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Education Supply Chain Management Framework for Higher Education in United Arab Emirates

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Abstract

The article examines the educational supply chain management framework within higher education in the UAE, focusing on its role in preparing graduates for the job market and addressing potential mismatches between educational outcomes and labor market needs. The research explores several key objectives: understanding how higher education prepares graduates for the job market, identifying any existing mismatch between educational qualifications and job market demands, analyzing challenges within the education supply chain, and proposing a framework to mitigate education-job mismatches. Adopting qualitative research methods, the study involved eight participants from both educational and non-educational sectors. Data was collected using structured interviews and analyzed thematically. The findings underscored the crucial role of higher education institutions in equipping graduates with relevant skills and knowledge through academic programs and internship opportunities. The challenges such as poor communication, inadequate collaboration, curriculum deficiencies, and a lack of innovation contribute to the mismatch between education and job market needs. The implications of these findings suggest the necessity for enhancing professional development opportunities, improving academic program quality, integrating robust internship programs to better align educational outcomes with job market requirements. Effective coordination among stakeholders is crucial to bridge the gap between theory and practice in higher education. The study highlights the broader impacts on the UAE's higher education system, emphasizing the need for enhanced understanding and implementation of educational supply chain management. It advocates for government policies that support graduate employability through quality assurance mechanisms, internship initiatives, and targeted professional development strategies. Ultimately, the article calls for a comprehensive approach to managing the educational supply chain in the UAE, one that fosters collaboration, innovation, and responsiveness to evolving job market demands. By addressing these issues, higher education institutions can better prepare graduates for successful integration into the workforce, thereby contributing to the overall socio-economic development of the UAE.

Keywords: Educational service, Education Supply Chain, UAE, SCM Framework

Introduction

Education has remained a primary and fundamental aspect required to enhance the quality and welfare of human lives. This is because it offers an opportunity to acquire academic skills and knowledge essential in a job environment to grow one's life. As such, globally and locally, the educational system is required to develop competent approaches to acquire skills for contemporary work performance (Wilkins, 2019). Many countries worldwide have positioned their educational institutions to set in place dynamics that facilitate the evolvement of knowledge and its application outside learning places. As a result, the world has witnessed political, social, and economic improvements, especially in recent years attributable to educational development (Abdelhakim & Sabry, 2019). Society has realized high-speed globalization because of the enhanced human interaction influencing the rest of human life. Besides, through the continued supply of education, all spheres of life have benefitted, including trade and the flow of currencies, improvement of family life, career development, and global political engagements (Almalek, 2022). The achievement of all these developments has been facilitated by the interconnection between education systems and labor market systems. As a result, governments globally have focused on strategic measures to align education and the job market properly.

While UAE may have employed several strategies to enhance its education system to match educational knowledge, skills, and labor, there is a lack of evidence of appropriate utilization of the established education supply chain management (SCM) framework in higher education. Most steps and actions taken by the UAE government and other institutions have been reactionary and abrupt without regard to the entire education system, from the lower levels of basic education to higher education (Almalek, 2022).

Supply chain management (SCM) involves managing the entire process from initiating the production of commodities or services to the end, where consumers can access them. In education, SCM entails adopting industry models for higher education specifically to ensure a constant supply of quality education to graduates to meet the job market requirements (Bukamal & Mirza, 2017). The education supply chain entails all stakeholders, including students, employers, schools, and university and college staff, collaborating to meet and satisfy all the needs. Since education SCM is the basis for achieving quality education, it requires implementing and integrating systems of education that are well-aligned that allow learners to advance in all areas of societal development. A successful SCM would therefore require adopting new educational systems and policies that align with the local labor market needs. However, there is little to no evidence that the higher education system has utilized education SCM. As a result of lacking robust SCM in the UAE's education system, there have been ineffectiveness and inefficiencies witnessed in the provision of education services (Ashour, 2020). This has led to the country experiencing a knowledge and skills mismatch needed for performance in the job market. There is also a lack of information integration due to poor alignment between stakeholders within the education system in the UAE (Cabus & Somers, 2018). Other reasons that could explain this situation include a lack of interactivity, more focus on supply rather than demand in education, and a lack of dynamism when providing feedback that can enhance the decision process.

