

Lifelong learning and the need of designing and implementing an educational subsystem in Macedonian companies

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Abstract

The education of the employees in each instance of company comes with the purpose to gain competences and experience in order to realize every business process in accordance with the requests of the products/ services, legal obligation and competitiveness criteria, as well as with the appointing of the employees requests, and all that with the intention to achieve quality where it is necessary to involve everyone in their own field.

In this paper the following inputs are being given in order to get a clear picture if Macedonian companies are keen on to learning and stimulating the individual and collective learning as to improve the results in general.

According to the given results in the research, it is stated that Macedonian companies do not care about the quality, insufficiently pay attention to the continuous education, make small investments in the innovations and over all, the quality system is built in a very small number of companies.

In this paper the following model for a successful designing and implementing of the educational system as a subsystem of the house of quality is suggested. This methodology is integral and universal meaning it is applicable to all companies and institutions.

Without a given training about TQM (Total Quality Management) philosophy and a continued education provided firstly to the managers and further on to all the employees, the TQM strategy could not be implemented as well as the benefits that come with the quality system.

All the above is imposing a stronger systematic effort where the bases lay in: strong leadership (new style of the top management, realistically grounded market vision, politics and strategy and systematic orientation and business moral that will gain back the confidence between the management and the employees), staff participation (efficiency and

cooperativeness in the teamwork that will not stifle the creativity and the individualism).

Keywords: TQM strategy, educational subsystem, methodology, leadership, quality system.

1. Introduction

One of the fundamental issues of the modern management lays in the operative running of the organization on one hand and in the advancement of its performances on the other. All of this comes as a result of the managing activities which are influencing the adjustment's preventions and the activities that are performed for improvement and innovations are heading towards creating changes.

In order to keep the self-maintenance, through constant improvement on the road that leads from the chaos to flawlessness, the organization itself is establishing a dynamic relation between:

- *management dictation* that is based on the strong need to realize the purposes of perfection;
- *active learning with a manual for action undertaking and*
- *improvement and innovation processes* for using the Deming's cycle (P-D-C-A).

2. Education – one of the polls in the house of quality

New management system that is based on the TQM [1] strategy requests quite less money and time and it could have same or larger effects than the huge equipment investments. The solution lays in the updating of the management system through new strategy and development of staff and upgrade of the processes far before the purchase of the new technology, especially IT.

According to Juran [2], when an organization is experiencing crises and falls behind the competition, or when it is foreseen that some influence will arouse from any of those factors, the first step is to undertake a leaping adjustments or breakouts. **Leaping adjustments** according to Juran represent a fundamental adjustment of the organization performances, with a visible discontinuance regarding the current condition; **breakthrough** refers to the radical change, dynamic and decisive movement towards higher level to a better performances.

As long as the organization is not capable to educate and learn, the improvements steps cannot be taken such as beginning with the usage of the knowledge of the others, or through the learning from own experiences, participation of every employee etc.

According to Juran, each change that is actually a leaping improvement regarding the current condition and the breakthrough to something new is a taboo or even forbidden in every static enterprise. The price of its stativity is paid by many generations afterwards. The already known illustration of this attitude is the letter of Madame Pamapdour sent to Luis XV with the saying: "After us, the Deluge".

The leaping improvement and breakthrough is aiming to bring the organization in a position from a condition of not being able to learn to a one being capable to get educated, and all of this done in a very short period of time, therefore to become an organization with a capability to learn; meaning from being in a position incapable to accept the existing adjustments going to a one that is being prepared to undertake such steps. In order to accomplish those adjustments there is an inevitable necessity to establish a learning process including a new external mental model.

The learning process that has been considered by many authors such as Kolb, Piaget, Lewin and Nonaka is defined as: *Never-ending and constantly repeated process between the opinion and action, where the knowledge is being created through transformation of experiences*", given in McHenry's and Husvik's paper [3].

Learning process itself according to the European model for flawlessness [4] represents a process of gaining and understanding information that could lead to improvements, innovations and changes. As a good example for educating is the conducting the benchmarking strategy, internal and external grading and check up, analyses of the best ones in the branch etc. As a good example of the learning process for individual activities include training and professional qualifications that are contributing within the adjustment of the mental model.

