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*Rajko NOVIĆEVIĆ, Špiro MIJOVIĆ¹***EDUCATION, PROFESSIONAL DEVELOPMENT
AND TRAINING IN COMPANIES****SUMMARY**

Classical agriculture and forestry science has been built around the ecological, biological and economic importance of that 'entity'. The social, cultural and environmental aspects of agriculture and forestry grow in importance. This requires agronomists and foresters to 'think outside the box', learning to deal with agriculture and forestry issues 'outside the rural areas and forest' and that is one challenge that is yet to be fully integrated into agriculture and forestry education (Temu et al, 2006).

In the times of socio-economic system integrations, liberalization of socio-economic processes and population growth, the importance of agrarian and rural system developments and rational use of resources, primarily agro-ecological and hydro-potentials, depends primarily on well educated human resources that have adequate knowledge, skills and competencies. Knowledge and intellectual capital are preconditions for development of competitive agricultural-food industry and for companies that operate in this industry. Developed intellectual capital provides companies with possibilities to ensure additional value to products and services and that way to become more competitive at the market.

Education, professional development and training of human resources in companies can ensure the best balance between the human resource structure and the organizational structure if the entire range of requirements expressed by the latter is taken into account in terms of quality and qualification of human resources. The very nature and substance of market economy imposes many functions and obligations for the companies, in terms of education and training. On the one hand, market conditions require from companies to react quickly to all changes in production requirements in terms of human resources, through a system of preparations, professional developments, vocational retraining and training of human resources.

On the other hand, companies have to provide the employees with the possibilities to undertake trainings and education in accordance with their personal ambitions, desires and interests. Therefore, this results in a need to have flexibility in the systems of education, professional development and training of human resources, as well as its ability to quickly adjust its content, methods and organizational forms to the production requirements and labor market situation.

This paper relates education, professional development and training experiences in companies' in order to initiate discussions about the way forward.

Keywords: company, human resources, educational needs, training

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1. Determining educational needs in company

The main purpose of determining educational needs in a company is to determine which specific knowledge and skill developments could ensure employees with possibilities to improve conduct of their work tasks. The priority is to determine which direction to take in development of employees' skills in order to contribute to better quality of products with permanent quality control and product quality management. The aim is to conduct education for employees and employees to become experts with a high level of fundamental and applicable knowledge from various programs in production and control of food products.

The first phase in implementation of educational process in companies is to determine educational needs. The entire educational process is organized and implemented with the aim to satisfy educational needs of the subjects it is not intended for. Quality and purpose of the entire educational process that it is to be implemented with the aim to improve competencies of the employees depend on the quality of educational needs determining process. The process of determining educational needs is a very complex mental process which is partially organized and target-oriented, but also partially random and accidentally established. Complexity of the educational needs determining process comes from many activities and tasks that are to be implemented.

The process of determining educational needs in companies is characterized by many specific features resulting from the characteristics of companies themselves. The most important are:³⁴⁸

1) company is a defined, strictly structured and functional unit with long term general goals;

2) activity (activities) of a company is/are also defined normatively and in practice by state rules and acts, internal rules, acts, customs and practice, as well as rules and norms and operations of market;

3) composition of human resources in company is, in principle, relatively stable with previously defined group of professions and vocations, i.e. required volume, content, degree and way of acquired and recognized (mainly applicable) knowledge;

4) work tools, work subjects and products are in principle defined in a long term;

5) company relations are regulated and known, as well as all main roles and relations between them;

6) as previously stated, organization and technology are mainly stable and known, therefore, they act as a determining component together with characteristics of work tools, work subject and products and market relations;

7) human resources are obtained from the labor market;

³⁴⁸ Milosavljević G.: Organization of Trainings, Official Gazette, Belgrade, 1997, pg. 104 and 105.

8) profile, i.e. expertise of human resources is primarily result of school system, respectively of educational system and is in accordance with officially defined and organized nomenclature of professions, i.e. vocations;

9) situations that require additional determination of educational needs are already known. The human resource development policy ensures that human resources possessing required education are obtained in accordance with the state rules and standards applicable to the educational and school systems.

