

[DOI: 10.20472/BMC.2019.009.009](https://doi.org/10.20472/BMC.2019.009.009)

**IZABELA STAŃCZYK**

**Jagiellonian University, Department of Human Resources Management, Institute of Economics, Finance and Management, Poland**

**ROBERT REINFUSS**

**business practitioner and consultant, Poland**

## **THE IMPACT OF TRAINING ON EMPLOYEE EFFECTIVENESS**

### **Abstract:**

It is commonly believed that training leads to an increase in the competencies of employees and therefore an increase in their performance. This view is based on the assumption that companies and organizations lack necessary competencies and that this shortage limits their effectiveness. The second assumption is that the increase in abilities achieved in the training process will translate into improved results. In the following article, we present an alternative thesis in which training can and often does, lead to a decrease in productivity. We present two reasons why training can lead to poorer results:

1. relative oversupply of competencies in the company and the associated misidentification of the competency gap, and
2. apparent efficiency gains - i.e. not leading to improved results - in a situation where there are productivity bottlenecks that are not a result of work efficiency.

This thesis is supported by research conducted during observations made by one of the authors, which is presented in the form of observations and comments. The second is the ValueView method, the results of which, are referred to in the text.

In the summary of the article, we indicate ways in which the planning of training events can be improved, their subordination to short-term business objectives, and the use of modern techniques of organizational planning.

### **Keywords:**

profitability of training, work efficiency, employee competence, overcapacity, training

**JEL Classification:** L21, J24, L29

## Introduction

The theory that training can, and often does lead to a decrease in effectiveness is the result of cyclical observations made as part of the consultant's work.

The reasons for the worsening of a company's results as a consequence of training courses designed to increase employees' competencies are seen in the overlapping of several phenomena:

1. In the majority of organizations there is an oversupply of competencies in selected areas or in their entirety resulting from the lack of sufficient call for competencies to balance their supply and demand.
2. The competence gap identified by the management staff (training need), which is the substantive basis of training is apparent, i.e. it results from the incorrect allocation of resources (competencies and working time) or from incorrect identification of the problem of low work efficiency and not from their actual lack in the organization.
3. Oversupply of competencies, further increased by training in skills that cannot be used, leads to frustration, demotivation and consequently to a decrease in commitment and effectiveness. Training further reduces work efficiency.
4. The scale of wasted working time in enterprises is so large that raising the level of employees' competencies instead of leading to improved effectiveness, results in greater frustration, increased involvement in unprofitable activities and processes and, consequently, increasing the scale of waste.
5. As a result of training, the effectiveness and involvement of employees in processes that are not profitable increase costs and impair company results. The lack of profitability results from the fact that the processes supported by training do not lead to improved results. The most common cause of unprofitability is productivity bottlenecks in areas other than those supported by training.

### 1. Definitions and theoretical background

#### Competencies

Competencies are multidimensionally defined by different authors. Competencies are abilities important in a given job and for internal motivation; education and knowledge; experience and practical skills; attitudes and behaviors expected by the employer; formal rights to act on behalf of the organization - conducting business, making decisions, signing contracts and making commitments, representing the organization externally; and psychophysical features important in a given job. (Oleksyn, 2014).

A. Roger points to elements such as: (McKenna, Beech, 1999):

- physical construction (health, physical appearance),
- personal achievements (education, qualifications, experience);
- general intelligence (intellectual capacity),
- specific natural abilities (manual, mathematical, communication skills),
- interests (culture, sport, etc.),
- disposition (promising, responsible, convincing),
- work-related incompatibilities (willingness to perform shift work, undertake frequent business trips, etc.).

R. Boyatzis argues that competence is the disposition of a person that leads to behaviors consistent with the requirements of the workplace determined by the parameters of the organizational environment, which in turn, brings the desired results (Armstrong, 2011). H. Król is of the opinion that competences are predispositions regarding knowledge, skills and attitudes, ensuring the implementation of professional tasks at an effective and/or distinctive level, according to the standards set by the organization for a given position (Król, Ludwiczynski, 2006). B. Mansfield claims that predisposition is a fundamental characteristic of a person that results in effective or above-average performance (Armstrong, 2011). On the other hand, a competent employee is one who can use their knowledge and skills in practical operation. This is supported by personality predispositions characteristic for specific activities as well as general (life) and specific (professional) experience. (Walkowiak, 2007, p. 20).

