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TECHNICAL EDUCATION ASSESSMENT IN BOTH BELARUS AND LEBANON AND ITS IMPROVEMENT USING INTELLIGENT DECISION SUPPORT SYSTEM

Technical education is traditionally defined as the program of education that prepares technicians and is the option that has all the times been considered as "second-rate one" for a minority of small educational achievers. This educational sector has been established at all stages in both Lebanon and Belarus, but in different perspectives. Technical education availability may be considered as a pecuniary growth and improvement plan, as it prepares graduates with expertise that are straightly appropriate for the wealth-generating economic segments like industry. Additionally, the technicians' demand in the personnel has augmented radically in numbers and variety. In order to evaluate the usefulness of decisions as well as measure the significance of further competences, Decision support system, a collaborating information system of computer based that is intended to provide support to outcomes of decision problems, has become a research focus. The intelligent decision support system, which is the outcome of the coalescing artificial intelligent and decision support system, seems to be an efficient tool for improving technical educational.

Key words: development strategy, technical institutes of higher education, technical education, intelligent decision support system (IDSS), artificial intelligence.

Introduction. Technical education is traditionally defined as the program of education that prepared technicians. Yet, the technical education scope has transformed as the world has come to be extra technological. Technical education can be regarded from these three perspectives as provision of a base of technical information, expertise, and consciousness to the youth, development of rudimentary technical know-how and abilities in adults, and provision of enduring learning to develop prevailing technical awareness and expertise and progress new ones.

For several decades Lebanon had been a higher education center of the Middle East, but with the passage of time it lost its benefit because of its political exertions. The regionally well-known Lebanese system of education is extremely established at all stages, with a high admission and transition from school to higher education institutions. However, the deficiency of a flawless vision, plan, and strategies for the entire educational sector generally, and for the technical educational sector particularly are considered major problems facing their development.

Putting into practice the economic and social transformation policy in the Republic of Belarus, a protuberant hinge on the substantial level on human resources and, on the country's educational level has been remarked. According to the Education, Audiovisual and Culture Executive Agency (2012) [1] modernization of the higher educational system of Belarus started in 2005. The modifications in the higher educational system give emphasis to the usage of advanced principles and methods to learning and teaching, improving and upgrading the technical based education, appropriate balance between free of cost education and the education delivered on the basis of fee-paying, availability of a range of technical education programs and practice of information technologies.

In aforementioned context, the study intends to use IDSS as a tool to evaluate the quality of decisions and therefore enhance the effectiveness and efficiency of technical education in the developing countries like Lebanon and Belarus. The study aims to relate the historical background of IDSS, present latest trends, tools and techniques in IDSS and end up with a conclusion enforced with many recommendations for a promising educational development.

Main part. Generally speaking, IDSS is an "interactive computer information system" that can provide assistance to decision-makers for using of facts and figures to solve complex problems. Intelligent decision support system (IDSS) is an outcome of the coalescing artificial intelligent (AI) and decision support system (DSS) 2005) [2]. Decision support system (DSS) can be described as information system (IS) which contributes and assists the human beings' process of decision-making [3]. It can make available a range of reliable programs and scrutinize the assumptions and requirements of decision-makers, as a consequence of attaining the objective of decision-making support. As the artificial intelligence (AI) approaches have been integrated into the systems for creating intelligent decision support system (IDSS), scholars have endeavored to measure the significance of further competences [4].

Decision support system (DSS) is an important area of information system (IS) discipline which focused on the systems that provide assistance and

develop decision-making capabilities [5]. From approximately four decades of the history, decision support system has been transformed from a fundamental movement to a different approach of information systems and perceived in the corporate as a mainstream information technology movement in which all organizations participate [6]. At this period, DSS has sustained to become a substantial subfield of information system. The research on DSS has an extensive history of utilizing design-science exploration approaches, and several of the initial DSS projects included designing and instigating innovative information technology based systems.

Artificial intelligence (AI) improves the prospective of the decision support system (DSS) in actual management circumstances [7] through, for instance, take along dissimilar resources composed and encompassing support competences. Not only IDSS can develop consequences, the usage of AI practices have emotional impact on the procedure of decision-making by giving the overall potential for actual response, mechanization, personalization, erudite reasoning arrangements, and extensive information bases on which decisions are depending [4]. Intelligent systems merely do things contrarily than those systems do not implant intelligence. Therefore, it is proper, then, to precisely identify system advantages initiating in procedure, as well as result, sustenance. The IDSS decision value can resolute from the multi-criteria assessment using the procedure of, and result from, the process of decision making as a criteria of top-level.

The foundation of DSS can be found back to previous effort in two key research streams: one is theoretical research of organizational decision making and second is technical research on interactive computer system [8]. First model of process of decision making comprised of three stages: "intelligence, design and choice" [9]. Here, intelligence is related to finding of problems, design comprises of alternatives' development, and the choice is related to scrutinizing alternatives and choosing one for execution. This was a classic problem solving model and the intelligence design choices model had been extensively accepted and implemented. Even though, later the model was extended with a fourth phase called monitoring [10] the research on DSS continued primarily concentrated on the originally developed three phases model.

