

# RELATIONSHIPS BETWEEN FACTORS AFFECTING THE TRANSFER OF VOCATIONAL SAFETY TRAINING IN THE WORKPLACE: THE CASE STUDY OF ALUMINIUM OF GREECE

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## ABSTRACT

*The purpose of this research is to present the process of the transfer of safety training in the company "Aluminium of Greece". It presents initial attempts to identify key factors affecting transfer of training and the correlation between these factors. The questionnaires were distributed in several related seminars and programs which involved 150 employees of this company. The returned completed 88 questionnaires were then analyzed. The findings show that employees place great importance on safety training. In our study, motivation for learning and transfer, the opportunity for implementation and personal ambition were associated with some and / or all factors examined (age, experience, level of education, etc.). Additionally, the researchers identified the need for evaluation of education not only immediately after its end, but overall evaluation especially some time after the training, in order to examine the value of the transfer of safety training as an investment.*

**Keywords:** *transferring training, workplace, safety, evaluation, motivation*

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## **1 INTRODUCTION**

Nowadays, the effects of the economic crisis are present in many areas of specialty. Consequently, a way to reduce costs in many fields is essential, without this resulting in lower quality of products and services. Staff training improves the work performance through cultivating knowledge, skills and attitudes of the trainees (Awoniyi et al., 2002). Businesses spend annually significant resources in training. Therefore, education and training are considered as investments. As such, they should provide a sufficient profit. It is necessary to access the skills which were developed during training and were eventually transferred to the workplace, in order to investigate the profit and the effectiveness of the provided education. The transfer of training and learning is a relatively new chapter in adult education. From 1988 to 2001 only 20 empirical studies were found in international literature. The researches have not documented the exact nature of the transferring process of training and learning. Thus, although several factors (internal motivation, attitude, business climate etc.) contribute to the transfer of learning, the correlation between these factors is unclear. The choice of the company “Aluminium of Greece” was made due to its known figures. It is one of the most productive factories of Greece and it employs large numbers of workers directly and indirectly. In a company of this size, safety in the workplace is a requirement and a tool for each employee.

The purpose of this research is to extend the investigation of the transferring knowledge and examine the factors which affect it. We intend to evaluate the training when the employee has returned to the workplace and not immediately after the end of the training sessions. The timing of the examination is the most significant aspect of our research, due to the fact that the issue of sustainability is the most vulnerable point of all educational methods, as knowledge and skills acquired during training programs are slowly declined by the trainees in most cases (Brinia, 2008).

## **2 LITERATURE REVIEW**

### **2.1 Evaluation of training in the workplace**

The current, rapidly changing conditions of labor lead the organizations in a constant search for competitive advantage (Kontoghiorghes, 2002). The organizations aim to achieve more, with fewer resources. However, companies are aware that without highly qualified, trusted and motivated workforce, their ability for competition and innovation will be drastically reduced.

Staff training, as a business practice, is internationally recognized as the most common strategy of Human Resource Management (HRM) in order to improve work performance (Awoniyi et al., 2002). Nikandrou et al. (2009) claim that the main goal of training is to provide, acquire and improve the necessary skills in order to help organizations achieve their goals and create a competitive advantage by adding value to the main source of their energy: employees. Whether the trainees are able to transfer and apply the skills they

learn on the job, should be one of the main purposes of any educational program (Nikandrou et al., 2009).

Transfer of training is the degree to which trainees effectively integrate the knowledge, skills and attitudes acquired during the training in their work (Baldwin and Ford, 1988). Furthermore, the obtained knowledge, skills and attitudes should be generalized in job content and preserved for some time in order to achieve the transfer of learning (Cascio, 1995). The generalization includes more than mere imitation. It requires the display of new behavior to different people, environments and situations outside of the controlled area of the educational environment (Ford and Weissbein, 1997). If people use what they learned, then the importance of skills, the development of possibilities and the time invested confirm the value of the training (Olsen, 1998). Organizations do not often evaluate the training results either because they are not measurable, or because education is not incorporated in the workplace. In previous studies, results showed that while the level of satisfaction of trainees in relation to the provided training is high, there is little evidence of the effects on connecting training to work and within organizations (Brinia, 2008). Therefore, despite the funds which are spent in order to educate the workforce, organizations do not make their employees responsible for their training.

