The relation between university education management and the vocational development

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Abstract

This study aims to identify the relation between the university education management and vocational development, using the analytical descriptive method based on data on vocational development.

The research also aims to measure the relationship between the university education management and vocational development and their dimensions from the point of view of university leaders and teachers in polytechnic universities in the Kurdistan Region of Iraq. To achieve the goal designed a questionnaire consisting of (31) paragraph to collect data on the field side, where 500 questionnaires were distributed to university leaders and lecturers at polytechnic universities in (Erbil, Sulaimani, Dohuk). 452 questionnaires were returned for analysis. The most important conclusions were that the existence of a positive moral relationship between the university education management and vocational development in polytechnic universities in the Kurdistan Region of Iraq. Accordingly the researchers made a number of recommendations, the most important is need to work to improve the university performance of polytechnic universities of the Kurdistan region of Iraq by making practical use of variables that directly or indirectly affect the vocational development.

Introduction

Strategic management is an analysis of the important and salient issues of an organization that is adopted by senior managers of the organization on behalf of the owners in order to control the resources outside the organization. Given the already accelerated environmental changes and the complexity of organizational decisions, the need for a comprehensive plan to deal with such issues becomes more evident than in the past. Strategic management, (relying on a dynamic, forward-looking, holistic and contingent mindset) is the solution to many of today's organizational problems. The basics of university education management are based on the understanding that managers of competing universities, job markets, challenges, law and regulations , governments, national customers, and customers around the world, are the determinants of today's business success. So one of the most important tools that organizations can use to succeed in the future will be "strategic management". University education management enables the organization to act in a creative and innovative way and not passively to shape its future. This style of management enables the organization to take the

initiative and engage in activities that influence and shape its destiny, control the future, and promote vocational development. The definition of vocational development has changed over the past 10 years. Guskey (2000) defined the term as, "those processes and activities designed to enhance the professional knowledge, skills, and attitudes of educators so that they might, in turn, improve the learning of students" (p. 16). A year later, Learning Forward (2001) issued its definition that stated that vocational development was a "means by which educators acquire or enhance knowledge, skills, attitudes, and beliefs necessary to create high levels of learning for all students" (p. 2). While many models of vocational development have been researched and supported across all occupational areas as effective methods to improve student achievement, Learning Forward redefined the term for educators in 2009.

Problem Statement

Around the world, higher education systems and universities find themselves hard-pressed to adapt to changing these environment. At one end of the spectrum, rising participation and the spiraling cost of higher education force university leaders to come up with new ways to become both more effective and efficient in teaching and learning.

At the other end, the growing worldwide competition for students, researchers and national excellence initiatives put pressure on higher education institutions to reimagine and sometimes reinvent themselves.

In both scenarios, higher education institution leaders need to find ways to develop a joint vision, build support for it and then lead and organize the necessary changes to make it a reality.

The problem statement requires several questions which have to be replied throughout the research;

1- What is the relationship between university education management and

vocational development?

How to use technology in vocational development to cover the requirements of the labor market?

Significance of the study

The importance of this research derives from the importance of the subject it deals with and highlights the importance of research in the following points:

1- Globalization, internationalization, higher education quality standardization, financing higher education, growth of higher education sector, academic profession development, ICT application in higher education and expansion of academic research are the driving forces behind the transformation of higher education (Altbach et al., 2009).

2- The changes of higher education institution (HEI) can be observed in the functions exerted by the HEIs, the management of the HEIs and the restructuring of the HEIs (Gumport, 2000)).

3- Qualifying and training academic staff to promote vocational development.

Objectives of the study

This study seeks to achieve the following objectives:
1-Finding the levels of importance of variables from the point of view of university education leaders and academic staff.
2-Create a correlation between the university education management and the vocational development.
3-Demonstrate the impact of university education management on vocational development.

Hypotheses

1-   The levels of significance and dimensions of the main study variables vary from the point of view of the respondents in the universities.
2-   There is a significant correlation of statistical significance between the University Education management and vocational development.
3-   There is a direct significant impact of the university education management on the vocational development.

The limits of the study

The study was carried out within the following limits:
6.1.   Time Limits: The study is limited to the answers of university leaders and academic members in polytechnic universities in the Kurdistan Region of Iraq between October 2018 to October 2019.
6.2.   Spatial limits: limited to polytechnic universities in (Erbil, Sulaimani and Dohuk).

