

Alzbeta Kucharcikova *

THE IMPORTANCE OF IDENTIFICATION AND ANALYSIS OF EDUCATIONAL NEEDS FOR INVESTMENT IN HUMAN CAPITAL

Human capital has currently represented significant production input for economies and companies as well. The need for investment is more intense in connection with the massive introduction of science and technology achievement into life and the need for constant innovation. Investments in human capital are made of the funds being invested in education, training, safety and security, health and etc. However, it is mostly the investment in education. Whether the subject of investment is a state, an individual or company, for the investment to be effective, it is necessary to place the identification and analysis of educational needs first. The purpose of this paper is to point out the importance of identification of the educational needs in company conditions, the methods of effective implementation, the accompanying problems and measures to prevent them.

Keywords: Investment in human capital, company education, identification and analysis of educational needs.

1. Introduction

The growth of technology intensity of production, opening of markets and continuing growth of competition require that companies are interested in technological improving of their production processes, improving quality of production and services, introduction of information technology and innovation. "The rapid and steady changes in a field of information and communication technologies have increased demand for high qualified specialists not only in a field of cybernetics and applied informatics, but also in related fields such as economy and management" [1]. It is important that advanced technology should be operated by people technically, knowledgeably, but also physically fit, able to respond flexibly to these changes, creative people, capable to innovate. Currently, companies are looking for optimal ways of organizing work, which would contribute to their effective functioning. "Equally also universities nowadays must behave responsibly and creatively competitively – in their activities they must create such future career opportunities for their future students/graduates, which enable them to hold an excellent starting position on the labor market, and at the same time help them to train their skills and competences, to direct their personal potential so that these students/graduates/employees permanently manage to cope with all work challenges. To achieve this level it means a very precise, demanding, and systematic work of the entire university and all its employees (pedagogic and other ones as well)" [2]. There is the essential

ability of teamwork, appropriately lead and positively motivate subordinates and also the ability to communicate and collaborate with customers successfully. The facts given form the pressure on companies to understand that it is necessary to invest in the human capital of their workers and develop their competencies.

2. Education in the company

Education and training representing an important part of the activities of personnel management company contribute to the development of the necessary competencies of company staff. It is a means of reconciling the changing demands on work activities, qualification and behavior of workers in order to effectively achieve the objectives set by company strategy. At the same time it is a means to achieve a higher degree of satisfaction of workers in the course of their activities (competence, achievement of performance promotion). Company investments in education and development of their people are a tool to attract and stabilize human capital and also become a tool for achieving a better return on these investments. Education may also be one, but not the only solution to the problems that prevent companies in effective achievement of the objectives [3].

Education and development of working skills can be considered as a lifelong process of continuous enhancement and enrichment of the current labor and life knowledge. Systematic education and staff development represent a process of goal-

* Alzbeta Kucharcikova

Department of Macro and Microeconomics, Faculty of Management Science and Informatics, University of Zilina, Slovakia
E-mail: Alzbeta.Kucharcikova@fri.uniza.sk

directed and balanced development of the human potential of the company, i.e. deepening professional and personal skills and competencies, and increasing employee's motivation and management [4].

Company education is not a short-term issue, but the education effectively realized represents a long-term process, which consists of 4 phases. It is: 1. identification and analysis of educational needs, 2. planning education, 3. implementation of the educational process, 4. evaluation of education outcomes [5].

3. Identification and analysis of educational needs

Companies, which support the development and personal growth of workers, contribute to improving the quality of production, increasing efficiency of internal processes and development of the company as a whole. In this way, company education also becomes a decisive factor in increasing the competitiveness of companies in today's markets.

The preparation of workers must always focus to increase performance, achieve specific objectives, as the main result of education is to achieve the highest company objectives [6]. It is often not possible to improve company performance only through education; there are also problems that cannot be resolved by education. At the beginning of the process of improving the quality of staff through educational programs, it is necessary to make identification and analysis of educational needs. Then, based on them, the entire educational program is planned and implemented and finally evaluated. The process of education and development of workers is based on the vision, mission, objectives, philosophy and culture of the company, its strategy and policy management and development of human potential. All these aspects must be taken into account when identifying the educational needs of company.