Determining educational needs in a company is efficient if the company:

- has a clear and precise description of all duties and all job positions that were determined for the purpose of implementing company tasks;
- has determined minimum competencies that employees have to possess for their respective duties;
- conducts analysis of inter-connections and relations between work demand and available competencies of employees.

In other words, process on determining educational needs requires adequate answers to questions: Which competencies employees need to possess in order to successfully perform their work and complete work tasks? Which employees do not possess adequate competencies or not to the required extent? And, whether the educational activity, i.e. action, will compensate the determined educational deficit?

Educational needs of companies are to be examined and determined through a multiphase procedure, as follows:³⁴⁹ (Figure 1.)

The first phase includes analysis of work and tasks, i.e. of activities that certain job position requires.

The second phase consists of determining and defining competencies that human resources are to possess for successful performance of work tasks.

The third phase includes determining of competencies that the human resources have to possess for their respective job positions.

The fourth phase is the final phase in determining educational needs and it includes comparison between required and available competencies of human resources (comparison of results from the second and third phases). The results obtained in such a way represent the educational deficit, which we call the educational need.

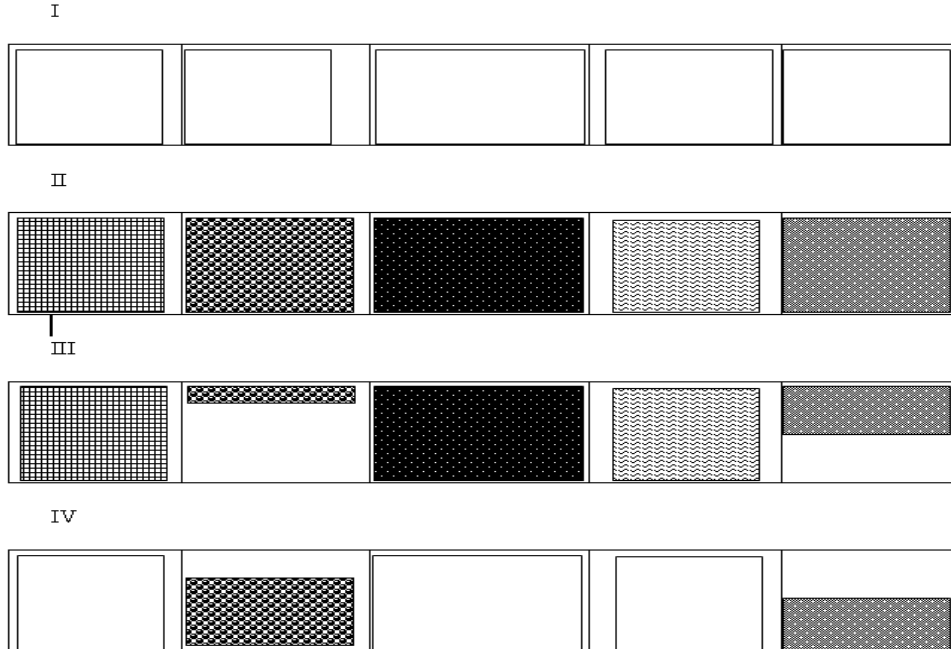
Such model for examination of educational needs that human resources have is applicable in all kinds and types of education, professional development, vocational retraining and training of human resources.

In addition to the procedure of analyzing work and work tasks, it is also possible to determine educational needs of a company by conducting a cooperative diagnosis. The cooperative diagnosis is a procedure where the educational needs are assessed by many competent subjects of the company, who

³⁴⁹ Jurina M., Pastuović N.: Ispitivanje potreba za obrazovanjem u radnoj organizaciji, Adult Education Center, Zagreb, 1972, pg.19, 20 and 21.

are primarily in the management structures, starting from the linear to the top management.

D. Torrington, I. Hill and S. Taylor³⁵¹ have a similar approach to the analysis of educational needs of human resources in companies and they emphasize two traditional approaches to this activity, problem-centered approach and adjustment of the profile of an individual's competencies to the profile of the job position he/she covers. The problem-centered approach is focused on all problems or difficulties at work and examines whether they occur as a result of competency deficit and if it is so, then of which competencies.