Background of the study

The most important research done in this section is outlined;

A study title "The concept of the university as learning organization: Its functions, techniques and possible ways of making it effective" reported that Learning organization is a concept that is becoming an increasingly widespread philosophy in our contemporary society. It has a strong humanistic orientation, being a place where people continually expand their capacity to produce results they truly desire, where new and expansive patterns of thinking are nurtured and where people are continually learning how to learn together. In order to implement learning organization techniques, universities tackle some disciplines which are essential to a learning organization. Such techniques are team learning, shared vision and systematic thinking. As a result, the paper is confined to how universities are committed to creating continuous learning opportunities, encouraging collaboration and team learning, establishing systems to capture and share learning, and connecting the university organization to its environment. It also proposed the need for a radical rethinking of the core functions of the university (Nakpodia, 2009) .

In study titled "Organizational Visioning: An Integrative Review" develop an integrated discussion of organizational vision, including a range of factors, from the reasons for visioning to the impacts of vision on individuals, groups, and organizations. The goal is to help integrate the field and to provide direction for both future research and leadership practice. Building on prior reviews, we update the literature and contrast group visioning processes with leader driven vision development. The article offers a comprehensive look at vision development, implementation, and the impact of visioning and suggests a number of propositions for future research (O'Connell, 2011).

In a study title "Strategic Planning in Institutions of Higher Education: A Case Study of Sakarya University" studied strategic planning in Sakarya University. They reported that A participatory and transparent management understanding, the effective and efficient use of resources, performance-based assessment and budgeting as well as the rapid developments experienced in informatics and communication technologies have obliged institutions of higher education to prepare their strategic plans both due to a legal obligation (Law No. 5018) and in order to realize their institutional transformation (Nermin Akyel, 2012).

The subject Learning strategies and styles in vocational education. As a result, the success of Hungarian public education, as shown by PISA research, lags far behind its possibilities. In our present paper the adaptive model of vocational education is outlined first, where teaching and learning strategies appear as regulating agents with a formative influence on the educational process. The preferred patterns of learning and teaching strategies typical of the individual yield the learning and teaching styles. In the second part of the paper, the results of a longitudinal examination performed among secondary vocational school students in Budapest are presented. The answers to the following questions are sought: how much learning strategy and style can be regarded as an individual characteristic, how it changes with the progress of studies, and whether it shows any correlation with the gender or specialization of the students (Tóth ,2012) .

Methodology and Data Analysis

The researchers will depend on the scientific methods in order to ensure the research goals through the following:

-Arranging the research structure to cover the theoretical and the applied sides of the research.

-Depending on a modern model which shows the independent and the dependent variables (figure 1), which is to cover the theoretical and the applied sides of the research?

1.The theoretical side:

The researchers relied on getting the required data not counter the theoretical aspect of the research on Descriptive method, by reviewing the literature of the subject of books, studies, research, scientific periodicals, letters and access to the theses as well as relevant theses on the topic of research on the Internet sites to learn about the latest books on this topic.

2.Field side:

The data of the research field were collected and analyzed based on a questionnaire, which is the main means for diagnosing and measuring the main variables and their dimensions.

The questionnaire form consists of

1. Personal information of members of the research community.

2. Contains paragraphs on the dimensions of the independent variable (University Education Management) and includes 16 questions.

3. Contains paragraphs on the dimensions of the dependent variable (Vocational Development) and includes 19 questions.

3. Preparation of the Data for Analysis

The main purpose of this section is to prepare sample data for further analysis. It included cleaning and screening of the sample data. Details of the procedures used to getting the sample data ready which analysis are explained in the following sections: coding and data entry and missing data.

8.3.1. Coding of Variables, Dimensions and Items

Coding is a process used to clarify the translation of respondent information and question responses to specific categories for the analysis procedures (Kerlinger & Lee, 2000). Therefore, the coding of variables, dimensions and items is shown in the table (1).

8.3.2. Missing Data

Missing data refers to the fact that not all respondents answered each question in the questionnaire survey. This occurred for many reasons; they did not understand the question, did not know the right answer for the question, or were not willing to answer the question (Sekaran & Bougie, 2016). Therefore, the missing data is a familiar problem in surveys (Hair et al., 2017). On the other hand, it is very crucial to use AMOS (Statistics Solutions) because the statistical analysis techniques of the data will not run if there is any missing data (Schumacker & Lomax, 2004). Therefore, returned questionnaires are checked for completeness and consistency. Besides, using a missing value analysis provided by SPSS v24, it was not found any missing value.

4. Preliminary Analysis

This section provides the preliminary analysis of the 452 questionnaires that were collected from leaders and lecturers working in the polytechnic universities of the Kurdistan region of Iraq. In order to determine the suitability of sample data, further analysis was discovered in the treatment of response rate and background of the respondents.

