

EVALUATION OF EMPLOYEES TRAINING EFFECTIVENESS IN ALGERIAN UNIVERSITIES USING KIRKPATRICK MODEL: AN EXPLORATORY STUDY

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ABSTRACT: We have tried through this research to identify employees training effectiveness level among employees (Administrative, Technical staff and Service agents) in the Algerian universities, through its three levels (Reaction, Learning, Behavior) according to Kirkpatrick's model. We studied a sample of Algerian universities. Its number reached (28). By using a survey of opinions of individuals sample who are employees in the Algerian universities, are working in department of «the administrative, technical staff and service agents» and department of «training and improvement». Via the survey, which numbered (126) individuals out of (140) were targeted by study sample. We found that evaluating employees training effectiveness is available at Algerian universities with moderate level in terms of approval degree of the respondents.

Keywords: Evaluation of training; Levels of training evaluation; Training effectiveness; Kirkpatrick model; Algerian universities.

JEL Classification: M53; O15.

1. INTRODUCTION

It is no exaggeration, when we say that most important of factors of production is human resource, because of its relative importance more than other factors, where it can achieve the best exploitation and mixing of material and organizational factors to make the most of them, this perception explains the relentless pursuit of interest in human resource in the organization and promote investment in it.

The success of organizations depends to a large extent on the efficiency of human factor, so most organizations, if not all, are keen to pay attention to this factor where they work to train and qualify in order to raise its production efficiency, and from this perspective, training was considered an effective entry point for human resources development and who are able to contribute to achievement of organizational goals.

The diagnosis of training process makes us stand in three stages, the first of which is to identify training needs, the second is represented by designing and implementing the training program through operational procedures associated with initial plans based on the training needs, finally, the third phase embodied in evaluation process related to the

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procedures for measuring effectiveness of training programs, and the extent of their success in achieving their objectives.

The most popular and widely known approach to the evaluation of training is Kirkpatrick's framework. The model has served as the primary organizing design for training evaluations in organizations for over 30 years (Passmore and Velez, 2012). Kirkpatrick identifies four categories of measures: (Kirkpatrick, 1979)

- *Reaction;*
- *Learning;*
- *Behavior;*
- *Results.*

We exclude the indicator (organizational performance results) as it depends not only on the effectiveness of training, but on several other factors, which prevents possibility of measuring this impact - as the source of training - through the study measurement tool (questionnaire).

Therefore, the following research questions were designed to fit the study aims:

- Q1 : What is the reality of employee's reaction evaluation to training in Algerian universities from respondents point of view?
- Q2 : What is the reality of employee's learning evaluation in Algerian universities from respondents point of view?
- Q3 : What is the reality of employee's behavior evaluation in Algerian universities from respondents point of view?

Through this exploratory study, the paper is structured as follows: this introductory section is followed by a review of existing literature on human resource training and evaluating training effectiveness, in addition has been reviewed previous studies directly related to measuring of training effectiveness according Kirkpatrick. The methodological processes used in the study are then explored, followed by a presentation of the study findings. These findings are then discussed. Finally, the conclusions are drawn from the study, the recommendations for future research directions are presented.

1.1. Literature Review

1.1.1 HR training

➤ Evolution of HR training and development

It can be summarized in what Maity (2019) referred to:

- **Pre-Second World War:** the roots of training and development can be traced back to the middle ages where the concept of apprenticeship was first introduced. The late eighteenth century and the nineteenth century witnessed the industrial revolution, the result of which was a need for highly skilled workmen to efficiently run units of mass production in several countries. The early 1800s witnessed the origin of Vocational Schools for the development of industry-specific skills ;
- **Post-Second World War – 1980s:** training and development practices took off world-wide post the Second World War. These practices were inspired and derived from the training within industry (TWI) service, which was initiated during the Second World War by the USA. . In 1984, the Instructional Systems Development (ISD) Model (Campbell, 1984) was developed, which mentioned for the first time the requirement for a needs assessment before designing the training course outline

and its contents. The ISD Model has five phases – analyze, design, develop, implement and evaluate – commonly known as the ADDIE Model today;

- **The 1990s – today:** in the 1990s, the focus of both, research and organizations shifted to enhancing employees' participation in development activities, learning and transfer. Organizations started implementing online training programs and promoted research on means to make these programs more engaging and effective for their employees. The methods of measuring the impact of training programs on business results broadened their focus from individuals to teams and organizations.

➤ **Definition of training**

Effective management human resources can increase the proficiency of any firm. Training is a vital aspect of the process as it offers a proven means of enhancing the knowledge, skills and capabilities of the human resources.

Training is one of the core practices of human resource management (HRM). It has been seen as the most valuable human resource practice that contributes greatly to organizational competitiveness (Rawashdeh, 2018). Nowadays, it seems that a considerable number of business organizations focus attention on the training activities as one of the human resource practices that is very significant for the development of organizational commitment of the employees. Employees are considered as a key asset of an organization (Rawashdeh and Tamimi, 2019). Training is a vital aspect of the process as it offers a proven means of enhancing the knowledge, skills and capabilities of the workforce.