Academic education is known for its excessive preoccupation with tests, grades and evaluation. However, in vocational education and training the postgraduate evaluation is inadequate. In a survey on 611 organizations in 1988, it was proven that only few conduct a large scale evaluation of educational programs while half of them do not carry any evaluation at all. The lack of evaluation can be perceived by participants as a sign of low-value education. Trainees know that they will not face postgraduate assessment of their learning and they will not take any responsibility for the application of new skills; this results in reduction of their incentives (Baldwin and Magjuka, 1991).

Without actionable and evaluable data for the provided education, instructors are unable to improve their programs and justify the choices of decision-makers (Pucel and Cerrito, 2001). Furthermore, when the results are measured, assessed and recorded there is higher attention by all stakeholders: employees, managers, consultants etc. According to Stiggins (1999), the criteria of the evaluator are numerous and their selection depends on the objectives of the training program, the goals of the organization and the policies of the funding body. Some of them are: structure, relevance, appropriateness, efficiency and effectiveness (Karalis, 2005).

## **2.2 Relationship between training effectiveness and transfer of learning**

Nowadays, managers and consultants recognize that the evaluation process provides stability and reliability in all aspects of work performance (Broad, 2005). After completion of the training, the organizations expect positive change in employees' behavior that will lead to the enhancement of the working environment (Awoniyi et al., 2002).

There are only few studies which link the effectiveness of training with the work performance. However, this link may be the key to the competitiveness of a business. A thorough analysis of training needs, development objectives and criteria should be conducted in order for the precision of the evaluation to be ensured. It should be noted that the investigation of the effectiveness of the training is not a one-dimensional process. There are at least three dimensions that should be taken into account: the content, the methods and the transfer of learning (Cascio, 1994).

Research has shown that from the skills acquired during the educational programs 40% are transferred directly to work, 25% are maintained for a period of six months and only 15% for one year (Nikandrou et al., 2009). Therefore, it seems that only a small amount of the funds about education and training are transformed into knowledge, skills and attitudes.

### **2.3 Theories on transferring training**

Theories related to transferring training, as they occur in the majority of the literature, are two. Both models focus on factors that relate directly to the content of education or its results. Consequently, the transfer of training is addressed in an isolated way, regardless of the factors that affect the job performance (Kontoghiorghes, 2002). The first model was formulated by Vroom in 1964, in which he argues that the trainees are motivated to attend training programs and they try to learn if they believe that: a) their effort will pay off by acquiring new pieces of knowledge presented in the program, b) attending the program and learning new skills will improve their working performance, c) the training will assist in achieving desired results and in avoiding unpleasant situations (Vroom and Deci, 1971)

The most common theory is the one developed by Baldwin and Ford (1988). In summary, there are three factors (trainees' characteristics, training design and business climate) which affect directly the educational outcome. However, via the education outcome, the same factors affect indirectly both the generalization and the maintenance of learning. They also argue that the acquired knowledge, skills and attitudes should be generalized to the content of work and preserved for a period of time to achieve the transfer of learning.

In an attempt to summarize the factors alleged to influence the transfer of training to work, the majority of researchers result in three major categories:

- i. Those involving the learner,
- ii. With regard to instructional design and
- iii. Related to the framework factors which affect the transfer, the training and the trainee (Nikandrou et al., 2009).

The following characteristics of the trainee affect the transfer of training: motivation to learn and transfer skills to work, opportunity to apply the new skills, personal career goals and ambition, perception about the fulfillment of career goals through education (useful in overall career) and about attainment of direct employment objectives (useful in daily work) and the commitment to the company (Nikandrou et al., 2009). Incentives for learning are affected by personal and labor factors. Personal factors relate to individual characteristics and

attitudes. Some individual characteristics are confidence, self-control, the need for success and open mind to new experiences. The working factors refer not only to the career utility, but may also refer specifically to the job utility (Kirwan, 2009).