Mental model is actually a cluster of knowledge, experience, skills and behaviors that could not be formalized uniformly; they actually represent an ability for each individual and ability of every organization getting a response to the unknown changes. There is an individual and mental organization model. The mental one is actually a world's overview including its explicit and implicit comprehension, according Chaalam [5].

Knowledge is a part of the system consisted of data, information and the knowledge itself. The data itself represent a raw material, but the information is data with a context (explanations and comments) and a perspective (base for corrective and preventive measures). Knowledge is information with an action manual.

If a certain organization is not exposed to learning novelties is not practically able to create opportunity to provide skills, or to be part of a systematic learning from others and incapable to perceive the unknown changes that are constantly arousing within or around it. Such type of organization does not

present experience to act upon future decisions and therefore its managing performances are worsening constantly as well.

When an organization gets exposed to learning, it is getting capable to create knowledge through a systematic learning from other instances and perceive the unknown changes within and around and is actually capable to gain an experience that will lead to improvement of their future managing decision and work performances.

Adjustment within the organization refers to changing of the state meaning changing into a condition capable to provide educating in order to handle the current foreseen crises.

Leaping improvements need to be defined as a strategy model and must be solidly structured within the adjustment programme that is being conducted from the highest management. This programme should present power and strength that will pull the organization towards new and higher performances.

The learning model using the mental model is consisted of a four staged cycle. This mental model influences the process of thinking and action, according to McHenry and Husvik [3]. The existing experience is a base for establishing a concise concept for solving the upcoming and unknown situation and a base for ability to generalize the yield from the existing knowledge and experience, as well as the outer mental model. Right after, the implementation examination is done over the established concept of the new situation. The positive experiences are integrated into a new, actual experience that represents a higher level before repeatedly new and unknown situation, therefore the learning process is constantly repeated.

Apart from the already known approach for a constant improvement that is being used within the Japanese, American and European flawlessness model. **Macedonian institutions** on the other hand, that do not express capability to learn and are falling behind in a technological level, style and management, innovations and quality of the product/ service, business performance and the employees' well behavior need to act on with a new approach for improvement that would include a combination of the following:

- leaping improvement and breakthrough towards new performances;
- conducting of learning process - qualifying for learning (meaning learning how to learn);
- improvement by the learning from own experiences and usage of the knowledge of the others;
- innovative leaps.

The problem with our mentality is that all of us persistently and irrationally defy the outer mental model instead of analyzing and conduct them wisely. And *when accepting a new mental model without detailed analysis*, we easily and

imprudently give up from the traditional model. Our basic problem is how to join out traditional values with the civilization values and the current trendy western values that rule around the world.

Ages and ages before we live in a place that is being bordered with the global cultures, religions and civilizations. Many conquerors have brought with themselves own mental model (through religion, culture, standards, etc) as their conquering models. Therefore we have created a defending mechanism towards the foreign values as well as towards each novelty of such type, fearing not to lose our own identity. All of this leads to isolation and creating an illusion for self-righteousness. Thus, there is a resistance towards learning, changes and with that accidental resistance to success which could be achieved only through knowledge and changes.

TQM strategy was a great opportunity for the Japanese to join their new mental model, carrying a western world values with their traditional mental model, based on their traditional eastern culture. Results that have been accomplished only by those fellow-citizens which live and work abroad are showing that they have successfully joined their great talent and the individual mental potential with the world's methods and techniques, which also leads us to the fact about our existing, huge and unused potential.

Improvement in the learning process [4] could be implemented in an organization where the capability to learn from own experiences and usage of knowledge, as well as learning from the experiences of the others, in the quest of an answer of the relentless internal and external changes.

Within an organization the simulative behavior where each employee will be involved in the improvement process is essential. Besides that, it is necessary to find mechanisms for enclosure of the existing and the potential buyers in the improvement process. Another essential factor that leads to improvement is the continuation. In order to accomplish the improvements easily, it is necessary to organize every phase in the P-D-C-A cycle impeccably.

3. Materials and Methods

The research has been done in a form of attempt to face the current condition within Macedonian companies in the domain of designing and implementation an educational subsystem [6]. A special attention is given to the collecting of the entering data included in the research. As an instrument there was a questionnaire used that was designed to give an accurate analysis in a manner of entire and correct fulfilling. At the same time there were some direct contact made with the top management and the employees, in order to depict the authenticity of the questionnaire and to present the realistic condition of the companies.