5. Response Rate

Response refers to the number of respondents who answered the survey which is divided into the number of respondents in the sample size (Hamilton, 2009). Of the 500 questionnaires randomly distributed among leaders and lecturers of the polytechnic universities of the Kurdistan region of Iraq, only 452 questionnaires were returned for a response rate of 90%. In this regard, Babbie (2007) has argued that a response rate of 50% is acceptable for surveys in social research. Thus, the response rate for the current study is more than adequate. Further, the total number of usable questionnaires was considered sufficient to run all the statistical analysis techniques, particularly a structural equation models (SEM) analysis (Hair et al., 2017).

Background of the Respondents

The respondents' demographic factors were gathered to collect information about each respondent that participated in the survey. Respondents were asked to provide information on age, gender, marital status, educational level, duration of employment, and position. The questions were designed for the respondents to choose their answers based on categories as opposed to providing specific information. Table (3) shows the profile of the respondents' demographic factors using SPSS v24.

6. Underlying Statistical Assumptions

Using the underlying statistical assumptions that include: normality, multicollinearity, linearity, and homoscedasticity, it can be useful for multivariate analysis. It is helpful to accommodate multiple variables in an attempt to identify and understand the complex relationship between them (Hair et al., 2017). Hence, the researchers will explain the assumptions of normality, multicollinearity, and homoscedasticity in the present section using 452 usable questionnaires.

7. Normality Assumptions

Normality refers to the bell-shaped curve of the data distribution for an individual metric variable and its correspondence to a normal distribution (Hair et al., 2017). A normality distribution of sample data is depicted as a symmetrical bell-shaped curve that has the highest range of frequency in the middle with smaller range of frequencies towards the extremes (Gravetter & Wallnau, 2000).

Skewness and Kurtosis are the main tests that can be used to validate normality assumptions (Pallant, 2007). Skewness refers to the measure of normality assumptions by describing the balance of the sample data distribution, that is, is it unbalanced and shifted to right, left or centered side and symmetrical with about the same shape on both sides, while the Kurtosis refers to the measure of normality assumptions by comparing them with a "peakedness" or "flatness" of the sample data distribution (Hair et al., 2017). As conservative rule of thumb, (Hair et al., 2017) have argued that sample data is considered normal if the test of Skewness values and test of Kurtosis values are between ±1.96. Based on using SPSS v24, all of the Skewness and Kurtosis ratios are between the normal distribution ±1.96, which indicated that their distribution was normal as shown in Table (4) Consequently, the assumption of normality is met.

8.Testing Goodness of the Measurement Instrument

All of the items that are used to measure the variables have been adapted from prior studies. Even though the borrowed measurement instrument has been confirmed of its stability and consistency, it is necessary to re-examine the exactness of the measurement instruments because the previous studies were done in different business environment and organizational culture. According to Sekaran & Bougie (2016), the goodness of measurement instrument is used to ensure they are stability, consistency, and accuracy between items of each variable. Any researcher can examine the goodness of measurement instrument through the Exploratory Factor Analysis (EFA), Confirmatory Factor Analysis (CFA), reliability, and construct validity. Hence, they were established, as described below.

Dimensionality of the measurement instrument using exploratory factor analysis before further tests were performed, the construct was subjected to validity and reliability tests. Factor analysis was carried out to test the construct of the questionnaires. Basically the purpose is "to identify small number of themes, dimensions, components or factors underlying a relatively large set of variables" (Meyers, et al., 2006, p. 465).

Exploratory Factor Analysis (EFA) is an interdependence technique which primary purpose is to define the underlying structure among the variables in the analysis (Hair et al., 2017). Then, EFA is a useful tool for understanding the factor structure of a measure instrument and to confirm that the items are suitable for each variable. It is extremely helpful for the primary purpose in the development of a set of measurement items as all factor loadings are free to vary across groups (Dobni, 2008; Hair et al., 2017).

In determining the factorability of the dimensions, the Bartlett's test of sphericity had to be significant and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy had to be more than 0.50 in order to be acceptable. Moreover, Bartlett's test shows the correlation matrix among the items. Some authors suggested 0.6 and above as mediocre, 0.5 and above as miserable and below 0.5 as not acceptable (Hair et al., 2017). Additionally, The criteria developed by Lgbaria et al.'s (1995) was used in the current study for cross loading, that is, a given item should load 0.50 or higher on a specific factor and have a loading no higher than 0.35 on other factors. Based on above, the exploratory factor analysis of variables are interpreted as follows:

8.1. Exploratory Factor Analysis of the University Education Management

Based on SPSS v.24 results, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy at 0.949 indicates that factor analysis can be conducted on the data. Moreover, Bartlett test of Sphericity was very large significant at c2 = 3974.460, with a p < .000. The following table (5) shows the results.

The same procedure of the Varimax rotation method was conducted on the university education management. The outputs of table (6) showed all sixteen items were known as an accurate tool to measure this variable. Then it conducted to determine which items should group to form dimensions. They were grouped in four dimensions. The final factor analysis was conducted on the remaining all items.

