

“Beyond Specialization: The Role of General Education Programs in UAE Higher Education, Comparative Insights from Applied and Non-Applied Systems”

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ABSTRACT

The research aimed to investigate the role of general education programs in UAE higher education. It adopted the positive realism philosophy. A questionnaire was utilized to collect data from a sample of students and faculty members at applied and non-applied universities in the UAE. The population consisted of all members, undergraduate and postgraduate students, in the UAE. Furthermore, a simple random sample of 360 individuals from the population was taken. The study results demonstrated that the reality of implementing General Education Programs in the UAE Higher Education was at a high degree, reflecting the commitment of UAE universities to the Commission for Academic Accreditation Standards (CAA), which emphasizes the importance of including general education courses within all academic programs. In addition, the results revealed that the level of learning outcomes of general education programs in the UAE higher education reached a high level, indicating that the programs effectively achieved their educational and pedagogical goals. There were no statistically significant differences at a 0.05 level between the sample individuals' mean degree concerning the role of the general education program in higher education, attributable to the gender variable. In comparison, there were statistically significant differences at the level of 0.05 between the mean degree of the sample individuals regarding the role of the general education program in higher education, due to the type of institution variable in favor of applied systems. The results also revealed that the general education program had a statistically significant impact on the program learning outcomes. The researcher recommended designing general education courses that focus on skills applicable to the local, regional, and international labor market demands.

Keywords: Specialization - General Education Programs - UAE Higher Education - Applied and Non-Applied Systems.

INTRODUCTION

Educators incorporate various programs that could aid in university students' positive development, among these programs are “general education programs” (Chao, 2023; Watkins, 2023; Flaherty, 2016). General education programs are the foundation of the university experience, as most universities offer courses across multiple disciplines that enable students to explore many topics as they work toward graduation. It allows students to think broadly, outside the major. A graduate with a “general education-based degree” should be able to think outside the box of his/ her major and be prepared for life. A generally educated person should be able to see issues from

multiple perspectives (Ferguson et al., 2015; Xundan, 2020). General Education programs provide an opportunity to elevate education to a higher level than vocational or professional training. Each program has a curricular structure in which General Education is part of “the principal/concentration and courses that make students more aware of the ethical, moral, and societal well-being of the society around them” (Antiado et al., 2020; Hothem, 2017; Gersten, 2012). They may include “being able to organize thoughts and write well, to use logical, scientific, probabilistic, or other types of reasoning”, to be aware of the past actions and ideas of humankind and how they influence the present and future, the ability to analyze, and so on (Schalin & Robinson, 2013).

Problem Statement

The MENA region needs to address the skills gap and make an effort to build the skills required for a knowledge economy. This gap is likely “due to the courses students take in their first year, which are the foundation of knowledge and driver for mental development as students and young professionals” (Antiado et al., 2020). The “United Arab Emirates' higher education policies” prioritize teaching effectiveness and learners' competencies acquired in General Education courses due to the need for a skilled workforce (Antiado et al., 2021; Alhammadi, 2024). The “Commission for Academic Accreditation (CAA) under the Ministry of Higher Education of the United Arab Emirates has identified General Education as a core element of any program requiring two or more years of study, stating in CAA Standards 2011 for General Education that all students enrolled in undergraduate programs requiring two or more years of study must complete a broadly-based General Education courses in the following areas: (1) English, Arabic, or other languages; (2) the humanities or arts; (3) the natural sciences; (4) information technology or mathematics; and (5) the social or behavioral sciences. The General Education courses are designed to equip students to express ideas clearly and effectively orally and in writing, reason scientifically, quantitatively, and critically, and use technology to access, evaluate, organise, and communicate information. Mastery of this general knowledge, skills, and competencies allow them to be responsive to the present and future needs and/requirements of a sustainable society to productively meet the needs of the labor market and develop civic-mindedness and sense of responsibility (awareness and involvement in solving social issues) in one's local, national and global environment” (Antiado et al., 2020).

In response to demands from the labor market, international competitiveness, and national development goals, “higher education in the United Arab Emirates (UAE)” is rapidly growing and diversifying. Universities in the UAE, especially applied ones, have historically emphasized specialization and programs focused on addressing the labor market demands. However, general education significance in fostering critical thinking, adaptability, cultural awareness, and transferable skills that support lifelong learning is frequently overlooked in favor of specialization. On the other hand, non-applied systems might place more emphasis on general education, sometimes at the expense of immediate professional preparedness. This conflict raises questions regarding the UAE general education initiatives' purpose, structure, and results. Although general education and specialization have been the subject of international research, little attention has been devoted to how these dynamics manifest in the UAE's higher education. There is an urgent need to assess general education's function, efficacy, and difficulties across various institutional types as the nation attempts to balance innovation, employability, and holistic student development. The larger educational goal of preparing graduates for both professional and societal contributions is threatened by the continuation of disjointed policies and curricular imbalances in the absence of such insights.