The instructional design is divided in the design of the content and the teaching methods. The essential requirement for those who plan educational programs about transferring training is to concentrate on the transferring needs instead of the educational needs. This simply means providing postgraduate evaluations through work plans, counseling and teaching at work (Lim and Morris, 2006). According to the literature, to achieve successful transfer of learning in the workplace, the curriculum should be relevant to the job. However, the relevance is not enough. To enable the transfer, the learner should understand the relationship between education and practice. The study of Nikandrou et al. (2009) draws attention to factors such as the objective and the scope of the program, the methods, the techniques, the training grounds and equipment. Furthermore, it presents the characteristics of the trainer who should be reliable and efficient and also examines the program outline which should include theoretical and practical applications, which aim at acquiring knowledge and new skills.

According to Burke and Baldwin (1999), the business climate can play a crucial role in creating a context where trainees implement and maintain the skills they have acquired via education. Positive factors for a supportive business climate are: the support from colleagues, the support from superiors and the general support of the organization. Several studies presented the importance of peer support. It refers to the extent to which colleagues support and strengthen the application of the new pieces of knowledge in practice. The positive influence of mutual support and empowerment among the programs' participants help to avoid many of the potential problems / obstacles which arise during the transfer of learning (Kirwan, 2009). Support from the business involves issues of resources, workload, priorities, autonomy, creativity and deadlines. Nikandrou et al. (2009) add to these supporting factors the availability of the necessary equipment during training, the culture of the organization which focuses on work performance, the existence of internal and external rewards and the overall reputation of the company.

## **2.4 Safety at work**

The year 2009 was internationally dedicated to safety at work, which is a major issue for all stakeholders: employees, employers, state, European Union etc. Many measures to prevent / reduce occupational hazards have been proposed by different authorities. Some are: protection of engines, replacement of toxic substances, ventilation, personal protective equipment and training. Practice has proved that suitable equipment and detailed procedures should be provided to all workers, improving the safety consciousness and the daily experience (Brinia, 2008). The effort should be constant and it should contribute to the awareness of each party involved in safety issues. This is achieved mainly through the training and retraining of staff.

With this research we intend to evaluate the training when the employee has returned to his/her job for some time; not immediately after the end of the training sessions, but one year later. Brinia (2008) reports that there is the phenomenon of declining skills, meaning that the knowledge and skills acquired during a program, decrease over time. The issue of sustainability is the most vulnerable point of all educational methods.

### **3. Research Methodology**

#### **3.1 The purpose of the research**

Holton *et al.* (2003) identified that the transfer of learning differs among various organizations. Rouiller and Goldstein (1993) found that different transferring climate exists in every organization. Therefore, the researchers conclude that if there are such differences among organizations, the transfer of education should be differentiated and should vary according to the needs and policies of each organization (Saks and Belcourt, 2006).

This research focuses on the evaluation of safety training in the company “Aluminium of Greece” and detects possible correlations between variables that affect the transfer of learning to the workplace. Consequently, we present the main research question that will occupy us; are there any correlations between the factors which influence the transfer of safety training in the workplace?

#### **3.2 Data collection**

Our research took place about a year after the completion of certain training programs in order to determine whether there was actually transfer of learning and what factors affected it. Therefore it is an *ex post facto* research, meaning it was conducted retrospectively. One group was used for the data collection, without the selection of a control group (Campbell *et al.*, 1963; Creswell, 1994; Lim and Morris, 2006).

The attempted investigation, as *ex post facto*, has advantages and disadvantages. On the one hand, the direct control of independent variables is impossible and experimental groups cannot be defined while subjects cannot join groups with random sampling. As a result, there is the risk of erroneous interpretation of research findings, because the interpretation of the data is conducted retrospectively. However, an important advantage of the *ex post facto* research is that the questions which arise are usually not investigated by the experimental method due to the fact that variables are not controllable (Cohen and Manion, 2011).

and

### **3.3 Research tools**

The main research tool is the questionnaire. The collected data is divided into social and professional background of the participants. The variables are categorized into dependent and independent. The independent variables are those that the researcher can control and / or manipulate. In this research independent variables are the: age of participants, years of experience in specific post, overall experience, level of education, job description and employment field. Dependent are the variables which measure specific influence of the independent variables handled by the researcher. In our research, dependent variables are the views of trainees to apply new knowledge, attitudes and skills in the workplace.