8.2.Exploratory Factor Analysis of the Vocational Development

Based on SPSS v.24 results, the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy at 0.958 indicates that factor analysis can be conducted on the data. Moreover, Bartlett test of Sphericity was very

large significant at c2 = 6515.268, with a p < .000. The following Table (7) shows the results.

In the context of Varimax rotation method, the outputs of Table (8) displays that all nineteen items were known as an accurate tool to measure this variable. Then conducted to determine which items should group to form dimensions. They were grouped in three dimensions. Additionally, four items (RVD5, RVD7, MVS1 and MVS6) were deleted due to cross loading. The criteria developed by Lgbaria et al.'s (1995) was used in the current study for cross loading, that is, a given item should load 0.50 or higher on a specific factor. The final factor analysis was conducted on the remaining fifteen items.

9. Reliability of the Measurement Instrument

Reliability is the degree to which measures are free from error and therefore yield consistent results (Zikmund, 2003). Additionally, reliability test was conducted to determine the stability and consistency of an instrument in measuring a concept to a degree that the observed score has minimal error. Cronbach's alpha coefficient is adequate to estimate the reliability of the measurement instrument (Hair et al., 2017). According to Sekaran & Bougie (2016), Cronbach's alpha can be considered a perfectly adequate index of the interim consistency reliability. Reliability which is less than 0.6 is consider poor, reliability test value that is in the range of 0.7 is considered acceptable, those more than 0.8 to 0.9 are considered very good and the closer the Cronbach's Alpha is to 1, the higher the internal consistency. Therefore, a Cronbach alpha value of .70 is considered the cut-off value. Table (9) displays the reliability test results of the measurement instrument using SPSS v24.

As shown in table (9), the results of the Cronbach's alpha values exceeded the required level of .70. These results suggest that the theoretical variables display a good internal stability and consistency.

10. Descriptive Statistics of the Variables

The descriptive statistics of the variables through mean, standard error, standard deviation, and variance can give the researcher a detailed idea of how the participants in the survey have responded to the items in the questionnaire (Sekaran & Bougie,

2016). The descriptive statistics using SPSS v24 of each variable can be seen as follow:

10.1. Descriptive Statistics of the University Education Management

As evidenced in the Table (10) summary of mean, standard error, standard deviation, and variance for university education management. The frequency distribution for the 16 items in the sub-scale of four dimensions shows with the mean (3.197319), standard error (0.051739), standard deviation (1.099983), and variance (1.21175). As a result, the sample data is meaningful for achieving the current study's objectives. Moreover, it is confirmed that the respondents tend to believe that strategic transformation plays its important role in determining an organizational successful.

10.2. Descriptive Statistics of the Vocational Development

As evidenced in the table (11) summary of mean, standard error, standard deviation, and variance for vocational development. The frequency distribution for the 15 items in the sub-scale of three dimensions shows with the mean (3.153247), standard error (0.052397), standard deviation (1.113974), and variance (1.242). As a result, the sample data is meaningful for achieving the current study's objectives. Moreover, it is confirmed that the respondents tend to believe that strategic transformation plays its important role in determining an organizational successful.

11. Hypotheses Testing Using Structural Equation Model (SEM)

SEM is a multivariate analysis used to test the relation between and they direct and indirect effect by estimating a series of separate, still interdependent, multiple regression equation simultaneously (Ellis & Webster, 1998). Indeed, the main objective of SEM analysis is to determine the extent to which the proposed model for observed and latent variables is supported by sample data collection (Anderson & Gerbing, 1988; Schumacker & Lomax, 2004). Specifically, SEM is used to examine the co-variation structure among the observed variables. In order to reduce the number of those variables into a smaller number of latent variables (Schreiber, Nora, Stage, Barlow, &

King, 2006), the observed variables are a set of variables that researchers use for defining or inferring the latent variable or construct (Schumacker & Lomax, 2004). While the latent variables are known as constructs or unobserved variables, which are required two or more measured indicators (Ullman, 2006). The structural equation model using AMOS v24 at the macro level (of the all universities in one model) can be seen as follow:

11.1.   Structural Equation Model of Exogenous Variable

The current study was performed with exogenous models and some fitness indicators in order to analyze whether relationships exist between exogenous latent variables (university education management, and vocational development). Only 31 items of overall exogenous latent variables were presented in this model. Furthermore, all these items were retained. This is because the results of CFA confirmed that the sample data had satisfactory fit to the exogenous model (GFI = .937, CFI = .965, and RMSEA = .049). Additionally, the Chi-square index was significant (c2 = 1609.062, df = 766, c2/df = 2.101). The remaining items of exogenous model were used for running the final SEM model.