As a country of concern, UAE has been at the frontline of adopting the needed and better educational supply chain framework triggered by the frequent changes in the job market

causing demand. As the need for effectiveness and efficiency in education increases, education supply chain management becomes essential in facilitating the proper preparation of graduates to fit into the labor market. The focus on these issues leads to multiple questions on what roles higher education has in preparing graduates for the market, any potential mismatch, and the challenges leading to the mismatch.

Literature Review

Literature traces the UAE education system from an informal to a vibrant formal sector that beats the cultural limitations which dominated the country over 50 years ago (Matsumoto, 2019). The young education system has gone big significant and multiple changes to the current establishment's superior view and support from the government. The nation's independence and oil discovery in 1971 led to a tremendous improvement in modern and large-scale education. The UAE has been on an upward trend in improving its education system to support the economy and growing population. Studies further reveal that higher education in UAE receives support from the ease of operation of institutions, local, foreign, private, and public, leading to increased supply. One such survey demonstrates that Dubai ranks first in the attractiveness of institutions of higher learning compared to Malaysia and Singapore (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2019).

Demand and Supply for the UAE Higher Learning Education

Of the around 10 million people in the UAE, 10% were nationals, with the remainder being expatriates in 2021 (United Arabs Emirate Government [UAE Government, 2022). India and Pakistan are the largest sources of expatriates in the UAE [UAE Government, 2022). The UAE population increased by approximately 150% from 4.1 million people in 2015 [UAE Government, 2022). Statistics show that the number of expatriates increased more than that of Emiratis. Religious and cultural factors have kept the UAE birth rate relatively high to support population increase. Studies demonstrate that the high birth rate, immigration, and increased educational value have increased the demand for higher education since the 1990s. In 2020, UAE had a 53.72 % gross enrollment at tertiary level education, including colleges, Universities, and vocational training institutions (Trading economics, n.d). The number has grown from around 20% gross enrollment in 2011. Thus, the demand for higher education in UAE among foreigners and nationals has been rising.

Unemployment among the UAE Graduates

According to the World Bank (2022 a), the unemployment rate among UAE youths stood at 10.7% in 2021. The government is prioritizing its citizens in higher education and employment in the public sector to address unemployment (Ashour, 2020 a). As a result, the increasing unemployment rate among young people indicates a problem in the education system that fails to meet its goal. UAE studies indicate that towards the beginning of 2020, the graduate unemployment rate will be 3% (Almalek, 2022). A 2020 Federal Competitiveness and Statistics Centre survey breaks down the statistics showing that most of the unemployed people in the UAE hold a bachelor's degree and equivalent certificates, 39.4% (Hussein, 2022). The lowest unemployment rate among the graduates and the entire population is those holding doctoral degrees, 0.2% (Hussein, 2022). According to Hussein (2022), the unemployment rate is so high that the government has introduced social insurance to caution the affected persons. The constantly worsening unemployment rate demonstrates more problems in the job supply, demand, economic factors, and government policies. Literature is

not silent on the issue, showing the impact of UAE's economic and national growth. The National News (2022) editorial observes that UAE is growing, leading to an increased need for highly skilled employees to serve new production lines. The country has started to adopt technology and modern production methods to diversify its economy. Such trends are unappealing to the country's labor force. UAE lacks experts in arts, artificial intelligence, and IT (National News, 2022). Higher education has not been vibrant in science and mathematics-related courses. A new pattern is emerging where the public sector is becoming sensitive to skills instead of academic certificates in job selection and promotion. According to National News (2022), the government has developed a strategy to import experts and skilled labor from other countries. The current approach to the economy exposes the burden on job opportunities among UAE citizens.