The questionnaire contains closed questions. However, we provided space for recording participants' comments about something that may deem as necessary. The combination of open and closed questions is usually an advantage (Cohen and Manion, 2011). The possible answers ranged from "strongly disagree" to "strongly agree", as a common expression of the scale Likert (strongly disagree, disagree, neutral, agree, strongly agree).

The questionnaire was created after extensive research of the existing literature and it includes the main variables that affect the transfer of learning: trainee's characteristics, instructional design and business climate. The questions of the final questionnaire consists of appropriately modified previous researches' questions (Brinia, 2008; Seyler et al., 1998; Lim and Morris, 2006; Burke and Baldwin, 1999; Olsen, 1998; Nikandrou et al., 2009; Pucel and Cerrito, 2001; Awoniyi et al., 2002) and some new, which we developed and chose for the needs of the current research.

### **3.4 Validation methods and techniques**

The questionnaire, as a research tool, has many advantages. The questions are the same for all participants and the answers are not susceptible to different interpretations. It is also efficient regarding time and resources. An additional advantage is that the questionnaire ensures anonymity, which is important in researches conducted in the workplace. Furthermore, the questionnaire practically eliminates the possibility of bias and prejudice on the part of the interviewer (Willis, 2005). Finally, it is easier for the researchers to process the collected data, due to its structured format. However, the possibility of low participation is a weak point of the questionnaire. Our attempts to eliminate this possibility included conducting the questionnaires on the spot by managers or those responsible for the training.

### **3.5 The sample**

The company "Aluminium of Greece" was founded in 1960 in order to establish trade agreements about the extensive Greek bauxite deposits. The company employs directly 1100 people and about 400 employees of associated companies. The annual turnover is more than 2.054 billion euros, representing 1.7% of the Greek Gross Domestic Product (GDP).

During the period 2008-2009, approximately 150 employees were trained on safety in the workplace in related seminars and programs. 134 questionnaires were distributed and a total of 88 were returned. The return rate of the questionnaires is 65.67%, which can be considered as satisfactory for the purposes of this research, due to its localized character.

### 3.6 Validity and reliability

Validity and reliability are major issues in any scientific research. The tools which were used were designed in order to reduce the errors. The information we requested was known to the participants and it was safe to be revealed. Keeping in mind the above, we conducted a small-scale pilot study, with employees of the company who attended the seminars in 2007. These employees were not included in the final sample of the research. This pilot study helped the researchers in spotting any ambiguities and reviewing the recommendations according to the population / target of the research. The processing of the questionnaires was conducted using the Statistical Package for the Social Sciences (SPSS), which is among the most widely used programs for statistical analysis in social science. The processing and the analysis of the collected data included frequencies, means and descriptive variables.

To investigate possible correlations of the questionnaire's variables we used ordinal regression analysis with log - log link function and significance level 95%. It is worth noting that the potential correlations which are not mentioned were not found statistically significant. The results include the statistically important or marginally significant findings of the correlations, based on the questions and variables of the research.

In Table 1 there is a presentation of the investigated variables and the literature variables, divided in the tree parts in which they were examined (trainee's characteristics, instructional design and business climate). Furthermore, the questions which refer to the specific variable are listed.

**Table 1: Presentation of investigated and literature variables and related questions**

Investigated variables	Literature variables	Questions
	Trainee's characteristics	
	Motivation for learning	4, 7, 8
Age	Motivation for training transfer	13, 22-26
Relevant experience	Opportunity for application	12, 27-30
Overall experience	Personal career goals/ambition	1, 5, 11
Education level	Motivation in work	3, 9
	Devotion to the organization	2, 6



**Table 1: Presentation of investigated and literature variables and related questions (cont)**

<b>Investigated variables</b>	<b>Literature variables</b>	<b>Questions</b>
	Instructional design	
	Content of training	17-21
	Business climate	
	Colleagues' support	10, 16, 31-33
	Superiors' support	14-15, 34-38

## **4 RESULTS**

As it was presented in the literature review, the main variables which affect the transfer of learning are: trainee's characteristics, instructional design and business climate. We are going to report the results divided in these three factors.