The data received from the research are processed with adequate mathematical-statistical methods. Pareto analysis was used for frequency as well as for analysis in order to calculate the involvement of certain answers in percentages. The structure of the examined companies (151) – the participants in the research according to the economic activity that it belongs to (National qualification of activities –NKD Rev. 2 –“Official Gazette of R. of Macedonia” no. 147, 26th of November 2008) is given in a fig. 1.

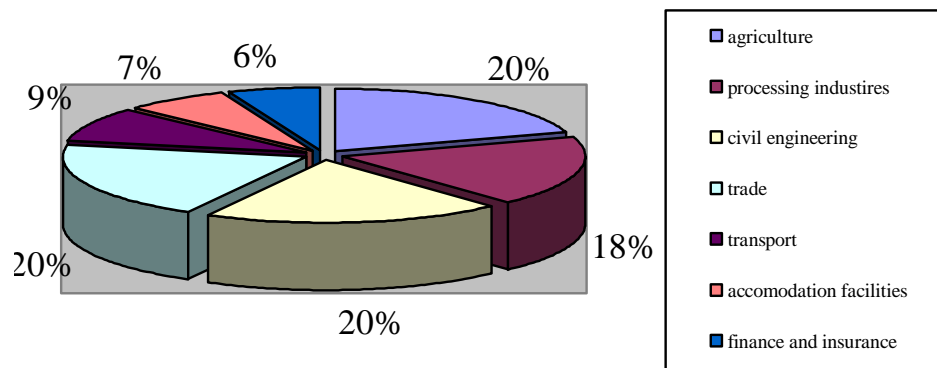


Fig.1: Companies' participation divided according to their economic activities

4. Results and discussion

Are Macedonian companies exposed to learning?

The educating process in the organization is a consisting part of the TQM strategy because if new techniques and methods are not being learnt, there is no a possibility for advancement and development. The knowledge is strengthening the competitive advance of the companies. The most important role to the top management is to give what is needed in order to be prepared to learn and transfer this necessity to the employees.

In order to get a clear picture if Macedonian companies [6] are keen on to learning and stimulating the individual and collective learning as to improve the results in general, there have been few questions raised: *Do these companies practice to hold trainings at the workplace and trainings for gaining additional competences?*

147 companies have replied of the first part of the giving the following results:

- 64,6% of the examined have answered that they *practice training at the workplace sometimes*;
- 33,3% of them attend a *planned, organized and well-accomplished training*;
- 2,4% of them *never practice trainings*.

According to the researches it is presented that the most of the trainings are being performed by the companies themselves, in order to enable a further qualification or prequalification of the employees.

The necessity to rise up a qualification level of the employees is particularly important in concordance with the investment within the modern technology. Our experiences so far indicate of the necessity of a continuous training of every employee and especially regarding the programmes in accordance with the demands of EU.

The question whether the company holds regular trainings in order to attain an additional competences is raised aiming to examine the awareness of the top management regarding the need for a continuous professional improvement and development of the employees in the era where knowledge and the continuous improvement of the employees is an imperative for the competitiveness and further development.

As of the examination here is the data:

- 56,3% of the examined attend a training in order to gain an additional education but *only if needed*;
- 26,5% of them *do not practice trainings*;
- 13,9% attend a *training once a year*;
- 3,3% Of them has been attending training *twice a year* which is the annual minimum for a professional promoting.

The fact that 26,5% of the examined companies do not practice training in order to gain additional competences is quite concerning. Lifelong learning is a condition for a survival of the modern business [6]. Those realistic indicators indicate that the lack of training on regular bases in order to gain additional competences is one of the main reasons for being not competitive with our products on the global market.

Considering the fact that if the existing competences are not being updated they can become old in less than 5 years [6], therefore the question whether the employees are competent (in about 40 organizations) if they do not practice further education, that need to fulfill the needs of the modern management work performance. If regular training for additional competences is being analyzed within the economical branches here is the outcome:

- the following sectors come out with a better condition such as: finance and trading where the trainings are done twice a year. Here the changes in the legal regulative and the market are imposing a necessity of continuous improvement and development of the employees competence;
- regarding the improvement of knowledge the worst condition has the civil engineering, processing industry, agriculture, and transport and supplying.