I Parts of the analyzed work activity;

II Competencies necessary for successful work;

III Competencies that employee already possess;

IV Competencies that human resources need

/educational needs/

Figure 1.³⁵⁰ The process of determining educational needs

The approach that is based on profile comparison (comparison approach) ensures more complex and wider consideration. Replacement of strategic priorities is possible and it requires new competencies for human resources because of the nature of their work, even when their roles or the positions were not changed.

³⁵¹ Torrington D., Hall L., Taylor S.: Human Resource Management, Data Status, Beograd, 2004, pg. 428.

³⁵⁰ Jurina M., Pastuović N.: Ispitivanje potreba za obrazovanjem u radnoj organizaciji, Adult Education Center, Zagreb, 1972, pg.19.

Existence of educational deficit represents a base for educational action and implementation of educational process. Only after noticing that there is educational deficit it is possible to make specification of educational goals and tasks, which are to be implemented in order to compensate the educational deficit.

Educational and training needs are mainly caused by changes in technology, work methods, etc... Common characteristic of such situations is the occurrence of significant educational deficit and a need to quickly eliminate it through educational activities (figure 2).

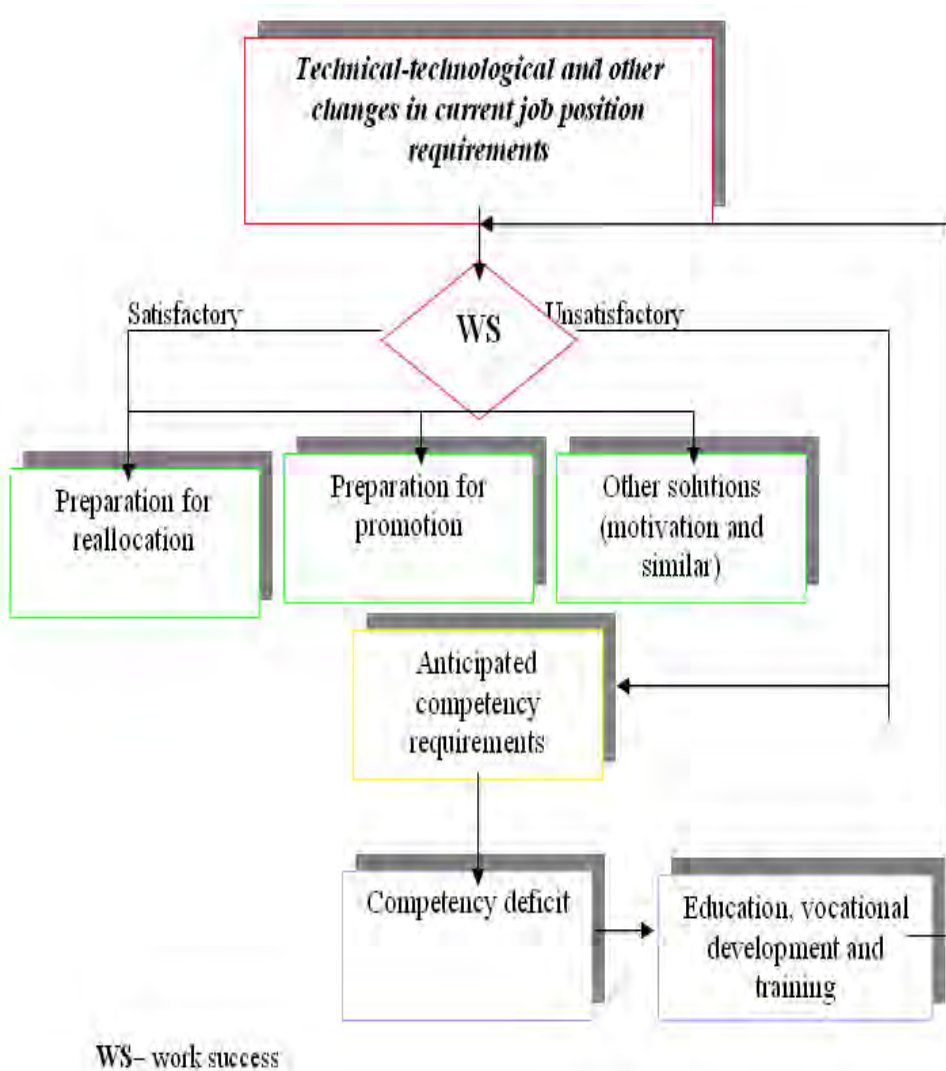


Figure 2. Analysis of needs

2. Planning and programming educational work

Examination of educational needs determines content, i.e. knowledge, competencies and abilities that human resources are not in possession of or do not have to the required extent, but which are necessary for performance of certain works and work tasks. Programming designs such content in a manner and way which ensures its optimum adoption by human resources.