Research Questions

- “What is the reality of implementing general education programs in the UAE higher education?”
- “What is the level of learning outcomes of general education programs in the UAE higher education?”
- “Are there significant differences at a $(0.05 \geq \alpha)$ level between the mean responses of the study sample regarding the role of the general education program in higher education, attributable to the study variables (gender, type of institution)?”
- “Is there a statistically significant effect at a $(0.05 \geq \alpha)$ level for the general education program on improving program learning outcomes?”

Research Objectives

- “Shedding light on the reality of implementing general education programs in the UAE higher education.”
- “Determining the level of learning outcomes of general education programs in the UAE higher education.”
- “Verifying the significant differences at a $(0.05 \geq \alpha)$ level between the mean responses of the study sample regarding the role of the general education program in higher education, attributable to the study variables (gender, type of institution).”

- “Verifying the statistically significant effect at a ($0.05 \geq \alpha$) level for the general education program on improving program learning outcomes.”

Research Significance

Globally, the role of general education is contested, but little is known about its relevance in rapidly developing, non-Western higher education systems. This research adds to the body of knowledge on curriculum design by examining the tension between specialization and general education in “the UAE's unique cultural and policy context”. By contrasting applied and non-applied systems, the research provides a theoretical framework for understanding how different institutional models shape student outcomes, skill development, and educational philosophies. Findings can inform UAE higher education policymakers about whether general education should be expanded, modified, or restructured across institutions, supporting national strategies such as *Vision 2031* and *Emiratization*. Applied and non-applied universities can benchmark against each other, identifying best practices in producing employable and well-rounded graduates. Universities can use the insights to improve curricular balance, ensuring that graduates are technically competent and possess transferable skills necessary for innovation and global competitiveness.

Theoretical Framework

The study variables can be best explained through “Human Capital Theory”. The human capital theory's proponents believe that investing in education is a productive use of human capital, which is just as valuable as investing in tangible assets. This idea of human capital, which placed a high value on human skills as a factor of production in the development process, is the foundation for the idea that education is a capital based. According to this theory, human skill or productivity is just as significant an input in the process of development as money, natural resources, and physical plants. In this sense, workers in high-skilled or professional roles are more marginally productive when they receive instruction that requires logical or analytical reasoning or imparts technical and specialized knowledge (Adedeji & Campbell, 2013). The theory can be used to explain how general education courses (applied systems) contribute not only to “specific job skills” but also to transferable skills (critical thinking, communication, adaptability) that enhance long-term career prospects, whereas non-applied systems emphasize immediate, specialized job readiness.

LITERATURE REVIEW

The massive reform initiatives of the 1980s and 1990s led to a significant increase in “enthusiasm for the potential and significance of general education”, more aspirations, and a further development and definition of concepts of general education. Through the common curriculum, colleges and universities more clearly expressed their dedication to coherence in purpose and breadth with integration. Numerous institutions created pedagogies, materials, and organizational frameworks that were unique to their objectives and character (Bowen, 2004).

The earliest efforts to describe general education in higher education are found in the “Reports on the Course of Instruction in Yale College by a Committee of the Corporation and the Academical Faculty, commonly known as the Yale Report of 1828”, which argued that education should strive to teach a subject but also to impart a general knowledge of everything about life. The report also argued that if students were limited to one subject, they would be unable to expand the human mind. In addition, education should include three disciplines: the first to allow the individual to act appropriately and acceptably without parental guardians, the second to teach mental discipline so that individuals can go through life, and the third to teach individuals the classical writings (Aldegether, 2015; Pak, 2008).

In modern American higher education, all undergraduates, regardless of their major, are expected to go through a general education curriculum (Bowen, 2004), sometimes referred to as a liberal education, which covers 25% to 50% of the credits needed for graduation to ensure that all graduates receive a broad-based education deemed fundamental to success in life after college, workplace, or civic life (Allen, 2006; Association of American Colleges and Universities, 2008). According to the “Association of American Colleges and Universities (AAC&U)”, a general education enables students to “develop a sense of social responsibility as well as strong and transferable intellectual and practical skills, including communication, analytical, and problem-solving skills and a demonstrated ability to apply knowledge and skills in real-world settings” (Association of American Colleges and Universities, 2018). These knowledge and skills are identified by regional accrediting agencies, educational associations, and industry as core elements of a quality education (Association of American Colleges and Universities, 2004).