Analyzing the needs there are identified current gaps in skills together with other factors that affect the performance of workers

in achieving the objectives required. Therefore, it is necessary to deal with questions such as:

- Is the performance of these skills and knowledge really so important?
- How is a worker stimulated to use these skills?
- Doesn't management by its behavior, in fact, discourage its people who have these skills?
- What other obstacles to achieve the performance still exist?

When it is clear that education will help to resolve some problems in the company, then it is necessary:

- To agree the objectives of education with the management, which agree with the priorities of the business.
- To decide which skills or qualifications we want to improve by education.

However, the analysis must deal with the problems that are organizational or procedural nature and they are not solvable in education and point out their relationship to problems in achieving company objectives [7] - [12]. There are many authors who address the issue of the implementation of identification and analysis of training needs process [7] - [12].

The analysis of education needs basically resides in gathering information on the current state of knowledge, skills and abilities of workers, the performance of individuals, teams and company and comparing the data collected with the level required. Identification gives an answer to questions such as:

- Is performance in skills in question actually necessary?
- Is an employee actually paid for managing these skills?
- Does management actually support the behavior required?
- What other performance barriers still exist?

When identifying education needs, it is necessary to compare two levels of performance, i.e. standard (required, optimal, planned) performance V_p and current (existing, real) performance V_s . The difference between the two levels is a **performance gap**. Then, the result of the analysis is to identify gaps of performance that need to be eliminated, with a focus on those that can be

Different behavior in a stable and dynamic environment [12]

Table 1

STABLE ENVIRONMENT	DYNAMIC ENVIRONMENT
Relevant information and their distribution are concentrated at the top of the company.	Relevant information must be available wherever operational decisions are taken, hence the lowest levels.
Manager is responsible for the work and performance of subordinates.	Manager is also responsible for the involvement of subordinates in decision-making and responsibility.
Manager is responsible for fulfilling the tasks and compliance with procedures.	Managers are co-creators of the plan, implement it and where necessary they change it together with procedures.
Managers are responsible only for their department.	Managers are also responsible for how their department affects the operation of the other parts of the company.
Managers monitor the relevant information.	Managers search for information from new resources.
Managers implement the plan.	Managers search for alternatives for implementation and new opportunities in changing environment.
Managers make decisions.	Managers empower others to take decisions and encourage them.

completed with education and the design of proper education program.

When analyzing the development needs, demands of the business environment on the behavior of managers should be taken into account. Other behavior is required in a relatively stable environment and others in a dynamic environment, as shown in Table 1. In the event that there is a shift from the requirements in the left-hand column to the right in the business environment, it is necessary to change the behavior of managers. It is not easy, and for this reason an appropriate analysis of the situation is essential.

The main objective of educational activities in the company is to increase the performance, individual as well as the department and the entire company. The performance can be assessed when a certain comparative level – standard is available, when there are educational and performance standards. Competence, which a worker receives during the process of company education, is *educational standard*. *Performance standard* provides information about what a worker can perform during normal – standard working conditions [6].

When calculating the current performance, we begin with the collection of information that can describe the performance and determine its size. Without providing the required level of performance there is no starting base. Then, we compare the detected level of performance with this standard. When assessing the current level of competence of performance there may be used standards of other companies (benchmarking with excellent companies) or organizations within the group of companies or national standards (representing acknowledged level in a particular activity).

Current needs can be determined by comparing actual existing performance with standard to be achieved in a short time. Otherwise, if the changes appear in the company, it is possible that it will be necessary to carry out education in parallel with the ongoing change. Future needs are linked to ideas about the future, with connection to the company's development strategy and its long-term objectives. Then, the purpose of education is to simply help to overcome current imperfections of performance and prepare workers to new situations and opportunities that await them.

Analyzing needs should be clearly defined and distinguished company performance, team performance, individual behavior, individual performance and competence of the individual. This clarification early in the process can prevent possible misunderstandings.

4. Analysis of performance problems

There are learning and development activities that should meet the needs of the organization. We can conceive the need either as an existing problem (error, customer complaints...) or

a new situation where the organization or department get in (new information system, new staff, new situations, new objectives ...). There is always the need of learning in the new situation. Education will be in place regardless of the mentality and must be focused on the positive, effective and fast educational process. However, education must not always involve solution of emerging problems.