Educational plan and program represents a base for establishing educational process, since it defines: general goals and tasks of educational activities, educational content (subjects, areas, etc...) which are to be studied, as well as order, time and manner of such studies, forms, methods, procedures, tools, etc... Plan and program have to be adjusted to possibilities of the ones that are to undertake it and its educational content has to cover educational deficit of its students, i.e. their educational needs.

General goal of planning and programming educational activities in and for a company represents the educational needs of human resources. They are a starting point in the process on planning and programming educational work. Rather rapid technical- technological changes in the production process increase educational needs of human resources. Increase of educational needs has impact not just on the fund of required knowledge on a certain subject, but also on the increase of multi-disciplinary knowledge necessary for successful work performance and conduct of work tasks. Under such condition, the planning and programming is faced with a complex problem, which is how to adjust accrued and increasing educational needs to the possibilities for their satisfaction, since the human resource abilities do not increase proportionally with the increase of educational needs.

“Creativity in programming consists of identification and assessment of genuine long-term needs for certain knowledge and competencies, identification and assessment of existing social knowledge and competencies, selection of content and its composition into one efficient unit and selection and connection of the most suitable program implementation forms and methods to the actual conditions “. ³⁵³ The program should define exactly which knowledge, to which extent and which employees are supposed to have such knowledge on certain issues. Namely, as stated by N. Pastuović ³⁵⁴ , examination of needs defines primarily the elements of educational base and the programming primarily designs optimum form for the defined content.

If we take into account the fact that human resources in companies do not have the same fund of knowledge, habits and abilities, do not have the same work function, nor work in the same work conditions, then the program content is to be adjusted as much as possible to the individuals, type and character of their work

³⁵³ Milosavljević G.: Organizacija treninga, Službeni glasnik, Beograd, 1997. str. 122.

³⁵⁴ Pastuović N.: Obrazovni ciklus, Republička samoupravna interesna zajednica odgoja i usmjerenog obrazovanja, Zagreb, 1978, str. 115.

and duties that they conduct at certain techno-economic unit or company. When developing a program any arbitrariness has to be eliminated and there should be requirement for its grounds, which are to include:

- a) scientific-professional base;
- b) practical base;
- c) material- financial base.

Scientific-professional base of a program means that its development has included consideration of world's scientific and professional knowledge on the content which is subject to programming, as well as the programming process itself. Therefore, when developing certain program and if we want it to be efficient, it is necessary to use proven scientific knowledge from the area that the programming subject refers to.

Practical base of a program means that program has to be suitable to the needs, requirements and possibilities of practice. Program which is incompatible with the practice has no value or importance.

It is possible to consider material –financial base of a program through three components, which were pointed out by G. Milosavljević.³⁵⁵ The first component includes costs of programming and program implementation. The second are direct revenues from placement and implementation of program. Finally, the third are material-financial benefits from development and implementation of program, incurred in two ways: a) through savings made by repetition, distribution and simple adaptation of high quality program; b) through effects of competencies gained by successful completion of educational program.

Educational plan represents a concretization of educational program and is a main instrument of educational process. It has to consist of:

- educational goals and tasks;
- thematic areas;
- defined period necessary for implementation of educational cycle;
- focus of the educational content (theoretical and practical);
- systematization of educational content (thematic units);
- structure of educational contents;
- other elements and norms regarding the space, time, human resources, etc..

If we take into consideration the tendency of further development, primarily technical-technological, but also the other factors of production process, we can anticipate that the educational needs and requirements are to increase more rapidly. Therefore, it is necessary to address this problem in a timely manner and systematically in order to find the most favorable solutions for efficient identification of educational needs, development of adequate plans and programs and establishing of the most suitable environment for implementation thereof. In such context, it is necessary to:

³⁵⁵ Milosavljević G.: Organization of Training, Official Gazette, Belgrade, 1997. pg. 123.