➤ **Training Purpose**

According to Wayne Cascio (2019) the training consists of planned programs aimed at improving employees' knowledge, skills, attitudes and social behaviors to significantly improve the organization's performance.

More specifically, Diez et al. (2019) explain that training seeks to improve one or more of the following areas:

- The productivity or the quality of the work currently being done;
- The speed and number of promotions by preparing employees for a possible next level of work;
- The speed of change due to new strategies, products, technologies, merger or other new circumstances introduced into the workforce;
- The speed to onboard newly hired or promoted employees (including lateral moves);
- The execution of work in terms of health and safety compliance.

1.1.2 Training effectiveness evaluation

Training and development requirements for employees have shifted from “mass up skilling” in batches in the early twentieth century to personalize and individual training needs, now. With the introduction of training models (ADDIE, Dick and Carey, Six Disciplines of Breakthrough learning, etc.), training and development in organizations now start with needs assessment for training programs and follow a scientific and structured approach toward designing and scheduling the programs for their employees. At times, these steps to be followed in designing training programs are lengthy and time-consuming (Maity, S., 2019).

Management should try hard to create a strong HRM system that would enhance the benefits of training for improving work motivation, or engagement, and performance. There

were several decisions that managers could make to ensure maximum training effectiveness. They included “defining expectations and communicating them clearly, making careful estimations of training budgets, assessing whether training would be better done in-house or externally, determining the role of new technology, planning the content of training and developing procedures to persuade employees to get involved, and carefully evaluating costs and benefits”. They should also pay attention to employee perspectives of training, which are key to positive outcomes. (“Study of Chinese firms”, 2019)

1.1.3 Kirkpatrick’s four levels of training evaluation

Training and transfer outcomes can be measured by evaluating the effectiveness of training. This can be achieved by adopting the four-level hierarchical model created by Donald Kirkpatrick. The four levels (reactions, learning, behavior and results) represent the sequence of how the evaluation should progress, as each level impacts the next one. The first level is the easiest to adopt, but as the evaluator moves to the next level, the process becomes more demanding and time-consuming (Heaslip and Stuns, 2019).

This study uses the Kirkpatrick model, widely known, which has a number of advantages as recommended by several previous studies. This model provides a conceptual framework, to explore evaluation of effectiveness of staff training in Algerian universities. According to Tamkin et al. (2002), Kirk Patrick’s model was described as “the most well-known and most commonly used framework for rating assessment,” while Bates (2004) stated that “the most popular approach to evaluating training in organizations today is the Kirkpatrick Framework (1959) of four levels.

Within the Kirkpatrick (2006) training evaluation model, (see Fig.1). The reaction reflects the emotional response of participants in the training program. Their degree of satisfaction and satisfaction to the training; learning includes post-training changes in the aspects of the skills, knowledge and attitudes of participants; behavior, is to measure extent of changes in behavior when participants return to work after receiving training, the results include measuring the impact of changes in learning and behavior on trainees.

To address different levels of training outputs Kirkpatrick and Kirkpatrick (2005) offers a framework proposing training evaluation made through sequential levels, which become more and more complex and informative, from assessing participants’ reactions to training, learning effects, behavioral changes and finally organizational results. Although, Kirkpatrick’s framework is one of the most commonly used models, to measure the impact of the training (Bates, 2004), it is criticized for being based on a hermetic and sequential logic, on the assumption of an existing inter-level causation (Cunha et al., 2010), in the sense that the more people are satisfied with the course, the more they will learn.

➤ Level 1 – reaction

is identified as “a measure of customer satisfaction” (Kirkpatrick and Kirkpatrick, 2006). It measures the participants’ satisfaction with the training program (Curado et al., 2014). Positive reaction may not ensure learning, negative reaction almost certainly reduces the possibility of it occurring (Kirkpatrick, 1998). It can be measured formally (reaction questionnaires/happy sheets) or informally (verbal questions) (Tamkin et al., 2002).

In this level, we evaluate people’s reaction to training: Were the delegates satisfied with the training process? Was the training conducive to learning and reasonably comfortable for the trainees? Were the trainers competent and credible?

➤ Level 2 – learning

It focuses on the extent to which trainees change attitudes, improve knowledge and/or increase skills due to attending a training program (Kirkpatrick, 1998).

At this level, it comes to assessing whether the trainees learned from the training. Can we measure the learning and assess the improvement in knowledge and skills? (Kirkpatrick, 1959).

➤ Level 3 – behavior

It focuses on the change in behavior that has occurred since the trainee attended a training program (Kirkpatrick and Kirkpatrick, 2006). In other words, this level assesses the transfer of knowledge or skills to the participants' on-the-job behavior due to training (Kirkpatrick, 1998).

As a result:

- has the trainee's behavior changed?
- Has the learning been transferred to the workplace?
- Is there a different attitude as well as improved knowledge and skills?
- Are they competent? (Kirkpatrick, 1959).

➤ Level 4 – results

It focusses on the organization's final training outcomes attributable to the participants attending the training program.