Walker & Soltis (1997) identified three approaches to general education that reflect the institutional academic value and the intended learning outcomes:

- a. Subject-centred perspective:** This perspective believes in “transmitting knowledge to the next generation. This can be done through teaching basic skills, critical thinking, and learning and mastering important facts and information”.
- b. Society-centred perspective:** “This perspective holds that education should aim to create and ensure a prosperous and healthy society. Consequently, this type of education aims to develop civic responsibility, vocational training, ethical values, a democratic attitude, and prepare individuals for an industrialised society and economic competence”.
- c. Individual-centred perspective:** “This perspective emphasises the importance of individual freedom, talent, and happiness and preparing students for community life. Therefore, it believes schools should help each student know their potential”.

General education should give students an exposure to diverse and integrative disciplinary perspectives; it should enrich the intellectual engagement of students in their majors, prepare them for the evolving expectations of professional careers, prepare them for lifelong learning, and encourage them for participation in their communities as citizens and leaders (University Catalogue, 2025). Grounded in a philosophy or framework developed by the institution or adopted from an established framework, the general education program provides students with broad knowledge, intellectual concepts, skills, and attitudes that the higher education institution assumes every college-educated person should have (University of Northern Iowa, 2017; Thompson et al., 2015).

International Experiences

American colleges and universities have been founded on the principle that undergraduate students should receive a broad general education (Gaff, 1994). Prominent examples of these experiences can be reviewed as follows:

i. Harvard University

In 2004, Harvard University announced a reform of its undergraduate curriculum. Lawrence Summers, former president of Harvard University, believes that Harvard students should take more humanities, language, arts, and math courses than they are required to. The counterargument that emerged from this plan was what should be included in general education requirements. Harvard's committee defined general education as that part of a student's entire education that, first and foremost, focuses on his life as “a responsible human being and citizen”. Universities assign general education courses to equip their students with general and basic skills for success and expand breadth in knowledge, study, thinking, and writing skills (Warner & Koepfel, 2009; Aldegether, 2015). This framework for the General Education Program acknowledges legacy while creating a new trajectory. This framework has seven learning outcomes that all undergraduate students should demonstrate before receiving a degree from Harvard University: “(1) U.S. and Global African Diasporic Developments, (2) Human Cultures and Creative Expression, (3) the Physical and Natural World, (4) Intellectual and Practical Skills, (5) Social Responsibility and Knowledge of Political Institutions, (6) Leadership and Applied Learning, and (7) Comprehensive Wellness Practices” (Wutoh, 2023).

ii. Portland State University

In 1994, Portland State adopted a general education program that included a six-credit senior capstone, which has four main goals represented in giving students experience regarding working in a team situation, providing students with a chance to apply what they have learned in the major to real community problems, challenging students to become actively involved in addressing community issues, and allowing students to create summation products that summarize their learning and address the needs of community partners. All students are expected to demonstrate proficiency in the following four areas: communication, diversity, critical thinking, and social responsibility. Other components of the general education program are designed to prepare students to meet expectations in the capstones: inquiry skills and communication skills, and orientation and training materials are included (Portland State University, 2025).

iii. The University of Memphis

The general education core at the University of Memphis ensures that college students receive the broad knowledge and skills they need to become lifelong learners in a global community. Because courses in general education should be broad, they should not be designed to be focused on the skills, techniques, or procedures of a particular occupation or profession. The critical thinking that comes from general education helps to search for truth, to find answers to questions, and to solve problems. Specifically, the general education program equips students to be thoughtful readers and effective communicators who are aware of their role in history, culture, and multicultures, who value the web of commonality of all humans in a multicultural world, who are prepared for the

obligations of engaged citizenship, cognizant of the ethical requirements of the shared existence, capable of applying the skills and knowledge of the social and behavioral sciences to their own world, acquainted with the appreciation of the fine arts, and possess an understanding and application of the scientific and mathematical view to the world (The University of Memphis, 2020).

iv. North Carolina (NC) State University

At NC State University, General Education gives our students a broad, informed understanding of the world and the foundation for rich and productive lives. General education is important to students because logical and creative thinking are at the core of enhancing the human condition; respecting the value of broad perspectives and understanding human history and cultures are necessary to good citizenship, as global knowledge has become essential to international interdependence. Appreciation of the universe and the richness, variety, and ecological interconnectedness of the world around is built on knowledge of science and the ability to apply scientific reasoning; because well-reasoned moral, philosophical, aesthetic, and intellectual convictions are required to contribute to human thought and achievement. Productive participation in academic, professional, and civic communities is dependent on effective communication; because an understanding and evaluation of the interaction among science, technology, and society is crucial in a world that is transforming through technological innovation and scientific discovery; and because attitudes and skills for healthy living are necessary to social, mental, and physical well-being (University Catalog, 2025).