## **Training**

One method of gaining performance improvement is training. Training is helping students to correct their deficiencies in their performance. Competence analysis supports training processes in the phase of identifying needs and designing training content. According to R. Walkowiak, training is a deliberate and planned activity aimed at acquiring new or upgrading the competencies necessary to work more effectively in the current job position (Walkowiak, 2007, p. 50,). On the other hand, J. Penc defines training as a process of obtaining and extending qualifications necessary for the current job position. Vocational training should ensure that an employee in a given position can, for example in the case of organizational changes, meet new requirements (Penc, 2007, p. 177). According to A. Pochtowski, the training process can consist of four stages (Pochtowski, 2007, p. 284):

- analysis and identification of training needs,
- planning and design of training,
- training delivery,
- assessment of training effectiveness (evaluation).

## **Analysis of training effectiveness**

Training is needed to improve the level of skill in employees and managers, because it is an important component of competitive success and enterprise strategy (Gerald, 2000 in: Li, Wiriyakitjar, 2018). D.L. Kirkpatrick defined four stages of training evaluation: (Kirkpatrick, 1994):

- Level 1 - reaction (examining how the participants reacted to the training),
- Level 2 - learning (gathering information on the training goals achieved),
- Level 3 - behaviors (assessment of the extent to which the behaviour of training program participants changed after returning to work),
- Level 4 - results (determination of the gains from training compared to its costs).

A detailed assessment of training enables the development of conclusions and suggestions aimed at increasing the effectiveness of training, and among others (Walkowiak, 2007, p. 57):

- defining the principles of the selection of appropriate training participants,
- modification of curricula and training content,
- formulation of methodological conclusions,
- improvement of organizational and social interaction activities,

- creation and dissemination of model organizational, didactic and methodological solutions applied in the process of employee development.

Cascio's analysis of the benefits of training on the production site could also include (Cascio, 2001):

- 1) evaluation of task performance:
  - a) the time needed to achieve competence, deal with set problems, and master the appropriate procedures to solve the problem;
  - b) production standards: the number of correctly performed tasks per hour;
  - c) performance test: how to respond to the introduction of a failure (downtime, production losses, comparing the time of the introduction of the failure with the time of the response to the failure, the time of the removal of the failure);
  - d) product quality: evaluation on the basis of appearance and dimensions (comparison of defective and non-defective samples);
  - e) consumption of raw materials: comparison of the weight of steel delivered with the weight of waste and the quantity of correctly made products;
- 2) assessment of employees' attitudes towards training and the workplace;
- 3) evaluation of profit:
  - a) data on the trainee's performance, translated into an amount;
  - b) the sum of the profits from structured and unstructured training.

Winfred Jr., B. Winston Jr., P. S. Edens, and S. T. Bell used meta-analytical procedures to examine the relationship between a specific training project and the evaluation functions and effectiveness of training in organizations. They contend that the training method, skill or type of training used is related to the effectiveness of training programmes (Winfred, Winston, Edens, Bell, 2003). E. Galanou and C. Priporas argue that the evaluation of training is best if it can be based on criteria derived from training objectives and is based on literature on management efficiency. They studied the impact of six levels of assessment - response, learning, labor market behavior, performance, organizational team performance and some wider social impacts - in measuring training interventions in relation to changes in learning, transfer and organizational impact (Galanou, Priporas, 2009). Y. Li and R. Wiriyakitjar stated that productivity is influenced by employee motivation, training needs, the design of appropriate training, implementation of training, continuous learning culture and support from superiors and peers (Li, Wiriyakitjar, 2018). S. Agrawal, K. Nath Gangai in their research using the Kirkpatrick model, showed that the identification of training needs has a significant impact on the effectiveness of training. There is a positive correlation between variables such as identification of training needs, response, learning, behavior, results and the effectiveness of training. Similarly, age and experience have a significant impact on training effectiveness, but qualifications do not have a significant impact on training effectiveness. S. Agrawal, K. N. Gangai studied the impact of demographic variables such as age, experience and qualifications that have a significant impact on training effectiveness (Agrawal, Gangai, 2016).

## 2. Research Methodology

The following research methods were used to illustrate the topic of improving the professional competences of employees through training and the impact of such training on work effectiveness:

- literature analysis based on the method of systematic literature review (Chakon, 2015);
- qualitative - qualitative observation (Creswell, 2009, Jemielniak 2012), these observations consist in the preparation of notes on the behaviors and activities of persons at the place of study; the researcher has direct contact with participants and can make unusual observations; these observations were supplemented with direct questions at the place of observation;
- profitability analyses - ValueView (Reinfuss, [www.valueview.eu](http://www.valueview.eu))<sup>1</sup>.