At this level, we wonder about what impact has the training had on the business objectives of the organization? How has the training helped towards achieving the operational objectives? (Kirkpatrick, 1959).

The assessment of this level is the most difficult compared to previous levels, as it is difficult to assign improvements to the efforts of certain individuals; hence, evaluation is frequently related, in more general terms, to the strength of the organization (Abdelhakim and al.2018).

1.1.4 Evaluating training programs using Kirkpatrick model in empirical studies

- Study of: (Abdelhakim et al. 2018), "Evaluating cabin crew food safety training using the Kirkpatrick model: an airlines' perspective ":

“Purpose”: The purpose of this paper is to explore the evaluation of cabin crew food safety training using the Kirkpatrick model. **“Design/methodology/approach”**: Using a snowballing technique, 26 cabin crew, managers, supervisors and trainers participated in in-depth, semi-structured interviews. Summative content analysis was used to evaluate the data.. **“Findings”**: In total, 26 respondents from 20 international airlines participated in the study. All respondents agreed that evaluating cabin crew food safety/hygiene issues is important in relation to in-flight food handling; for example, “Training evaluation helps in the improvement of the future training”; “We have an end of course feedback form, either done electronically or on paper and that looks at how the delegates felt the training went, if they came away learning something new, if the environment for learning was right, all sorts of things; the questionnaire is quite comprehensive”; and “Every trainee is given a feedback

form to complete". However, significant failures in food safety training and its evaluation were identified.

- Study of: (Phillips and Bullock, 2018), "Clinical leadership training: an evaluation of the Welsh Fellowship programme":

“Purpose”: UK fellowship schemes have been set up to address low-level engagement of doctors with leadership roles. Established in 2013, the Welsh Clinical Leadership Fellowship (WCLF) programme aims to recruit aspiring future clinical leaders and equip them with knowledge and skills to lead improvements in healthcare delivery. This paper aims to evaluate the 12-month WCLF programme in its first two years of operation.

“Design/methodology/approach”: Focused on the participants (n = 8), the authors explored expectations of the programme, reactions to academic components (provided by Academi Wales) and learning from workplace projects and other opportunities. The authors adopted a qualitative approach, collecting data from four focus groups, 20 individual face-to-face or telephone interviews with fellows and project supervisors and observation of Academi Wales training days. **“Findings”**: Although from diverse specialties and stages in training, all participants reported that the Fellowship met expectations. Fellows learned leadership theory, developing understanding of leadership and teamwork in complex organisations. Through workplace projects, they applied their knowledge, learning from both success and failure. The quality of communication with fellows distinguished the better supervisors and impacted on project success.

- Study of: (Olexová, 2018), "Establishing the financial returns arising from an evaluation of a retail training programme":

“Purpose”: The purpose of this paper is to propose an evaluation of training for shop assistants, specifically in retail chains. **“Design/methodology/approach”**: The proposed evaluation is based on Kirkpatrick’s model and Phillips’ modification. The representative case study includes the application of the training evaluation at the fourth and fifth levels of evaluation in a particular chain of retail stores. The data were collected from the retail chain’s financial reports, internal documents related to training of employees and interviews with managers in the retail chain. **“Findings”**: The results contribute to the training evaluation literature by presenting a training evaluation for shop assistant using evidence from a retail chain. The training focussed on selling skills and product knowledge; the details of evaluating the training are presented, encompassing mainly the benefits and costs of the training and return on investment calculation.

- Study of: (Kucherovand Manokhina, 2017), "Evaluation of training programs in Russian manufacturing companies":

“Purpose”: This study aims to examine the features of training evaluation process in Russian manufacturing companies. On the basis of three assumptions regarding the differences in group of employees involved in training, duration and costs of a training program, the authors tried to find out the peculiarities of training evaluation tools and levels in Russian manufacturing companies. **“Design/methodology/approach”**: The HR professionals from 24 Russian manufacturing companies completed the author’s online questionnaire. **“Findings”**: The results revealed that the respondents perceived training evaluation as highly important, but their satisfaction level toward existing evaluation was low. The most significant training evaluation goal was recognized as raising the efficiency of training process and the most widely used training evaluation model was Kirkpatrick’s, with focus on the reaction level. It was confirmed that training evaluation tools used in

Russian manufacturing enterprises differed among the employee groups and different levels of training evaluation depended on duration and cost of the training program.

- Study of: (D'Souza et al. 2013), "Innovative evaluation of researcher training at the University of Birmingham, UK":

“Purpose”: The purpose of this paper is to highlight developments in evaluation of researcher development training undertaken by the University of Birmingham's Graduate School. It details the mixed methods analysis techniques applied and shows how results are used to shape future training provision. **“Design/methodology/approach”**: Initial analysis is carried out immediately following each course to ensure it meets the needs of current students. Deeper analysis is undertaken on an annual basis to draw out trends and issues. This allows us to see overall satisfaction with each course as well as identifying the most helpful elements, what could be changed, and what other courses students would like to see. As a case study this paper demonstrates the quantitative and qualitative evaluation undertaken on the Academic Writing, Part Time Researcher and Viva Preparation courses run in recent years and shows how the results can be measured using the Rugby Team Impact Framework. **“Findings”**: Analysis of courses has revealed conclusions which will steer future course development and demonstrates the value of researcher development training.