v. King's College

At King's College, the general education program is designed to foster seven skills envisioned as transferable across any major field: effective writing, critical thinking and problem solving, effective oral communication, technology competency, quantitative reasoning, library and information literacy, and moral reasoning. During the undergraduate experience, these skills are reinforced and developed semester after semester, both in general education and major courses (King's College, 2025; Association of American Colleges and Universities, 2004).

vi. University of Central Florida

At UCF, the General Education Program (GEP) is a gateway to exploration, discovery and growth; innovative courses taught by inspired faculty who will challenge students to think deeply, connect across disciplines and solve complex problems while building skills that will take students beyond the classroom into the world as a creative thinker, a resilient problem-solver and a lifelong learner ready to make a positive impact (University of Central Florida, 2025).

United Arab Emirates Experience

The UAE offers general education courses for undergraduate students in language, mathematics, sciences and humanities, which are cross-disciplinary and will encourage students to apply environmental principles in their respective specialisations. The UAE general education program is promoted as one that “encourages intellectual discovery and critical reflection, promotes an appreciation of the various modes of human inquiry, and develops the knowledge and skills to succeed in and contribute to the Arab Gulf region and the world at large” (Undergraduate Catalogue 2018-2019; Ross, 2019). Many universities have already applied these courses and programs as follows:

1. EMIRATES COLLEGE OF TECHNOLOGY (ECT)

The General Education Program for Bachelor's Degrees in ECT includes several courses that are standard to all current and future bachelor's programs. The learning goals and the relevant outcomes of ECT General Education Programs are: giving students the knowledge to pursue their major, broadening students' understanding of themselves, their environment, and society, enabling students to establish a foundation of knowledge and skills necessary for lifelong learning, providing students with the knowledge, skills, and motivations to make informed ethical decisions based on understanding of societal values (Emirates College of Technology, 2019). All Graduates of the ECT General Education Program will have the ability to:

- ☐ Communicate effectively in business and daily contexts in Arabic or English, whether in oral, written, or listening situations.
- ☐ Be technologically literate and use technology to achieve personal and educational goals.
- ☐ Apply mathematical and statistical concepts to solve quantitative business and real-life problems.
- ☐ Comprehend scientific methods and apply them.

- ☐ Demonstrate an understanding of the fundamental theories and concepts in social and behavioural sciences, and apply them to personal, social, and developmental issues.
- ☐ Understand major ethical concepts and theories in the professional fields.
- ☐ Apply effective learning strategies appropriate to the situation.
- ☐ Demonstrate an understanding of current environmental challenges.
- ☐ Demonstrate an understanding of the Islamic religion and its relation to culture, civilisation, and science.
- ☐ Apply critical thinking and reasoning skills for problem solving (Emirates College of Technology, 2019).

2. American University of Ras Al Khaimah (AURAK)

The program is deeply aligned with the university's vision and mission. AURAK graduates will have the skills, conceptual knowledge, diversity awareness, ethical and civic responsibility, and entrepreneurial spirit to navigate an increasingly complex and ever-changing environment. The goals of a liberal arts education demand that students take several courses outside their major to “gain a holistic sense of a wide range of knowledge domains”. Upon graduation, students can write and speak clearly using current technology and produce a final written or oral product, identify, analyse, and evaluate ethical concerns and justify their positions in a reasoned argument, apply logical and mathematical reasoning to analyse quantitative data and solve problems for personal and professional purposes, implement appropriate tools to access information, demonstrate an understanding of artistic forms' historical contexts and diversity, evaluate sources, and conduct independent research, appreciate the contributions of multicultural contexts that enrich the human experience and the interdependence of the global community, apply one of the social sciences to analyse a contemporary issue, identify, analyse, and solve scientific problems using scientific methods, use technology for academic purposes (General-Education-Program, 2014).

3. Zayed University

One of the main components of Zayed's effort to advance “liberal arts education” in the area has been interdisciplinary education. The interdisciplinary approach has made it possible to promote the liberal arts in a setting that is frequently dominated by fields that are related to skills, even though more research is required, especially regarding the role of the natural sciences within a liberal arts education. Although ZU's approach to interdisciplinary education shares some characteristics with that of other US institutions, there are also significant distinctions. The university's general education program has always included an interdisciplinary curriculum, much like many other western universities. However, “ZU has contributed to the advancement of general education by providing it with its own administrative leadership within the university, in contrast to many of these same institutions”. Faculty dedication to the program, program innovation, and institutional support for general education have all benefited from this. The university has also demonstrated that it is “ahead of the times” by eschewing the more conventional discipline-based majors and departments that are still prevalent in many western universities through its “International Studies” program and major (Joseph, 2005; Gallacher et al., 2010).