### **4.1 Trainee's characteristics**

It is found that the characteristics of trainees which statistically correlated with the transfer of learning are: the motivation to learn and transfer the training, the opportunity for implementation of the new skills and the personal career goals. No correlations related to motivation in workplace and to dedication to the company were found. This can be justified, at some extend, if we suppose that the devotion to the company is granted and the training in heavy industry is mandatory.

#### **4.1.1 Motivation for learning**

For the statistical analysis regarding the motivation to learn, there was the following hypothesis: Motivation for learning is correlated with age, relevant experience, overall experience and level of education (1st hypothesis).

Regarding the motivation for learning, there are a low percentage of older people who answer "agree" in question 4. Looking at the significance, individuals with more relevant experience correlated with an increased percentage answering "strongly agree" in question 4, while there was a high percentage who answered "disagree" in question 7 and a low percentage answering "strongly agree" in question 8. Additionally, trainees with greater overall experience associated with a high percentage of answering "strongly agree" in question 4 and also high percentage answering "agree" in question 7. Finally, individuals with a higher level of education are correlated with a low percentage of answering "strongly disagree" in question 5 and an even smaller percentage to answer "strongly agree".

Therefore, the motivation for learning is correlated with all concerned factors (age, relevant experience, overall experience, level of education), sometimes positively and sometimes negatively, confirming the first hypothesis.

#### **4.1.2 Motivation for training transfer**

For the statistical analysis regarding the motivation for transferring of training, there was the following hypothesis: Motivation for transferring training is correlated with age, relevant experience, overall experience and level of education (2nd hypothesis).

Regarding the motivation for transferring of training, older people are associated with a low percentage answering “agree” in question 24. There is also a low percentage who answers “agree” in the 25th question, even less correlated with a low percentage answering “strongly agree” and an even lower percentage of responding “strongly disagree”. In addition, people with more relevant experience associated with an increased percentage answering “strongly agree” in the 26th question. People with greater overall experience correlated with a reduced percentage answering “agree” in the 24th question. Participants with a higher level of education are associated with a low percentage of responding “agree” in the 22nd question and correlated also with a reduced percentage answering “strongly agree” in question 23.

Therefore, it can be noted that motivation for transferring training correlated with each of the investigated factors either positively or negatively, confirming the second hypothesis.

#### **4.1.3 Opportunity for application**

For the statistical analysis regarding the opportunity for application of the new skills, there was the following hypothesis: Opportunity for application of the new knowledge, skills and attitudes is correlated with age, relevant experience, overall experience and level of education (3rd hypothesis).

There were multiple correlations between the investigated variables and the literature variables. There is about the same percentage of older people who answer “strongly disagree”, “disagree”, “agree” and “strongly agree” in the 12th question. Additionally, there is a high percentage answering “disagree” in question 28 and a low percentage answering “disagree” in the 29th question. Looking at the significance, individuals with more relevant experience associated with an increased percentage answering “strongly agree” in the 29th question. Additionally, individuals with greater overall experience correlated with an increased percentage of responding “disagree” in the 27th question, “agree” in the 28th question and “disagree” in question 30.

Many correlations were found in relation with the level of education. Individuals with a higher level of education are associated with approximately the same percentage of responding “strongly disagree”, “disagree” and “agree” in the 12th question. Additionally, they are associated with a low percentage of responding “strongly agree”, even lower of

answering “agree” in the question 27 and with a high percentage responding “strongly agree” to the 28th question. Looking at the significance, people with a higher level of education are correlated with approximately the same low percentage answering “agree” and “strongly agree” in the 29th question and finally there is a reduced percentage answering “agree” in the 30th question.