In the empirical part five observations concerning the effects of trainings improving the competences and influencing the decline in work efficiency were indicated.

## 3. Training reduces efficiency– case studies

In the following observations, we present the thesis that training can reduce work efficiency. According to the definitions presented at the beginning of the article - a person with a higher level of competencies should achieve the same results faster or achieve things that someone with lower competencies is unable to. Thus, we get the impression that by being able to reach goals faster, a person with higher competencies will be more effective. Hence the common belief that training will increase effectiveness. This is not always the case. The problem is serious and has measurable negative effects on business. How is it possible that improving competencies may reduce effectiveness? How can the problem be diagnosed and prevented?

Competencies are tools used by a person to realize and achieve the goals he pursues. Competencies are not only skills, but also personality traits or other innate abilities.

### Observation 1 - New knowledge reduces efficiency

Maciek, an employee of a large bank, learned one of the modern techniques of self-management during his training. The next day, he mentioned it to his superior. He had not discussed the subject greatly, when his supervisor said, "you will not implement anything like that in this company." A meeting with his own team convinced him that "with these people ... there is no chance. I'll do something else for which there is more support." Maciek's problems in managing the team's effectiveness were growing. The training made the situation worse.

*Source: author's observation*

Examples as described above, are situations in which employees are taught a competency which they cannot use, and are widespread. Tools, in this case competencies, do not in themselves increase efficiency. They increase human potential, but not necessarily what the company needs.

---

<sup>1</sup> The ValueView application is a method of measuring the suitability of tasks performed by employees and increasing the efficiency of work processes. It is used in organizational planning, and to eliminate losses resulting from wasted time, increase the profitability of processes and company management systems. ValueView uses simple electronic surveys. The data is analyzed in real time, which enables an immediate improvement of the company's results and profitability.

The problem is more serious than just the untapped potential of employees. The increase of competencies means that employees will reorient themselves to other, usually more ambitious, goals. They want to change something or expect this change from their superiors. Because the company is not prepared for such initiatives, their implementation is blocked. After training, participants return to the same offices and continue to do the same in the same way. Not because they want to, but because the company's needs are limited and that their work is already determined. The acquired knowledge and enthusiasm for change make their existing work look even more boring and pointless. Motivation falls, efficiency drops.

### **Observation 2 - Unused competencies**

Since 2016, during the speeches and meetings with managers of various companies in Central Europe, I have been asking myself whether their potential and motivations are used by employers. Over 90% of more than 1,000 managers surveyed believe that their competencies are not being used to a satisfactory degree. Everyone agrees that among their subordinates the problem is more serious - their competencies are not used to the extent that would satisfy them and the company has a competency potential that significantly exceeds their possibility of being used.

*Source: author's observation*

The overpotential of employee competencies, i.e. their oversupply in relation to the needs posed by the enterprise, is a more serious management problem than the local lack of competencies (competency gaps). Competency gaps are generally easy to identify and usually result from errors in the allocation of competencies and not from their global absence in the enterprise. Training is effective when it eliminates the real competency gap and leads to immediate improvement of the company's efficiency and results. The development of competencies that the organization cannot use in the form of improved efficiency and results, leads to an increase in the overpotential and frustration of employees.

### **Observation 3 - The problem of excess competency**

I remember talking to an operator being made redundant: "Why are you firing me when I have the highest competencies?" he asked. The company had insufficient work and was forced to end some employee contracts on economic grounds. The employees to be dismissed were chosen based on individual performance bases. The operator received the following answer: "Because the rest want to work and their competencies are lower but sufficient to do the job." Raising competencies above the required level can lead to a decrease in efficiency.

*Source: author's observations*

Over-competences (Reinfuss, 2016), and more precisely, their surplus in relation to the current needs of the organization is a problem of most companies not only in Poland. Managers create exuberant profiles of candidates and recruit people whose formal competencies they will never use. The most important competency, or motivation to do what is really required, is underestimated and then suppressed by poor organization of work, lack of challenges, limiting requirements and instrumentalization of work through benefits. Competencies, including those related to engagement, are suppressed by various management techniques to a level that is realistically needed. Lack of innovation and the possibility of pursuing professional passions by managers and their employees means that they have no motivation to do what is required of them (Reinfuss, 2012). Managers are therefore under the illusion that they lack the competencies ... and send them on training courses. The effect is exactly the opposite - efficiency drops even more as a result of frustration resulting from the difference between ambitions and reality.