Once you have identified the problem, then you need to find its key causes and not to correct symptoms, as happens so often. In practice, it does not make sense to try to correct the symptoms (which are usually on the surface), as this will not get rid of the problem.

New situations automatically deliver learning needs, however, many new situations appear unexpectedly, resulting in the fact that companies have little time to plan and implement an appropriate response in the form of education. Therefore, it is appropriate to point out some indicators that help to predict learning needs. Since they are indicators associated with the company, at the same time they can help to ensure that the process of company education will be linked to the requirements of the company management.

The useful indicators of future educational needs include:

- Strategic company plans, particularly plans for expansion, diversification, increase customer value, which will have increased demands on education.
- Restructuring and the resulting reduction in the workforce and changing stratification will lead to changes in job specifications, and thus the performance requirements.
- Changes in the competitive environment.
- New technologies and systems, e.g. installation of new information systems put demands on those who will operate them, but also those who will use their output in their work.
- Changes in management and performance, such as reduction in productivity will lead to finding possible causes. These causes can point out differences in performance of various departments in the company. These causes often lead to the realization of the need of education.

5. Stages of identification of educational needs

The process of the identification of educational needs is carried out in *three stages*. It is the analysis of company objectives, task analysis, knowledge and skills of workers and analysis of people.

In the first stage, the analysis of company objectives is implemented. Having the education successful and effective, it is necessary to monitor the overall company strategy and objectives (BSC is a good starting point). This also acquires support even from management. It is important to ensure that all workers are aware of the strategy of the company and identify them with it. The task of analysis is to identify the differences between required

and achieved performance and define whether and how it is possible to reduce this performance gap using education. This level is of particular importance in relation to the education needs, organizational systems, programs increasing the performance and company strategy. The process of analysis of the objectives that lead to the identification of educational needs, it is important to take into account the company culture, which reflects the value system - the philosophy of the organization. Provided that education is provided by external organization, it is appropriate to realize the analysis of company culture first. Considering the company performance, the point is that education needs should be expressed so that the required changes in the level of company performance should be clear.

In the second stage, the analysis of tasks, abilities, knowledge, and skills of workers is taking place. Data for analysis can be obtained from descriptions, specifications and qualifying characteristics of working places. Data thus obtained are compared with the actual competence of workers, figuring the leadership style of managers at all levels, culture of working relations, etc. The result is information about the potential need for education. The changes required in individual behavior and performance, especially for executives, may have, in general, technical character, or they approach to leadership and working with people, which is more often. A manager affects the performance by what his individual performance is, but especially how he can lead and motivate their colleagues to improve their personal performance. Individual level of the analysis is starting. Each employee has unique and individual needs of education due to his specific job position, level of education, experience, cultural background and his personality. The emphasis on assessing the individual needs enables to prepare the education "tailored", to adapt it really to the needs of the individual and monitor the objectives which the individual feels responsible for. When analyzing the needs of education, it is necessary to examine the needs of the team, as some managers' needs are unique and others are common for team, managers do not work only as isolated individuals, but often in teams. Thus the needs come to the fore, which cannot be defined, if we dealt with each individual separately.

The third stage focuses on the analysis of individuals when the individual characteristics of workers are compared with the requirements of the company. Data can be obtained from the records of evaluation of workers, his education, qualifications, completing educational programs, trainings and so on [13].

There can be applied the following *procedure* at each of the three phases. First, collect the necessary data and then analyze all the data. When collecting and analyzing, it is possible to use different methods of implementation. In order to ensure the greatest possible objectivity, it is important to get the largest amount of data and combine more kinds of methods.

Data collection

The process of identification of educational needs begins with collecting information when comparing the current level of performance, but also the skills, abilities and knowledge of workers with the standard. Information about the substance of job position activities and achieving the level of performance can be obtained using different *methods* such as structured interview, group discussion, questionnaire, and participation and observation. It is a simple and easy-to-use method.

