

## Article

# The Degree of Practicing Creative Leadership by Academic Leaders at Jordanian Universities and Its Relationship to the Level of Teaching Performance

Zohair H. Al-Zoubi, Hytham M. Bany Issa \* and Fawwaz Y. Musallam

Department of Educational Foundations and Administration, College of Educational Sciences,  
The Hashemite University, Zarqa 13133, Jordan

\* Correspondence: hytham@hu.edu.jo

**Abstract:** This study aimed to identify the degree to which academic leaders at official Jordanian universities practice creative leadership and its relationship to the level of teaching performance according to faculty members' point of view. This study also aimed to identify if there are statistically significant differences in the degree of creative leadership and in the level of teaching performance due to the variables of faculty and years of experience. It also aimed to examine the correlation between creative leadership and teaching performance. A descriptive correlative approach was used in this study, and the study sample consisted of 362 faculty members at Jordanian universities during the second semester of the academic year 2020/2021. This study found that the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian universities was high, and it also showed that there were no statistically significant differences in the degree of academic leaders' practice of creative leadership at the faculties of Jordanian public universities due to the variables of faculty and years of experience. The level of teaching performance of faculty members at the faculties of Jordanian universities was also high, and there were no statistically significant differences in the level of teaching performance of faculty members. There was a positive relationship between the degree of practicing creative leadership and the level of teaching performance of faculty members at Jordanian universities. According to the results of this study, the researchers recommended that universities should adopt the concept of creative leadership because of its positive role in achieving the universities' mission, vision, and objectives, and in motivating employees.

**Keywords:** academic leaders; creative leadership; teaching performance; Jordanian universities



**Citation:** Al-Zoubi, Z.H.; Issa, H.M.B.; Musallam, F.Y. The Degree of Practicing Creative Leadership by Academic Leaders at Jordanian Universities and Its Relationship to the Level of Teaching Performance. *Educ. Sci.* **2023**, *13*, 163. <https://doi.org/10.3390/educsci13020163>

Academic Editor: Youmin Xi

Received: 21 November 2022

Revised: 19 January 2023

Accepted: 25 January 2023

Published: 3 February 2023



**Copyright:** © 2023 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<https://creativecommons.org/licenses/by/4.0/>).

## 1. Introduction

Organizations seek to organize all their affairs in various fields because leadership and creativity are important features of excellence. As organizations seek to develop their internal and external relations, societies and institutions must insist on creating a conscious leadership that is aware of modern developments and renewable circumstances. In addition, leadership must keep up with the speed of developments and the important needs of the organization, and these issues are achieved by creative leadership that is able to organize its affairs, deal with concerns regarding important issues, and achieve the desired goals [1].

Leadership has great importance and a great role in the success of educational administration. Leadership is defined as the art of treating human nature or the art of influencing human behavior and directing a group of people toward a specific goal in a way that ensures their obedience, trust, respect, and cooperation. Some people define it as the art of guiding people and affecting them. It means the art of management as it means effective activities in the administrative approach because it transfers administration from a static state to an active state [2]. Leadership is considered a link that relates between employees and what an organization plans. This will help an organization achieve its goals, keep up

with surrounding changes, and use them to serve the organization and develop itself as desired [3].

Leadership is necessary for all organizations, regardless of the types of activities they engage in, which include all the administrative areas of planning, organizing, motivating, controlling, and making decisions. A leader has a significant role in guiding employees to achieve the desired goals through his/her ability to influence their behavior and in making administration more effective and dynamic [4]. Creative leadership is one of the modern approaches that is used to develop and improve the performance of institutions, wherein creative leader changes the general state of policy through available human and financial resources and formulates a vision for the future. Moreover, he/she develops the necessary strategies and directs others through motivation and being a good role model. He/she defines the general framework for creativity and the ways of working to achieve the mechanisms of creativity for the performance of all employees in the institution [4].

Leadership is one of the most discussed and written about topics in the field of management, and it is also one of the most controversial topics. It represents one of the defining tasks of managers, in that it distinguishes an efficient and creative manager from others. The progress or failure of achieving the goals of any organization depends on the efficiency and creativity of the leadership of the organization. Efficient and creative leaders are rare because they need a lot of work to fulfill and a lot of achievements that lead to superiority, and the development of an organization's advanced technologies is not enough without creative leadership to create a positive interaction in the organization's environment [5].

Reference [6] defines creative leadership as a leader's ability to innovate and reform in various areas, such as thinking and practicing, to bring about qualitative and quantitative development in the fields of work and achievement within an institution, taking into account the work to uncover problems and obstacles in order to solve them, to create a stable climate, and to meet the needs of workers. Creative leadership becomes a basic requirement for the modern leader during modern challenges and developments to guide institutions to a highly competitive quality [7]. Creative leadership is based on changing and building an institutional framework that encourages creativity, especially when decisionmakers realize that there is a gap between the actual performance of an organization and the desired performance [8]. According to [9], creativity is the main driver of change. Creativity has no value without change as each leads to the other. Leadership uses creativity to achieve efficiency and excellence. According to creative leadership, the desired change includes essential matters, such as strategies and policies, the vision of the organization, the use of modern techniques, and the use of unusual methods to reach the desired goal; this is contrary to the traditional leadership, which is characterized by its inflexibility and rigidity. The skills of a creative leader are the skills that he/she needs in his/her fields of work, and there are many that can be obtained through training and learning [10].

A creative leader's practice of work includes training himself/herself to acquire work skills and developing his/her methods by collecting the largest amount of information about the progress of work and monitoring successful physical models in leadership. These are all considered ways to develop the skills of leaders [11].

Reference [12] mentioned that the skills of creative leadership include the following: (1) sensitivity to problems as a creative leader is the most capable person in sensing problems and having the ability to solve them; (2) perseverance as a creative leader is persistent and able to control his/her surroundings; (3) initiative as creative leaders are proactive and achieve a high level of performance, and organizations rely on them to make the necessary change; and (4) authenticity as a creative leader has the ability to be free from everything traditional and common.

The activity of university institutions is characterized as an academic activity. University's most important duty in education, scientific research and community service requires creative management and leadership, and empowering faculties at the university through

creative administrative leadership is achieved through the selection of qualified leaders by decision makers.

Thus, when leaders are good, this will provide an organizational atmosphere that encourages creativity, which is reflected specifically on the college and the university in general [13].