Educational and Skill Mismatch among Graduate and Undergraduates

Educational and skill match is apparent due to economic and technological developments. Qualification or educational mismatch, used interchangeably henceforth, is a state where individuals' qualifications, human and technical skills, and levels misalign or differ from those the job market requires (Di Stasio, 2017). Studies such as Goher et al. (2020) demonstrate that UAE is not an exception to the educational and skill match phenomenon. According to Goher et al. (2020), there is sufficient research demonstrating the skills gap prevalence in the UAE. Ashour's (2020) literature review agrees with Goher et al. (2020) through a synthesis showing the continued mismatch between the qualities of graduates and undergraduates and the evolving changing job market in the UAE. Khaleej Times (2017) reports one of the studies where 49% of job seekers in the UAE believed in the skills gap, while 65% of employers in UAE and across the Middle East had a similar view. The employers speak from their experience with graduates seeking jobs and working in various positions. Goher et al. (2020) also investigated the perception of employees on the skills gap, with 32.5% of respondents from the UAE and the rest from the Middle East region. Results showed that educational mismatch was high, with 69.9% of participants claiming not to use the skills gained through education (Goher et al., 2020). In a GOV HR Summit in Abu Dhabi, Shanfari Faisal, general manager at Oman Oil Marketing Company, complained that the quality of education among UAE nationals does not match the job demands (Kumar, 2018). The manager argued that companies are hiring Emiratis to meet the government requirements, but the graduates are not competent enough (Kumar, 2018). Such sentiments from a manager are reliable information revealing qualifications among university graduates in UAE. The literature further demonstrates that the higher education curriculum in the UAE is also a significant institutional challenge to producing graduates who meet labor market requirements. Hanif (2017) analyzes a 2017 Arab Youth Survey showing that most UAE youth are unprepared for the job market due to inadequate curriculum. Education curriculum affects qualification-skill mismatch due to inappropriate content teaching and learning methods to prepare students for specific fields. Von Oppell and Aldridge (2015) also observe that curriculum in the UAE has been a persistent challenge with instructors adopting traditional teaching and learning methods. According to Von Oppell and Aldridge (2015), such a curriculum is outdated and lacks relevance in the current labor market. According to Ashour (2020), the problem with unchanging curricula amidst shifting skill demands is the lack of autonomy among higher education institutions to develop the curricula. Higher education institutions in the UAE face stringent regulations that limit their ability to alter their cubiculum to match the needed skills. The Mistry of Education [MOE] and the Abu Dhabi Education Council (ADEC) inform

pedagogical and managerial decisions, including curriculum and educationist salaries (Matsumoto, 2019). As a result, colleges, vocational institutions, and universities can only recommend changes in the curriculum without a final decision. The impact of such limited freedom to pedagogical approaches and content is evident in the difference between private and public educational institutions' curricula. Ibrahim and Alhosani (2020) and McClusky (2017) identify another problem with the UAE curriculum: the prescribed teaching method does not match the Emiratis' needs. The UAE copied the Western model of teaching and learning. McClusky (2017) notes that Arabs prefer a perspective learning approach where instructors provide instructions and directions. Studies demonstrate that the UAE MOE endorses nontraditional learning and teaching with more active students. Instructors utilize the advocated pedagogical method, but research indicates that Emiratis students develop disengagement and anxiety (McClusky, 2017). The variation between UAE students' preference for teaching strategies and the curriculum prescribed is a challenge to the optimal acquisition of the needed skills. The learners are inactive most of the time due to training that does not match their learning styles. Literature reveals that the low quality of education results from a combination of factors in the UAE. Moreover, the impact of Emiratisation on quality education is, thus, negative due to institutions' overpopulation. Research further reveals that the various issues, including lack of autonomy and Emiratisation, combine to develop a situation where UAE higher education institutions do not focus on skills relevant to the Job market. Tuxford (2017) exposes the unavailability of data to track graduates through the center for higher education data and statistics [CHEDS], which closed in 2014, two years after its establishment. The CHEDS stored data on graduate skills gained and employment to inform about the effectiveness and suitability of the degree program offered in producing an appropriate labor force (Tuxford, 2017). Thus, the UAE educational institutions and MOE do not have a reference point when deciding on specific training programs and knowledge content due to the closure of a center that gathered data on skills available and labor market saturation.

Education Supply Chain and Supply Chain management

The concept of supply chain began towards the end of the 20th century in the manufacturing sector. Researchers note that the supply chain idea is now diffusing in the service industry because services have become key in global economies (Bolgova et al., 2020). Unfortunately, few scholars and researchers are focusing on the supply chain in the service industry, especially education. Basu et al. (2017) define the main components and processes in determining the education supply chain, including customers, society, and well-being. Gillespie and Bampasidou (2018) maintain that education compares with other product sectors because the programs rely on internal and external factors affecting skills development. The analysis guides the education supply chain as a network of stakeholders, such as customers and society, who interact to improve learners' well-being. Literature shows that government influences educational programs through the strategic direction that affects labor market demands in skills (Bolgova et al., 2020). The role is evident in the UAE, where the government's economic policy and strategy for a knowledge-based society lowered qualification requirements in the job market (Ashour, 2020 a). Waham and Lestari (2019) note that all the pillars influence the decision to choose an academic program, including specifics. The interaction, including employers, ensures that students get the needed skills that help them join the labor force to get value for their time and improve life. Thus, the education supply chain is an interaction and network of stakeholders and processes to ensure that the

