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# The importance of training programs in the improvement of the performance of employees in the petroleum companies

- Case of Sonatrach Company - The Regional Directorate of BERKAOUI (Ouargla- Algeria) -

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## Abstract:

The training of the workers in the enterprises allows the development in the skills and knowledge of the employees. As the other Enterprises, the training programs in the petroleum companies got a great importance, which became more cleared through this study.

Through the case study on Sonatrach subsidiary employees, and based on self-questionnaire our paper aims to analyze the training programs contribution in the improvement of the unit productivity level, and on the upgrading of the profitability and efficiency of the workers. Nevertheless, the importance of the training contribution appears undoubtedly in minimizing the lost days caused by the work accidents, which is a huge costs organization must cover Although the luck in decreasing in the rates of this accidents.

**Keywords:** Training, Employees, Performance, Berkaoui basin, Work Accidents.

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## I. INTRODUCTION

Any enterprise could not seek to reach a certain goals of dispensing without interesting of human resources, which is considered the main engine for any economic entity by virtue of their relationship to extend to all sections of the other components of the enterprise. Therefore, our study try to involve by investigating with self-questionnaire the training programs contribution in the improvement of the unit productivity level, and on the upgrading of the profitability and efficiency of the workers on a sample of petroleum company workers in Algeria.

According to (Abdul hakim et al., 2012) the human capital theory predicts that workers tend to invest in job training and are expected to work longer. Correspondingly, high performance working system practices on job satisfaction contribute directly to the organization performance. Our discussed paper provides the impetus to examine the relationship between training programs and their impacts on the company performance in Algerian Oil Sector.

Therefore, this paper gives an importance research to the literature witch concern one of the important issue under the human resource management and especially for the Oil companies' workers in Algeria. Consequently, we will analyse our paper in three (03) main sections. The first one will discuss the literature review and theory concepts leads to the subject. The second section, will show the research methods and technics tools. The third section will represent the main attained results.

## II. LITERATURE REVIEW AND THEORITICAL BACKGROUND

As mentioned by (Anyim.E, 2015) the Human Resource practices work to develop individual knowledge and skills, as well as employee attitudes and behaviors. If these effects are prevalent enough in the employee population, then the collective changes in human capital, attitudes, behaviors, and associated organizational climate, should be strong enough to influence organizational performance (Bowen and Ostroff, 2004; Kozlowski and Klein, 2000; Ostroff and Bowen, 2000).

Basically, the HR management can be defined as: "The process of analyzing and managing an organization's human resource needs to ensure satisfaction of its strategic objectives". Also defined as: "The policies and practices involved in carrying out the "people" or human resources aspects of a management position, including recruitment, screening, training and appraising". (Shapiro.J, 2013, Al-said.M, 2010).

Depending on the main functions of HR department, the training programs derived as most important function beyond the others under two principal functions: Designing the motivation systems, the assessment of the performance (Blkheri.M, 2006).

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## II.1 Training & company performance

Training and development practices constitute one of the most important ways to assist personnel in gaining new knowledge and skills required to adhere to competitive standards. Studies have suggested that human resource practices such as extensive training would create a sense of organizational support. Providing career development opportunities via training and development of employees is increasingly recognized as an important aspect of best human resource management practices (Abdul hakim et al., 2012).

Through a various reference, the training may defined in multiples ways as it mentioned with (Degraft & Eric, 2012): "Training is learning experience, in that, it seeks a relatively permanent change in an individual that will improve his ability to perform on the job". Also, from the point of view of (David King) the training is the process by which gets the adaptation of individuals so that they can learn effectively (Amine.S, 1999).

In Brief, through all those definitions we can resume the following points:

- Training is the process of improving the knowledge and the skills of the employees for the completion of a work.
- Training: is a set of activities designed to raise the standard of the skills and expertise of staff members in order to improve their performance.
- Training is a learning process to acquire the concepts and new rules to improve the performance of the individual.

