be qualified as a factor of production, similarly to natural resources, capital, and labour (Oleński, 2001, p. 271). Therefore, it is an essential determinant of a company's success. Properly processed and used, information might undertake a competitive advantage of a company on the market. Thus, each company (organisation) must have an effective and complex system to generate the most useful information possible, namely information that is up-to-date, accurate, complete, and related to the actions and goals of the given product.

Based on the above-mentioned definitions, three fundamental aspects of the notion of 'information' can be indicated. They confirm that information plays an overriding role in the functioning of organisations which struggle with changes in the environment. These aspects can be summed up as follows:

- information as a representation of reality,
- information as a measure of complexity and diversity,
- information as a causal and controlling factor.

'Information' is commonly associated with terms such as: wisdom, knowledge, data, information, message. All these terms are connected with the intellectual capital of a company, and the level of their importance can be depicted through the pyramid (Figure 1). The first three levels – i.e. collecting messages, entering them to the information system in the form of raw data, and even data-processing to receive information in the next step – do not bring any benefits to the company yet. As the pyramid shows, all these factors are dependent on the quality of the human capital, as it is people who ultimately determine their value.

Information is valuable only if it is up-to-date, which, in practice, means that the manager is able to interpret the data and make the right decisions. If the received information is outdated, it means that the decision-making process is not based on an accurate and complete dataset. As Filipiak concludes (2008, pp. 205–218), completeness is the disposal of the necessary information which is required in the decision-making process. Certainly, this does

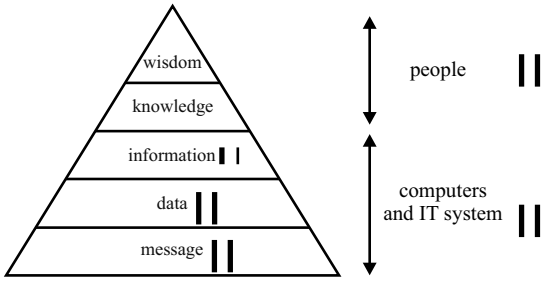

Figure 1. The elements of intellectual capital in a company

Source: Heracleous, 1998, p. 29.

not mean that any piece of information describing a certain phenomenon in which a manager is interested should be treated as useful. The major feature of management information (MI) is its usefulness in the management decision-making process. From the perspective of management, it is the form of information as well as its speed and range that makes for its essential features. Form is the length and complexity of a message; speed is about the time in which information reaches the recipient; range refers to the possibility of transferring management data to many recipients. Information should respond to the needs, which may vary in different periods or situations. Nowadays, information is more accessible and, as a result, more valuable owing to popular and available data carriers and technology. However, this might also cause the risk which was rightly worded by Herbert Simon (1971, p. 40) when he said that "a wealth of information creates a poverty of attention" .

The robust information systems for management consist of, among others, operational and strategic information, interviews, research, experiments, observations, and surveys. Data contained in the management information system – which requires cooperation of all organisational units in the company as well as the employees at all levels of management – is knowledge. In the implementation of management activities, managers are assisted by information management systems (programmes), which consist of elements such as: analyses, evaluations, datasets, presentation methods, etc. These are created by people supported by technology and information infrastructure. The technological infrastructure makes information more accessible and thus more valuable. Distinguishing relevant information from irrelevant information is key, as well as estimating whether irrelevant information will not become relevant. This is why an appropriate system is needed. A real-time system will verify the data reliability, describe the structured data, and present how to use the acquired knowledge – all this simultaneously so that it can help managers with both the internal and external process control.

In the light of these considerations, it is my view that there are problems that cannot be ignored, especially a lack of essential management competencies, insufficient competencies, and/or a lack of digital skills among managers. Information is useless when head teachers and municipalities' management do not have the basic competence to move into the world of information. The additional challenge today lies in digital education – not only in the field of organisation management, but, in particular, regarding school. The urgent need for access to digital technologies is strongly connected with the global COVID-19 pandemic. The world has suffered from the virus and almost 85% of the school-age population (in 191 countries) have felt the effects of closing schools. The pandemic situation has also revealed the education digital gap caused by a lack of online education. This problem also affects Poland. In terms of digital skills, Poland is on the 63rd position, according to the latest report of the World Economic Forum (WEF). This proves that a simple transition from the traditional system to digital channels (the creation of the hybrid model) will not be easy. Ultimately, the role of teachers will change. The pandemic is changing everything (Ciesielski, 2020).