program enhances learners' well-being. Following the nature of academic program development and training leading to employment, scholars have come up with different structures representing a higher education supply chain network. Waham and Lestari (2019) preset one of the frameworks which Srivastava and Pandey (2013) proposed in figure 1. The chain shows that families, low-level educational institutions, higher learning institutions, and employers are vital makers of the chain. Waham and Lestari (2019) criticize the model arguing that it does not reveal coordination across stakeholders and could lead to qualification-job incongruity. The comment is consistent with the SCM, where firms are in the middle to coordinate the interest of various stakeholders. Badawood (2021) shows that the role of universities in the SCM model is to integrate activities within the center and across stakeholders. Higher education institutions coordinate the various activities in developing and implementing academic programs by facilitating information following and achievement of shared and isolated interests among stakeholders. Thus, the presented education supply chain model is inadequate and below the levels of SCM theories.

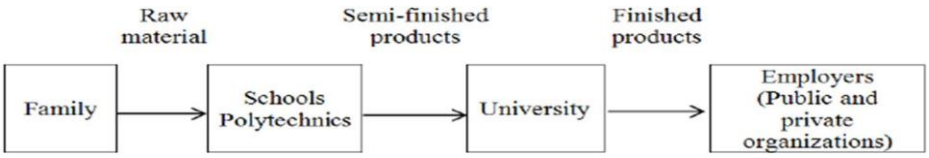

Figure 1: Higher Education SCM Model

Waham and Lestari (2019) propose a different supply chain that corrects the limitations of the previous one, as shown in figure 2.7. According to Waham and Lestari (2019), a higher education supply chain is not different from the product sector and should contain dimensions to measure coordination. Mageto et al. (2020) make the statement explicit by arguing that education relies on multiple factors, including infrastructures and curriculum, to make the training relevant to the job market. Most of the requirements are not readily available to educational institutions. The components and nodes must coordinate with the environment to access and have an effective training program that provides the market with the needed labor force. Waham and Lestari (2019) follow the guide for a working education supply chain to propose more players, including professional bodies and graduates. The model aligns with product supply chains placing the business and the middle of other stakeholders (Gamboa Bernal et al., 2020). Waham and Lestari (2019) also include elements of coordination by showing that all stakeholders coordinate with the university to make the network successful. The coordination aligns with the need for a supply chain to enhance a firm's performance in meeting a shared goal (Japhet et al., 2021). Waham and Lestari (2019) include the critical information-sharing process in an education supply chain to avoid qualification-job incongruity. Universities require information about the need for market skills to rain within the demand for labor.

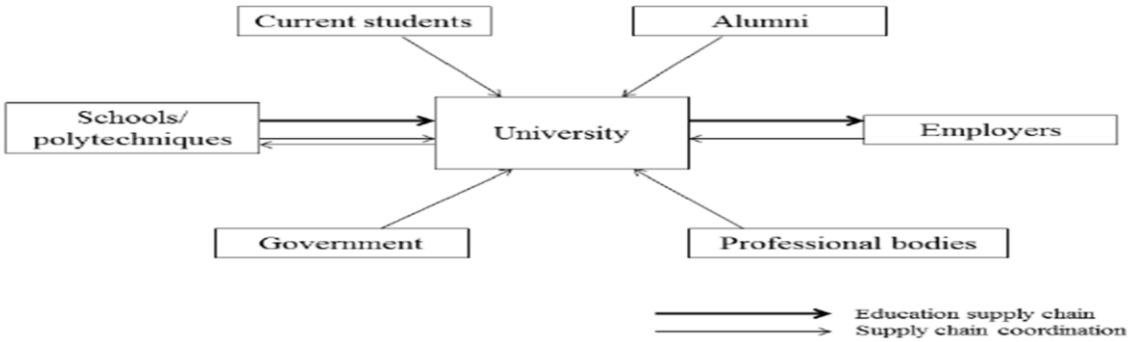

Figure 2: University Supply Chain Model

The literature has shown that such increased importance of education and challenges in performance among higher learning institutions motivates improvement in the system through the adoption of supply chain models. As a result, some studies are adopting the supply chain model from the product sector into the service industry. Scholars support the models through supply chain theories and challenges in higher education institutions that affect students' skills and employment. The literature contains reports on challenges in the higher education supply chain. Unfortunately, the field of the supply chain in higher education is new, and few empirical studies and models exist. Researchers are creating theoretical SCM frameworks from the product supply chain and traditional education system model. Such studies utilizing previous theories within the product sector do not adequately inform the higher education supply chain and related frameworks. Questions exist on stakeholders and concepts in the higher education supply chain. The gaps lead to the current study's focus on analyzing the UAE higher education supply.