Beyond the concept definition of training, we can distinguish three (03) types that can be summarized in the following table:

**Table (01): Training types**

<b>Training according to the step recruitment</b>	<b>Training depending on the type of jobs</b>	<b>Training depending on the place</b>
<ul style="list-style-type: none"> <li>- The guidance of the new worker.</li> <li>- The training during work.</li> <li>- The training with a view to renewing the skill and knowledge</li> <li>- The training to upgrade.</li> </ul>	<ul style="list-style-type: none"> <li>- The vocational and technical training.</li> <li>- Specialized training.</li> <li>- Administrative training.</li> </ul>	<ul style="list-style-type: none"> <li>- The training inside the institution</li> <li>- The training outside the institution</li> </ul>

**Source:** (Buarloh Alrabie, 2007)

## II.2 The relation of training with the performance

The enterprise exercise training activities for the purpose of raising the efficiency of individuals and their knowledge and skills and attitudes toward certain activities on the company to determine the needs of subordinates for training, use the methods and routes, and assess the effectiveness of this training.

The right employee training, development and education provide big payoffs for the employer in increased productivity, knowledge, loyalty, and contribution to general growth of the firm.

As stated by (Anyim.E, 2015), the employee training involves an expert working with learners to transfer to them certain areas of knowledge or skills to improve in their current jobs. Development in the context of human resource management is a broad ongoing multi-faceted set of activities (training activities among them) to bring someone or an organization up to another threshold of performance, often to perform some job or new role in the future (McNamara, 2008).

In fact, according to (Marmer, 1999) the quality of employees and the continual improvement of their skills and productivity through training are now widely recognized as vital factors in ensuring the long-term success and profitability of small businesses and in addition create a corporate culture that supports continual learning (Anyim.E, 2015).

Training is an educational process. People can learn new information, re-learn and reinforce existing knowledge and skills, and most importantly have time to think and consider what new options can help them improve their effectiveness and performance at work. Effective trainings convey relevant and useful information that inform employees and develop skills and behaviors that can be transferred back to the workplace (Charnov, 2000).

## II.3 Human resources policies and strategies in the petroleum companies:

Oil firms believe that HR has a great importance due to the nature of the enterprise activity that depends on the relevant knowledge, skills and abilities of high-quality human resources, and therefore the development of human resources policies are placed by virtue of many considerations, which is in each (Hussein.Y, 2008):

- The strategy of the human resources in the organization seeks to maintain the owned strong points, especially the employees with high level of capacities and experience, furthermore the available tires high competencies, and many foreign companies attract them to take advantage of their abilities, skills and experience and this constitutes a threat and a danger exists of the institution in the case of leaving.
- The petroleum enterprises seeks that the human resources strategy must be prepared clearly and precisely, through the vision, goals, objectives, and policies and programs for the institution, and reporting it to all the employees using the effective ways to contact, also the human resources strategy included within the overall context of the strategy of the enterprise, with complementary and consistent with it in order to achieve short, medium and long-term goals.
- the organization working to strike a balance between the human resources strategy and the financial strategy and also the marketing strategy with the rest of other functional strategies as one of the overall strategy of the institution.

### III. METHODS & SAMPLING

#### III.1 Choosing of the study compound

Considering that the research topic is the training in the petroleum companies. The applied study was in one of these circumstances institutions, the National Foundation for the Transportation and Marketing of Hydrocarbons group, called (SONATRACH) represented by the Regional Directorate of the basin "Berkaoui" (province of Ouargla -Algeria-), and this is in order to know the extent of matching the theoretical concepts of the subject of training in the reality practices in this organization, while the study includes all levels of workers which they estimated of 986 workers: a total of 228 responsables, 421 executives, and 337 agent workers calculating the permanent and non-permanent workers.