Structured interview is based on a pre-prepared list of questions (open or closed), solving the problem. The purpose is to find out why individuals or groups do not perform satisfying performance, get opinions, perceptions and attitudes of key personnel representatives. The advantage of the structured interview is the possibility of more detailed examination of the situation and flexibility. The disadvantages are that they are often time consuming and the person who conducts the interview must be sufficiently qualified. "This should be done in a form of bilateral communication. Managers and experts from organization should realize that this type of interview will enable them to recognize the complex potential of applicants and compare these personal competence complexes to the requirements of the position being offered to the applicant" [14].

Observation represents an intentional observing an individual or group of persons of employment in a given environment. An observer can compare different styles and skills of individuals who perform work and compare them with the job description, standards and procedures. The advantage is to obtain a clear picture of the task performance in terms of organization. The disadvantage may be that if a worker is surprised, then he can get resistance to the observation and behave untypically.

Questionnaire represents targeted aggregate structure of different types of questions. The purpose used in this case is to obtain data on the roles and attitudes of employee on different aspects of his work. The advantage of using is low cost, disadvantage may be that the respondent does not understand the right questions, open questions are difficult to assess and question scale may not cover all aspects of the work.

Participation represents the time section, during which the researcher takes on the roles and responsibility of the worker. The purpose is to gain a closer understanding of the work when it is difficult to explain, or the procedures in the company are new and there is no one able to competently assess these approaches. The advantage is a deeper understanding of the conditions of work; the disadvantage is that in some cases where it is necessary to have special skills, an examiner cannot be involved in the work.

Job description written by an employee is a product of the analysis conducted by the employee himself. The purpose is to develop a complete job description which, from the perspective of an employee, describes the levels of importance and difficulty of the main tasks and duties which his work is composed of. The advantage may be speed and may reflect the experience of

the employee if he had several jobs. Employees may sometimes find that it is difficult to describe their work, information may be incomplete, it is necessary to verify them and it is difficult to standardize this process. It happens that employees overestimate or undervalue the importance and difficulty of their work.

Group discussion represents concentration and discussion the difficulties of individuals who are somehow connected with the job. The purpose of this working meeting is to gather relevant information and specific aspects of the work and gain perspectives on how it should be implemented. It is particularly important in those cases where the work includes changes in the content or methodology. The advantage is the relatively rapid acquisition of various perspectives on the job. The disadvantage can be time-consuming; the need of skilled and qualified moderator, there may appear barriers of workers to speak out, especially if they are in different functional status.

After getting the information using some of these methods, the data are analyzed to identify problems in performance and determining the causes of the problems identified. The priority in problem areas will be set and the educational and other measures that help to solve the problems will be identified. Based on the findings there will be developed the program of education in accordance with company strategy and objectives.

In view of the success of the process of identification of educational needs, the amount and relevance of information ability of the company, its activities and people are important. In addition to those methods, in order to obtain the data there is also used the study and treatment of internal documents of the company, SWOT analysis, workshops with management and selected workers, monitoring of work performance, ability tests, but also the performance evaluation and self-evaluation. In practice, it is necessary to use a combination of best techniques to the situation in the company. It is risky to make decisions solely based on a single technique. Strategy, company objectives, organizational structure, financial plans and reports, job descriptions, indicators of fluctuation and accidents, performance standards, marketing plans and staff evaluation system can be used as *sources* for processing the necessary information. These sources allow getting technical, economic and personal data and information on existing relationships and company culture. The obtained data should be interpreted and assessed in relation to the extent to which they present opportunities to enhance the performance of workers and entire company.

Analysis of data

When evaluating and measuring data obtained from the first phase of company education there are usually used two approaches - comparative and absolute. *Comparative approach* involves techniques of order determination (from best to worst), forced division (dividing into groups, intervals, scoring at a fixed number of points in a given group of employees) or paired

comparisons (each is compared with each and determine if the specified criterion is better or worse).

Where absolute approach there is used a written description of the evaluator, numerical rating (to a certain extent of possible points), descriptive scale (use of adjectives for the evaluation of skills), graphic rating scale (usually involves several aspects and combined with a numerical or descriptive scale), performance scale (where direct performance indicator) or forced choice (choice of usually five descriptions of behavior in every part, it is a favorable and unfavorable evaluation).