- Study of: (Diamantidis and Chatzoglou, 2012), "Evaluation of formal training programmes in Greek organisations":

“Purpose”: The purpose of the paper is to highlight the training factors that mostly affect trainees' perception of learning and training usefulness. **“Design/methodology/approach”**: A new research model is proposed exploring the relationships between a trainer's performance, training programme components, outcomes of the learning process and training usefulness. The validity of this model is tested empirically adopting the structural equation modelling approach, using data from 126 employees who have participated in different training programmes. **“Findings”**: All the factors that constitute a training programme (trainer performance, training environment and training goals, content, material, process) have been found to affect both learning outcomes and training usefulness.

2. METHODS AND MATERIALS:

2.1. Data collection tools

In order to collect data related to the reality and level of study variable in Algerian universities, the questionnaire was used. For the purpose of analyzing and extracting useful information, many statistical tools were used, most of which are available in the SPSS program.

In order to measure of Respondents' awareness about items of study axis, the closed form was adopted in questionnaire preparation according to five point Likert scale. So, For items, the degree of approval is as follows:

- Mean of 1 to 1.79, representing (strongly disagreeing) towards each item;
- Mean from 1.80 to 2.59, representing (disagreeing) towards each item;
- Mean from 2.60 to 3.39, representing (neutral) towards each item;
- Mean 3.40 to 4.19, representing (agree) towards each item;
- Mean 4.20 to 5.00 represents (strongly agree) towards each item;

The degree of approval for whole axis follows:

- Mean of 1 to 2.33, reflecting a (low) level of the axis to be measured;
- Mean from 3.34 to 3.67, reflecting a (medium) level of the axis to be measured;
- Mean from 3.68 to 5.00, reflecting a (high) level of the axis to be measured;

The study measurement tool, which is represented in the questionnaire, consists of one axis (Evaluating employees training effectiveness), contains (17) items on the Likert five-level scale, the items were distributed to include the following four dimensions:

- The first dimension (Reaction): items (1-2-3-4-5-6) are assigned to it;
- The second dimension (Learning): items (7-8-9-10-11) are allocated to it;
- Third dimension (behavior): items (12-13-14-15-1-17)

2.2. Data analysis tools

In order to achieve the study objectives by collecting and analyzing data, many suitable statistical methods were used through SPSS "22nd edition", the following are the most important statistical tests used:

- Cronbach's Alpha: coefficient to measure internal consistency of questionnaire;
- Kolmogorov-Smirnov test: in order to check whether data are normally distributed;
- Frequencies and Percentages: in order to identify the sample functional characteristics of respondents and determine their responses to the items of axis included in the study;
- Mean: in order to find out how high or low the responses of respondents sample of to each items;
- Standard deviation: to identify deviation extent of sample responses to each of the items and was also used to rank item with equal mean in favor of the least dispersion.

2.3. Study population and statistical sampling unit

The field of this study is the Algerian universities as one of the institutions of higher education. According to the Algerian Ministry of Higher Education, the universities are divided regionally in line with (the socio-economic fabric and the number of students) according to three aspects: (center area "17 universities") , (East "22 universities"), (West "11 universities").

The statistical sampling unit was represented in the human resources who are works in the Algerian universities both in department of "The administrative, technical staff and service agents" (DATSSA) or department of "Training and Improvement" (DTI).

➤ Sample of the study

The number of the sample of the study (140) individuals selected from twenty-eight (28) universities "out of (50) universities, selected by stratified random method according to the proportional allocation level.

➤ Questionnaire stability

In order to verify internal consistency of questionnaire we used the Kronbach alpha coefficient, which was (0.910) and this indicates a very high consistency, thus, there is a possibility of consistency in the results.

➤ Normality Test

The values of One-Sample Kolmogorov-Smirnov Test is (0.058) with a significant level of (0.2), which means that data study follows the normal distribution, where the statistical significance was higher than (0.05).

3. Results and Discussion

Below we will present and discuss data related on availability degree of evaluating employees training effectiveness in Algerian universities, by measuring availability degree of reaction, learning and behavior of employees (Administrative, Technical staff and Service agents) who have conducted training courses. For this, we will rely on calculation of frequencies, percentages, means and standard deviation.

3.1. Availability degree of evaluating employees training effectiveness in Algerian universities

The mean and standard deviation of dimensions of evaluating employees training effectiveness can be illustrated and arranged in **Table (1)**.

It is clear from **Table (1)** that the respondents agree on evaluating employees training effectiveness in Algerian universities.

The mean for this axis was (3.421) with SD of (0.622), and falls within the category (2.34 to 3.67), which indicates that availability of evaluating employees training effectiveness with a moderate degree from respondents point of view. Behavior came first with mean of (3.610), which is higher than the general mean (3.421), and a SD of 0.712, while reaction came third and last with mean of (3.163), which is lower than general mean (3.421) – and SD of (0.705).