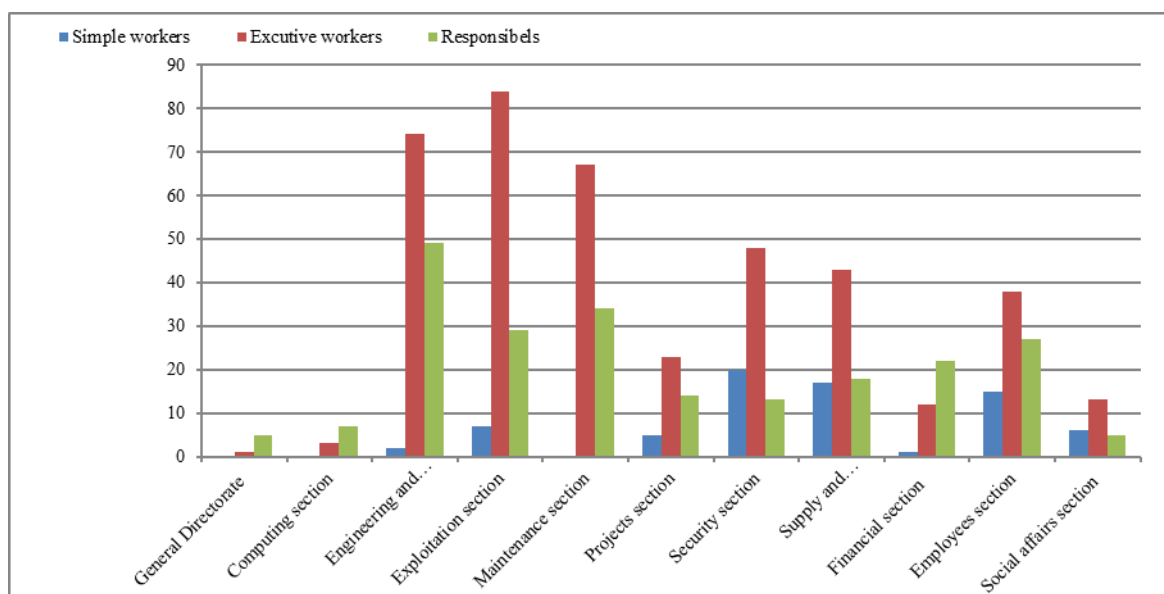
Based on data that we have collected, our method work will describe, analyse, and discuss the reports and indexes data witch concerns the training types and volumes that held for Berkaoui basin workers during last three (03) years.

#### III.2 Historical overview of the institution study case

"Berkaoui" is one of the most important petroleum regions in the Algerian desert basin, where are stationed in the cluster number 438 of "Oued Mieh" in the south of Algeria. It is also located between the most two important regions in the field of hydrocarbons in Algeria, namely, Hassi Messaoud and Hassi R'Mel, Berkaoui located about 900 km from the capital Algiers and 30 km from Ouargla Province and about 100 kilometers from the main Algerian oil complexes Hassi Messaoud.

Furthermore, Berkaoui is the most important production units in the activity of the upstream and in view of its contribution to the national production of oil, where wells of this basin productivity extends south of "Ghardaia" until the region of Berkaoui area. Berkaoui basin consists of three main areas of production, namely: basin Berkaoui (15 productive wells), Guellala (06 productive wells), and Ben Kahla (08 productive wells).

**Figure (01):** shows the distribution of workers by level according to the sections



**Source:** researcher's conception based on the data of the company

### III.3 The Training system in Sonatrach group (basin Berkaoui)

#### III.3.1 Sonatrach training institutes

"Sonatrach group" pay great attention to the process of development of human resources in order to raise the level of specialization and the performance of the employees, and this clearly shows through programs in this field, during the year 2014, 31% (represent 14731 agents) in addition to 2361 engineers & high technics agents of the permanent workers benefiting from the training operations, carried out mainly within training institutes at home and abroad, and in this regard, they are working to upgrade the level and specialization of the staff by three training institutes of SONATRACH group: (Algerian Petroleum Institute "IAP", Perfection Center Foundation "CPE", and "Naftogaz" center) and is currently enhancing institutes capabilities to enable them to leave up to the international standards (SH Annual report, 2014).

- **Perfection Center Foundation (« CPE » Centre de Perfectionnement d'Enterprise) :**

This center involved in the following areas: technologies and management techniques, business management, languages, training of trainers, financial and legal affairs, computing and media system, as well as security, health and the environment.

- **Algerian Petroleum Institute (« IAP » Institut Algérien du Pétrole) :**

Algerian Petroleum Institute consists four (04) facilities located in (SH Annual report, 2014):

- Boumerdes school: responsible for the training of specialized engineers and Master of Science in the scientific and technical fields of the oil and gas chain, also the continuing education;
- Skikda School: responsible for the training of technicians and superior technicians specializing in liquefaction, refining & petrochemical and gas, with continuing training;
- Arzew School: oriented in the same training tasks and objectives of "Skikda school";
- Hassi-Messaoud School: responsible for the training of technicians and technicians specialized in Oil and Gas Exploration-Production techniques, as well as continuing training.