Methodology

Methods and Materials

The most suitable research philosophy employed for this project was interpretivism considering its ability to get informed by hermeneutics and phenomenology, focusing on how humans make meaning of their worlds. The philosophy was critical in the subjective understanding of the reality around education and the labor market to identify its roles, potential problems, and solutions. The descriptive research design was considered for this study, considering its ability to provide an in-depth analysis of the data collected concerning the research questions. The study also employed the use of a survey as an appropriate approach to collect data that was utilized to answer the research questions. The study relied on the population of educators, administrators, and heads of relevant departments in employers' organizations that are concerned with matching the graduates' skills and knowledge with the job performance requirements. Purposive sampling was the most suitable for the study as it resulted in a sample of people with background information on education matching the labor market. Consequently, 8 participants were considered for data collection to offer more insight into the phenomenon of education-job mismatch. The data analysis adopted qualitative measures to find the values that answered the research questions.

Data Collection

The primary data was collected through structured interview questions reflecting the study's objectives. The procedure to collect data began with identifying the right group of individuals

to participate in the study. This led to focusing on the members of the faculty team that handle various students' affairs, administrative team members, and decision-makers. The second step involved seeking consent from the learning institution to research the groups identified by the researcher. This was considered the critical part of ensuring that the selected teams met the faculty requirements of the institution of learning and did not violate any of the rules for the students within the institution. The researcher also sought consent from the relevant agencies, including the participants' work institutions, to ensure that the research conduct had the full authority of the various relevant organizations. However, this was subject to the request from the individual participants if they demanded their involvement in the study be sanctioned by the institution's authority. A successful acquisition of consent was followed by contacting the participants to schedule the interview at their convenience. Most contacts were made through email accounts provided by all the willing participants. Where email messages were not replied to, the researcher made direct contact with them through provided mobile number for individual participants. Interviews were then scheduled, and equal time was allocated for each participant depending on the time that each one of them had. An average of 45 minutes was given to each participating team member to ensure enough engagement to get the needed information that facilitated answering the research questions. All recorded audios and videos of the interview were transcripts for easy follow-up and understanding to get the most detailed ideas put across by the researcher. The final step of this procedure involves analyzing the data collected using relevant tools and techniques of analysis. Therefore, the analysis step was the most crucial considering that the researcher had to make meanings from the collected information.

Data Analysis

The thematic analysis allows the application of terms that require responses, including how, what, and why. By extracting themes from the collected data, this analysis elaborates on data quality while referring to the research questions and objectives designed for the study, including their respective answers (Heeringa et al., 2017). The authors identified six steps involved in achieving the entire process of thematic analysis. The first step is for the researcher to familiarize themself with data, followed by the initial code generation. Once codes have been generated, the analyst searches for and reviews the themes. Their definition and naming follow the themes review before producing the final report. In generating the initial codes, this study applied the guidelines proposed by LeCompte (2000). LeCompte (2000) explained that there are three methods to identify codes, i.e., frequency, omission, and declaration. Frequency means the codes can be identified by information repeatedly mentioned explicitly or implicitly by the research participants. On the other hand, information that never appeared but logically should have appeared can be identified and considered an omission. The declaration could be information that is not repeatedly stated by the participants but declared to be necessary. In generating themes, LeCompte (2000) elaborated that a theme can emerge based on one of the following criteria: Similarity or analogy – a set of items or codes that are identical or serve the same purpose; co-occurrence - a set of items or codes that occur at the same time or place, and sequence - set of items or codes that appear in a series. Other criteria for consideration include hypothesized reasonableness – a pattern that should exist based on theory, experience, or hunches and corroboration and triangulation – a pattern that exists due to confirming information.

Findings and Discussions

The descriptive statistical view of the profile of the participants shows that they either belonged in the educational or non-educational sectors where graduates acquire knowledge and skills for application. The educational sector was highly represented, with 87% of those interviewed, while the on-educational industry representing the rest of the organizations where students work after graduation was only 13%. Most participants have worked for many years in their areas of specialization, with the highest having worked for 20 years and the lowest being six years.