The following is an explanation of sample respondents views on items that measure availability of each dimension of evaluating employees training effectiveness.*

3.2 Availability level of reaction in Algerian universities

This dimension consists of six items, whose order in the questionnaire corresponds to (1, 2, 3, 4, 5, 6). For the purpose of analysis, we will work to calculate the means and SDs, and present approval degrees according to the respondents opinions of the study sample.

Table (2) refers to the responses to items related to employees reaction availability in the Algerian universities, and it is clear from this table that respondents agree to employees reaction availability, where the approval mean of this dimension (3.163) with SD of (0.705), and this mean falls into the category (2.34 to 3.67), which indicates reaction availability with medium degree from respondents point of view.

The items under reaction availability arranged according to approval degree as follows:

- **Item No. (6):** ranked first in terms of approval degree of the respondents, where the approval degree mean is (3.36), and SD of (1.008). This demonstrates that reactions of trained employees often reflect their desire to reflect their knowledge, experience and skills within the training process at level of their activities and functions;

- **Item No. (3):** ranked second in terms of approval degree of the respondents, where the approval degree mean is (3.35), and SD of (1.030). This is an indicator that in many instances positive feedback is generated by trained employees. This point should be reinforced by trying to identify aspects that attract attention employee to contents and training topics because it is a milestone in terms of understanding of what will receive and pass through the course or the training process;

- **Item No. (1):** ranked third in terms of approval degree of the respondents, where the approval degree mean is (3.27), and SD of (0.999). This demonstrates that usefulness of

training process is sometimes realized, and that training evaluation supervisor should try to identify, through the trainees' survey, the reasons that would contribute to the realization of the expected training benefits for use as feedback to subsequent training programs;

- **Item No. (5):** ranked fourth in terms of approval degree of the respondents, where the approval degree mean is (3.25), and SD of (1.001). This shows that topics chosen for the trained employees often make them feel serious and interesting, and this is not enough because degree of suspense, for example, is a decisive factor for many employees and because it puts them in a catalytic position to explore what they will receive and how they will receive, therefore, moving away from routine and stereotyping in training courses is one of the major bets that can contribute to raising of effectiveness degree in the training process;

- **Item No. (4):** ranked fifth in terms of approval degree of the respondents, where the approval degree mean is (3.06), and SD of (0.994). This is an indicator that necessary training requirements are sometimes provided, and therefore training supervisors at Algerian universities need to focus more on this point by identifying appropriate training methods (such as simple traditional "blackboard", and relatively modern ones such as "transparency and film", developed ones, such as computers), are used to convey the training program to trainees by supporting spoken words. In addition, they increase interest and diversity and show how things actually look;

- **Item No. (2):** ranked sixth in terms of approval degree of the respondents, where the approval degree mean is (2.69), and SD of (1.039) This indicates that duration allocated to training program is sometimes only sufficient, and perhaps this is because it is determined arbitrarily improvised without taking into account different training program from last and different target of training, this period varies depending on nature of program, its purpose and methods used, and therefore the duration of the training should ensure a balance between subjects, requirements and methods of the training program, and should allow all trainees, at different levels and capacities, to benefit from the training. It should also be avoided that this period leaves apprentice employee at work for long periods of time or lead to boredom.

3.3 Availability level of learning in Algerian universities

This dimension consists of five items, whose order in the questionnaire corresponds to (7, 8, 9, 10, 11). For the purpose of analysis, we will work to calculate the means and SDs, and present approval degrees according to the respondents opinions of the study sample.

Table (3) refers to the responses to items related to employees learning availability in the Algerian universities, and it is clear from this table that respondents agree to employees learning availability, where the approval mean of this dimension (3.163) with SD of (0.705), and this mean falls into the category (2.34 to 3.67), which indicates reaction availability with medium degree from respondents point of view.

The items under reaction availability arranged according to approval degree as follows:

- **Item No. (10):** ranked first in terms of approval degree of the respondents, where the approval degree mean is (3.58), and SD of (0.966). This makes it clear that trained employees are often able to demonstrate their skills, because they are well aware of facts and techniques included in the training program;

- **Item No. (7):** ranked second in terms of approval degree of the respondents, where the approval degree mean is (3.56), and SD of (0.890). This shows that trained employees acquire skills and knowledge that they will later seek to employ in order to achieve goals and objectives of the university, and this acquisition is a clear indicator of learning;

- **Item No. (11):** ranked third in terms of approval degree of the respondents, where the approval degree mean is (3.55), and SD of (0.986). This reflects the degree of employees susceptibility to learn, Since the development of knowledge and information balance is often noticeable and this is the essence of the learning process in training. An increase in amount of content being absorbed is an indicator of effectiveness of learning process, regardless of whether or not the learning has been applied, because that is within the assessment of behavior standard;

- **Item No. (8):** ranked fourth in terms of approval degree of the respondents, where the approval degree mean is (3.44), and SD of (0.872). This shows that time spent by the trained employees in order to absorb training program content is often within a reasonable level, which is evidence of learning process effectiveness in context of the training program,;

- **Item No. (9):** ranked fifth in terms of approval degree of the respondents, where the approval degree mean is (3.32), and SD of (0.993). It is clear from this that sometimes trained employees absorb what they have learned well, despite above mentioned that trained employees acquire skills and knowledge and balance of them evolved significantly and take a reasonable time for this, but degree of absorption is not very good, and here should stress the need to verify - through a set of tests or interviews with the employees trained - extent of their understanding of what was provided to them in the training program and ensure that it is within a good level and not only acceptable.