As evident in table (12), all results of SRW estimations of the exogenous model showed that all the 31 items were at an appropriate level. This is because all values of SRW were above .50. Moreover, all the C.R. values were greater than 1.96 and all the 31 items loadings and structural relationships are significant at the p >.001 level.

Table (13) shows that the correlation relationships of the paths are statistically significant. Comparing these results with the hypotheses, the standardized path coefficient of .965 suggests that university education management has a positive and statistically significant related to vocational development use (H1).

12.   Summary of Hypotheses

SPSS v24 and AMOS v24 were used to test the nine hypotheses proposed in the current study. The result of this analysis is used to accept or reject the hypotheses based on the significance of the standardized path coefficient of the relationships, C.R. value, p value, and significant level at .05.

In that case, the overall hypotheses testing all direct and indirect relationships, differences and as conceptualized are summarized in table (14).

Conclusions and Recommendations

1.Conclusions

1-This study expects that the universities' ability to achieve high level of vocational development would depend on the university education management.

2-The strength of this strategy lies in their knowledge capacities which are based on their stock of knowledge. It is expected that universities were able to achieve fully university education management. Moreover, by having these capabilities, the universities are able to identify and transform it into their vocational development.

3-The university education management could also enhance the vocational development. Universities develop their own competencies and capabilities that disallow others to imitate its progress.

4-The findings proved the influence of university education management on the vocational development .

5-The integrated variables of both university education management and vocational development are vital to the universities.

6-The result indicates that there are some problems in the university education management. Without these variables, it would be difficult for universities to move to vocational development.

7-According to opinion of respondents, there are significant differences (H3) between dependent variable and independent variables.

8-Furthermore according to opinion of respondents, there is no significant variances between the groups.

2. Recommendations

1-There is need to work to improve the performance of polytechnic universities of the Kurdistan region of Iraq (Sulaimani, Erbil, and Dohuk) through the adoption of strategic thinking to achieve excellence and sustainability in university performance and excellence, which universities aspire to reach by facing the impact of competitive environment factors characterized by the dynamics of the surrounding variables.

2-There is need to increase the capacity of polytechnic universities of the Kurdistan region of Iraq in Sulaimani, Erbil and Dohuk to adopt strategies in order to be able to create and exploit opportunities for achieving organizational development and leadership in its field.

3-The need to direct those in charge of the management of polytechnic universities of the Kurdistan region of Iraq (Sulaimani, Erbil, and Dohuk) to use a variety of teaching methods to increase the level of innovative and creative field of educational services.

4-The need to seek to increase the interest of directors of polytechnic universities in Sulaimani, Erbil and Dohuk to vocational development through the proper application of the management of university education, which ensures the balance between the planned and actually achieved.

5-There is need to continuously strive to achieve the goals of polytechnic universities of the Kurdistan region of Iraq by retaining skilled and talented lecturers, who contribute to the achievement of its goals.

6-There is need for leaders of polytechnic universities (Sulaimani, Erbil, and Dohuk) to adopt mechanisms to develop their capabilities by seeking to employ workers who have the capabilities and capabilities to enable them to achieve their goals.

7-There is need to create the motivation of the polytechnic universities of the Kurdistan region of Iraq towards the use of their capabilities for the purpose of creating an organizational climate prevailing in the spirit of the working group to reduce problems that may occur while encouraging communication with leaders, lecturers, and all stakeholders.

8-There is need to work to improve the university performance of polytechnic universities of the Kurdistan region of Iraq by making practical use of variables that directly or indirectly affect the vocational development.

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Appendix

Questionnaire form

Kurdistan Region Government
Ministry of Higher Education & Scientific Research
Sulaimani Polytechnic University
Technical college of Administration
Department of Technical Administration

1st: Identification information:

- Age: 25-34 years □, 35-44 years □, 45 years and older □

- Gender: Female □, Male □

- Marital status: single □, married □

- Education: Bachelor □, High diploma □, Master □, PhD degree □

- Duration of employment: under 5 years □, 5-10 years □, 11-15 years □, over 15 years □

- Position: Dean □, Deputy Dean □, Head of Department □, Manager of Directorate □, Head of Division □, Academic Staff □.