1) Examination and definition of educational needs should be a subject of continuous work within the human resource management, i.e. of trainings in company departments, if they are being undertaken;

2) Plans and programs of educational activities should be based only on identified and defined educational needs, in order to ensure quality in required accomplishments of human resources during their education;

3) Plans and programs should be adjusted as much as possible to the identified educational needs, but also to the individual possibilities of human resources, respectively to the educational process participants.

Regarding the importance of planning in educational work, R. Grandić³⁵⁶ points out that planning in modern society occurs as an activity that encourages people and guides them to rationally and efficiently master their collective future.

Effectiveness of an educational program, professional development, vocational retraining of human resources in company largely depends on precision in definition of goals, as well as on procedure for definition of program content. The mentioned program (programs) has to be based on actual needs of company and human resources and not on full and independent projection of the lecturer (instructor). This arises from a simple fact that the goal of education, professional development, vocational retraining of human resources is not a simple acquisition of knowledge. Its result has to be more successful work, better operational outputs, more functional behavior and overall development of human resources.

3. Organization and implementation of educational work in companies

Planning and programming educational work is followed by its execution and implementation. Implementation of human resource education itself is conditioned and determined by The Educational Plan and Program.

We live in times of rapid changes and explosions of knowledge with unforeseeable and incomprehensive dimensions, therefore further development of companies, as well as society in general, requires finding of the most adequate education and training for human resources. This implies many changes that are to be implemented in regular (school) systems, but also in companies. Our companies, which have already started transformation process, have to intensify education and trainings, with application of the most contemporary educational approaches. Education and trainings have to be deemed as one of the most important and the most complicated areas of human resource management in companies, whereby management has very responsible and initiative role. Without engagement of management, there is no successful educational and training process, since there would be no conditions for actual determination of educational needs, i.e. of educational deficit. Therefore there would be no

³⁵⁶ Grandić R.: Pedagogy, Faculty of Philosophy, Novi Sad, 2000, pg. 229.

adequate planning, implementation and control of educational results, i.e. measuring of their effects.

D. Filipović points out that adult education, especially permanent education, can be organized:³⁵⁷

- a) at work;
- b) along with work, and
- c) can come from work.

Education and training at work is especially suitable way of developing human resources in companies. This way human resources in a company are educated and trained in actual situations and with work instruments, not on models. Even though models can be close to originals, they still differ from them, at least in the environment they are placed at. Lecturers or instructors are usually employees, experts, with certain knowledge and experience. In addition to professional-specialized knowledge, they also must have appropriate adult education.

This type of education and training is implemented in many situations, but mainly if technical-technological base is changed, i.e. when new machines and tools are introduced into technological process.

If we take into consideration the heterogeneity of educational structure, but also the age structure of human resources, and different work experience and knowledge, it would be the most ideal to make plan and program for each person separately, even though very often this is irrational. This way the maximum suitability of educational content to the individual possibilities of workers would be achieved. Since this is almost impossible, G. Milosavljević³⁵⁸ points out that if it is not possible to project individual training programs, then it is necessary to develop individualized, typified programs with maximum possibilities to vary modules.

Education and training along with work has its advantages, because it is the best way to teach how to work and learn at the same time. It is very important that during the training along with work the human resources do not work under pressure of norms and higher productivity. The primary goal is to get the best knowledge and competencies that the respective job position requires. Therefore, learning results are more important than work effects. Subjects for implementation of this type of education and trainings are company's training centers (if there are any) or their cooperation with educational institutions outside company. This type of education is used in situations when the focus is on practical actions and competencies, with lower demand for theoretical knowledge.

Education coming from work or outside job position is rarely used in practice, because it requires bigger financial budget and longer absence of human resources from their everyday work duties. This type of education is similar to

³⁵⁷ Filipović D.: *Development and Education*, Zenit, Belgrade, 1995, pg. 178.

³⁵⁸ Milosavljević G.: *Organization of Training*, Official Gazette, Belgrade, 1997, pg. 182.

regular school education, since the human resources are relieved from their work duties and are dedicated to acquisition of new knowledge and deepening and systematization of the existing one. Considering the fact that in this case the human resources are not obliged to perform their work duties, favorable conditions are established for their higher dedication to the educational process.