The work from management information technology researchers was also extensively recognized. Influential publication [11] focused on the design issues of DSS. Keen and Scott Morton worked on a wider interactive orientation of DSS as scrutiny, design, application, assessment and improvement. However, the research on decision making and decision support system still continued in several ways by a number of practitioners and scholars [12][6], as well as scholars from other categories as Artificial Intelligence (AI), and Management Information System (MIS) that have brought lushness and density to the research of DSS [2][8]

A fast look exposed that the importance of traditional DSS seemed to be diminishing in the period of 1990s [13] as many different challenges raised for the standing alone DSS. The key challenges comprised: first technology transferals from "database to data warehouse" and OLAP (On Line Analysis Processing), from mainframe systems to server, and from solo user to World Wide Web access; second rising interconnection with new dynamic organizational setting and intellect that was addressed by further information systems like ERP (Enterprise Resource Planning), CRM (Customer Relationship Management), and SCM (Supply Chain Management); third was the growing complication of decision conditions which places huge cognitive amount of work on the decision makers.

One communal important concern behind the overhead challenges is the outdated problem solving characteristics of DSS that has to be extended and combined to be well-matched with innovative technologies, organizational settings and intelligence, to permit more translucent collaboration between system and decision makers, not only to improve the effectiveness and efficiency of the process of decisions, but as well for cooperative sustenance and virtual group working. Many academics have at present get on the excursion of integrated and intelligence approaches aimed at addressing those challenges.

Education sector is most important sector and education is the most imperative issue of the whole world. The context is an inclusive situation in which institutions race for more enrollment with one another. Recently, DSS is an efficient tool for dealing with any type of circumstances, where it is required to take decisions efficiently. Huge numbers of structures have been anticipated for consolidating the knowledge relevant to decision support system.

Seven general types of DSS depend upon the prevailing technology element are suggested as:

Personal Decision Support Systems (PDSS) are generally the systems for small-scale, developed for single person, or less number of autonomous managers, for supporting the decision task. Possibly the ancient DSS category, PDSS, still remains significant in practice, especially in the form of user-built models and data analysis systems.

Group Support System (GSS) is the usage of the combination of hardware, software, communication, language mechanisms and DSS technologies that facilitate the active working group involved in decision making meetings [14] Negotiation Support Systems (NSS) exist where DSS works

in the group but consist of application the IT for facilitating negotiations [5]

Intelligent Decision Support Systems (IDSS) include an application of techniques of artificial intelligence to support decisions. IDSS has been categorized into two groups such as the one included the practice of rule-based adept system for supporting decision, and the other practices neural systems, fuzzy logic and genetic processes.

Knowledge Management-Based DSS (KMDSS) are the systems that provide assistance to decision making through the addition of knowledge storage, recovery, transfer and implement by associating individual and group memory, and the knowledge access of inter-group [15] Data Warehousing (DW) are the systems that make available the data infrastructure of large-scale to support decision. Generally speaking, the data warehouse created for providing information to make decisions.

Enterprise Reporting and Analysis Systems (ERAS) are the enterprise concentrated DSS that consist of Executive Information Systems (EIS), Business Intelligence (BI), Corporate Performance Management Systems (CPM) and Business Analytics (BA). BI tools get access and examine data warehouse facts by predefined software relevant to reporting, query and analysis tools [16].

ERP is the concepts and techniques used for integrated management collectively, from the perspective of efficient use of managerial resources for improving the competence of management. Vohra and Das pointed out three main limitations of EPR systems [17]. Firstly, the executives cannot produce convention reports without programmer's help, and this prevents them from attaining information rapidly. Secondly, this system does not make available past information as it provides only recent status and for good decision making present and past both status are necessary. Thirdly, data cannot be combined with other units and it does not consist of external intelligence.

DSS are basically designed for semi-structured and unstructured activities. But the process for decision making is not a solo task as it slightly can be described as collective correlated tasks containing: information gathering, inferring and exchanging; generating and recognizing scenarios picking among different alternatives, and applying and observing [18] But applying DSS is a challenge due to some of its disadvantages. Firstly, applying DSS can reinforce the viewpoint of rationality and overemphasize the process of decision making. The trouble is created in resolving complex semi-structured and unstructured activities due to traditional DSS. Secondly, the system of data-base and model-base management are the primary parts of decision support system. A suitable database management system should be available to perform with both internal and external data. But the absence of assimilation data may also leads towards ineffective applications of outdated DSS. To get a precise, operative and improved decision making process, the data should be inclusive, precise and up-to-date.

To eliminate the disadvantages of ERP and DSS both systems, intelligent decision support systems (IDSS) are required to use. IDSS is the outcome of combination of artificial intelligent (AI) and DSS. Its elementary design is the combination of knowledge cognitive methods of AI and rudimentary functional models of DSS. It is required and economically reasonable to use IDSS for nonspecific problems that required monotonous decisions. IDSS is collaborative computer-based system that utilize data, models, and professional knowledge for associating data mining to resolve semi-structured and unstructured problems by integrating artificial intelligence method.

Conclusion. To improve the status of the institutions, universities attempt to put on plans and develop different tools to develop the excellence of education and research accomplishments and arrange for public pertinent facilities and knowledge so more students can take admission in the institutions. Information and communication technologies (ICT) have been becoming progressively an important part of the updated standard of living. ICT is gradually becoming very imperative for assisting the processes of decision [18] Data mining (DM) and Decision Support Systems (DSS) are suitable technologies to make available decisions support in environment of higher education by creating and offering related facts and knowledge to improve the quality of educational process and administration [19].

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