The performance of universities depends on the leadership of faculties, and there is no doubt that leading faculties is a very hard task due to the continuous change in the surrounding environmental conditions and the accompanying problems in managing conflict and change. So, a university's administration must believe in change, be firm and provide the appropriate conditions for the leaderships to perform their work gracefully, without creating difficulties or burdening their movements [14].

There are many requirements that must be fulfilled by creative leaders, which are the following: reconsidering the university's mission, vision, strategies and organizational structures; achieving the quality concepts; making a full interaction and integration between the university and its neighboring environment; presenting a high level of quality of work in all its forms, including administrative, teaching and research work; having the ability to manage any change and conflict and the environment; and having the ability to interact with emerging conditions.

Teaching performance is considered an essential pillar in the educational process. Ref. [15] defines teaching performance as the degree to which faculty members implement activities and processes that indicate their ability to practice educational skills inside and outside the classroom, which are measurable. It seems easy to some, but it includes many complications due to the fact that teaching performance deals with students of different backgrounds, and the desired aim is helping students to learn. Teaching performance is one of the works which quality can be judged on based on a professor's ability to manage it [16]. University teaching performance is one of the most important topics that should be given attention because of its importance in improving the level of university graduates and the effectiveness of developing curricula, which include content and methods [17].

Teaching performance is one of the topics that has occupied the minds of social thinkers and writers. There are many definitions about this topic, which differ from one researcher to another, from one theory to another, and from one specialty to another. Before talking about the definition of teaching performance, we must divide it into two main parts: performance and teaching. Performance, according to [18], is the visible behavior that can be observed, appreciated, and evaluated. As for teaching, it is defined by [19] as a set of activities with multiple aspects and dimensions. It includes not only information, but also knowledge, emotions, and movements that happen through presenting one's experience and knowledge, asking questions, explanation, interpretation, listening, and discussion. Ref. [20] defined teaching performance as a behavior or effort made by a teacher to achieve the desired goals according to a set of rules and laws, which regulate the process of planning, preparing, implementing teaching, and evaluating the performance of learners and the consequent professional responsibilities. Teaching performance of a university professor is defined as the commitment of a professor to the requirements of his/her job and the tasks that are assigned, such as working hours, teaching, guiding students scientifically and morally, supervising their research and their scientific activities, and performing his/her scientific duty in his/her fields of research and administrative guidance, as well as following the university's regulations [18].

Reference [21] divided teaching performance into several elements, including having knowledge of the requirements of the job. It also includes knowledge and technical skills about the job and related fields about the job. The most important requirements include the following: being able to transform the negativity, which is found in students, to positivity and to cast a mistake as a way to discover the right solution; having efficiency in the content of the scientific courses that are related to one's specialization; respecting students and guiding them academically; performing scientific research continuously; and writing books and publishing scientific articles.

The amount of the work can be defined as the amount of work that a teacher can accomplish in normal conditions and the speed of this achievement, so that the amount of work performed by a teacher in a modern teaching system is much greater than it has been in a traditional system. Perseverance and confidence include seriousness, dedication to work, and the ability to take responsibility for work and complete it on time. Thus, teaching performance is a set of overlapping factors that must be focused on all its elements, starting with a university professor and ending with the tasks that are entrusted to him or her.

Teaching skills that professors need in their profession and obtaining them are considered the main goals for the faculty members at a university. These skills are very important because they are part of the tools of the teaching and learning process, which require few capabilities and efforts that will be reflected on a professor's teaching performance. Ref. [22] defined teaching skills as the sum of abilities that a faculty member possesses, which qualifies him/her to teach at a university efficiently. These abilities are related to four groups: (1) ability to plan for teaching; (2) ability to implement teaching; (3) ability to evaluate students' learning; and (4) ability to communication with students.

University teaching includes these characteristics: it is a purposeful, specialized, and professional activity. It is professionalized by officially appointed persons (teachers) to achieve certain goals and requires them to have teaching efficiencies, which are a set of knowledge, skills, and attitudes that are necessary to be successful in teaching. In addition, it involves mastering the courses skillfully, knowing the psychological characteristics of students, knowing the ways of teaching, and mastering the skills of teaching. Professors must be ready to perform their profession through obtaining the necessary professional qualification before working at a faculty and taking this qualification during the service. Teaching is a basic, interrelated process involving planning, implementation, and evaluation [23].

A transactional leader in a school system should be able to ensure that each specific teacher inside the educational organization has been performing the job they were hired to do, according to a study by [24] entitled Effective supervision of teaching in Nigerian colleges. A leader is expected to carry out the duties that have been assigned to him/her, including encouraging a suitable environment for both teaching and actual book learning, giving teachers expert advice on record keeping, and assisting teachers in ensuring the proper maintenance of the college facilities. The conclusion is that the information above will help determine if a teacher needs to be fired, promoted, or retrained in the educational system.

Employees must possess a very high level of intellectual skills, personality, and psychological aptitudes in order to successfully navigate the leadership–follower relationships that are advantageous to both parties. Unfortunately, they will not achieve the targets that are expected if they cannot take part in such a sophisticated leadership [25].

In order to reach the desired development in university education, it is necessary to evaluate the performance of a university professor periodically and continuously. This evaluation will motivate the professor to improve his/her performance and increase his/her effectiveness. It plays an important role in developing scientific materials (courses), their contents, and the approved methods in teaching, and it is the most effective method that tests teaching performance to make sure if it goes in the correct way. Additionally, knowing the level of a professor's control of his/her performance has a role in the development of the educational process at a university, thus raising the level of quality of university education and helping develop educational programs and teaching methods at the university [14].

The function of school leaders in the future is clearly impacted by the school leaders' job as a social architect, according to [26]. Instead of continuing to run schools for only "excellent learners" who match the present framework, school administrators will need to come up with and put into practice strategies for transforming schools into environments that are suitable for students. School administrators will also need to have a general understanding of cultural diversity and know how to make it work in the classroom.