The role of information in education

The economic system, in which all the processes emerge, is built on information. Taking account

of the above definition, information can be understood as a good which is necessary to process managing in any kind of organisation. Depending on the consumers' needs, information becomes a tool to gain knowledge from different areas. Information is crucial in the education process for all the actors involved, namely:

- the state as the main education policymaker that sets out a strategic approach;
- the Board of Educators, which is responsible for pedagogical supervision on the education process; it does not have any competence in the field of organisation and logistics; the Board operates under the voivodeship office;
- the local authorities, especially municipalities, which are responsible for the educational establishments functioning on their areas;
- the head teachers (school directors);
- the teachers, pedagogues, psychologists, speech therapists;
- the parents or legal guardians;
- the students, who are the essential element in the education process as well as its main actors.

These actors co-create a system responsible for providing teaching and educational services. Schools and educational establishments are a special part of the system, as they are production centres of responsibility which employ the teachers. In the market theory of education, a teacher is a middleperson between the local authorities – which supervise the school – and a student, who is a client, i.e. a recipient of the education service.

The following simplified scheme (Table 1) of individual actors' access to various aspects of education indicates the information demand. The presented table reveals the practical use of actual information about the education process by different beneficiaries, without any research element that might improve the whole process. Only that information which is comprehensive and well-adjusted to relevant recipients' needs should be treated as useful.

The entities that have the statutory legal authority and significant influence on the education process organisation, its funding, and pedagogical supervision, are as follows:

Table 1. Simplified scheme of the information demand by individual actors of the process according to their role

	The recipients of information				
	Superior unit/ the Board of Education	**Head teacher**	**School administrative staff member**	**Teacher**	**Parent/ student**
Electronic school register		x		x	x
Timetables		x	x	x	x
Finances /accounting, human resources	x	x	x	x	
Performance appraisal		x	x	x	
Library		x	x	x	x
Student data (learning process)	x	x	x	x	x
Employee data (employment record)	x	x	x	x	
Reporting related to one unit	x	x	x	x	
Reporting related to the units in a municipality	x	x	x		

Source: own elaboration.

– public administration, especially the municipalities as the supervisors;
– the Board of Educators, which is accountable to the voivode, as the unit responsible for the pedagogical supervision over the schools.

However, the activity of primary schools, although not calculated for bringing any income, is subject to economic laws. Even the best concept of running a school is doomed to failure when confronted with the tough rules of market economy. Efficiency measurement as well as access to information are the key areas of education. Budgeting is one of the methods of collecting information and measuring the effects. Particularly, it shows to what extent the education is significant for the national economy, the municipality, and the citizens. It is worth noting that the state covers high expenditures on the education sector.

The local authority implements budgeting for the education sector in relation to its external environment: politics, local economy conditions, cultural events, and the human factor (with or without respective skills and knowledge). For a local authority, this process belongs to the most important processes in the management sector. It involves: continual information processing; planning the workflow and finance budget not only for the educational establishments, but also for units responsible for this sector (e.g. the department of education in a municipality); an economic and administrative assistance in the schools. The budgeting model currently used in municipal units is bureaucratic, obsolete, and inefficient, with regulations and strong impact of the trade unions. The costs of the education potential, its human resources, and its assets are very high. The budgetary accounts of the local authorities (which are the supervisors for 80% of schools) show a significant share of expenditure on education in the global expenditure of the municipalities. According to the Educational Research Institute (Nowakowska, 2015), these expenses represent nearly 50% of the municipal budget. However, this amount is not sufficient to provide good-quality education, so there is a need to do some research and look for resources which will enable both the improvement of processes and the optimisation of decisions. Budget implementation in school is a part of municipal budget implementation and at the same time it is connected with performance of material tasks planned to be carried out in the accounting period. Relating these activities to such a short period of time indicates the lack of interest from municipalities and schools in implementing practical and modern solutions in budgeting.