Table 1
Respondents' Experience

No.	Profession/designation	Working Experience
1	Chief Strategy and Excellence Officer	20
2	Head of institutional research and effectiveness /program development	7
3	Associate Professor /Associate Provost	13
4	Senior Admin/trainer	6
5	Director Internal Audit	6
6	HR Manager	-
7	Associate Professor	12

The researcher established that higher education plays a significant role in preparing graduates to join and work in the labor market through the development and implementation of employability programs. As identified in the interview answers, such programs provide them with the needed skills and knowledge to perform in the labor market. The aspect of the employability program for graduates, the Associate Provost for Student Affairs said that;

"I have built a strong relationship with employers to secure internship and career placements. In my current role, we have a unit specialized for the employability of our graduates, called the career readiness unit, that supports students in enhancing their skills and preparing them with the needed elements such as CV writing and interview preparation. This week, we organized a virtual career fair to provide students with some information about the job market, provide training that the employer carried out, and for students to explore job opportunities with more than 53 employers."

This response shows that educators at the higher education level build relationships for learners before they graduate such that they plan them for internships and placements into careers that make them fit into the employment sector.

The employability issue emerges as a common aspect in the interviews that show a mismatch between the education offered and the needs of the labor market. Various themes also emerged as common elements that contribute to the challenges that cause the mismatch. It includes:

- poor curriculum development, the Head of Institutional Research and Effectiveness, in his response, says that there are;

"Issues with program/course learning outcomes where the focus is on knowledge/theory rather than skills/practice and Issues with students' assessments"

- lack of or limited innovation, the chief strategy and excellence officer indicates limited innovation when answering probing question five in the second section by saying; *"Education cannot innovate due to the regulatory environment. As mentioned above, the program is set four years in advance of graduation.*
- failure to understand the concept of the education supply chain, the Chief Strategy says; *"The supply chain in the educational systems in the UAE needs to align with demand, and this is not happening, as there is a time lag from when a student starts studying to when they complete. Therefore, the skills and knowledge acquired remain outdated because the program they take is set four years before they graduate.*
- poor communication between sectors, The director says;

"Communication may yield the highest outcome if practised transparently and frequently. This is the most difficult action to perform as this requires sharing of information among government entities and the industry."

- lack of collaboration and coordination. chief strategy and excellence officer, who says;

"The Ministry of Human Resources focuses more on employment regulation rather than employability. The industry is not engaged in graduate employability issues – they want a skilled workforce and can buy this in rather than engage in solving issues. Education Institutions do not fully engage with industry – they have advisory boards who meet four times a year which is insufficient to really inform developments."

Finally, various themes emerge from the interview in the framework development for education supply chain management in higher learning. It includes:

- academic programs development, The HR manager says;

"Training presents a prime opportunity to expand knowledge; however, finding development opportunities is a bit expensive in the current climate. A professional development program allows you to strengthen the skills each employee needs to improve. A development program brings all employees to a higher level, so they all have similar skills and knowledge."

- academic programs quality assurance, the strategy and excellence officer, in his response, indicated;

"The education system has not obtained professional development in higher education in the UAE. In this case, the UAE has transformational leaders but hasn't improved the linkages with the supply chain."

- developing professionally, effective leadership, developing and implementing internship programs, and ensuring integration of various elements of a successful supply chain, including communication, coordination, and collaboration, the chief strategy and excellence officer says;

"Real world and how organizations operate. This is a valuable experience, but more importantly, they must demonstrate core and generic skills such as teamwork, timekeeping, etc. Students learn to work together in a protected environment. Yes, they have deadlines, but what is the real consequence if they don't deliver? In the workplace, they are required to turn up on time, dress professionally, interact with others in a particular way, and understand how the organization fits together, e.g., different departments focusing on delivering their piece of the puzzle, which is the service to the customer. These skills are not really embedded within an academic program; some may be but not to the level required in the workplace".

The Role of Higher Education in Graduates Preparation

As unemployment looms in the UAE, results show that educationists, employers, and administrators of higher learning institutions recognize the overall goal of universities and colleges to enhance students' employability. The study outcomes arguing for the coordination of activities to make learners satisfy the job market resonates with previous studies on acceptability. Thus, higher learning institutions impact students with knowledge and skills that the community values to enhance their absorption. In the UAE, for example, Emiratis have to go through higher education to get employment in the Government (McClusky, 2017). Therefore, the universities and colleges' role is to ensure that the learner graduates with academic qualifications. Such qualification is not what private employers would wish. Fortunately, the UAE government has been using it as a criterion to absorb citizens into public jobs.