A number of researchers have dealt with studies related to administrative creativity, including [3], who found that the level of administrative creativity was medium, and [27],

who found that the level of administrative creativity skills among the managers of secondary schools was at a good level, and there were no statistically significant differences in the degree of practicing administrative creativity due to the variables of gender, years of service, and specialization. As for [28], it was concluded that the administrative creativity of managers came to a high degree; there were no statistically significant differences in members' estimation of the level of administrative creativity due to the variable of gender and academic qualification, while there were differences attributed to experience, and a positive relationship was found between the methods of managing conflict and administrative creativity. As for the study by [29], it showed that the degree of practicing administrative creativity by educational leaders in the directorates of education in Irbid was medium, and there were no differences due to the variables of practical experience, directorate, and job title. The study by [30] found that the level of administrative creativity among managers of schools was high and there were differences due to the variable of academic qualification (PhD category). The results of [20] showed that the degree of practicing creative leadership by the deans of the faculties of pharmacy at Jordanian universities was high, and there were no statistically significant differences due to academic rank, gender, years of experience, and presence of differences according to the university.

As for [31], the results of this study showed that the degree of administrative creativity among school leaders was high, and there were statistically significant differences due to the variable of years of experience (10 years or more). Ref. [32] found that administrative creativity was very high among secondary school leaders in Khamis Mushait governorate according to creative leadership. The results of [33] showed that the total degree of practicing administrative creativity was large, and there were no differences due to the variables of years of experience, academic qualification, and specialization. Ref. [34] showed that the degree of practicing the skills of creative leadership by the academic leaders at the Imam Abdulrahman bin Faisal University was high, and there were no differences due to the variables of faculty and years of service.

Reference [35] found that the degree of practicing creative leadership by the academic leaders at Najran University was very high, and that there were no statistical differences due to gender, years of experience, academic qualification, and faculty. The results of [36] showed that the degree of school leaders' practice of creative leadership was high, and there were no statistically differences due to the variables of experience and educational qualification.

As for the studies that dealt with teaching performance, ref. [37] showed that the level of job performance among educational supervisors was high. The results of [38] also showed that there is a direct relationship between job performance and the study variables of academic qualification, number of training courses, and the Director General's assessment, while [39] showed a positive relationship between the level of performance and the degree of innovative leadership among managers.

Reference [40] concluded that the degree of faculty members' performance of teaching competencies is medium according to the standards of total quality management. There are statistically significant differences in the degree of practicing teaching competencies by teaching staff, according to the standards of total quality management, in the field of evaluation and the field of communication due to gender. These results showed that there are differences in the degree of practice of teaching competencies by faculty members, according to the comprehensive quality standards in each field of study, and in performance as a whole.

As for [41], the results of the study indicated that there is a high level of standards for the quality of university environment in all fields and a high quality of teaching performance among university professors as a whole, and for each skill separately. The results of [42] stated that male and female teachers have high degrees of trending toward modernity, social commitment, and job performance. Ref. [21] revealed that university teaching skills that are found among the teaching members at the Al-Balqa Applied University are moderate according to the students' point of view, and this study also showed that there



are statistically significant differences in teaching skills among all faculty members due to gender according to the students' point of view.

Reference [18] found that the quality of teaching performance of university professors in a lecture is low and the quality of teaching performance of university professors in an applied class is also low, and there are no statistically significant differences between students in their assessment of the level of teaching performance of university professors due to the gender variable. There are also no statistically significant differences among students in their assessment of the level of teaching performance of university professors due to the variable of scientific specialization. The results of [43] showed a statistically significant relationship between emotional intelligence and job performance. As for the study by [44], the results of their study showed that students' attitudes toward the job performance of university professors are high.

The results of [45] showed that the degree of practicing management, which is based on the values of the managers of secondary schools, is considered moderate, and there are statistically significant differences in job performance among teachers according to gender, which is in favor of females, specialization, which is in favor of those with humanitarian specialties, and practical experience for no less than five years. There are no differences according to the educational qualification variable, and there is a direct statistically significant relationship between the degree of management with values and the level of job performance of teachers.

## 2. Statement of the Problem

Most administrations and leaderships at universities and institutions related to university education have a desire for change and a generality to keep up with the current era. Working at universities needs innovation and creativity, especially in the issue of management and leadership. Universities need a new modal of leaders with modern and distinctive skills and trends. Successful management is considered one of the factors that helps to develop teaching performance. Teaching skills and obtaining them are main goals for university staff, and they are very significant because they are the tools of the educational process that require possible capabilities and efforts that are reflected in professors' performance.

The current study aims to answer the following questions:

**First question:** To what degree the academic leaders at Jordanian universities practice creative leadership according to teaching staff's point of view?

**Second question:** Are there statistical differences ( $\alpha = 0.05$ ) in the level of practicing creative leadership by the academic leaders at Jordanian universities according to faculty members' point of view due to the variables of faculty and years of experience?

**Third question:** How is the level of teaching performance among faculty members at Jordanian universities?

**Fourth question:** Are there statistically differences ( $\alpha = 0.05$ ) in teaching performance among faculty members at Jordanian universities according to faculty members' point of view?

**Fifth question:** Is there a relationship between the degree of practicing leadership by academic leaders and the level of teaching performance of faculty members?

## 3. Methodology of the Study

The researchers used the descriptive approach to measure the level of creative leadership and teaching performance. The correlation method was used to examine the relationship between creative leadership and teaching performance.

## 4. Study Population and Study Sample

The study population consists of all faculty members at official Jordanian universities, and their number is 11394 individuals, according to the official statistics from the website of the Jordanian Ministry of Higher Education and Scientific Research for the academic year 2019/2020. The study sample consisted of 362 faculty members who were chosen by

a stratified random sampling method from three public universities representing each of the three regions of Jordan, namely: North Region (Yarmouk University), Central Region (The Hashemite University), and South Region (Mut'ah University). Table 1 shows the distribution of the study sample.

**Table 1.** Distribution of the study sample based on the variables of faculty and years of experience.

The Variable	Category	Number	Percentage
Faculty	scientific	168	46%
	Humanitarian	194	54%
Years of Experience	1–5 years	114	31%
	From 6–10 years	140	39%
	11 years and more	108	30%
Total		362	100%

#### 4.1. Study Tool

To achieve the study's objectives, the researchers developed a questionnaire to identify the degree of practicing creative leadership by the academic leaders at Jordanian universities by referring to a number of previous studies and taking their findings into account when developing the questionnaire, including references [20,28,29]. The questionnaire, in its final form, consisted of 24 items, which were divided into three fields. A questionnaire was also developed for the level of teaching performance of faculty members after referring to a number of previous studies, including references [37,39,41,43,45]. The questionnaire, in its final form, consisted of 20 items, which were divided into three areas.