#### III.3.2 Training process steps in Sonatrach group (basin of Berkaoui)

Training process steps in the Regional Directorate of the basin Berkaoui are not different from the other regional directorate's stages of the activity of the upstream in Sonatrach group company, where they pass through a series of stages as follows:

##### a. Identifying needs step

Training department on the level of employees section in the Regional Directorate of Berkaoui basin communicates directly all the sections to identify their needs of individuals to be trained with attaching requests and the report of all the information of the worker of an educational level and the seniority in the position. In addition to send the reason of which must be trained.

##### b. Prepare the estimated lists

After sending all the lists from the party directorate sections based training department prepare discretionary lists of individuals who they must be educated to all sections of the directorate workers and send it to the General Directorate in Hydra- Algiers, for approval and checking. The general directorate compares the sending training requests from the Regional Directorate of Berkaoui basin with the predictive reports filed over the last year, since if it was approved these orders will be send again to the Directorate of Special Operations with the budget report of the current year.

##### c. Preparing the training programs and the execution

Subsequently receiving the approval from the general directorate in Hydra, training department starts designing the training programs, and preparing the final lists of the employees which they must be trained, and doing all the other logistics such as preparing the assignment orders, reservations, ... etc.

**Table (02):** shows the training operations for the period between 2009- 2013

1 kilo DA = 1000 DA

Training operations		Years	2009	2010	2011	2012	2013
<b>Responsibles</b>	Employees Number		229	220	221	226	241
	The Number of participations		288	239	258	98	174

	Period (day)	1925	1224	1475	576	904
	The cost (kilo DA)	26044	17783	14182	2847	6440
<b>Executives</b>	Employees Number	384	399	393	403	405
	The Number of participations	247	202	227	206	133
	Period (day)	1420	959	993	965	595
	The cost (kilo DA)	14857	10290	8160	3526	1884
<b>Simple workers</b>	Employees Number	141	144	146	121	88
	The Number of participations	146	56	45	47	41
	Period (day)	1877	265	135	237	147
	The cost (kilo DA)	9888	3134	497	344	600
<b>Total</b>	<b>Employees Number</b>	<b>754</b>	<b>763</b>	<b>760</b>	<b>750</b>	<b>734</b>
	<b>The Number of participations</b>	<b>681</b>	<b>497</b>	<b>530</b>	<b>351</b>	<b>348</b>
	<b>The cost (kilo DA)</b>	<b>50789</b>	<b>2448</b>	<b>2603</b>	<b>6717</b>	<b>1646</b>
<b>The global costs on Kilo DA</b>		<b>50789.34</b>	<b>31207.93</b>	<b>22839.51</b>	<b>6716.81</b>	<b>8923.96</b>

**Source:** researcher's conception based on the data of the company

What we have observed from the table above are convergence the numbers of the individuals trainees with a single level during all the years from 2009 to 2013, where there is little difference either with increasing or decreasing. We notice from the table also the disparity of workers in the number of participations in training courses where this is due to the formative programs established by the company. Furthermore, among the most important observations on this data is the high costs of the responsible workers trainings compared with the executive workers.

Although they are more frequent than others, for example in the year 2013, there were 241 responsible trained under a cost of 6440 kilo DA, and 405 executive workers at a cost of 1884 Kilo DA, this is due to the high costs of the responsible workers and because most of this trainings programmed outside the country and for a long time.

### III.4 Trainings operations of Berkaoui basin

During 2014 the regional directorate has done the following training operation:

#### III.4.1 Trainings inside the Berkaoui basin

##### a. Training inside the unit (Sonatrach alone)

**Table (03):** the training topics within Sonatrach group alone

Training Topics	Responsible		Executive		Simple workers		Total	
	person	Person /month	person	Person /month	person	Person /month	person	Person /month
<b>Unity drivers training</b>	2	0.27	5	0.68	0	0	7	0.95
<b>Electricity Agents training</b>	8	1.09	8	1.09	1	0.14	17	2.32
<b>conduct maintenance</b>	8	1.09	10	1.36	1	0.14	19	2.59
<b>Work permits releasing</b>	3	0.41	2	0.27	0	0	5	0.68
<b>Training in the official Correspondence</b>	8	1.82	6	1.36	0	0	14	3.18
<b>Training in the Labor rights field</b>	8	2.18	1	0.27	0	0	9	2.45
<b>First Aid Training</b>	13	3.55	28	7.64	9	2.45	50	13.64
<b>Total</b>	<b>50</b>	<b>10.41</b>	<b>60</b>	<b>12.68</b>	<b>11</b>	<b>2.73</b>	<b>121</b>	<b>25.82</b>

**Source:** researcher's conception based on the data of the Berkaoui unit

From the table above, we notice the diversity of subjects of the formative sessions in the organization and comprehensiveness to all the workers of the unit, and this shows the importance of training operations of all the

sectors of the Regional Directorate Berkaoui basin.