#### Observation 4 - The excavator and productivity problem

In one of the mines for which I worked, the president purchased a new coal mining machine. The excavator was twice as fast as the ones working so far with a capability of 15% of its nominal capacity. After installation, it turned out that the productivity of the new machine was two times lower than the old excavator at 7.5%! The data was shocking, but the explanation was simple: in the case when the amount of coal mined was limited, the excavator worked twice as fast and did the work in half the time. Therefore, its productivity was - in relation to its capacity, two times lower. Employees with higher competences may be even worse - as a result of training, they will not only reduce their effectiveness in relation to competence, but also motivation. Unlike employees, the excavator will not say: *"if you do not need my production, then I will do something else and you can mine coal yourself."* The efficiency of employees with over-competence is often lower than those who have a slight shortage.

*Source: author's observation*

The purchase of new production lines and new tools pays off only when the company has orders and production can be increased. The same applies to competencies. Investing in their development does not pay off if there is, and will be, no demand for them. In most businesses, development is not limited by the lack of good ideas and competencies to implement them, but above all by the lack of demand for them. Development is hampered by superiors and owners, usually consciously. Poor work organization, bad habits, lack of sales and customer interest, and finally, a lack of resources for innovation are the main constraints. Lack of competency of employees is rarely the cause of low efficiency.

#### Observation 5 - Wasted working time

According to a survey conducted by ValueView since 2016 among managers, 30% of the tasks performed by them are considered unnecessary. Training them to be more efficient is not only unlikely to bring growth, but it will also cause a further decrease in efficiency ([www.valueview.eu](http://www.valueview.eu)).

During effective training, we usually learn "short cuts" in achieving the intended goals. However, such skills usually lead managers to problems. I have heard the statement many times: *"In our bank, we will not use such methods, procedures are in place."*

*Source: author observation*

Employees with relatively high competencies are motivated to achieve their own goals and not necessarily the company's goals, to carry out tasks and projects not ordered by the company, i.e. unsold work or excessively risky. At the same time, they have at their disposal the company's resources, exposing it to costs and risks associated with activities that do not have full legitimacy. Developing competencies not resulting from real needs through training may lead to losses and a worsening of the financial condition of enterprises.

#### 4. Conclusions and summary

Designing training in an organisation requires at least two perspectives and related research methods:

1. First of all, we need to know what competencies the organization really needs - and not those that managers would like employees to have.
2. Secondly, we need a mechanism for analyzing optimal allocation of competencies to tasks, projects and positions, which would ensure a minimum (!) but sufficient level for the implementation of company processes and objectives. Such an approach is contradictory

to common thinking about employment in terms of posts and staffing. It would be necessary to employ competencies for tasks and not people for positions.

The diagnosis of training needs must be based on tasks - how much, what, and when things are needed be done to achieve organizational goals. Thus, we should abandon thinking about employee development - development should be a "side-effect" limited to the unsatisfied needs of the organization, the so-called competence gap.<sup>2</sup>

A good tool for such analysis is the substitutability plan used in manufacturing companies, sometimes referred to as a human resource plan<sup>3</sup>. In factories, it is created based on a list of activities or machines that need to be operated. Each activity or machine is at the same time a competency. For a factory, it is important to have sufficient "manning", i.e. the competencies to implement the production plan and the people who offer (possess) these competencies. Other competencies, not used by the company, are not analyzed. Substitutability plans can be applied to all positions and all types of organizations, thus minimizing the level of competencies required and guaranteeing sufficient availability.

In organizations other than production, quantification of activities or processes necessary for proper functioning is not as difficult as it seems at first. Applications analyzing workload in "difficult to measure" positions are used for this purpose. An example of such an application is ValueView. Activities and processes defined by means of such applications are at the same time competencies. Performing a given activity means that an employee is able to perform it. Having defined competency needs, we can allocate employees in such a way that their personal potential is used to the maximum extent, and at the same time, so that the company can afford to:

- recruit only those competencies that the company has a use for,
- limit training to that which is only position-based, i.e. realistically necessary for the current operation and planned development,
- increase labor turnover to enable workers with overcapacity to find a better place to work.

### Counteracting the ineffectiveness of training

Training can limit the effectiveness of employees. However, this can be counteracted.