#### 4.2. Instrument Validity

To verify the validity of the instrument of the study, a content validity method was adopted. The questionnaire in its initial form was presented to 10 arbitrators (university professors), who are experts in majors of educational administration and educational policies in Jordanian universities. They were asked to read the items of the questionnaire and delete, modify, add, merge, reform, and explain some of the phrases they thought were inappropriate according to their point of view. The arbitrators agreed on the validity of a large number of items and suggested some modifications in reforming some items, which had already been modified, and adding other items. The researchers took notes, modified, and added the items that were proposed by the arbitrators. To ensure the reliability of the tool, internal consistency (Cronbach's alpha) was used to check the items of the questionnaire for their degree of availability and appropriateness, as shown in Table 2.

**Table 2.** Value of Cronbach's alpha.

Variables	Cronbach's Alpha
Creative leadership by the academic leaders	0.86
Teaching performance	0.94

Table 2 shows the stability coefficient of the internal consistency of the questionnaire that measures the degree of practicing creative leadership by the academic leaders and the questionnaire that measures the level of teaching performance (Cronbach's alpha).

It appears in Table 2 that the stability coefficient for the tool which measures the degree of practicing creative leadership is 0.86 and the coefficient of the tool which measures the quality of teaching performance among teaching staff is 0.94. This indicates that the tools have appropriate stability coefficients to achieve the objective of the study. Note that the sample responses are expressed according to a five-point Likert scale (strongly agree, agree, neutral, disagree, and strongly disagree).

The degree of practicing creative leadership as well as the quality of teaching performance were determined through three levels (low, medium, and high) by evaluating the arithmetic averages as follows: Items which averages range from 1.00 to 2.33 mean that the degree of practicing creative leadership and the quality of teaching performance of faculty members are low. Items which averages range from 2.34 to 3.67 mean that the degree of practicing creative leadership and the quality of teaching performance of faculty members are medium. Items which averages range from 3.68 to 5.00 mean that the degree of practicing creative leadership and the quality of teaching performance of faculty members are high. The scale was calculated by using the following equation: The upper limit of the scale (5) was subtracted from the lower limit of the scale (1), and the result was (4). Then, the difference between the two terms was divided by three levels (4/3), and the result was 1.33. Finally, the answer (1.33) was added to the end of each category.

#### 4.3. Procedures of the Study

To achieve the objectives of the study and reach the required results, the following procedures must be followed:

1. Obtaining an official letter to facilitate the researchers' task of administering the study tools to the faculties of Jordanian public universities and communicating with faculty members through e-mail, especially since we were in the period of the COVID-19 pandemic, and it was difficult to communicate with faculty members because teaching performed was online through Microsoft teams.
2. Preparing the tool of the study and verifying its validity and reliability.
3. Determining the members of the study's targeted community by referring to the official statistics of the Ministry of Higher Education and Scientific Research, obtaining the official numbers, and determining the number of participants, which consisted of 362 faculty members who were randomly chosen.
4. Distributing the study tools to the participants to collect data. An explanation was provided on how to answer the tools of the study and other related information, and the participants were told that their responses would only be used for scientific research purposes.
5. Collecting the tools of the study to ensure their validity for statistical analysis and to categorize them according to the study variables.
6. Processing data statistically using a statistical analysis program (SPSS), interpreting the data, discussing the results, and writing recommendations.

#### 4.4. Presenting the Results of the Study

The results presented below are related to the first question: To what degree the academic leaders at Jordanian public universities practice creative leadership according to teaching staff's point of view?

To answer this question, the averages and standard deviations were calculated for the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian public universities according to the point of view of the faculty members at these universities, as shown in Table 3.

Table 3 shows that the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian universities is very high according to the responses of the teaching staff.

The results presented below are related to the second question: Are there statistically significant differences ( $\alpha < 0.05$ ) in the responses of faculty members about the degree of practicing creative leadership by the academic leaders at the faculties of public Jordanian universities due to the variables of faculty and years of experience? In order to find out whether there are differences or not due to the faculty variable, the averages and standard deviations were calculated, and the *t*-test was used to reveal the significance of the differences between the averages of the responses of faculty members about the



degree of practicing creative leadership by the academic leaders at the faculties of Jordanian universities due to the variable of faculty, and Table 4 shows the results.

**Table 3.** Means and standard deviations for the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian public universities according to the faculty members' point of view.

Dimension	Mean	Standard Deviation	Rank	Degree
The ability to solve the problems	3.71	0.66	1	High
Initiative and perseverance	3.70	0.78	2	High
Encouraging creativity and intellectual evoking	3.68	0.79	3	High
Creative leadership	3.70	0.77		High

**Table 4.** Mean, standard deviations, and the results of t-test for the significance of differences between the responses of the faculty members about the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian universities according to the faculty variable.

Dimension	Faculty	N	M	Standard Deviation	df	T	Sig
The ability to solve the problems	Scientific	168	3.68	0.74	360	0.148	0.88
	Humanitarian	194	3.66	0.85			
The ability to make a change	Scientific	168	3.62	0.81	360	−0.633	0.53
	Humanitarian	194	3.72	0.77			
Encouraging creativity and intellectual evoking	Scientific	168	3.73	0.76	360	0.328	0.740
	Humanitarian	194	3.68	0.80			
The total degree	Scientific	168	3.68	0.75	360	0.132	0.90
	Humanitarian	194	3.69	0.74			

The results of the test (T), as shown in Table 4, indicate there are no statistical differences at the level of  $\alpha \leq 0.05$  in the responses of the teaching staff about the degree of practicing creative leadership by the academic leaders at the faculties in Jordanian universities due to the faculty variable: the calculated t-value is 0.132 with a significance value of 0.90. Additionally, there are no statistical differences at the level of  $\alpha \geq 0.05$  in the average of the responses of teaching staff in all fields regarding the practice of creative leadership by the academic leaders of Jordanian universities due to the faculty variable, according to the t-value, which is not statistically significant for all fields.

In order to find out whether there are differences or not due to the variable of years of experience, the averages and standard deviations were calculated to reveal the significance of the differences in the responses of the teaching staff regarding the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian universities due to the variable of years of experience, and Table 5 shows the results.