Therefore, the opportunity for application of the new knowledge, skills and attitudes is correlated with all investigated factors, sometimes reinforcing and sometimes daunting the transferring training, confirming the third hypothesis.

#### **4.1.4 Personal career goals / Ambition**

For the statistical analysis regarding the personal career goals / ambition, there was the following hypothesis: Personal career goals / ambition are correlated with age, relevant experience, overall experience and level of education (4th hypothesis).

With regard to personal career goals, older people are associated with a higher percentage answering “strongly disagree” in question 5, in relation to the percentage who would respond “strongly agree”. In addition, individuals with greater overall experience correlated with an increased percentage of responding “agree” to question 5 and a lower percentage answering “strongly agree”. Even people with a higher level of education are associated with a high percentage answering “strongly disagree” and “agree a little” in the 11th question. In this case, the relevant experience does not depend significantly on any of the declared independent variables of the model, so the model does not present a statistically significant relationship between the investigated variables and transfer of training.

Therefore, the fourth hypothesis is partially confirmed, due to the fact that most variables (except from relevant experience) are correlated with the transfer of training.

#### **4.1.5 Motivation in work**

For the statistical analysis regarding the motivation in work, there was the following hypothesis: Motivation in work is correlated with age, relevant experience, overall experience and level of education (5th hypothesis).

Regarding the variable motivation in work, no correlation was found based on age and level of education. Furthermore, the relevant and overall experience do not depend significantly on any of the declared independent variables of the model, so the model does not present a statistically significant correlation between the investigated variables and the training transfer. Therefore, the fifth hypothesis is rejected.

#### **4.1.6 Devotion to the organization**

For the statistical analysis regarding the devotion to the organization, there was the following hypothesis: Devotion to the organization is correlated with age, relevant experience, overall experience and level of education (6th hypothesis). Regarding the variable devotion to the organization, no correlation was found based on age, level of education, relevant and overall experience, so the model does not present a statistically significant relationship between the investigated variables and the training transfer. Therefore, the sixth hypothesis is rejected.

### **4.2 Instructional Design**

#### **4.2.1 Content of training**

For the statistical analysis regarding the content of training, there was the following hypothesis: Content of training is correlated with age, relevant experience, overall experience and level of education (7th hypothesis). There is a high percentage of older people who answer “disagree” in the 17th question while in question 19 a lower percentage answered “disagree” and even more answered “agree”. Moreover, people with more relevant experience correlated with a low percentage answering “disagree” in the 17th question and with a higher percentage responding “strongly agree” to question 18 and “disagree” to question 19. Furthermore, individuals with greater overall experience associated with a reduced percentage of responding “disagree” to the 17th question and with a high percentage answering “strongly agree” in the 18th question. Finally, individuals with a higher level of education answer “agree” in questions 18 and 19 with a high and low percentage respectively. Therefore, it can be noted that content of training correlated with each of the investigated factors either positively or negatively, confirming the seventh hypothesis.

### **4.3 Business climate**

#### **4.3.1 Colleagues’ support**

For the statistical analysis regarding the support of colleagues, there was the following hypothesis: Support from colleagues is correlated with age, relevant experience, overall experience and level of education (8th hypothesis).

Regarding support from colleagues, many correlations emerged from the analysis. A low percentage of older people answered “disagree” in question 10 and a higher percentage answered “strongly agree” in the 16th question, while approximately the same high percentage responded “disagree” and “strongly agree” in question 31. Those with greater experience associated with approximately the same increased percentage of responding “disagree” and “strongly agree” to the 31st question. Individuals with a higher level of education are associated with a low percentage of responding “disagree” in the 33rd question.

In this set of variables no correlations to the overall experience were found. Therefore, the eighth hypothesis is partially confirmed, due to the fact that most variables (except from overall experience) are correlated with the transfer of training.