The heart of modern management systems in the public sector is 'making the citizens' needs a priority'. A well-done education task is a public value undertaken for citizens and other stakeholders, and is adequate to market value in the private sector. That is why the increasing number of private schools, private preschools, and all kinds of private universities confirms the business benefits. From the business standpoint, the benefits in the public sector should be the effects of activities in the process of the optimal use of public funds assigned to educational activities.

At the beginning of the second decade of the 21st century, the Educational Research Institute conducted research which aimed to determine how much time the teachers spend on professional activities during a typical week in a school year, as well as to identify factors determining its differentiation. The research reliability and its findings should be assessed as unquestionable, as the research initiators were the teachers themselves. They were the first who, by the representatives of teacher trade unions, acknowledged the need to conduct research in this field. The research was carried out as a part of the system project titled "Research on the quality and effectiveness of education and institutionalisation of research facilities" (Federowicz et al., 2013), and it was based on a representative sampling using two research methods: Computer-Assisted Personal Interviewing (CAPI) and Computer-Assisted Web Interviews (CAWI), which were preceded by qualitative research. The results of this research were used in public debate in which the author

of this publication was trying to diagnose time and financial reserves that arise within educational activities.

The data presented in the thematic report by Federowicz et al. (2013) was considered as a reliable basis to conduct Time-Driven Activity-Based Costing: case study of primary school in Kielce in the 2018/2019 school year, as well as the municipal budgetary accounts for this period, in the part of the budget related to task no. 80101 form the relevant budget bill. The study indicates the practical processing of general information from the said Report as well as its adaptation to a form that allows for making decisions in the process of education management at the level of various bodies responsible for education. The Time-Driven Activity-Based Costing was combined with the results presented in the study by Federowicz et al. (2013); it allowed for processing independent information for its double use, namely in the education management sector (i.e. by the municipality which supervises the school) and by the Board of Educators, which supervises the education management effects.

Time-Driven Activity-Based Costing as a research tool

The commonly used traditional costing works well for financial reporting, but it is not sufficient for management needs. A new approach, called 'Time-Driven Activity-Based Costing' by the authors of the Kaplan and Cooper system (Cooper & Kaplan, 1991, pp. 130–135), allows companies to calculate in an elegant and practical way the costs of processes and the degree of their use of production capacity and profitability of orders, products, and customers. This costing enables cost-accounting systems to be improved rather than shifted. Managers receive accurate cost and profitability information in order to be able to prioritise process improvement (Kaplan & Anderson, 2008, p. 18).

The TDABC approach avoids the costly, time-consuming, and subjective activity surveying of a conventional calculus. Time equations are used that directly and automatically allocate resource costs to the activities performed and the transactions processed. Only the parameters for the unit cost of production capacity and for the consumption of production capacity by individual transactions need to be estimated (Kaplan & Anderson, 2008, pp. 21–24). The first element necessary in the Time-Driven Activity-Based Costing is the unit cost of acquiring the teacher's service skills Jk_{ZP}.

The formula for calculating the cost of service capacity of the accountability centre, i.e. one primary school per month, is as follows:

$$jK_{ZP} = \frac{K_{ZP}}{R_{ZP}},$$

where:
Jk_{ZP} – the unit cost of the service potential of a primary school (all teachers);
K_{ZP} – the total cost of maintaining the service potential in a cost centre implementing processes of similar cost intensity;
R_{ZP} – actual service ability, i.e. actual teacher work according to working time estimates.