There are different forms and manifestations of this type of human resources education in companies. The common ones are: various types of courses, seminars, symposiums, conferences, congresses, and rarely even entire educational process in regular school systems at higher schools and faculties.

4. Measuring result of educational work in companies

Measuring results of educational work in companies (evaluation of training) is as important activity as determination of educational needs and goals. Measuring results of educational work evaluate success of education and identifies potential weaknesses and shortcomings for the purpose of its improvement. It is possible to determine results of educational work only by comparison of situations before and after the educational process. This process is very complicated due to its numerous manifestations and multi-dimensionality and it is rather difficult to fully implement it in practice. We may rather say that there are partial possibilities to exactly determine results of human resource education in companies.

Results of education and training in companies are divided into three main groups:³⁵⁹ first, results that could be measured and statistically monitored, second, results that can not be measured but can be observed, and third, results (changes) that can not be measured or noticed, but can be felt.

Quantification of education and training results is very important and it should be insisted on whenever possible, but only in situations where it is possible, making a clear border between measurable and immeasurable values. Immeasurable results are not less important than measurable ones, but due to their nature it is not possible to determine their economic effects, at least not in a short run.

Among the before mentioned groups of results, it is possible to determine exact results only with the first group. This group of results makes it possible to precisely determine economic effects of the educational process, namely the level of increased work performance of company's human resources. A. Kibanova gives an example of effects of educational program to the work performance of human resources (increased productivity and quality of work), according to the methodology of American company "Honiuell"³⁶⁰:

³⁵⁹ Vujić D.: Znanje – put ka uspjehu, časopis "Zaštita" broj 444, Novinsko izdavačko preduzeće, Begrade, 1998, pg.43.

³⁶⁰ Kibanova A.: Upravljenje personalom organizaciji, M.: Infra, Moskva, 2000, str. 486.

$$E = P \cdot N \cdot V \cdot K - N \cdot Z$$

where,

- P – permanence of effects of an educational program to the work productivity and other success factors;
- N – number of trainees;
- V – comparative valuation of differences in work productivity between the best and average workers, who work on the same jobs;
- K – coefficient that characterizes effects of training (increased productivity expressed in product units);
- Z – training costs per employee.

Speaking of valuation of education in companies, G. Milosavljević points out that it is inseparable from two important dimensions:³⁶¹

- external – which primarily includes the country, business partners (who are also a complex category, a group with multiple and individual roles) and public which constitutes into publicity;
- internal dimension of education valuation can also be perceived as valuation of prescribed education, which is education required for job positions and operations of an organization, and specific, special education necessary for development and perspective of an organization.

Educational process is successful if it results in increased competencies of human resources necessary for successful performance of work duties. Its result would be increased economic effects of work.

Success of educational process can be measured in different ways and with application of different methods, which are:³⁶²

- 1) comparative valorization method ;
- 2) subjective assessment method;
- 3) experimental valorization method and
- 4) successive valorization method.

The comparative method refers to monitoring the human resource competencies and its increase after completion of educational activities. The experimental method refers to determination of quality in educational process within an experimental group of participants. The successive method includes monitoring of participants' knowledge at certain time. The subjective assessment method refers to assessment of quality and quantity of gained knowledge and competencies by competent company subjects (management).

³⁶¹ Milosavljević G.: Organizacija treninga, Službeni glasnik, Beograd, 1997, str. 204.

³⁶² Petrović M.: Menadžment – savremeni principi i funkcije, FON-CIRK, Beograd, 1994, str. 186.

CONCLUSION

Our current economic environment expresses a need for adequate training of human resource and investments into their development. Ultimately, one type of indicator of actual re-orientation towards people in managerial and business policies and strategies are deep and radical changes not just in management style, but also in organizational structures. They are fully dependant and adjusted to the dimensions of a person and its creativity in all business spheres.

Organization represents a framework, i.e. an environment where human resources accomplish not just the goals of organization, but also their own goals. Organization itself has to create necessary conditions for continuous development of all factors of human resource work success, without insisting on, nor undermining any of them individually. Only such organization can become a favorable environment for supreme business results, achieving full efficiency and effectiveness.