### **4.3.2 Superiors' support**

For the statistical analysis regarding the support of superiors, there was the following hypothesis: Support from superiors is correlated with age, relevant experience, overall experience and level of education (9th hypothesis). Regarding support from superiors, older people associated with a high percentage responding "strongly agree" to question 10, "agree" and "strongly agree" to the 15th question and a lower percentage of responding "disagree". Individuals with more relevant experience correlated with a higher percentage and answered "agree" in the 36th question in relation to the percentage answering "strongly agree". Several correlations identified on overall experience. In particular, individuals with greater overall experience correlated with approximately the same low percentage answering "disagree" and "strongly agree" to the 14th question, with a higher percentage responding "strongly agree" to the 15th question and "disagree" to the 34th question. Finally, they were associated with a high percentage of responding "strongly agree" and an even higher percentage of them answered "agree" in the 36th question. Additionally, many correlations are identified with respect to the level of education. Individuals with a higher level of education are associated with a lower rate of responding "disagree" to the 15th question and the 35th question. However, they are associated with a high percentage of responding "disagree" to the 34th question and to the 37th question.

There were multiple correlations between the support of superiors and the examined factors. Therefore, the 9th hypothesis is correlated statistically with the transfer of training.

## **5 FINDINGS AND DISCUSSIONS**

### **5.1 Findings**

The investigation outlined the procedures for the transfer of training in this company. The trainees pay great attention to safety training. Their safety is directly related to the safety of the working environment and the welfare of everyone with the same attentiveness to one's self and to the trainee's colleagues. Employees with less working experience value highly the viewpoint of the more experienced colleagues and those whose educational level is low take more into consideration the opinion of their colleagues with higher education. The younger employees are more willing to learn and expect that training will contribute to their professional advancement. Older trainees express strong opposition to the chance of receiving some kind of recognition or reward. This may mean that they have realized that there is no other reward than the professional advancement and the improvement of their safety conditions.

Trainees with more relevant and overall experience believe that even if they apply everything that they learned during the training, there are always risky conditions and something may go wrong.

With regard to motivation from work, there is no strong correlation. This may be caused by the content of the training, as safety is intertwined with the working object and contained therein. It could also be implied that trainees do not need any further motivation other than the improvement of their safety. The results about devotion to the organization are the same (no correlations were found), maybe because it was taken for granted for many of the participants.

## **5.2 Limitations**

The return rate of the questionnaires is approximately 66%. This indicates that special attention should be paid for anyone who will attempt to generalize the results to larger populations. Additionally, despite the provided assurances on privacy and anonymity, there is a chance that the given answers were in line with the company's policy and practices, in order for the superiors to be pleased. The people of the company distributed the questionnaires and showed constant interest in proper conduction of the research from the initial proposal until the completion of our effort. However, it is understood that an external partner investigates to the extent that is permitted.

## **5.3 Application of the research**

When designing and implementing a training program, the needs and policies of the trainees' working environment should not be overlooked. Moreover, the need to evaluate the results of the training is essential. The most crucial part of the evaluation is that it should not only occur after the completion of the training, but after some period of time, too, in order to examine if there is any transfer of the training in the workplace. This indicator will help the managers to examine if the acquired knowledge and skills are an investment or not. If employees use constantly what they learn, then the importance of the new skills, the continuous effort for staff development and the time required for training are of the highest business value. The knowledge, skills and attitudes which are learned, maintained and eventually transferred back into the workplace should be the ultimate purpose of any training program.

The training should be enhanced with many methods like role-playing or the project method in order for the learning process to be enriched with images and action. Modern educational methods are student-centered rather than teacher-centered resulting in better and easier application of the new skills and knowledge (Brinia, 2008). Furthermore, it is obvious that safety training is a necessity in every working environment and especially in the workplace of heavy industry. Additionally, the creation of a database (electronic or book library) may be useful for anyone who is interested to re-access and remember the information related to what was taught during the training.

## 5.4 Questions and need for further research

Future researches may examine the effect of additional trainees' characteristics in the design of training, as well as additional factors of the business climate. For a more detailed insight, the opinion of the trainees should be collected before and immediately after the training, while there should also be an evaluation of the training regarding what was finally transferred in the workplace after some period of time. Obtaining and evaluating such data could provide very useful results for the design of new training programs. However, researches should also be conducted in other factories and in larger samples, in order to obtain a reliable generalization of the results.

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