3.4 Availability level of behavior in Algerian universities

This dimension consists of six items, whose order in the questionnaire corresponds to (12, 13, 14, 15, 16, 17). For the purpose of analysis, we will work to calculate the means and SDs, and present approval degrees according to the respondents opinions of the study sample.

Table (4) refers to the responses to items related to employees behavior availability in the Algerian universities, and it is clear from this table that respondents agree to employees behavior availability, where the approval mean of this dimension (3.610) with SD of (0.712), and this mean falls into the category (2.34 to 3.67), which indicates behavior availability with medium degree from respondents point of view.

The items under behavior availability arranged according to approval degree as follows:

- **Item No. (13):** ranked first in terms of approval degree of the respondents, where the approval degree mean is (3.76), and SD of (0.942). This is a good indicator of the trainees' awareness of the change in their behavior and skills;

- **Item No. (17):** ranked second in terms of approval degree of the respondents, where the approval degree mean is (3.66), and SD of (0.965). This is a good indication that a trained employee can pass on what he or she has learned to someone else;

- **Item No. (14):** ranked third in terms of approval degree of the respondents, where the approval degree mean is (3.65), and SD of (0.915). This confirms positive modification in trained employee behavior, as improvement in pattern of responsiveness between them and their supervisors achieves the desired benefit from training, through harmonization of efforts at various organizational levels to improve performance of the departments in the university for its activities and tasks;

- **Item No. (16):** ranked fourth in terms of approval degree of the respondents, where the approval degree mean is (3.59), and SD of (0.915). This shows a marked improvement in performance behavior of trained employees upon return to their posts;

- **Item No. (12):** ranked fifth in terms of approval degree of the respondents, where the approval degree mean is (3.58), and SD of (0.958). This reflects evolving capacity of trained employees to assume the responsibilities that arise from their jobs as a result of their training;

- **Item No. (15):** ranked sixth in terms of approval degree of the respondents, where the approval degree mean is (3.42), and SD of (1.030). This is an indication of appropriateness and willingness of trained employees to put what they have learned into their activities, as soon as training is completed and returned to their workplace.

4. CONCLUSION

Evaluating employees training effectiveness using Kirkpatrick model is the result of conducting an evaluation of training process that targets employees. This process (in this study) includes the following dimensions: reaction, aimed at measuring reactions of the trainees' impressions and thoughts on how to apply what they have learned, as well as on their views on different aspects of training process. Learning, aimed at measuring level of changes in the knowledge, attitudes and skills of learners in theory. Behavior, aimed at measuring level of changes in the behavior of trainee and the manner in which he performed his duties in practice.

The study questions centered on "trying to explore the evaluating employees training effectiveness in Algerian universities", through this exploratory study and by studying a sample of 28 Algerian universities, our answer to these questions is in this result:

"Evaluating employees training effectiveness is available at Algerian universities with moderate level in terms of approval degree of the respondents, where the approval degree mean was (3.421), and from the perspective of their constituent dimensions (reaction, learning, behavior) the approval degree mean was (3.163, 3.491, 3.610, 3.421), respectively".

The results showed that evaluating employees training effectiveness is less than the standard level. Through the collected data on effective evaluation, we find that the reaction, learning behavior needs to be improved further, so understanding and evaluation of training as a continuous process requires periodic review and analysis, with need to develop a systematic process of evaluation within the organization.

The results of the study indicated that evaluation of the training process is in an average level in Algerian universities, this is unacceptable in view of expenses incurred by Algerian universities in order to ensure continuous training of their employees. The following recommendations must be taken into account by Algerian universities:

- Continuous evaluation by HRM supervisors of employees reaction of who underwent training and to know their opinions about it, (i.e., do they like the training topics? did they consider it relevant to their tasks and activities? was time available for training sufficient? in short, trying to identify - through the trainees survey - the reasons that would contribute to the achievement of the expected training benefits, in order to be used as feedback for future training programs and activities);
- Continuous evaluation by HRM supervisors of employees learning of who underwent training, by knowing how well they have developed their knowledge and whether they are able to showcase their skills through a series of tests or interviews, to make sure they understand what has been provided in the training program, and ensure that it is within a good level and not only acceptable;
- Continuous evaluation by HRM supervisors of employees behavior of who underwent training, by recognizing their ability and willingness to put what they

have learned into practice once they return to their workplace, as well as their degree of improvement in way they perform their activity, and whether they can pass on what they have learned in program of training to their other co-workers.