1. Competency management should focus on specific competencies - tasks such as: telephone answering to customer inquiries regarding products, monthly sales reports, etc., and not on general competencies such as goal orientation and analytical skills. In operational work, tasks and activities can be identified in terms of competencies. Detailed competencies should be defined for each position on an ongoing basis. Computerization of HR functions allows for such management at low cost and organizational effort.
2. Employee resourcing should be planned on the basis of detailed competencies defined in this way. In business, planning based on detailed competencies - tasks are usually referred to as substitutability planning or human resource planning. This means abandoning the planning of jobs and the so-called vacancies. You should employ

<sup>2</sup> The **competence gap** is the difference between the required level of competence and its current level. It is assumed that the existence of a competence gap limits the effectiveness employees, which in certain situations may translate into a decrease in the profitability of the process or a reduction in productivity.

<sup>3</sup> **Substitution plans** usually include the allocation of people and their competencies in the production plan or processes implemented by the company. Replacement plans are used for employment planning, recruitment, organizational structure optimization, team and human resource planning, training and professional development, rotation and promotion planning and remuneration policy needs.



- competencies for tasks and not employees for positions. This will result in a better allocation of resources in the organization.
3. Employment, including recruitment, training and staff development, and staff structure and budget should be planned on the basis of substitution plans and not on the basis of the needs expressed by managers. This will reduce recruitment needs and staffing costs.
  4. We propose to completely abandon the evaluation of the value of training based on Kirkpatrick's Four-level training evaluation model ([www.kirkpatrickpartners.com](http://www.kirkpatrickpartners.com)). Such assessments lead to an increase in excess competencies and aiming the content and of training courses to toward individual needs of employees, often to the detriment of the company.
  5. The profitability (return on investment (ROI)) of training should be measured or at least estimated (Reinfuss, 2018) - Kirkpatrick describes this as the 4th level of measurement, but in his day, effective methods of measuring ROI were not yet known. Good training companies and specialist consulting companies offer such analyses and teach clients how to use them. Many training courses conducted in enterprises are assessed using only delegate feedback and therefore unprofitable because no analysis of usefulness is carried out.
  6. We recommend not using training as a benefit. Development of competencies other than those that can be used by the company at the moment is not of interest.

### Is it worth training?

Competencies are like machines or tools. Companies need them as much as necessary to produce what they can sell. This is well illustrated by the Context Scale<sup>®4</sup> created by Lenartowicz and Rechart. The less, the cheaper. Excess is an unjustified cost. In the case of competency, excess is additionally difficult to manage and often results in a decrease in motivation, commitment and, as a consequence, work efficiency. Of course, it is a good idea to plan a certain surplus to ensure the company's economic and resource security in the case of labor turnover or a sudden increase in sales. The ability to manage such a surplus through internal rotation, projects and development goals requires higher managerial skills. It is worthwhile developing this within the organization.

In order for training events to make sense, they should always result from objectives, i.e. planned changes and process needs of the organization. Only when we make sure that the goal supported by training is profitable, should it be organized. Otherwise, training will be unprofitable. The profitability of training results from the profitability of business objectives, which are supported by training.

A justified need for training may also result from the processes implemented by the organization. Training should be provided, but only when training is necessary to guide the process. If training does not improve productivity in the short term, it is unprofitable.

Training events should, if possible, be organized in the form of internal training, i.e. based on the company's own knowledge or know-how purchased from suppliers of new technologies (e.g. training on new IT systems, legal regulations, implemented changes in work organization). This does not exclude the use of trainers and external companies. The essence of internal training is the know-how purchased from the supplier and not the person conducting the training.

---

<sup>4</sup> Lenartowicz, M., Reichhart, W., Zych, B. (2010), Realizacja zadań w organizacjach sieciowych, [seria:] Podręczniki Konsultanta Rozwoju Organizacyjnego, 3, Wyd. Advisio Press

If we analyze and pay attention to the profitability of training courses conducted, their number will decrease and the quality and adjustment to the needs of the company will definitely increase.