General Education Programs Requirements

General education is of equal priority to other courses and should be maintained if it is not enhanced or advanced. Potential enhancements to the General Education program to consider are: first- and second-year seminars related to General Education purposes such as time and problem-oriented themes or topics, or faculty select seminar topics related to contemporary social problems and/or issues in their fields of expertise; civic engagement activities with research and reflective analysis as part of General Education; research activities in academic, laboratory, and “field” settings. (Antiado et al., 2020). An effective general education program has specific characteristics represented in:

- ✓ It is intentionally designed with clear reasons and stated educational outcomes, associated with the mission and identity of the institution, that are understood and endorsed by all stakeholders.
- ✓ The university must provide the necessary resources to apply the general education program successfully.
- ✓ The elements are integrated and reinforce one another, rather than creating a disjointed student experience.
- ✓ The faculty and administration must lead and supervise the program. In many cases, this involves assigning a faculty member to oversee the general education program, who, with a general education committee, can assist faculty to develop the learning goals, create coherence, and measure student attainment.
- ✓ Students are invited to explore relevant topics and are captured by their interest in learning and applying their learning to areas of interest.

- ✓ Supposing general education is limited to the first two years and consists of disconnected introductions to the disciplines. In that case, students will not see the strength in general education and will just attempt to "get their requirements out of the way." So, it must last for all the years of study within the university.
- ✓ Students are encouraged to master challenging content and gain advanced analysis, reflection, and communication skills.
- ✓ Regardless of how general education is defined within an institution, it cannot be achieved by a single person or even a handful of faculty members; the faculty must share a sense of purpose, structure, and content, and support its implementation and assessment (Association of American Colleges and Universities, 2004).

General Education curriculum design should focus on further enhancing "the employability or career readiness skills of students" such as ability to work and learn with others through group activities or tasks, in-class activities that make students aware of new developments in the sciences and world affairs, ability to locate, evaluate information critically and analytically in individual or group reports, assignments or projects, provide more opportunity for oral expression, and gain a greater understanding of diverse cultures through learning a foreign language and other general transferable skills. General education instruction and teaching methods must be continuously improved and evaluated to meet the diverse needs of students in terms of age, lifestyles, and professional experiences and ensure that the general education program remains relevant (Antiado et al., 2020).

First: Research Methodology

This paper adopted positive realism philosophy, assuming that reality is quantifiable and that variables are clearly defined. Moreover, the research focused on measuring the correlation between the general education program and students' learning outcomes, with the possibility of objectively verifying the causal relationship through analysis tools. The study adopted the deductive approach, where the hypotheses were developed based on past theories and studies on the impact of general education programs on students' skills and knowledge. Once the hypotheses were developed, data were collected in order to test their validity and examine how the independent and dependent variables are related.

A questionnaire strategy was utilized to collect data from a sample of students and faculty members at applied and non-applied universities in the UAE. This strategy is appropriate in quantitative research, as it will enable the collection and statistical processing of large quantities of data to disclose the degree of the application of general education programs and their effect on learning outcomes. The research also adopted a cross-sectional method, which involved collecting data from a sample of students and faculty members at a specific time. This makes it possible to evaluate the current status of the implementation of general education programs in UAE universities and compare the outcomes of the applied and non-applied institutions without involving long-term follow-up.

An electronic questionnaire was used as the primary tool for data collection, including statements to measure program quality, teaching methods, assessment methods, and learning outcomes. In addition, the data were processed through various statistical techniques, including factor analysis, t-test, and linear regression, to ensure the accuracy of the results and the validity of the conclusions. Additionally, data were collected from a representative sample of students in applied and non-applied UAE universities. Once the data had been cleaned and processed, it was statistically analyzed with software like SPSS to determine the relationship between general education programs and learning outcomes and to examine the differences between types of institutions. This helped to make practical recommendations to enhance education programs.

Second: Sample and Population

The population consisted of all members, undergraduate and postgraduate students, in the UAE. Furthermore, a simple random sample of (360) individuals from the population was taken.