No.	Phrases	I totally disagree	I disagree	I have no idea	I agree	I totally agree
1st : University Education Management						
It is defined as the many means applied by all administrative levels in the educational edifice.						
1- University education planning						
It is the first and most important activity of an organization's management process, starting with setting goals, setting priorities, harnessing the available resources through which the desired objectives can be achieved, and achieving positive results in the management process.						
1	The university is keen to apply advanced control systems to identify planning deviations from real experiences.					
2	The University rewards faculty members for introducing new ideas and knowledge.					
3	The University is keen to establish close relations with other universities and institutions.					
4	The University always urges scientific departments to balance theoretical and practical teaching methods and research.					
2- Organization of university education						
It is a sub-process of the major administrative process in organizations working in different sectors, and is classified as one of the successive and continuous administrative support operations, and technical operations specialized in investing the resources owned by the organization.						
5	The University provides appropriate reports and information to stakeholders.					
6	The University uses many resources to acquire and develop knowledge.					
7	The University has a clear policy for formal and systematic review of knowledge.					
8	The University holds regular conferences, seminars, meetings, lectures and training sessions to share knowledge continuously.					
3- leadership of university education						

It is the ability to influence others and guide their behavior to achieve common goals.						
9	The University is developing advanced laboratories for obtaining patents and new copyright knowledge.					
10	The University provides libraries and other forms of communication for the presentation and dissemination of knowledge.					
11	The University provides buildings and classrooms to suit the teaching process.					
12	The University focuses on intensive teaching and applied methods and studies.					
4- Supervision of university education						
A function of the Department concerned with measuring and correcting the performance of subordinates to ensure that the objectives and plans set have been achieved.						
13	The University adopts the results of the evaluation of the performance of faculty members in accordance with quality assurance programs and instructions.					
14	The University gives full attention to intellectual property rights.					
15	The University applies knowledge to critical competitive needs based on its market position.					
16	The University continuously monitors the progress of all administrative and educational transactions.					
2ⁿᵈ : Vocational Development						
The process of the interaction of faculty members with scientific expertise and new skills in order to develop habits and attitudes, and his method of work to enable him to perform his duties and educational duties more efficiently while keeping up with everything new in his field.						
1- Scientific and technical research and development						
Research and development is one of the policies adopted by the Organization to achieve its objectives.						
1	The University provides sufficient space for faculty members to review the educational needs and demand for their provision.					
2	The university is concerned with the process of continuing education at all levels.					
3	The University entrusts faculty members with new functions and tasks to keep abreast of developments and changes in the scientific process					
4	The University provides an opportunity for an independent faculty member to carry out their duties.					
5	The University improves faculty capacity to use their time efficiently and effectively.					
6	The University emphasizes faculty members to improve their computerization capabilities					
2- Realistic vocational training						
It is an organized and planned effort to provide manpower in the administrative system with certain knowledge, improve and develop their skills and abilities, and change their behavior and attitudes positively and constructively.						
7	The University provides educational workshops to train faculty members to support and develop the team.					
8	The University works to improve the skills of faculty members to					

	deal with difficult business or situations better.					
9	The university improves faculty members' ability to organize their work effectively.					
10	The University is keen to involve faculty members in training courses on how to work in laboratories.					
11	The University engages faculty members in training courses to work as a team and how to develop and strengthen its mechanisms.					
12	The University provides a suitable environment for cooperation between the faculty member with high experience with others with little experience					
13	The University provides a suitable environment for faculty members to share their experiences among themselves.					
	3- means of vocational strengthening The process of consolidating appropriate behavior or increasing the likelihood of its recurrence in the future by adding positive stimuli or removing negative stimuli after it occurs.					
14	The University is keen to spread the spirit of assistance among faculty members in the completion of daily tasks and tasks					
15	The University works to replace the organizational hierarchy with the spirit of teamwork.					
16	The University urges faculty to work as a team to achieve results.					
17	The University urges faculty members to give priority to accomplishing the scientific tasks assigned to them.					
18	The University provides faculty members with equal opportunities for job rotation assignments.					
19	The University provides a suitable environment for faculty members to express their opposition to the views of others without any hesitation.					
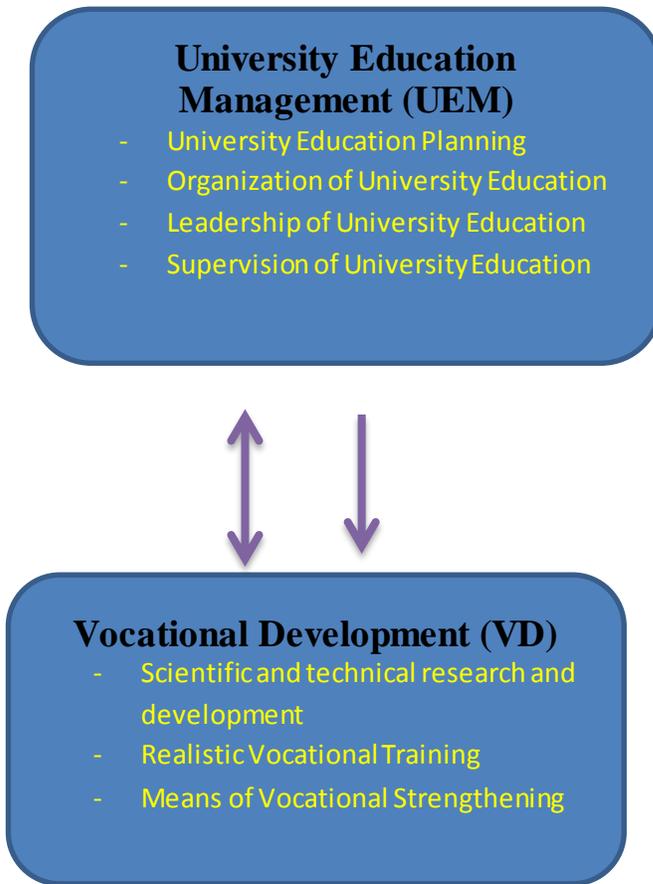
Figure (1): Research Model Prepared by researchers