If we divide the examined economical subject into two groups (private or public sector) here are the results:

- the public sector has 4% of the examined companies, meaning 6 where 100% of the capital is in a public ownership and
- 96% are from the public sector.

The examinations done in the public sector regarding the need of gaining additional competences have shown that (83, 3%) of the examined public enterprises do not practice trainings.

They still have a monopolistic position on the market, where a certain excuse for the minor significance of the necessity for innovation and constant improvement of the employees still exists (*but the awareness for the significance of the innovations and the constant improvement of the competences with the managers doesn't*). *Macedonian companies still haven't comprehended the necessity of knowledge promoting as a source of competitiveness, condition for survival at the market and initiative power for a further development.*

Within Macedonian companies that are not qualified to perform further education and which are falling behind regarding the technological level, management style, innovation and product quality/ service and business culture of the employees ***need to take seriously into consideration to implement an education for a further improvement of the quality.***

The incompetent education of the top management is one of the issues that Macedonian companies are facing nowadays. Nowadays there are top managers that have been educated according the previous system and they cannot accept the changes that inevitably are happening at present. The companies are visionless about the future and can hardly adapt to the needs of buyers/ consumers. If the managers get a vision where the global economy is moving, as well as what exactly is the thing that the buyers are looking for from the product, it is certain that the solution lays into the survival of Macedonian companies.

The training of the top management prepared in a world example [7, 8] as well as gaining of additional competences for a proactive achievement will seriously influence the successfulness of Macedonian companies. ***As of the analyses of Macedonian companies regarding their efficient cooperation with the scientific-research, university and other type of education institutions within recent years, the following outcomes appear:***

Our research has shown a weak cooperation and linkage between the companies and the scientific institutions that indicates to the fact that those companies are not enough informed regarding the possibilities that are being offered by this institutions, or indifference for a scientific approach or work performance.

All of the abovementioned is a consequence of an insufficient instruction of the services that are offered by this organizations and programmes.

The fact that our analyses regarding the issues of presence of the management in the hierarchy in the organization appears as 3.5% that indicates

that a great number of enterprises manages with a single one manager - owner and the rest of the staff are just employees, is indisputable. Therefore, because of the weak quantity of the management the managers are dealing with shortage of time or they develop a single interest regarding a cooperation that would lead them to instant results. In other words, the degree of development the companies are actually appearing at is vocational level or better to say to a level of craftsmen - meaning far behind the professional.

Countries that are into a process of a slow transition such as ours, the domestic brainpower, knowledge, learning investments, experience, competencies and especially the technical and technological occupations are reaching quite a low level. The responds to all this adjustments within these types of companionship are expected abroad, from the foreign investments.

In the search of an active national strategy in order to overcome the crises, many questions are imposed; whether the country's economical development is enough for the country to be released from the past, or is it also necessary to create a new breakthrough towards a higher aims, performances and values, all at the same time. Simultaneously, there should be a chance given to the domestic education of the diligent, young and creative population in the country and abroad as well, to allow a technological development etc.

According to the given results in the research [6], it is stated that Macedonian companies do not care about the quality, insufficiently pay attention to the continuous education, make small investments in the innovations and over all, the quality system is built in a very small number of companies.

In this paper the following model for a successful designing and implementing of the educational system as a subsystem of the house of quality is suggested [6]. This model should be universal and applicable to all institutions.

5. Methodology for designing an educational subsystem as a poll from the house of quality

Application of the integral methodology for designing and implementing of the TQM system has to start with the education and therefore a good educational subsystem in the learning institutions should be prepared. It should be done in a way to be easy to learn and adjust to the changes and the knowledge should be used for a personal development and designing as well.

Complex knowledge of the system according to TQM should be expanded from the top person of the company - general manager - and up to each employee with a different volume and substantiality for different functions of the company's work.

Educational process planning is a task that stands for the top management that bears the responsibility to establish a department for education. This service should prepare plans and programs of different level in order to provide quality, concordance with the functions and tasks done by the companies, using the methodology and applications of the Deming's Quality Circle.

Staff education within the whole institutional structure comes with the purpose for them to gain skills and experience to accomplish business processes in accordance with the products' demands, services, legal obligations and criteria for suitability and appointing of the employees, because the quality requests involvement of everyone to its own job responsibility.