Third: Sample Characteristics

The frequencies and percentages of the general information of the study sample individuals, which is represented by demographic data, such as "Gender and Type of Institution", were calculated as illustrated in the following table:

"Table (1) Distribution of Sample Individuals According to Their Characteristics"

"Gender"	"Frequencies"	"Percentages"
"Male"	217	60.3%
"Female"	143	39.7%
Total	"360"	"100%"
"Type of Institution"	"Frequencies"	"Percentages"
Applied University	194	%53.9
Non-Applied University	166	%46.1
Total	"360"	"100%"

"Gender" was (60.3%) for (Male), while (Female) had the lowest percentage of (39.7%). In contrast, the sample individuals' highest percentage according to "Type of Institution" was (53.9%) for (Applied University), and the lowest percentage (46.1%) for (Non-Applied University).

Fourth: Research Tool

A questionnaire was created to determine the role of the general education program in UAE higher education through comparative insights from applied and non-applied systems. Furthermore, its "validity and reliability" were confirmed using a variety of approaches, including experts' validity, as the questionnaire was submitted to the experts to judge the "linguistic formulation, clarity", and extent to which the statements were relevant to the questionnaire. As a result, some statements in the questionnaire were removed and rewritten, as agreed upon by more than 80% of the experts. Thus, the final edition of the questionnaire, after being arbitrated, contained (35) statements distributed across two axes. By applying the questionnaire to a pilot sample of (30) from the study population, its validity and reliability were also confirmed, as follows:

- **First axis: General Education Program:** "The Pearson correlation coefficient" was used to assess the "internal consistency validity" of each statement in relation to the overall degree of the dimension to which the statement belongs on the axis. "The correlation coefficients" were high, from (.704**-.787**), and all were statistically significant at the (0.01) level. "The overall construct validity" of the axis dimensions was further confirmed by determining "the correlation coefficients" between the dimensions and the total degree of the axis, which were between (.766**-.850**), and all statistically significant at the (0.01) level. "The Cronbach's alpha reliability coefficients" for the axis dimensions and total degree of the axis were validated, with values ranging from (.774-.824). In comparison, the overall reliability coefficient for the axis was (.910). "The reliability coefficients" values affirmed that the axis is valid and reliable.

- **Second axis: Program Learning Outcomes:** The internal consistency validity of each statement concerning the total degree of the dimension to which the statement belongs on the axis was calculated using the Pearson correlation coefficient. There were high correlation coefficients between (.713**-.790**), and all were statistically significant at the 0.01 level. "The construct validity" of the axis dimensions in general was further established by finding out "the dimensions' correlation coefficients" to the axis's overall degree, which ranged between (.822**-.845**), and all were significant at the 0.01 level. "The Cronbach's alpha reliability coefficients" for the axis dimensions and the overall degree of the axis were confirmed. Furthermore, the value of "Cronbach's alpha reliability coefficient" for the axis dimensions fell between (.791-.817). In the meantime, the overall coefficient of reliability of the axis was (.888). The values indicated the validity of the axis for application and to trust the results and accept them.

The questionnaire was verified using a "five-point Likert scale (strongly disagree, disagree, somewhat agree, agree, strongly agree)", with the responses of "strongly disagree (1), disagree (2), somewhat agree (3), agree (4), strongly agree (5)".

Fifth: Methods of Statistics

The (SPSS) software was used and the results were drawn out as per the following statistical methods: "Pearson correlation coefficient, Cronbach's Alpha coefficients, frequencies and percentages, arithmetic means and standard deviation, t-test, linear regression analysis, and range equation", where the response was identified as "very low (1), low (2), moderate (3), high (4), and very high (5)". Additionally, the verification degree is determined for each dimension based on the following:

$$\text{"Category Length"} = \frac{\text{Highest Value} - \text{Lowest Value}}{\text{Number of Category}} = \frac{1-5}{5} = 0.80"$$

- "From (1) to less than (1.80) represents a (very low) degree."
- "From (1.80) to less than (2.60) represents a (low) degree."

- "From (2.60) to less than (3.40) represents a (moderate) degree."
- "From (3.40) to less than (4.20) represents a (high) degree."
- "From (4.20) to less than (5) represents a (very high) degree."

Results Presentation, Discussion, and Explanation

Question No. 1: "What Is the Reality of Implementing General Education Programs in The UAE Higher Education?"