Table (1) Coding of Variables, Dimensions and Items

Variable	Variable Code	Dimension	Dimension Code	Numbers of Items
University Education Management	UEM	University Education Planning	UEP	4
		Organization of University Education	OUE	4
		Leadership of University Education	LUE	4
		Supervision of University Education	SUE	4
Vocational Development	VD	Scientific and technical research and development	STRD	6
		Realistic Vocational Training	RVT	7
		Means of Vocational Strengthening	MVS	6

Prepared by Researchers

Table (2) Summary of the Response Rate

Questionnaires Status	Count	Percentage
Distributed	500	100%
Not Returned	48	10%
Total Usable Questionnaires	452	90%

Prepared by Researchers

Table (3) Profile of the Respondents' Demographic Factors

Details		Frequency	Percent	Valid Percent	Cumulative Percent
Age	25-34 years	150	33.2	33.2	33.2
	35-44 years	202	44.7	44.7	77.9
	45 years and older	100	22.1	22.1	100.0
	Total	452	100.0	100.0	
Gender	Female	164	36.3	36.3	36.3
	Male	288	63.7	63.7	100.0
	Total	452	100.0	100.0	
Marital Status	Single	102	22.6	22.6	22.6
	Married	350	77.4	77.4	100.0
	Total	452	100.0	100.0	
Educational Level	Bachelor	158	35.0	35.0	35.0
	High diploma	31	6.9	6.9	41.8
	Master	198	43.8	43.8	85.6
	PhD degree	65	14.4	14.4	100.0
	Total	452	100.0	100.0	
Duration of Employment	Under 5 years	41	9.1	9.1	9.1
	5-10 years	141	31.2	31.2	40.3
	11-15 years	134	29.6	29.6	69.9
	over 15 years	136	30.1	30.1	100.0
	Total	452	100.0	100.0	
Position	Dean	10	2.2	2.2	2.2
	Deputy Dean	9	2.0	2.0	4.2
	Head of Department	55	12.2	12.2	16.4
	Manager of Directorate	50	11.1	11.1	27.4
	Head of Division	119	26.3	26.3	53.8
	Academic Staff	209	46.2	46.2	100.0
	Total	452	100.0	100.0	

Table (4) Skewness and Kurtosis Test of Normality Distribution (n=452)

Variable	Skewness		Kurtosis	
	Statistic	Std. Error	Statistic	Std. Error
UEM	-.387-	.115	-.209-	.229
VD	-.251-	.115	-.600-	.229
UEP	-.543-	.115	-.182-	.229
OUE	-.394-	.115	-.273-	.229
LUE	-.229-	.115	-.555-	.229
SUE	-.268-	.115	-.444-	.229
STRD	-.288-	.115	-.609-	.229
RVD	-.198-	.115	-.671-	.229
MVS	-.346-	.115	-.532-	.229

Table (5) Kaiser-Meyer-Olkin of the University Education Management (n=452)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.949
Bartlett's Test of Sphericity	Approx.Chi-Square	3974.460
	df	120
	Sig.	.000

Table (6) Exploratory Factor Loadings of the University Education Management (n=452)

Item	Component			
	1	2	3	4
UEP1		.559		
UEP2		.676		
UEP3		.824		
UEP4		.574		
OUE1				.721
OUE2				.749
OUE3				.617
OUE4				.630
LUE1			.659	
LUE2			.823	
LUE3			.743	
LUE4			.543	
SUE1	.734			
SUE2	.734			
SUE3	.748			
SUE4	.679			

Table (7) Kaiser-Meyer-Olkin of the Vocational Development (n=452)

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.958
Bartlett's Test of Sphericity	Approx.Chi-Square	6515.268
	df	171
	Sig.	.000

Table (8) Exploratory Factor Loadings of Vocational Development (n=452)