**b. Internal training with partnership**

**Table (04):** the training topics within partnership

Training Topics	Responsibles		Executive		Simple workers		Total	
	person	Person /month	person	Person /month	person	Person /month	person	Person /month
Technical observers training	9	4.1	0	0	0	0	9	4.1
How to store nitrogen	3	0.95	5	1.59	0	0	8	2.5
Equipment maintenance and exploitation of high tension	11	2.32	26	6.36	0	0	37	8.68
<b>Total</b>	<b>23</b>	<b>7.36</b>	<b>31</b>	<b>7.95</b>	<b>0</b>	<b>0</b>	<b>54</b>	<b>15.32</b>

**Source:** researcher’s conception based on the data of the Berkaoui unit

The adoption of foreign experience in Sonatrach group is only in the topics that require expertise and efficiency of capability, which has been showed from the table above, where all these topics are purely technical oriented for the individuals with high level (engineers & technical workers).

**c. Trainings outside the Berkaoui basin**

**Table (05):** the training topics outside the production unit of Berkaoui

Training Topics	Responsibles		Executive		Simple workers		Total	
	person	Person /month	person	Person /month	person	Person /month	person	Person /month
Short-Term conferences	111	32.09	33	8.5	3	0.77	147	41.36
<b>Total</b>	<b>111</b>	<b>32.09</b>	<b>33</b>	<b>8.5</b>	<b>3</b>	<b>0.77</b>	<b>147</b>	<b>41.36</b>

**Source:** researcher’s conception based on the data of the Berkaoui unit

In the total of 986 workers in the production unit of Berkaoui, 147 workers benefited from training programs outside the production unit of Berkaoui, which represent 14.90% of the total workers, all these programs were organized in the institutes and centers of the Sonatrach witch are: the Algerian Petroleum Institute in Boumerdes, Arzew, Skikda, and the Center for the development of the enterprise (CPE).

**III.4.2 The external trainings (outside the country)**

In 2014, depending to training programs plans; the production unit of Berkaoui did not send any employee abroad on training program.

However, it is important to know how much the training programs are going to cost for the unit, and most organisations will have this information readily available. Nevertheless, when carrying out an evaluation it is important to consider all training costs, including indirect, for example, participants’ time. This will ensure you have an accurate and credible view of the potential benefits of the programs in comparison to its cost.

The external training programs contain other considerations than the internal one, where the first one cost much more than the other programs.

In this point, we can use the unit (person/month) in order to measure the cost as follow:

$$\text{The number of person/month} = \frac{\text{Training days (day)}}{\text{The days of month - weekends}} = \frac{x}{22}$$

The equation of measuring the cost of one employee in regional directorate of Berkaoui might calculated as follow:

$$\text{The cost of Trainings in Kilo DA} = (\text{pedagogical expenses} + \text{logistical expenses} + \text{tax burdens} + \text{transportation expenses} + \text{the expenses of mission order} + \text{other expenses})$$

- *Pedagogical expenses*: the total expenses in the conventions signed between SONATRACH and the other institutes and centers who are in the implementation of training programs.
- *Logistical expenses*: it is the total costs of food and accommodation.

#### IV. DISCUSSION & ANALYSIS OF THE OUTCOMES

The Regional Directorate of Berkaoui like all the other districts of the upstream activity of SONATRACH group consider that the training is very important operation, where reflected this through programs that hit annually in this area through the large amounts of money allocated for this function (more than 2 billion centimes in 2014), where the goals of this process (Training) hit all its objectives in maintaining the productive capacity of the combination and improve it, and this reflected through the maintenance of all elements of the series of the production process.

##### IV.1 The importance of training in the improvement of the firm's productivity

The worthy understanding of the importance of training on economic firms level in general and in the oil & gas firms specifically, whether to recognize the role of training in the development of the workers performance; requires to link the impact of the programs and the ruler, then carried out to improve the productivity of the firms and lifting annually in the oil firms.