Findings further reveal that higher education institutions are in the middle to lead the entire system in serving students to develop appropriate skills for the job market through coordination.

The results are consistent with previous studies demonstrating that higher education institutions are in the exact position of the production process as other businesses in the supply chain framework. Findings from the study further revealed that universities and colleges rely on stakeholders to ensure that their graduates get positions in the job market. Badawood (2021) and Waham and Lestari (2019) commented on the role noting that coordination in higher learning institutions is critical to performance. The institutions have position power and own the learners to facilitate a gathering of other key players and leverage their benefits.

The Mismatch between Acquiring Higher Education and the Labor/Job Market

Unfortunately, the UAE has not achieved the role of higher education following the identified challenges among graduates in the labor market. The survey results confirm a significant theme that the UAE is experiencing an education-job mismatch leading to a high unemployment rate among graduates.

Graduates in the UAE suffer from horizontal educational job incongruity where their skills do not align with those employers want. Additionally, the study reveals the prevalence of vertical qualification-job mismatch in the UAE, where graduates have lower skills to perform in the labor market effectively. Studies demonstrate that some Emiratis aimed at graduating without minding skills because of the promised positions in the Government (Shaer et al., 2019). Results further expose the sources of the existing educational-job mismatch in the UAE, citing institutions' failure to align educational programs with market needs. The country needs skills in entrepreneurship, science, and mathematics, but few Emiratis have the skills required and are at an optimal level to deliver productivity. Another identified cause of educational-job mismatch in the UAE is the government's poor economic and educational policies. The UAE Ministry of Human Resources regulates employment instead of focusing on employability, which leads to issues in providing skills that serve labor market requirements. Additionally, the UAE educational system is un- predictive of the future leading to the current educational-job mismatch. This research found that the current job positions in the UAE require different skills from what graduates have. Significant economic changes, including

technology and innovation, demand science and mathematics-related capabilities. The universities have further failed to guide learners in developing skills that will prepare them to deliver in various jobs. Instead, most students are fast-tracking their programs, including taking more accessible paths to graduates without guidance from the higher learning institutions' faculties and relevant departments.

A significant result that aligns with past research findings is the inadequate implementation of the supply chain in higher education. An appropriate curriculum reflects a supply chain management issue because it guides the effectiveness and efficiency of the entire system. Students' well-being to get employment after going through the program results from a curriculum that impacts the right content, teaching, and learning styles. Additionally, the UAE higher education supply chain has limited collaboration and coordination with the government, a critical stakeholder that affects performance and, therefore, educational-job mismatch. The identified lack of practicum courses and inappropriate policies implies a disintegrated stakeholder network where the universities and colleges cannot leverage the government's benefits in funding and providing a conducive environment for a focused education system. Previous studies support the finding through exposure to the Emiratisation policy (Kamal, 2018). The policy harms the supply chain more by affecting the quality of education, learning, and graduates to match the needs of the private sector labor force.

Educational Supply Chain Management Framework

According to Waham and Lestari (2019), higher education is adopting the supply chain model to improve productivity and skilled graduates. Thus, skill development aims to influence new elements in the traditional education system by introducing communication and coordination. Similarly, the goal of professional development will push the UAE higher education system to an effective supply chain through pressure to raise the missing concepts, such as integration across stakeholders. The UAE higher education supply chain requires the implementation of professional development objectives to improve its efficiency. Results show that professional training is an opportunity in the UAE to expand graduates' knowledge and skills, the needed performance. Graduates' skill development is the outcome of the entire higher education supply chain that benefits all customers, including employers, students, and society. The findings agree with the literature showing that failed determination to produce skilled workers is leading to a broken higher education supply chain. Determination to professional development will reverse some of the weaknesses in the UAE higher education system as the supply chain leverages knowledge that will support the achievement of the purpose.