**Table 5.** Mean and standard deviations of the faculty members about the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian universities according to years of experiences.

Variable	Level	N	Mean	Standard Deviation
Creative leadership	Less than 5 years	114	3.84	0.62
	Between 6–10 years	140	3.85	0.77
	More than 10 years	108	3.64	0.96

Table 5 indicates that there are apparent differences between the averages and standard deviations of the responses of faculty members about the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian public universities according to years of experience. To verify the significance of the apparent differences, a one-way ANOVA was performed on their responses according to the variable of years of experience, and Table 6 shows the results.

**Table 6.** Results of one-way ANOVA about the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian public universities due to the faculty variable and years of experience.

Variable	Source	Sum of Squares	df	Mean of Square	F	Sig
Creative leadership	Between group	3.32	2	1.661	2.295	0.10
	Within group	236.75	359	0.274		
	Total	240.07	361			

Table 6 shows that there are no statistically significant differences at the significance level ( $\alpha \leq 0.05$ ) in the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian public universities due to the variable of years of experience.

The third question: What is the level of teaching performance of faculty members at Jordanian public universities according to faculty members' point of view?

To answer this question, the averages and standard deviations for the level of teaching performance among the faculty members at Jordanian public universities were calculated according to the faculty members' point of view, as shown in Table 7.

**Table 7.** Mean and standard deviations for teaching performance among the faculty members at Jordanian public universities according to the faculty members' point of view.

Variables	Mean	Standard Deviation	Rank	Degree
Planning	3.96	0.54	1	high
Execution	3.95	0.52	2	high
Evaluation	3.93	0.55	3	high
Teaching performance	3.95	0.53		High

Table 7 shows that the level of teaching performance among the faculty members at Jordanian public universities is high according to the faculty members' point of view (according to their responses).

The fourth question: Are there statistically significant differences in the level of teaching performance of faculty members at the faculties of Jordanian public universities according to the two variables of faculty and years of experience? In order to find out whether there are differences or not due to the faculty variable, the averages and standard deviations were calculated, and the *t*-test was used to reveal the significance of differences in the level of teaching performance at the faculties of Jordanian public universities from the point of view of the faculty members due to the variable of faculty, and Table 8 shows the results.

The results of *t*-test, as shown in Table 8, indicate that there are no statistically significant differences at the level of significance ( $\alpha \leq 0.05$ ) in the average responses of the faculty members about the level of teaching performance among the faculty members at the faculties of Jordanian public universities due to the variable of faculty, based on the calculated *t*-value, which is 0.132 with a significance level of 0.90.

**Table 8.** Means, standard deviations, and the results of t-test for the significance of the differences in the responses of the faculty members about the level of teaching performance among the members of the faculties at Jordanian public universities due to the variable of faculty.

Variable	Faculty	N	Mean	Standard Deviation	df	T	Sig
Teaching performance	Scientific	168	3.70	0.66	362	0.132	0.90
	Humanitarian	194	3.68	0.74			

At the significance level ( $\alpha \geq 0.05$ ).

In order to find out whether there are differences or not based on the years of experience variable, the averages and standard deviations were calculated for the responses of the faculty members about the level of teaching performance at the faculties of public Jordanian universities based on years of experience, and Table 9 shows the results.

**Table 9.** Means and standard deviations for the responses of the study participants about the level of teaching performance of faculty members due to the variable of years of experience.

Variable	Level	N	Mean	Standard Deviation
Teaching performance	Less than 5 years	114	3.36	0.58
	Between 6–10 years	140	3.66	0.63
	More than 10 years	108	3.56	0.50

Table 9 indicates that there are apparent differences between the averages and standard deviations of the responses of faculty members at Jordanian public universities due to the variable of years of experience. To verify the significance of the apparent differences, one-way ANOVA was performed on their responses with the variable of years of experience, and Table 10 shows the results.

**Table 10.** Results of the ANOVA about the level of teaching performance among the faculty members based on years of experience.

Variable	Source	Sum of Squares	df	Mean of Square	F	Sig
Teaching performance	Between group	2.75	2	1.376	2.636	0.07
	Within group	170.74	359	0.522		
	Total	173.49	361			

Table 10 shows that there are no statistically significant differences at the statistic level ( $\alpha \leq 0.05$ ) in the level of teaching performance among the teaching staff at Jordanian public universities due to the variable of years of experience.

The fifth question: Is there a statistically significant relationship between the degree of practicing creative leadership and the level of teaching performance of faculty members at public Jordanian universities according to their point of view?

To answer this question, a Pearson correlation coefficient was calculated between the degree of practicing creative leadership and the level of teaching performance of the faculty members at Jordanian public universities, and the results are shown in Table 11.

**Table 11.** Pearson correlation between the degree of practicing creative leadership and teaching performance.

Variables	Teaching Performance
Creative leadership	0.58 *

\* means statistically significant.

Table 11 shows that there is a strong direct and statistically significant relationship between the degree of practicing creative leadership and the level of teaching performance among the faculty members at Jordanian public universities, where the correlation coefficient reaches 0.58, with a statistical significance of 0.00.

## 5. Discussion

The results showed that the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian public universities is very high according to the point of view of the faculty members. These results can be explained by the need for innovation and creativity as one of the basic necessities in business management and institutions over time. The needs and ambitions of educational institutions also grow and expand. Thus, it is no longer sufficient to perform work at universities in the traditional way because continuing with the traditional ways leads to moving backwards and not keeping up with modernity, or even failure. This is what [46] indicated in his study. Therefore, effective universities work to ensure their survival and continuity with an effective power. They must not stop at the limit of efficiency, which means to carry out their work in a correct manner and perform their duty with honesty and sincerity, and this has been confirmed by [1].

Creative leadership also has the ability to affect others and push them to achieve the goals of the institution. To make this influence effective and real, leadership must be based on creativity in its preparation and testing, as well as it must translate the knowledge it has acquired into new choices characterized by quality and into benefits through its interest in solving problems by using creative ways that are different from traditional ways. A creative person notices that there is something wrong that others have not noticed: he/she is born with a high sensitivity to problems, and he/she is able to find a better way to solve the problem. Creative leadership may indicate university leaders' adoption of new methods of leadership that benefit the university and the educational process, and this is what [47] pointed out.