Hence, that case for example reflect the importance of training in improving the productivity of the firms through the familiarity of some training programs to the definition of most important technological developments tools leading to the exploitation of the biggest possible amount of well capabilities, if we knew that the technology being used allow just the exploitation of 25% to 35% in the best of cases compared to the USA which exploit from 55% to 65 % of the ability of the well.

##### IV.2 The importance of training in minimizing the lost days because of accidents of work

There is no doubt that any company must provide the suitable criteria for health and safety of their users, since this reflected on the profitability of these workers, thus it can practice her activity in the best conditions. As all of the organization, the oil & gas firms took very great significance to this area, where they planned many training courses and series designed to reduce the incidence risks of work. These later performed in many cases to break the activity of production in different periods, rendering to which cause an enormous financial injury to the company, for the reason that the high production costs rises in hydrocarbons field.

From that standpoint, SONATRACH group continued through the Regional Directorate of Berkaoui to develop new strategy in the area of training, represented in high level training sessions for the workers of the industrial security section inside and outside the Unit (refer to the agendas of the configuration process for the year 2014), where the most of those officers subsequently organizing training sessions to all workers in the Regional Directorate of Berkaoui in a various topics, such as for example how to deal with the fires at the level of wells, and the supervisions by using the anti-aircraft fires in the case of conflicts (weekly session).

The main objective of SONATRACH group through that policy is to get reduces the greatest as possible as it can the lost days as a result of discontinuing the unit activity which is due to incidents in different working situations in which that generates additional charges for the days lost.

Therefore, the reasons that causes various incidents are a lot, and different some of them we can beat them and the other types we cannot get them over. Rather than, we can fix what was controlled in different ways and means, which allow SONATRACH group to reduce the burdens resulting from these accidents. While among the most important and the most effective ways are the process of training of workers and make them feel the real position they are in, because of the risk element denote an important role in the oil industry.

On the following discussion, we will analyse the data obtained from the section of industrial security and access, concerning the importance of the training in reducing the rate of lost days as a result of accidents at work from 44 lost days per one accident in the year of 2011 to 06 lost days per one accident in 2014.

**Table (06):** shows a comparison of work accidents in the unit of production Berkaoui from 2011 till 2014

Year	Incidents which resulted the stop	Incidents did not resulted the stop	Total	Lost days	The average of Lost days per one incident
2011	3	0	3	132	44
2012	5	0	5	20	4
2013	10	1	11	103	9.36
2014	10	2	12	72	6

**Source:** researcher's conception based on the data of the Berkaoui unit

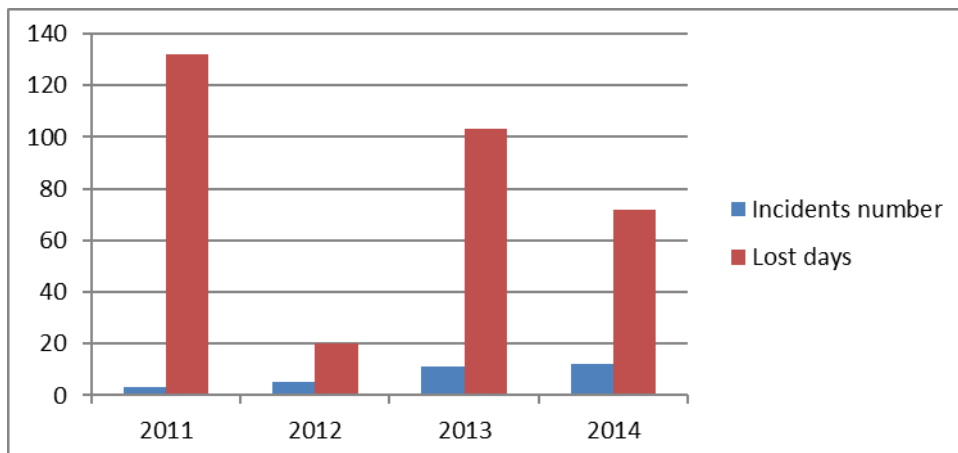


We notice through the previous table, the presence of two types of work accidents, work accidents did not stop the activity on the production unit, and incidents caused a stop in the production, thus later is due to what we call it "lost days" because of accidents at work. Furthermore, we notice also the difference in the numbers of accidents types during all the years covered by the study, we observe the increasing numbers of accidents at work between all years, where rose from (03) incidents in 2011 to (05) incidents in 2012, which means an increase of 66 %. Moreover, the numbers of accidents rose from (11) in 2013 to (12) incidents in the year of 2014, which means the difference of one accident.