"The arithmetic means" and "standard deviations" of the statements of the first axis were calculated to answer this question. Thereafter, its statements were organized in a downward order according to their means, as shown below:

"Table (2) Arithmetic Means and Standard Deviation of Sample Individuals' Responses for The First Axis"

No.	"Statements"	"Mean"	"SD"	"Response Degree"	"Rank"
1	The program offers diverse content relevant to my field of study requirements.	3.98	1.252	High	5
2	The program clearly outlines the course objectives.	4.39	1.115	Very High	1
3	The course content is relevant to the job market and professional needs.	4.11	1.190	High	3
4	The program integrates theoretical and practical knowledge in a balanced manner.	4.27	1.192	Very High	2
5	The courses within the academic program are easy to understand and organized.	4.05	1.395	High	4
The Overall of First Dimension: Course Design		4.16	.869	High	
6	Faculty members use a variety of teaching strategies.	3.61	1.619	High	3
7	The teaching encourages participation and interaction during classes.	3.89	1.361	High	1
8	The program integrates technology to support the learning process.	3.43	1.636	High	5
9	Faculty members present content clearly and understandably.	3.79	1.464	High	2
10	The program provides opportunities to apply knowledge practically while learning.	3.52	1.630	High	4
The Overall of Second Dimension: Teaching Methods		3.65	1.197	High	
11	Faculty members explain concepts clearly.	3.72	1.546	High	4
12	Faculty members provide ongoing support to students.	4.27	1.288	Very High	1
13	Faculty members motivate students to think critically.	3.64	1.500	High	5
14	Faculty members encourage students to research and investigate.	4.19	1.272	High	2
15	Faculty members demonstrate a high commitment to the courses and their requirements.	3.87	1.394	High	3
The Overall of Third Dimension: Faculty Performance		3.94	1.025	High	
16	The program provides diverse learning resources (libraries, laboratories, and databases).	3.42	1.601	High	5
17	The program provides effective academic guidance for students.	3.69	1.528	High	2
18	The program facilitates access to information and educational resources.	3.48	1.590	High	4
19	The program provides support for students to enhance their academic skills.	3.76	1.543	High	1
20	The program provides a stimulating and safe classroom environment for learning.	3.51	1.590	High	3
The Overall of Fourth Dimension: Student Support		3.57	1.325	High	
The Overall of First Axis: General Education Program		3.83	.958	High	

The prior table showed that the "overall mean" for the first axis was (3.83), with a "standard deviation" of (.958) and a (high) response.

The study results demonstrated that the reality of implementing "General Education Programs in the UAE Higher Education" was at a high degree, reflecting the commitment of UAE universities to the Commission for Academic Accreditation Standards (CAA), which emphasizes the importance of including general education courses within all academic programs, in alignment with the country's directives and UAE Vision 2031 to prepare well-rounded graduates with knowledge, skills, and values. Also, this outcome reflects the quality of design and structure of these courses, whereby the objectives and various content are clear. Moreover, implementing the modern teaching methods, which are grounded in active learning and technology, has helped to make the programs more effective and appealing to the students. Consistent with the above, One can conclude that the "United Arab Emirates' higher education policies" prioritize general education courses due to the need for a skilled workforce (Antiado et al., 2021; Alhammadi, 2024).

Question No. 2: "What Is the Level of Learning Outcomes of General Education Programs in the UAE Higher Education?"

"The arithmetic means" and "standard deviations" of the statements of the second axis were calculated in order to answer this question. The axis's statements were then organized in a downward order depending on their mean, as seen in the table below:

"Table (3) Arithmetic Means and Standard Deviation of Sample Individuals' Responses for The Second Axis"

No.	"Statements"	"Mean"	"SD"	"Response Degree"	"Rank"
21	Students use research tools and techniques effectively.	3.69	1.543	High	4
22	Students gather information from reliable sources to build accurate knowledge.	4.15	1.413	High	1
23	Students apply research skills in academic projects.	3.62	1.522	High	5
24	Students analyze data and information systematically.	4.07	1.375	High	2
25	Students present research findings logically and clearly.	3.81	1.292	High	3
The Overall of First Dimension: Research Skills		3.87	1.169	High	
26	Students analyze issues and problems logically.	3.62	1.596	High	3
27	Students evaluate information and defend their opinions with evidence.	3.45	1.511	High	4
28	Students make decisions based on careful analysis of data.	3.73	1.474	High	1
29	Students connect theoretical knowledge with practical application.	3.42	1.611	High	5
30	Students face new challenges innovatively and systematically.	3.69	1.586	High	2
The Overall of Second Dimension: Critical Thinking		3.58	1.260	High	
31	Students appreciate cultural diversity and pluralism in society.	3.57	1.484	High	4
32	The program promotes national identity and social values.	4.14	1.403	High	1
33	Students respect the perspectives of others and work in multicultural environments.	3.67	1.531	High	3
34	Students participate in activities that enhance cultural understanding.	3.93	1.446	High	2
35	Students connect academic knowledge with humanistic and cultural values.	3.48	1.652	High	5
The Overall of Third Dimension: Cultural Values		3.76	1.103	High	
The Overall of Second Axis: Program Learning Outcomes		3.74	1.065	High	

Based on the data shown above, this axis had a (high) "response degree", an "overall mean" of (1.065), and a standard deviation of (1.065).