REFERENCES

- A.B. Temu, D. Okali and B. Bishaw (2006): Forestry Education, Training and Professional Development in Africa. *International Forestry Review* 8(1):118-125. published by Commonwealth Forestry Association.
- Filipović D. (1995): *Razvoj i obrazovanje*, Zenit, Beograd.
- Grandić R (2000): *Pedagogija*, Filozofski fakultet, Novi Sad.
- Jurina M., Pastuović N. (1972): *Ispitivanje potreba za obrazovanjem u radnoj organizaciji*, Andragoški centar, Zagreb.
- Kibanova A. (2000): *Upravljenje personalom organizaciji*, M.: Infra, Moskva.
- Novićević R. (2008): *Upravljanje radnom uspješnošću*, NIG-ad, Pobjeda, Podgorica.
- Milosavljević G. (1997): *Organizacija treninga*, Službeni glasnik, Beograd.
- Petrović M. (1994): *Menadžment – savremeni principi i funkcije*, FON-CIRK, Beograd.
- Torrington D., Hall L., Taylor S. (2004): *Menadžment ljudskih resursa*, Data Status, Beograd.
- Vujić D. (1998): *Znanje – Put ka uspjehu*, časopis “Zaštita” broj 444, Novinsko izdavačko preduzeće, Beograd.

Rajko NOVIĆEVIĆ, Špiro MIJOVIĆ

OBRAZOVANJE, USAVRŠAVANJE I TRENING U PREDUZEĆU

SAŽETAK

Klasična poljoprivredna i šumarska nauka postavljena je na ekološkim, biološkim i ekonomskim osnovama. Uloga socijalnih, kulturnih i ekoloških aspekata poljoprivrede i šumarstva raste. Ovo zahtijeva da agronomi i stručnjaci šumarske struke razmišljaju i van uskostručnih okvira ("think outside the box"), učeći pri tom da se bave pitanjima poljoprivrede i šumarstva van okvira seoskih područja i šume kao resursa. To je izazov koji tek treba da bude u potpunosti integrisan u obrazovanju poljoprivredne i šumarske struke.

U današnjem vremenu integracije socio-ekonomskih sistema, liberalizacije društveno-ekonomskih procesa i rasta populacije na planeti značaj razvoja agrarnog i ruralnog sistema i racionalnog korištenja resursa, prije svega agro-ekoloških i hidropotencijala, počiva prije svega na dobro obrazovanim kadrovima, sa odgovarajućim znanjima, vještinama i kompetencijama. Znanje i intelektualni kapital su uslov strateškog razvoja konkurentne poljoprivredno-prehrambene industrije i kompanija koje posluju u ovoj oblasti. Razvijeni intelektualni kapital omogućava da preduzeća obezbijede veću dodatnu vrednost proizvodima i uslugama i da na taj način budu konkurentne na tržištu.

Osposobljavanjem, usavršavanjem i treningom ljudskih resursa preduzeće može obezbijediti najpotpuniju usklađenost strukture ljudskih resursa sa organizacionom strukturom uzimanjem u obzir čitavog spektra zahtjeva izraženih od strane ovih poslednjih u vezi kvaliteta i kvalifikovanosti radne snage.

Tržišna ekonomija po svojoj biti i suštini nameće brojne funkcije i obaveze preduzeća u vezi organizacije obrazovanja i obučavanja. Kroz sistem pripreme, usavršavanja, prekvalifikacije i treninga ljudskih resursa, preduzeće, u uslovima tržišta, s jedne strane, mora brzo reagovati na promjene potreba proizvodnje za radnom snagom, a s druge, da ostavi zaposlenima mogućnost obučavanja i obrazovanja u skladu sa njihovim ličnim ambicijama, željama i interesima. Otuda i proističe potreba za fleksibilnošću sistema obrazovanja, osposobljavanja i usavršavanja ljudskih resursa, za njegovom sposobnošću brze promjene sadržaja, metoda, organizacionih formi u skladu sa potrebama proizvodnje i situacijom na tržištu rada.

Ključne riječi: preduzeće, ljudski resursi, obrazovne potrebe, trening