Consequently, the reason of work incidents increasing from a year to another. It is not because of the lack of effectiveness of training programs, nonetheless it is because a variety of reasons, including the workers did not follow the safety instructions, and the lack of discipline to do what has been studied and obtained in the training courses, in addition to some other reasons where the employees cannot control it such as the nature reasons.

In brief, we conclude that training programs are not the only responsible of the increasing of work incidents.

**Figure (02):** shows the lost days because of accidents at work in the period of (2011 to 2014)

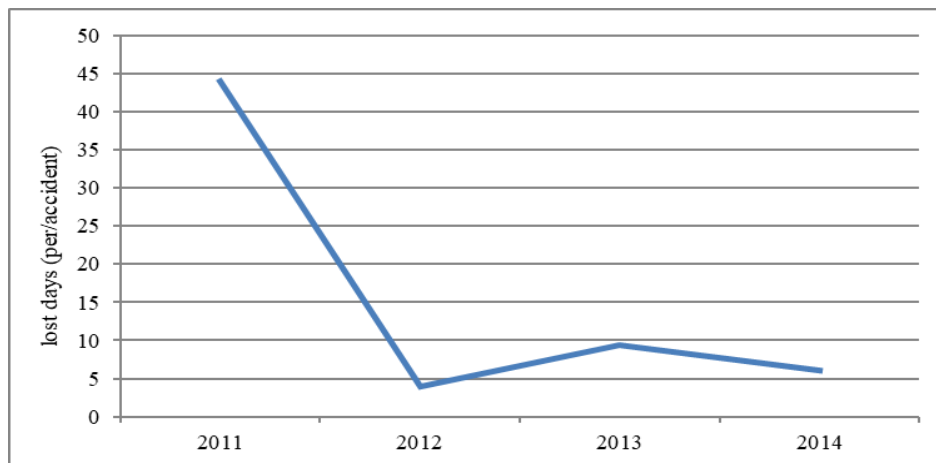


**Source:** researchers adaptation based on the data of table (06) above

We observe from the figure (02) above, the stops of the activity in the production unit of Berkaoui by (132) day reasoned by only (03) malfunctions, while in 2014 the unit has ceased to work for (72) day because of (12) incidents. This explains the contribution of many reasons in decreasing the lost time, which the most and the effective reason on all the previous is the formative programs in the field of safety and security which have proved their effectiveness through the above.

The contribution of the training programs in reducing the lost time because of work accidents means the contribution of reducing costs if we consider that these days are a costs, which the enterprise requires to bear, through the above we conclude that there is no direct relationship between the number of work accidents and the lost days.

**Figure (03):** shows the average of lost days per accidents



**Source:** researchers adaptation based on the data of table (06)

On the basis that the most important causes; contributing in the decline on the duration of the lost days because of work accidents, are the effectiveness of training programs.

The recent concept contributed also in the decreasing on the average of lost time because of work incidents. In the year of 2011 the rate of lost days per one incident was (44) day, then it was dropped to just (06) days per incident in 2014, and this confirms what we have proved in the beginning of our analysis.

## V. CONCLUSION AND PRESENTATION OF THE RESULTS

Beyond the discussion and analysis that we have demonstrated basing on data that taken from the production unit of Berkaoui, conducted us to draw and abstracting some arguments that could be highlighted as the following:

1. The effectiveness of training programs contributes in the reduction of costs resulting from lost days because of work accidents,
2. Training programs is not responsible of the increase in work accidents,
3. Training programs reduce the dependence of the foreign competencies in the field of hydrocarbons,
4. The absence of a direct relationship between the number of work accidents and lost days, because those days are cost should be allowed by the organization,
5. The training programs also allows a supplementary control in machinery of the productive process, which help to exploit the maximum extent possible of well (raising productivity),
6. It works to achieve effectiveness in the performance of the employees, whether at the level of administration or in the oil fields,
7. It helps reduce all the types of costs resulting from the breakdown of production machinery and processing factories and the wells,
8. It allows to keep abreast of the technical and technological developments advances in the domain of oil, especially when the trainings in partnership with foreign big companies or to be outside the country.

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