5.1. Organization and function of the service for educational quality

This service within its organization and working methodology needs to fulfill the following obligations:

- identifying of the educational needs of the employees according their position, task content and the organ of the quality management functions;
- cooperation with experts and scientists;
- building and alleging of the educational programme;
- alleging, checking and realization of the educational concept;
- designing and application of the motivation activities in the quality educational system within the company;
- constant improvement of the skills development system of the employees as a precondition of the quality system.

The service for education is preparing different programmes – aimed for different quality management levels, differentiated according the basic levels of the organizational structure.

The education according the organizational structure is referring to:

1. management of the strategy;
2. tactical and/or operative management;
3. employees.

The training according the organizational structure includes realization of the following steps:

Step 1: Education of the strategy management

Education of the strategy management is performed by the school for quality and the creative quality workshops, where the staff will attain:

- fundamental introduction of the philosophy top management, elements, roles, meaning, functioning and assets of the total quality management system;

- interpretation of the quality circle and the TQM philosophy, introduction of the quality circle in certain function within the institution;
- education for the quality methods and techniques in all institution functions;
- education for optimization of business processes.

Step 2: Education of the tactical and/or operative management for quality improvement

Forms of management education of such level are the schools and workshops for quality training.

The programme refers to a detailed elaboration of problems and quality control management. Besides the introduction with the TQM philosophy, methodology and experience, the managers ought to acquire knowledge for:

- **quality circle and its application** to all institutional functions;
- **quality control management** within the whole company;
- **implying, promotion and education quality control**;
- **more detailed analyzing and development of the relation between the quality control and the confidentiality**;
- **application of the statistical methods and control techniques.**

Step 3: Education of the employees from certain sectors (services/ departments).

The content of this programme is designed to provide skills on: the gist and the TQM philosophy, methodology of the quality system, and especially attaining operational skills for comprehension of the quality system.

As through the quality workshops the employees would get the following training:

- training for realization of the *business processes*;
- *training for applying of the quality methods and techniques*;
- *training at the work place – meaning an insisting of the training until the employee gets the results within the frame of the statistical process control*;
- *training defined with legal regulations*;
- *in case of introduction of new product/ service, technology or methods of working, the full training programme is necessary for all of the employees*;
- *gaining an additional skills in order to make the people feel safe for their work positions in future, and gaining new skills that will be useful to maintain their current positions*;
- *stimulation towards everyone for additional training as well as being a good example to the others.*

Besides that the employees need to be skilled and motivated to learn from others in order to allow an improvement of the personal skills and competences.

5.2. Duration of the educational process

The duration of the educational process has to be done through applying of the quality circle and could be described as a block diagram.

Company management has an obligation to provide all the conditions for successful realization of the education programmes which by itself requires a detailed analysis and providing a most suitable answers for : what, who, whom, when, where and how in the company's hierarchy needs to attain necessary competences for providing quality.

Within the *planning phase* of the education process, the following steps need to be done:

(Plan) 1: Plan for staff education

- education service prepares a plan for staff training.

Step 2: Selection of teachers (experts, specialists) within the company or externals in order to realize the training

The external education could be realized under mentorship of external experts and especially regarding the TQM philosophy which thought specialized programmes, seminars and trainings would transfer the experience coming from the developed countries.

Internal education is done through workshops with 5-15 employees, under mentorship of an expert who is aware and well-informed on the issues and the causes of problems, weaknesses, mistakes etc, and therefore certain improvement measures such as measures for preventive functioning.

Step 3: Selection of participants in the training employed in different company sectors

The selection of participants is done according a special questionnaire and testing. The defining of questions, analysis of the results and the selection itself should be done by competent professionals and institutions.

(Do) Step 4: Realization of the education

The realization of the training has to be done in the company premises, with well-provided working conditions and using assisted teaching and surveillance tools.

The quality of knowledge and education transfer of the participants will be dependent on the trainers' skills and capabilities, the participants' interests, available written materials, surveillance means etc, but mostly from the interaction between the trainers and the participants.

Significant factors for quality providing within the educational process are: *working conditions, motivation, and permanence in the work performance and responsibility.*

(Check) Step 5: Competence checkup

The competence checkup is a consistent element of the education process quality as well as part of the participants training and their active participation.

This is done by:

- *questions, tests, discussions* - as the first part of the checkup, but same with
- *assigning tasks* - as a second part of the educational process.

Through the competence checkup we test:

- the trainers' successfulness;
- application of the educational programmes;
- participants' capacity.