## References

- AGRAWAL, S.; GANGAI K. N. (2016) Effectiveness of Training Evaluation in Autoancillary Industry, *Journal of Organization and Human Behaviour*, Volume 5 - Issue 1 January 2016
- BOYATZIS, R.E. (1982) *The Competent Manager*, Wiley, New York [in:] M. Armstrong, Zarządzanie zasobami ludzkimi, Oficyna Wolters Kluwer business, Warszawa 2011, p. 191.
- CASCIO, W. (2000) *Costing Human Resources*, South-Western College Publishing; Kalkulacja zasobów ludzkich, Oficyna Ekonomiczna, Kraków, 2001, p. 310-311
- CRESWELL, J. W. (2009) *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches* SAGE PUBLICATIONS, United States, London, New Delhi.
- CZAKON, W. (2015) Metodyka systematycznego przeglądu literatury [in:] *Podstawy metodologii badań w naukach o zarządzaniu*, (Ed.) W. Czakon, Oficyna Wolters Kluwer business, Warszawa, p. 124
- GALANOU, E.; PRIPORAS, C. A. (2009) Model for evaluating the effectiveness of Middle managers' training courses: evidence from a major banking organization in Greece, *International Journal of Training and Development* 13:4, Blackwell Publishing Ltd.
- <https://www.merriam-webster.com/dictionary/competency> (22.02.2019)
- JEMIELNIAK, D. (Ed.) (2012) *Badania jakościowe. Metody i narzędzia*, Wydawnictwo Naukowe PWN, Vol. 2
- KIRKPATRICK, D. L. (1994) *Four Levels of Training Evaluation*, Berret-Koehler, San Francisco [in:] Armstrong M. Zarządzanie zasobami ludzkimi, Oficyna Wolters Kluwer business, Warszawa 2011, p. 601
- KRÓL, H.; LUDWICZYŃSKI, A. (Ed.) (2006) *Zarządzanie zasobami ludzkimi. Tworzenie kapitału ludzkiego organizacji*, PWN, Warszawa, p. 82.
- LI, Y.; WIRIYAKITJAR, R. (2018) Dominant factors influencing training effectiveness (learning and transfer performance) of SMEs in Beijing, China: A study on the hotel sector, *UTCC International Journal of Business and Economics (UTCC IJBE)* Volume 10 Number 3, December
- MANSFIELD, B. (1999) What is 'competence' all about?, 'Competency,' No. 6(3), pp. 24–28 [in:] M. Armstrong, Zarządzanie zasobami ludzkimi, Oficyna Wolters Kluwer business, Warszawa 2011, p. 190.
- MCKENNA, E.; BEECH, N. (1999) *Zarządzanie zasobami ludzkimi*, Wydawnictwo Felberg SJA, Warszawa, p. 123
- OLEKSYN, T. (2014) *Zarządzanie zasobami ludzkimi w organizacji*, Oficyna Wolters Kluwer business, Warszawa, p. 146–147.
- PANAGIOTAKOPULOS, A. (2011). Barriers to employee training and learning in small and medium-sized enterprises (SMEs). *Development and Learning in Organizations*, 25(3), 15-18. doi:10.1108/14777281111125354
- POCZTOWSKI, A. (2007) *Zarządzanie zasobami ludzkimi*, PWE, Warszawa.
- REINFUSS, R. (2018) Czy na HR można zarobić? <https://www.pb.pl/czy-na-hr-mozna-zarobic-948599> Puls Biznesu (22.02.2019)
- REINFUSS, R. (2012) ThinkTank - Szefie pozwól mi się zmotywować /THINKTANK zima 2012/ [http://mtp.pl/index.php?option=com\\_content&view=article&id=371:szefie,-pozw%C3%B3l-mi-si%C4%99-zmotywowa%C4%87&catid=69:zarzadzanie-ludzi&Itemid=499](http://mtp.pl/index.php?option=com_content&view=article&id=371:szefie,-pozw%C3%B3l-mi-si%C4%99-zmotywowa%C4%87&catid=69:zarzadzanie-ludzi&Itemid=499) (22.02.2019)
- REINFUSS, R. (2016) Od pomnażania potencjału do rentowności, *PersonelPLUS* vol. 12,
- SCHULTZ, T.W. (2010) *Education and Economic Growth* [in:] *Gospodarowanie kapitałem ludzkim* (Ed.) W. Jarecki, M. Kunasz, E. Mazur-Wierzbicka, P. Zwiech, Wydawnictwo Zespół, Szczecin, p.19

WALKOWIAK, R. (2007) Zarządzanie zasobami ludzkimi, Wydawnictwo Dom Organizatora, Toruń.  
[www.kirkpatrickpartners.com](http://www.kirkpatrickpartners.com)  
[www.valueview.eu](http://www.valueview.eu)