Another element of the framework that will support the adoption of an effective supply chain and SCM in the UAE is quality assurance in academic programs. Most of the issues along the education supply chain can improve with the development of educational programs that revolve around quality in imparting skills. The conclusion gets confirmed following the current vertical academic job mismatch in the UAE. In the UAE, employers cite incompetence among Emiratis and prefer expatriates (Bridi & Al Hosani, 2022). The difference between the two is the quality of education that affects the depth of skills and their application in practice. Inadequate skills to effectively deliver in the industry implies that the students go through academic programs that are inefficient in impacting the targeted competencies. Including quality assurance in educational program development will attract other significant supply chain elements to enhance overall efficiency. Quality educational programs would have

motivated developers to seek a normative system that includes gulf culture to have an efficient supply chain.

Moreover, the UAE higher education must implement internships into its supply chain to improve productivity and address unemployment related to qualification-job mismatch. According to the results of this study, an internship is appropriate for UAE students to expose them to the real world and test their core and generic skills. The training will prepare the graduates to join the labor market immediately and get employment following refinements of the needed competencies. Scholars agree with the need for an internship after identifying the generic and technical skills gaps among graduates (Al-Marri et al., 2017). Findings show that the program allows learners to expand their knowledge by exposing their skills. Internship exposes students to business organizations to stimulate thoughts about the gained and needed skills in the job market. Such motivations would work best in making learners significant stakeholders in influencing education programs. The internship programs will empower students to take up their position in the education supply chain following the drive towards enhancing their skills. Currently, Emiratis take the selected university courses without minding employability and performance in organizations. As a result, most learners cannot question or seek inclusion in curriculum development. The UAE require such nodes in the supply chain that makes learners identify their responsibility for their employability within higher education and motivate contribution to having an efficient education system.

Conclusion

This scientific study aims at improving the UAE higher education supply chain by identifying components of an effective and efficient SCM, current challenges in the chain leading to education skills or job mismatch, and developing a framework that incorporates the missing vital elements. The four objectives that guided the study were: (1) to explore the role of higher education in graduates' preparation for the job market in the UAE, (2) to explore whether there exists a mismatch between acquiring higher education and the labor/job market, (3) to conduct exploration and analysis of some of the problems that face the education supply chain from high learning institutions to the labor market and, (4) to develop an educational supply chain framework that facilitates the reduction of education-job mismatch in the UAE.

The primary motivation for the study was the high regard for education within the UAE. Despite the income from oil that has supported the country, the UAE values education to develop a knowledge-based society and diversify the economy. The government has set goals and policies to improve the education sector to empower Emiratis. A secondary motivation for the study was the growing economy and globalization changing the nature of the industries and labor market. The UAE is one of the countries experiencing significant growth in production processes that requires advanced and new skills while accommodating international graduates. Thus, the rising need for educational services and abilities and the current nature of the labor market motivated development and response to the above objectives.

This study used qualitative, and interview instruments to collect data from eight participants, including professionals, educational managers, and decision-makers within the UAE higher education and job market setting. The eight titles were chief strategy and excellence officer,

the head of institutional research, two associate professors, a senior administrator/ senior trainer, an internal audit, an HR manager, and an associate professor/associate provost. Such a small sample was appropriate following their accessibility and experience in the academic and job market that allows reliable and detailed information.

Recommendation on Future Research

The study identified limitations that serve as the basis for future research to advance knowledge and inform the UAE higher education supply chain. One area of future research is a comparative study between the UAE higher education supply chain and other countries, including the Gulf and the US. Researchers can include respondents across the lands or use the established supply chain frameworks to compare various processes and nodes, including their significant roles in higher education. The comparison is critical to the current study, whose aim is to guide the UAE to advance its higher education to meet the government and community goals in producing competitive graduates. Results would inform on strengths, weaknesses, and opportunities of the UAE higher education supply chain for adjustments to achieve competitive advantage.

Further research should incorporate all the identified stakeholders in the literature review, such as ongoing students, fresh graduates, and unemployed ones. A different research methodology, including survey questionnaires instead of interviews, can accommodate an all- inclusive sample due to limited researcher involvement. A diverse selection could provide rich and reliable data to diagnose the developed higher education supply chain and UAE challenges leading to education job mismatch. The additional participants will provide information to criticize or add new processes and nodes in the supply chain to raise its efficiency and effectiveness in informing UAE higher education.

Other researchers can duplicate the current study but use the quantitative approach in a significant part of the research. The studies should organize data correction and analysis methods in ways that provide information on the effect, effect size, and correlation between variables. This research provides a starting point for others researchers who might choose the quantitative design. Results provide diverse themes from stakeholders on potential problems leading to education-job mismatch in the UAE.

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