The second element necessary in the Time-Driven Activity-Based Costing is time equations. The time of the education process is the sum of the individual periods of activity:

$$T_n = \beta_0 + \Sigma\beta_i X_i,$$

where:
T_n – duration of action n;
β_0 – basic operating time n (the simplest variant);
β_i – additional implementation time for action n in the variant per unit of its performance or per unit of another activity duration variability factor;
X_i – measure of the factor of variation and action n

$$T_{process} = (\beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \ldots + \beta_i X_i)$$

As a result of the use of this research tool in search for time and financial reserves that arise

during the implementation of the basic educational task 80101, it was shown that:

– the unit cost of production capacity ($j\ K_{ZP}$) was at the level of 1.73 PLN;
– the total duration of educational activities during the week in the whole school was 53,640 minutes.

Therefore, the cost of individual educational activities per week in an average primary school amounted to 92,797.20 PLN (according to the calculation of 53,640 minutes multiplied by 1.73 PLN)

– the monthly financial resources provided for the disposal of the school by the municipality are at the level of 375,285.00 PLN.

The conducted TDABC shows that the monthly costs of educational activities carried out by an average primary school run by the Kielce municipality are justified by the time worked 163,602 minutes and should be at the level of 283,031.46 PLN, while the financial resources at the school's disposal have been fully used, i.e. in the amount of 375,285.00 PLN. The difference of 92,252.62 PLN is the unused production capacity. In the time dimension, they amount to 53,656 minutes, which should be treated as time inefficiently used or lost. Making an in-depth analysis of the effects of lost profits at the level of primary education in the 2018/2019 school year in Kielce – which is a city with the rights of a county – when comparing them to the research for the 2015/2016 school year, it should be noted that:

– Resources not used by all primary schools in the municipality amount to 24.6%, which, compared to the survey conducted in the 2015/2016 school year, indicates an increase in lost profits (unused resources back then amounted to 17.1% of the resources put at the disposal of the municipality). The increase in lost profits by 7.5% resulting from the current research results from a different structure of the school calendar (15.25 school days in the year 2018/2019, while in the year 2015/2016 – 20.00 days) (see Tables 2 and 3).
– Lost benefits in the scale of primary education in the year 2018/2019 in the municipality amounted to 16,096,800 minutes of lost time and 27,675,786.00 PLN in terms of financial outlays, which is 6.2% of annual expenditure on education (section 801) and 1.8% of the total annual budget of the municipality in 2019. In the 2015/2016 school year, lost finances were at the level of 12,479,385.60 PLN, constituting 3.9% of the annual expenditure on education (section 801) and 1.1% of the total annual budget of the municipality in 2016.

In the market theory of education, the main beneficiary of the public good which is 'educational

Table 2. The analysis of the unused educational potential at the level of primary education in 2018/2019 in Kielce, the city with the rights of a county

Unused capacity	In minutes	In Polish zloty (PLN)
The unused production capacity in one school per month 92,252.62 × 12 = 1,107,031.44	53,656′	92,252.62
The unused production capacity in one school per year	643,872′	1,107,031.44
The unused production capacity in primary schools in the municipality per year 1,107,031.44 × 25 = 27,675,786.00	16,096,800′	27,675,786.00
The expenses on primary education in 2019 according to budget costing for 2019, section 80101	112,585,218.25	
The share of lost profits in total expenditure	**27,675,786.00 : 112,585,218.25 × 100% = 24,6%**	

Source: own elaboration based on the author's research conducted with the use of model.

Table 3. Analysis of the unused educational potential at the level of primary education in 2015/2016 in Kielce, the city with the rights of a county

Unused capacity	In minutes	In Polish zloty (PLN)
The unused production capacity in one school per month	30 220′	43,331.20
The unused production capacity in one school per year	362 640′	519,974.40
The unused production capacity in primary schools in the municipality per year	8 703 360′	12,479,385.60
The expenses on primary education in 2016 according to the budget costing for 2016, section 80101	72,925,319.03	
The share of lost profits in total expenditure	**12,479,385.60 : 72,925,319.03 x 100% = 17,1%**	

Source: own elaboration based on the author's research conducted with the use of model.

service' is the student. Despite a 23.4% increase in expenditure on education of one student in the period from 2015/2016 to 2018/2019, an increase in intellectual capital should not be expected in the studied municipality, because the increase in lost profits shows as much as 77.2% growth dynamics. Per student, lost benefits in 2018/2019 amounted to 2,327.07 PLN, while in the survey for 2015/2016 they amounted to 1,313.10 PLN.