Addressing subject of evaluating employees training in Algerian universities raises several important topics; in general, they constitute interesting research prospects. As research topics, we propose the following:

- Obstacles facing effective evaluation of training process in universities;
- Build a proposed model to evaluate effectiveness of employee training at the university;
- Implications of technological transformation on evaluating effectiveness of training programs.

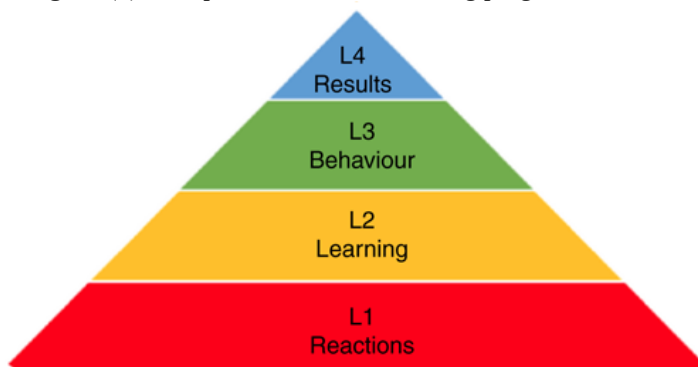
BIBLIOGRAPHY

1. Abdelhakim, A., Jones, E., Redmond, E., Griffith, C. and Hewedi, M. (2018), "Evaluating cabin crew food safety training using the Kirkpatrick model: an airlines' perspective", *British Food Journal*, Vol. 120 No. 7, pp. 1574-1589.
2. Bates, R. (2004), "A critical analysis of evaluation practice: the Kirkpatrick model and the principle of beneficence", *Evaluation and Program Planning*, Vol. 27 No. 3, pp. 341-347.
3. Cunha, P. , Rego, A. , Cunha, R. , Cardoso, C. , Marques, C. and Gomes, J. (2010), "Manual de Gestão de Pessoas e do Capital Humano", 2nd ed., Edições Silabo, Lisboa.
4. Curado, C. and Martins Teixeira, S. (2014), "Training evaluation levels and ROI: the case of a small logistics company", *European Journal of Training and Development*, Vol. 38 No. 9, pp. 845-870.
5. Diamantidis, A. and Chatzoglou, P. (2012), "Evaluation of formal training programmes in Greek organisations", *European Journal of Training and Development*, Vol. 36 No. 9, pp. 888-910.
6. Diez, F., Bussin, M., Lee, V., Diez, F., Bussin, M. and Lee, V. (2019), "Training and Development", *Fundamentals of HR Analytics*, Emerald Publishing Limited, pp. 121-141.
7. D'Souza, K., Hawkes, E. and Mills, C. (2013), "Innovative evaluation of researcher training at the University of Birmingham, UK", *International Journal for Researcher Development*, Vol. 4 No. 2, pp. 117-124.
8. Heaslip, G. and Stuns, K. (2019), "Effectiveness of humanitarian logistics training", *Journal of Humanitarian Logistics and Supply Chain Management*, Vol. 9 No. 2, pp. 196-220.
9. Kirkpatrick, D. (1959), "Techniques for Evaluating Training Programs", *Journal of American Society for Training and Development*, Vol. 13, 1959, pp. 3-9, 21-26; Vol. 14, pp. 13-18, 28-32.
10. Kirkpatrick, D. (1979), "Techniques for evaluating training programs", *Training and Development Journal*, pp. 78-92
11. Kirkpatrick, D. (1998), "Another Look at Evaluating Training Programs", *American Society for Training and Development*, Alexandria, VA.
12. Kirkpatrick, D. and Kirkpatrick, J. (2005), "Transferring Learning to Behavior – Using the Four Levels to Improve Performance", 1st ed., Berrett – Koehler Publishers, San Francisco, CA.

13. Kirkpatrick, D.L. and Kirkpatrick, J.D. (2006), "Evaluating Training Programs: The Four Levels", 3rd ed., Berrett-Koehler Publisher, San Francisco, CA.
14. Kuchеров, D. and Manokhina, D. (2017), "Evaluation of training programs in Russian manufacturing companies", *European Journal of Training and Development*, Vol. 41 No. 2, pp. 119-143.
15. Maity, S. (2019), "Identifying opportunities for artificial intelligence in the evolution of training and development practices", *Journal of Management Development*, Vol. 38 No. 8, pp. 651-663.
16. Olexová, C. (2018), "Establishing the financial returns arising from an evaluation of a retail training programme", *Industrial and Commercial Training*, Vol. 50 No. 1, pp. 20-31.
17. Passmore, J. and Velez, M. (2012), "SOAP-M: a training evaluation model for HR", *Industrial and Commercial Training*, Vol. 44 No. 6, pp. 315-325.
18. Phillips, S. and Bullock, A. (2018), "Clinical leadership training: an evaluation of the Welsh Fellowship programme", *Leadership in Health Services*, Vol. 31 No. 2, pp. 226-237.
19. Rawashdeh, A. (2018), "The impact of green human resource management on organizational environmental performance in Jordanian health service organizations", *Management Science Letters*, Vol. 8 No. 10, pp. 1049-1058.
20. Rawashdeh, A. and Tamimi, S. (2019), "The impact of employee perceptions of training on organizational commitment and turnover intention", *European Journal of Training and Development*, Retrieved from:
<https://www.emerald.com/insight/content/doi/10.1108/EJTD-07-2019-0112/full/html>
21. Tamkin, P., Yarnall, J. and Kerrin, M. (2002), "Kirkpatrick and Beyond: A Review of Training Evaluation", The Institute for Employment Studies, Falmer, Brighton.
22. Wayne Cascio (2019), "Training Trends; Macro, micro and policy issues". *Human Resource Management Review*, Vol. 29 No. 2, pp. 284-297.