Those results are used not only for the final evaluation of the seminar's efficiency, but for undertaking of adjustment measurements for further improvement of the educational process quality of the company.

(Act) Step 6: adjustment of the programme

The adjustment is very important of the education process. It is realized according the evaluation of the successfulness of the previous seminar.

The adjustments could refer to:

- *selection of trainers;*
- *programme content;*
- *motivation activities for attending of the training;*
- *conditions for programme performing etc.*

6. Instead of a conclusion

After determining the lapses, in order to achieve best education quality as planned, some adjustment measures are undertaken. **Therefore the second quality circle begins (Plan-Do-Check-Act). This style of work continues spirally towards permanent improvement in all functions of the work performance in the company.**

The implementation of this methodology in our institutions in not an easy task and could become a barrier that needs to be overcome without expectations that someone else will do it instead.

The continued education within the institutions would allow not only a simplified communication from the top to down and vice versa, but as well as:

- new awareness based on improved mutual understanding;
- competitiveness that is achieved through better changes and
- inclusion of staff into problem solutions, decision making and suggestions, improvements and innovations.

Besides that, the employees need to be capable and motivated to learn from others in order to achieve improvement of the personal skills and competences.

7. References

1. Sh. Shoji, (1997). *Evolution of Quality from Control to Breakthrough TQM*, Vol. 1, 41st EOQ Congress, Trondheim, Norway, pp.13-14.
2. J. M. Juran, (1974). *Quality control handbook*, London: McGraw-Hill,
3. J. E. H. McHenry, G. C. Husvik, (1997). *Continuous Improvement and Types of Learning in Organisations*, Vol.1, 41st EOQ Congress, Trondheim, Norway, pp. 103.
4. The EFQM, (1999). *Excellence Model Changes*, pp. 6-29.
5. V. V. Chaalam, (1987). *Adaptive Control Systems, Techniques Applications*, Marcel Dekker, Inc. New York, pp.65-70.
6. E. Mitreva, (2010). *Integral methodology for designing and implementing a TQM system within companies*, PhD Dissertation, Skopje.
7. B. Roca, (2002). *Menadžment trgovinskih preduzeća*, Univerzitet u Novom Sadu, Ekonomski fakultet u Subotici, pp. 37-301.
8. V. Vujić, (2004). *Menadžment ljudskog kapitala*, Sveučilište u Rijeci, Fakultet za turistički i hotelski menadžment Opatija, Rijeka, pg.35.
9. L. Edvinsson, (2003). *Korporacijska longituda: navigacija ekonomijom znanja*, Differo, Zagreb, str. 17.
10. K. Mertins, P. Hersing, J. Vorbeck, (2004). *Knowledge management*, Berlin, pp.5.
11. V. Chepurnoska, (2009). *Quality Management –Theory, Science and Practice*, Faculty of Metallurgy, Skopje, pp.120-137.
12. N. Živanović, (1996). *Obrazovanje – značajan element u konceptu totalnog upravljanja kvalitetom (TQM)*, *Total Quality Management*, 24 3-4
13. P. Drucker, (1995). *Post kapitalističko društvo*, Grmeč-Privredni pregled, Beograd, 1995, pg.10- 112, (9).
14. I. Adžes, (1994). *Upravljanje promenama; moć uzajamnog poštovanja i poverenja u privatnom i porodičnom životu, poslu i društvu*, 2. izdanje, Grmeč-Privredni pregled, Beograd; Adžes menadžment konsalting, Novi Sad, pg 7-9.
15. S. Drew, P. Smith, (1995). *The learning organization: "change proofing" and strategy*, *The Learning Organization*, Vol. 2, No. 1, 7
16. A. Mumford, (1996). *Creating a learning environment*, *Journal of Professional Human Resource Management*, Vol. 4, July, 27
17. P. Senge, (1990). *The Fifth Discipline*, Doubleday, Garden City, NY, pp. 37.
18. J. S. Oakland, (2003). *Total Quality Management*, Text with cases, 3rd Edition, Elsevier Butterworth-Heinemann, Oxford, Burlington, pp. 319.

19. H. S. Harung, (1996). *A world-leading learning organization: A case study of Tomra Systems, Oslo, Norway*. The Learning Organization: an International Journal, **Vol. 3**, No. 4, 22-34