The results of the TDABC proved that the potential of the Polish education system is not fully exploited. Using the efficient information channels is essential to fully exploit the time and financial resources within the system, which will minimise the distance between the Polish education and the modern-world requirements.

Conclusion

Information in education is a causal factor for the education management process control not only in the macro scale, but also in the context of school as a core element of the system. Education management requires the use of information from multiple sources both by the head teachers as the leaders and by the local authorities. The head teachers are searching for information about problem-solving tools in the context of previously unknown circumstances which can influence the educational establishment.

On the basis of the conducted studies, both the main hypothesis and the sub-hypothesis were verified and confirmed. The efficient use from proper information by all members of the education process will improve the effectiveness of education processes owing to full exploitation of resources, provided that other necessary conditions are fulfilled. The sub-hypothesis was confirmed, because the information demand from local authorities which supervise the schools is low. The efficient use of financial resources, which is crucial in building an efficient education system, is not taken into consideration. Another reason why the demand for information is low can be the previously mentioned Educational Information System, i.e. a part of the Polish education system, which includes only reporting features. From the author's point of view, making two updates a year does not bring any quality changes of published information, which makes the whole system ineffective in education management processes. It shows that the education management system requires major changes and should give accurate information research a priority role in decision-making processes. The research conducted by the IBE and other organisations provides a lot of information, but processing as well as practical

implementation of this information is also required in decision-making processes.

It could be argued that information-and-data transformation into information using IT technology is a set of aggregate facts, but does not constitute a basis which can be used in enhancing knowledge. Consequently, there is a lack of 'building material' for the last value in the information pyramid, namely wisdom, which determines the quality of human capital. The defining lines for action should be based on the use of information. However, this information has to be processed and adapted to the specific needs of individual beneficiaries. The role of information in education management processes is very important, which was demonstrated in the TDABC method with the use of data from the IBE Report.

The research presented in this article indicates that:

- Information has a significant role in the education process management. This information, when properly processed and used, is a substantial reserve for the education potential.
- There is a need to implement the modern methods and tools in management of the education processes, which will guarantee resource efficiency in the field of the quality of the services provided by schools, as well as in the financial dimension. All the units responsible for primary education should take the necessary action.

Information plays a prominent role in the education system. Filling the gap between the Polish education and the modern-world requirements demands proper use of information in education management. The research question about whether the actors of the Polish education system use the information cannot be answered in the affirmative, especially if the scope of this question is broadened to include the element of the quality of education associated with the methods of education which guarantee the proper level of education for young generations. The context of the research question should also be extended to the qualitative aspect of information provided by the Educational Information System (SIO), which still does not meet the public expectation despite the attempts to improve it in 2012. Building human capital in the future depends on whether the information is recognised and enhanced. In conclusion, a lack of the understanding of the role of information in management results in low financial efficiency, because "only a man supported by good information creates knowledge and contributes to generating specific benefits" (Litwa, 2007, pp. 11–12). Its key role – and also the need for proper use of knowledge by all the participants of the system – was confirmed by the qualitative findings in the education system. In principle, the question remains open as to whether the Polish education and its quality meet the challenges of the 21st century and give a chance for a decent standard of living. When the local authorities execute the laws without accurate information about its effects on the education sector, it can be assumed that their activities are inefficient and non-economical.

Today, organisation management requires access to processed data and expert information at the same time. The world is developing rapidly. Crises, migration problems, and terrorism make us live in the conditions of uncertainty, which is what defines the new faces of the global risk (Beck, 2012, p. 21). Nowadays, the COVID-19 pandemic belongs to the phenomena that cause the crises with particularly negative effects on the education sector's goals. In the face of these risks, information is valuable only if a manager is able to respond to the current data and make the right decisions.

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