Considering data collection there is obtained a large number of information from various sources. When processing it is necessary to maintain objectivity, allowing the application of certain principles:

- consider those factors that affect mainly problem in the performance of an individual or an entire company,
- focus on obtaining a comprehensive view of the problem, allowing consultation of all responsible workers,
- use perspective approach in which to give an objective view of the worker and the problem from the perspective of another worker based on his attitudes, ideas and information. It is a certain paraphrase of problem.

In practice, it is possible to use, for example, a combination of mathematical and statistical techniques, too [15].

Applying those principles, or combinations thereof, it is important, in terms of objectivity, to obtain a large amount of information, which to the subsequent processing, are summarized, and classified and where interdependencies between them are explored.

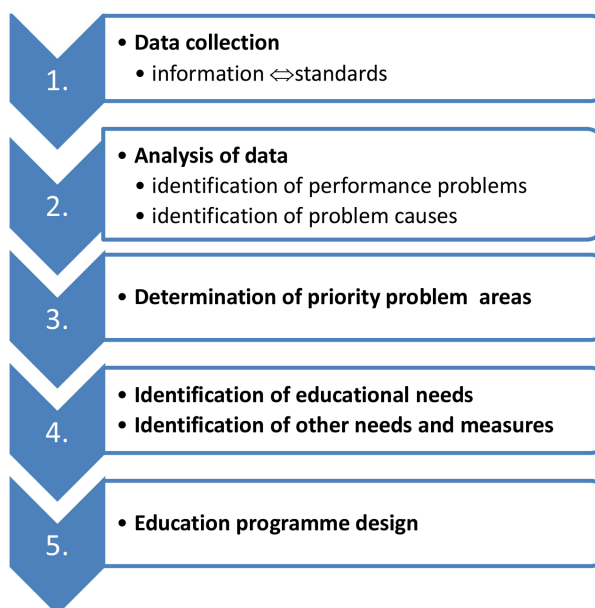


Fig. 1 The process of identification and analysis of educational needs
Source: [own design according to 12]

The aim of the process of data analysis is to identify problems in performance through the symptoms they demonstrate themselves and identify their causes. The performance of the company and the individual is determined by internal environment of the company, its environment, motivation and behavior of workers. Therefore, the cause of changes in performance can be the change in these factors. It is necessary to detect and specify such changes in performance in the process of data analysis.

The result of the process of analysis and identification of educational needs is a list of educational and other needs of workers and the design of educational program, or other designs to resolve other problems and needs identified (Fig. 1). It is essentially a determination of who and why needs education [12]. We recommend that the efficiencies training program accepted knowledge of learning styles and education styles [16].

In terms of effective implementation of identification of analysis of educational needs, it is essential that the company workers were informed in advance about what is happening and why it matters for the company. Unless there is sufficient information, there appear concerns about the impact of ongoing activities and consider them a threat to its own person. This could reduce the motivation of workers to learn in future educational activities. Omrod [17] in his article discusses the topic motivation in learning.

6. Conclusion

Continuous development of competition and increasing pressure in developing market lead managers to introduce new, progressive forms in management of companies. "The current labor market effects also the university education to a large

extent requiring a graduate of interdisciplinary knowledge and with the skills to find the solutions to both technological and economic issues" [18]. Determinants of the success of companies in these conditions can affect the intensity of the introduction of advanced approaches and methods of analysis, planning and control, innovation of organizational structures and information systems [19]. One of the possibilities of increasing the competitiveness of companies is to focus on increasing the value of human capital of their employees using company education, which is aimed at increasing job skills, abilities and knowledge. Identification and analysis of educational needs enables companies and educational institutions to set objectives of educational programs properly so that they are in accordance with company objectives and help to solve problems in achieving performance in the company. Evaluation of data obtained during the process of identification and analysis of educational needs analysis of the actual and required knowledge, skills and abilities provides not only information on the educational needs, but it is also possible to detect other problem areas and their causes, such as organizational areas or introducing changes. Experience shows that a well-prepared and carried out identification and analysis of educational needs allows better investment in the development of human potential and effectively supports increasing the performance of individuals, teams and the company.

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