Additionally, creative leadership adopts the principle of altruism, which is reflected in the work of faculty members at different departments when they see how the principle of altruism is at work from the performance of the heads of departments. Perseverance means the strength of determination to achieve, take responsibility, increase emotional maturity, and continue to work to find new innovative solutions to problems. The study participants feel the performances of the university leaders to achieve administrative creativity, and this is what [48] has pointed out.

Through the responses of the study participants, it is clear that the degree of practicing creative leadership by the academic leaders at Jordanian universities is high, and it is clear that the general atmosphere at the universities is dominated by a spirit of cooperation, participation, and creativity, which motivates workers to compete properly to obtain the highest levels of achievement.

The results of this study agreed with the results of previous studies [20,28,30–34,36]. The results of previous studies showed that the degree of practicing creative leadership at the educational institutions where they were conducted was high. The results of this study also differed in terms of the degree of practice from other previous studies [3,27,29]. The results of these studies showed that the degree of practicing creative leadership were medium and low in light of the responses from the sample they studied.

As [49] argued, anyone may exercise creative leadership; it is not just for a select group of people. There is a ton of useful advice provided with many real-world examples. Even those without any training in creativity or leadership should read about creative leadership.

The results also showed that there are no statistically significant differences in the degree of practicing creative leadership by the academic leaders at the faculties of Jordanian public universities according to faculty members' point of view, based on the variables of faculty and years of experience. These results suggested that the responses of faculty members are unified and that there are no differences based on what is applied by the academic leaders. They make a discussion with their subordinates to find suitable solutions

for issues that happen at work and acquire the required skills to solve problems that happen at work. A leader must also be considerate of the subordinates' feelings when he/she analyzes a problem and put in a clear mechanism to control the participation of the subordinates when making decisions. Additionally, a leader must help others at work and motivate the soul of leadership within their subordinates, as well as appreciate the positivity of their subordinates; for a leader, helping others must be a humanitarian responsibility. A leader must invigorate new ideas that are presented by their subordinates and encourage new initiatives. Additionally, a leader supports their subordinates' training and self-control and provides the necessary environment for work and possibilities that contribute to creativity.

The results of this study agreed with the results of previous studies [20,25,27–29,33,34] that there are no differences for the study variables. The results of this study also differed from other previous studies [30,31,36,50], which results indicated that there are statistically significant differences for the study variables in regard to the practice of creative leadership.

The results also showed that the level of teaching performance of faculty members at the faculties of Jordanian public universities was high, according to the responses of the study participants. These results can be attributed to several reasons, including the universities' keenness to develop faculty members professionally during service and through courses, lectures, seminars, and conferences, as well as through supporting colleagues of various ranks and cooperating with those colleagues in order to solve their teaching problems and raise the level of their job performance. Teaching staff also follows self-learning to enhance their professional efficiency. Additionally, faculty members view their profession as requiring effort, sincerity, and high-level perform.

These results also indicate that a conscious and creative leadership at the departments within the faculties of university leads to increasing perseverance by faculty members in carrying out their duties, because it helps them plan for achieving the vision, mission, and goals of the departments, which is reflected on the college and university, especially when these specific goals are written and, therefore, implementing these goals can be achieved with high accuracy. Additionally, it is important to evaluate the goals that are achieved. This will make a faculty member persevere on his/her performance to achieve the determined goals that are set up by the department, faculty, and university.

As it is known, the duties of a faculty member include teaching; conducting examinations; conducting research and innovative studies; and supervising university theses, students' research reports, and their scientific and social activities. These duties include guiding students scientifically and morally by giving academic guidance, participating in university councils and committees, and participating in any work that advances the university and pushes it to progress. A faculty member must devote himself/herself to his/her scientific duty at the university and contribute his/her effort to advance the scientific mission of the university and maintain an appropriate university position in his/her fields of research, teaching, guidance and administration, as well as community service and development.

Based on faculty members' implementation of their duties in terms of planning, implementation, and evaluation, the level is high, which can be reflected in the improvement in the averages of production, cooperation, and keeping up with the global developments related to their tasks.

Therefore, modifications can be made to existing plans based on developments and based on outputs, which can be reflected in the improvement in and increased quality of the rates of production. In addition, an efficient university professor has a degree of professional and personal qualities, including knowledge of the objectives of university education and how to achieve them; showing respect for the university system and instructions; and having the capabilities and skills of scientific thinking and knowledge of its trends, while prioritizing public interests over personal interests and realizing their responsibility.

Ref. [41] also emphasized that one of the most important and modern roles that is required of a university professor to keep up with the requirements of the current era



which we live is providing students with knowledge, facts, and scientific and functional concepts and developing students for future. In addition, a university professor achieves the principle of self-learning and moral controls and entices students to science and education.

The results of this study agreed with the results of previous studies [37,41,42,44]; the results indicated that the level of functional and teaching performance is high. The results of this study also differed from the results of previous studies [18,21,40], which indicated that the level of educational performance was medium or low. The results also showed that there are no statistically significant differences with regard to the level of teaching performance at the faculties of Jordanian public universities from the point of view of the faculty members according to the variables of faculty and years of experience. These results can be explained based on the answer of the third question, which is related to the level of teaching performance among the faculty members, which is high. Therefore, we do not find a difference in the responses of the faculty members according to the variables of faculty and years of experience, because the view of the faculty members for the tasks and duties that they work on is the same regardless of the faculty they belong to and the years of their experience teaching at the university.

Good management in administrative work is strongly linked to performance and increases productivity. The results of this study agreed with the results of [37,41,43,44] that there is no difference in the responses of the study participants according to the study variables. However, the results of this study also differed from the results of [18,40,45].

Ref. [26] found that creative leadership demonstrates leadership's responsiveness to changing circumstances by utilizing the components of evolving leadership methods, such as a school principal serving as a community servant, organizational architect, social architect, moral educator, and visionary leader. The results also showed a strong and statistically significant positive correlation between the degree of practicing creative leadership and the level of teaching performance of faculty members at the faculties of Jordanian public universities from the faculty members' point of view. This result can be explained by the fact that creative leadership and its effectiveness enhance teaching performance. Creative leadership also facilitates the investment in human energies and achieves the desired goals in a better way; it contributes to creating an appropriate organizational climate to reach the desired goals and provokes enthusiasm. Additionally, it evokes the energies to serve the institutions. It ensures the commitment of faculty members to high-quality performance and achieves their loyalty and sense of belonging to their institutions.