Item	Component		
	1	2	3
STRD1	.722		
STRD2	.726		
STRD3	.649		
STRD4	.712		
STRD5	.699		
STRD6	.644		
RVD1	.508		.614
RVD2	.546		.562
RVD3			.604
RVD4			.771
RVD5		.415	.779
RVD6		.429	.640
RVD7		.529	.599
MVS1	.505	.673	
MVS2		.744	
MVS3		.736	
MVS4		.738	
MVS5		.726	
MVS6		.694	.501

Table (9) Reliability Test Results of the Measurement Instrument (n=452)

Variable	Dimension	Numbers of Items	Cronbach's alpha Value $\geq$ .70
UEM	UEP	4	.832
	OUE	4	.897
	LUE	4	.734
	SUE	4	.822
VD	STRD	6	.767
	RVT	7	.821
	MVS	6	.797

Table (10) Descriptive Statistics of the University Education Management (n=452)

Item	Mean	Std. Error	Std. Deviation	Variance
UEP1	3.1018	.04909	1.04374	1.089
UEP2	3.2765	.05318	1.13054	1.278
UEP3	3.5398	.05167	1.09856	1.207
UEP4	3.2124	.05049	1.07337	1.152

OUE1	3.0642	.04948	1.05202	1.107
OUE2	3.2367	.05097	1.08371	1.174
OUE3	3.1527	.05082	1.08043	1.167
OUE4	3.4978	.05075	1.07892	1.164
LUE1	3.1018	.05670	1.20542	1.453
LUE2	3.1637	.05425	1.15331	1.330
LUE3	3.1571	.05287	1.12406	1.264
LUE4	3.2323	.05263	1.11888	1.252
SUE1	3.0575	.05281	1.12274	1.261
SUE2	3.1217	.05042	1.07203	1.149
SUE3	3.0730	.04876	1.03657	1.074
SUE4	3.1681	.05294	1.12542	1.267
Average	3.197319	0.051739	1.099983	1.21175

Table (11) Descriptive Statistics of the Vocational Development (n=452)

Item	Mean	Std. Error	Std. Deviation	Variance
STRD1	3.1615	.05238	1.11352	1.240
STRD2	3.2765	.05082	1.08040	1.167
STRD3	3.2013	.05197	1.10500	1.221
STRD4	3.1903	.05078	1.07958	1.165
STRD5	3.0841	.05310	1.12894	1.275
STRD6	3.2190	.05153	1.09556	1.200
RVD1	3.0442	.05466	1.16215	1.351
RVD2	3.1460	.05110	1.08646	1.180
RVD3	3.1549	.05017	1.06669	1.138
RVD4	3.1128	.05386	1.14497	1.311
RVD6	3.1416	.05338	1.13495	1.288
MVS2	3.1173	.05245	1.11509	1.243
MVS3	3.1903	.05202	1.10596	1.223
MVS4	3.2279	.05154	1.09578	1.201
MVS5	3.0310	.05619	1.19456	1.427
Average	3.153247	0.052397	1.113974	1.242

Table (12) CFA estimates of the university education management, and vocational development

Item	SRW	S.E.	C.R.	P
UEP1	.666	.045	13.565	***
UEP2	.704	.050	12.914	***
UEP3	.685	.051	13.007	***
UEP4	.768	.039	12.214	***
OUE1	.735	.040	12.591	***
OUE2	.750	.042	12.216	***
OUE3	.779	.038	11.980	***
OUE4	.651	.049	13.563	***
LUE1	.666	.061	13.539	***
LUE2	.691	.053	13.210	***
LUE3	.775	.042	12.062	***
LUE4	.833	.035	10.884	***
SUE1	.735	.045	12.982	***
SUE2	.773	.037	12.469	***
SUE3	.806	.032	11.796	***
SUE4	.756	.042	12.760	***
STRD6	.751	.040	13.343	***
STRD5	.761	.040	13.260	***
STRD4	.752	.038	13.394	***
STRD3	.746	.041	13.411	***
STRD2	.758	.039	13.342	***
STRD1	.703	.047	13.815	***
RVD6	.763	.041	13.067	***
RVD4	.784	.040	12.751	***
RVD3	.775	.036	12.949	***
RVD2	.815	.033	12.271	***
RVD1	.719	.048	13.567	***
MVS5	.752	.048	12.863	***
MVS4	.750	.043	12.913	***
MVS3	.838	.033	11.145	***
MVS2	.842	.033	11.041	***

Table (13) Correlation Relationships in structural equation model of Exogenous Variable

Path			Correlation Coefficient	S.E.	C.R.	P
VD	<-->	UEM	.965	.052	9.317	***

Table (14) Summary of Hypotheses Testing Result

No. of Hypothesis	Hypothesis Statement	Status
H1	University education management has a significant and positive related to vocational development.	Accepted
H2	University education management has a significant and positive effect on vocational development.	Accepted
H3	There are significant differences between dependent variable and independent variables.	Accepted