Appendices:

Figure (1): Kirkpatrick model for training program evaluation



Source: (Kirkpatrick, D.L. and Kirkpatrick, J.D. ,2006)

Table (1). Summary of availability degree of evaluating employees training effectiveness in Algerian universities

<i>levels of Training evaluation</i>	<i>Mean</i>	<i>SD</i>	<i>Rank</i>	<i>Availability</i>
Reaction	3.163	0.705	3	Medium
Learning	3.491	0.710	2	Medium
Behavior	3.610	0.712	1	Medium
Means & SD of the axis	3.421	0.622	/	Medium

Source: Author's preparation based on statistical analysis result

Table (2). Approval degree, means and SDs of reaction items in Algerian universities

Items	Approval degree					Mean	SD
	Strongly Agree	Agree	Neutral	not agree	Strongly Disagree		
Fr	12	43	43	23	5	3.27	0.999

1- After employees	%	9.5	34.1	34.1	18.3	4		
2- The time allotted to employees training is	Fr	6	25	30	54	11	2.69	1.039
	%	4.8	19.8	23.8	42.9	8.7		
3-Feedback from trained employees is usually good.	Fr	14	49	35	23	5	3.35	1.030
	%	11.1	38.9	27.8	18.3	4		
4- Trainees believe that the necessary training	Fr	8	39	35	41	3	3.06	0.994
	%	6.3	31	27.8	32.5	2.4		
5- The training topics are serious and interesting for trained	Fr	10	45	44	20	7	3.25	1.001
	%	7.9	35.7	34.9	15.9	5.6		
6- Trainees apply what they have learned in training within	Fr	11	54	37	17	7	3.36	1.008
	%	8.7	42.9	29.4	13.5	5.6		
General mean and SD of availability degree for reaction							3.163	0.705

Source: Author's preparation based on statistical analysis result

Table (3). Approval degree, means and SDs of learning items in Algerian universities

Items	Approval degree						Mean	SD
		Strongly Agree	Agree	Neutral	not agree	Strongly Disagree		
7- Trained employees acquire skills and knowledge to	Fr	11	68	32	11	4	3.56	0.890
	%	8.7	54	25.4	8.7	3.2		
8- Employees take reasonable time to understand the	Fr	7	64	36	16	3	3.44	0.872
	%	5.6	50.8	28.6	12.7	2.4		
9- Trainees understand and absorbs what they gain in	Fr	10	52	38	20	6	3.32	0.993
	%	7.9	41.3	30.2	15.9	4.8		
	Fr	15	67	24	16	4	3.58	0.966

10- Trainees' ability to show	%	11.9	53.2	19	12.7	3.2		
11- The information and knowledge possessed by the	Fr	15	61	24	16	4	3.55	0.986
	%	11.9	53.2	19	12.7	3.2		
General mean and SD of availability degree for learning							3.491	0.710

Source: Author's preparation based on statistical analysis result

Table (4). Approval degree, means and SDs of behavior items in Algerian universities

Items	Approval degree						Mean	SD
		Strongly Agree	Agree	Neutral	not agree	Strongly Disagree		
12- Trained employees are increasingly able to take	Fr	18	58	32	15	3	3.58	0.958
	%	14.3	46	25.4	11.9	2.4		
13- Trainees know that there is a change in their behavior	Fr	26	59	29	9	3	3.76	0.942
	%	20.6	46.8	23	7.1	2.4		
14- The degree of responsiveness of the trainee employees to	Fr	21	55	37	11	2	3.65	0.915
	%	16.7	43.7	29.4	8.7	1.6		
15- Trainees apply what they have learned in training in their	Fr	14	56	31	19	6	3.42	1.030
	%	11.1	44.4	24.6	15.1	4.8		
16- The way the trained staff performs their work is	Fr	14	67	26	17	2	3.59	0.915
	%	11.1	53.2	20.6	13.5	1.6		
17- Trainee employees can pass on what they have learned	Fr	19	66	24	13	4	3.66	0.965
	%	15.1	52.4	19	10.3	3.2		
General mean and SD of availability degree for behavior							3.610	0.712

Source: Author's preparation based on statistical analysis result