One of the factors that increases the level of teaching performance is having a creative and innovative leadership, which is able to facilitate the tasks for faculty members to perform their duties in the best way. The results of this study agreed with the results of several studies [38,43–45].

## 6. Limitations and Recommendations

A self-report method was used to measure creative leadership and teaching performance in this study, and this is one limitation of this study. In addition, another limitation of this study is that all participants in this study are faculty members at Jordanian public universities. This study makes several recommendations. First, there is a need for universities to adopt the concept of creative leadership because of its positive role in achieving the universities' mission, vision, and goals, and in motivating employees. Secondly, there is a necessity of providing the requirements to create a sense of job satisfaction among faculty members by the academic leaders at Jordanian universities, which can motivate faculty members to work hard and sincerely. Thirdly, there is a need to focus on using the best scientific methods to measure teaching performance, such as by measuring the production rates of individuals from the same job categories and comparing them with each other. Finally, it is also important to conduct more studies on the creative leadership style and the difficulties that academic leaders are facing.

**Author Contributions:** Methodology, H.M.B.I.; formal analysis, Z.H.A.-Z.; writing—review and editing, F.Y.M. All authors have read and agreed to the published version of the manuscript.

**Funding:** This research received no external funding.

**Conflicts of Interest:** The authors declare no conflict of interest.

## References

1. Al-Shahwan, D. Creative Leadership among Deans of Faculties in Jordanian Universities in the Governorate of the Capital Amman, and its Relationship to Organizational Conflict Management from the Point of View of Academic Heads of Departments. Master's Thesis, Middle East University, Amman, Jordan, 2019.
2. Atwi, R. The impact of administrative empowerment on creativity from the point of view of women leaders in higher education as one of the entrances to achieving Vision 2030. *Glob. J. Econ. Bus.* **2018**, *4*, 125–151.
3. Al-Harthy, M. The Elements of Administrative Creativity and the Most Prominent Obstacles among the Managers of Of public Secondary Schools in Jeddah according to the Managers' Point of View. Master's Thesis, Umm Al-Qura University, Riyadh, Saudi Arabia, 2012.
4. Lahoub, N.; Al-Sarayrah, M. *Modern Educational Leadership Skills*; Arab Gulf House for Publishing and Distribution: Amman, Jordan, 2012.
5. Eid, H. A proposed vision for achieving creative leadership among university leaders in the Kingdom of Saudi Arabia. *Arab. Stud. Educ. Psychol.* **2015**, *32*, 387–426.
6. Mabry, S. Towards A Creative Leadership Model: A State University's Leadership Labors. *J. Case Res.* **2016**, *7*, 1–22.
7. Hawamdeh, B.; Harahasheh, M. The Level of Administrative Creativity among Educational Leaders in the Directorates of Education in Jordan. *King Saud Univ. J.* **2006**, *18*, 493–543.
8. Al-Saidi, H. Developing the Performance of Leaders of Education Departments in the Kingdom of Saudi Arabia in Light of the Standards of Administrative Excellence (Proposed Model). Master's Thesis, Umm Al-Qura University, Makkah, Saudi Arabia, 2017.
9. Al-Khasawneh, A. *Managing Creativity and Innovation in Business Organizations*; Dar Al-Hamid: Amman, Jordan, 2011.
10. Al-Tarawneh, H. *Leadership and Behavioral Skills in Management*; Gulf House: Amman, Jordan, 2005.
11. Jumaa, M.; Nouri, H. The Impact of Successful Administrative Leadership in Achieving Administrative Creativity—An Applied Study of the Opinions of Senior Leaders at the University of Diyala. *J. Adm. Econ.* **2011**, *34*, 299–318.
12. Saleh, Q.; Bani, B. Creative leadership and its relationship to the requirements of quality management at the University of Kufa from the point of view of its administrative leaders. *Al-Qadisiyah J. Adm. Econ. Sci.* **2013**, *15*, 113–138.
13. Al-Asadi, A.; Al-Abadi, H.; Al-Tai, J. *University Education Department, A Modern Concept in Contemporary Administrative Thought*; Dar Al-Warraq: Amman, Jordan, 2008.
14. Omran, M. Creative leadership for the development of university education as seen by university faculty members: A field study. *Libyan J. Stud.* **2014**, *17*, 191–230.
15. Burns, T.; Sinfield, S. *Teaching Learning and Study Skills: A Guide for Tutors*; Sage Publication: New York, NY, USA, 2004.
16. Nassar, A. Teaching performance of faculty members at the faculties of education according to the students' point of view at university of Gaza. *Master* **2017**, *25*, 160–174.
17. Bawashri, H. The Strategy of Time Management and Its Relationship to Teaching Performance of the University Professor from the Students' Point of View. Master's Thesis, University of Djilali Bounaama, Khemis Miliana, Algeria, 2019.
18. Asmaa, M. The Quality of the University Professor's Teaching Performance from the Students' Point of View, a Field Study at the University of Batna. Master's Thesis, University of Batna, Batna, Algeria, 2016.
19. Al-Ghamdi, F. The Degree of Scientific Practice and Training Needs for Creative Leadership as Envisioned by Academic Leaders at Um Al-Qura University. Master's Thesis, Um Al-Qura University, Makkah, Saudi Arabia, 2013.
20. Makahleh, H. The Degree of Creative Leadership Practice by the Deans of Pharmacy Faculties in Jordanian Universities and Its Relationship to the Level of Their Support for the Scientific Productivity of Faculty Members. Master's Thesis, The Hashemite University, Zarqa, Jordan, 2014.
21. Al-Saaida, M. University Teaching Skills that should be Available to Faculty Members at Al-Balqa Applied University from Their Point of View. Master's Thesis, Middle East University, Amman, Jordan, 2015.
22. Tollerud, T. The Perceived Self-Efficacy of Teaching Skills of Advanced Doctoral Studies and Graduates from Counselor Education Programs. Ph.D. Thesis, The University of Iowa, Iowa City, IA, USA, 2011.
23. Abdullah, W. Faculty Member Specialization from the Point of View of Faculty Members in Palestinian Universities. Master's Thesis, An-Najah University, Nablus, Palestine, 2013.
24. Ekundayo, H.T.; Oyerinde, D.O.; Kolawole, A.O. Effective supervision of instruction in Nigerian secondary schools: Issues, challenges and the way forward. *J. Educ. Pract.* **2013**, *4*, 185–190.
25. Blaskova, M.; Trskova, K. Creative leadership and motivation of university employees. *New Trends Issues Proc. Humanit. Soc. Sci.* **2017**, *4*, 23–34. [[CrossRef](#)]
26. Botha, R. The need for creative leadership in South African schools. *Afr. Stud.* **2013**, *72*, 307–320. [[CrossRef](#)]
27. Shaqoura, M. Change Management and its Relationship to Administrative Creativity among Secondary Schools in Gaza Governorates from the Teachers' Perspective. Master's Thesis, Al-Azhar University, Gaza, Palestine, 2012.
28. Al-Jaafrah, P. Methods of organizational conflict and its relationship to administrative creativity among the managers of public schools in Karak Governorate according to their point of view. *Dirasat J.* **2013**, *40*, 1663–1687.

29. Ababneh, R.; Al-Shaqran, R. The degree of practicing creativity among educational leaders in the directorates of education in Irbid governorate. *J. Educ. Psychol. Sci.* **2013**, *14*, 56–71.
30. Al-Maaytah, P. The level of administrative creativity among the managers of public secondary schools in the General Directorate of Education in Karak Governorate according to the managers' point of view. *J. Psychol. Educ. Sci.* **2014**, *15*, 541–581.
31. Al-Zahrani, M. Time Management among Al-Baha School Leaders and its Relationship to the Level of Administrative Creativity from the Teachers' Perspective. Master's Thesis, Al-Baha University, Al Baha, Saudi Arabia, 2017.
32. Al-Shahrani, H. Developing Administrative Creativity among Secondary School Leaders in Khamis Mushait Governorate in the Light of Creative Leadership. *J. Educ. Sci. Natl. Res. Cent. Gaza* **2018**, *2*, 75–100.
33. Al-Dajani, F. The Degree of Use of Electronic Administration and its Relationship to Administrative Creativity among School Leaders in Al-Aqiq Governorate. Master's Thesis, Al-Baha University, Al Baha, Saudi Arabia, 2018.
34. Al-Boushi, G. The Degree of Creative Leadership Practice and Ways to Develop it at Imam Abdulrahman bin Faisal University. *J. Sci. Res. Educ.* **2018**, *11*, 607–642.
35. Al-Ajmi, H. The degree of practicing creative leadership by the academic leaders at Najran University for and proposals for its development from the point of view of faculty members. *J. Coll. Educ. Al-Azhar Univ.* **2019**, *19*, 211–232.
36. Al-Khathami, M. Creative Leadership among Schools in Khamis Mushait Governorate from the Teachers' Perspective: A Field Study. *J. Coll. Educ.* **2020**, *36*, 482–508.
37. Abdo, M. Job Empowerment and its Relationship to Performance among Educational Supervisors in Jordan. Ph.D. Thesis, Yarmouk University, Irbid, Jordan, 2011.
38. Al-Mahjam, P. Evaluation of Managers and Job Performance of Teachers: Objectivity in the Light of Some Scientific and Functional Performance Indicators. Master's Thesis, King Faisal University, Al Hofuf, Saudi Arabia, 2011.
39. Jaradat, M. The Level of Teaching Performance among Students of the College of Science and Arts at Prince Saltam bin Abdulaziz University in the Light of the Teachers' Competency Test. *J. Educ. Psychol. Sci.* **2012**, *3*, 89–104.
40. Harahasheh, H. Job Performance of Public Secondary School Principals in Jordan and its Relationship to Stress Level Using Their Interpersonal Skills. Master's Thesis, Al al-Bayt University, Mafrq, Jordan, 2013.
41. Al-Haila, M. The Degree of Application of Medium Stage Electricity Teachers to the Skills of Originality and Flexibility and its Relationship to Their Teaching Performance in the State of Kuwait. Master's Thesis, Middle East University, Amman, Jordan, 2014.
42. Abbas, A. The Trend towards Modernity and Social Commitment and its Relationship to Job Performance among Teachers of Physical Education. Master's Thesis, University of Babylon, Hillah, Iraq, 2013.
43. Oudat, A. The Relationship between Emotional Intelligence and Job Performance of Managers: Clarifications from Yarmouk University. Master's Thesis, Yarmouk University, Irbid, Jordan, 2017.
44. Amal, M.; Fotia, F. Students' attitudes towards the job performance of university education teachers, a field study, of the University of KhemisMiliana, model, Al-Bahith, Algeria. *J. Sport. Soc. Sci.* **2017**, *35*, 1–29.
45. Abu Seif, R. The Degree of Management Practice by Using the Values among the Principals of the Secondary Schools and Its Relationship to the Level of Job Performance among Teachers in Amman. Master's Thesis, The Hashemite University, Zarqa, Jordan, 2019.
46. Moussa, R. Cultural Intelligence among Secondary and Private School Managers which Teach the British Curriculum and Its Relationship to Creative Leadership in Emirate of Dubai. Master's Thesis, Middle East University, Amman, Jordan, 2018.
47. Jibrini, S. The Degree of Practicing Innovative Leadership among Educational Leaders and its Relationship to Decision-Making from the Point of View of the Deans of Faculties and Heads of Academic Departments in Palestinian Universities. Master's Thesis, An-Najah National University, Nablus, Palestine, 2016.
48. Al-Qurashi, L. Creative Leadership and Organizational Climate in Saudi Universities. Ph.D. Thesis, Imam Umm Al-Quran University, Makkah Al-Mukarramah, Saudi Arabia, 2014.
49. Ashley, G.; Reiter-Palmon, R. Review of Creative Leadership: Skills that Drive Change. *Psychol. Aesthet. Creat. Arts* **2009**, *3*, 124–125. [[CrossRef](#)]
50. Al-Shehri, M. The Degree of Practicing the Values of Organizational Culture by School Principals in Bariq Governorate and its Relationship to Administrative Creativity. Master's Thesis, Al-Baha University, Al Baha, Saudi Arabia, 2017.

**Disclaimer/Publisher's Note:** The statements, opinions and data contained in all publications are solely those of the individual author(s) and contributor(s) and not of MDPI and/or the editor(s). MDPI and/or the editor(s) disclaim responsibility for any injury to people or property resulting from any ideas, methods, instructions or products referred to in the content.