The results revealed that the "level of learning outcomes of general education programs in the UAE higher education" reached a high level, which indicates that the programs are effective in achieving their educational and pedagogical goals. Furthermore, this meant that students could develop an integrated set of skills, such as "written and oral communication skills, critical and logical thinking skills", and scientific research, in addition to strengthening moral values, national identity, and positive interaction with multiple cultures. This result also reflected the success of UAE universities in aligning learning outcomes with the local and global labor market requirements and adhering to national and international academic quality standards. This result might be due to the UAE general education program's objective in encouraging intellectual discovery, critical reflection, and appreciation of human inquiry to succeed (Undergraduate Catalogue 2018-2019; Ross, 2019).

Question No. 3: "Are There Significant Differences at a ($0.05 \geq \alpha$) Level Between the Mean Responses of the Study Sample Regarding the Role of the General Education Program in Higher Education, Attributable to the Study Variables (Gender, Type of Institution)?"

A "T-test" was employed as follows:

- **"Statistical Differences According to Gender":**

The "T-test" was employed to detect "Statistical Differences" according to "Gender" as follows:

"Table (4) Arithmetic Means, Standard Deviations, and T-Values Indicating the Significance of Differences Between the Opinions of Sample Individuals Regarding the Role of the General Education Program in Higher Education According to Gender."

"Axis"	"Gender"	No.	"Mean"	"SD"	"Calculated (T) Value"	"Degrees of Freedom"	"Level of Significance"	"Significance"
General Education Program	Male	217	3.80	.945	.859	358	.391	Not Significant
	Female	143	3.88	1.021				
Program Learning Outcomes	Male	217	3.71	1.074	.577	358	.564	Not Significant
	Female	143	3.78	1.054				

According to the preceding table, there were no "statistically significant differences" at a (0.05) level between the sample individuals' mean degree concerning "the role of the general education program in higher education", attributable to the gender variable in each of: (General Education Program and Program Learning Outcomes).

This is attributed to the standardization of educational policies and academic programs in UAE higher education institutions, where general education courses were offered to all students according to uniform standards and similar teaching methods, which reduced the emergence of gender-based differences.

- **"Statistical Differences According to Type of Institution":**

The "T-test" was applied to discover "Statistical Differences" according to the type of institution, as indicated below:

"Table (5) Arithmetic Means, Standard Deviations, and T-Values Indicating the Significance of Differences Between the Opinions of Sample Individuals Regarding the Role of the General Education Program in Higher Education According to the type of institution."

"Axis"	"Type of Institution"	"No."	"Mean"	"SD"	"Calculated (T) Value"	"Degrees of Freedom"	"Level of Significance"	"Significance"
General Education Program	Applied University	194	4.01	.887	3.866	358	.001	Significant
	Non-Applied University	166	3.62	.999				
Program Learning	Applied University	194	3.93	1.018	3.797	358	.001	Significant

Outcomes	Non-Applied University	166	3.51	1.077				
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Based on the anterior table, there were "statistically significant differences" at the level of (0.05) between the mean degree of the sample individuals regarding "the role of the general education program in higher education", due to the type of institution variable in each of: (General Education Program and Program Learning Outcomes). The differences were in favor of the type of institution (Applied University).

This was explained by the fact that applied universities in the UAE emphasized incorporating general education courses into their curricula in a way that served practical and applied aspects. They were keen to align these courses with labor market requirements and future skills, which enhanced student satisfaction with the program and contributed to achieving more tangible learning outcomes than non-applied universities. Consistent with the above, Antiado et al. (2020) confirm that mastery of this general knowledge, skills, and competencies allows students to be responsive to the present and future needs and/requirements of a sustainable society to meet the needs of the labor market productively.

Question No. 4: "Is There a Statistically Significant Effect at a $(0.05 \geq \alpha)$ Level for the General Education Program on Improving Program Learning Outcomes?"

The following table demonstrates the use of a multiple linear regression analysis in order to solve this question:

"Table (6) Shows the Effect of the General Education Program on Program Learning Outcomes"

"Independent Variable"	"B"	"Beta"	"R"	"R²"	"T-Value"	"T-Sig"
"Course Design"	.176	.144	.911 ^a	.829	3.434	.001
"Teaching Methods"	.148	.166			5.282	.001
"Faculty Performance"	.309	.297			6.052	.001
"Student Support"	.342	.425			12.720	.001
"Dependent Variable"	Program Learning Outcomes					
" B_0 : Intercept (Constant)"	.027					
"Adj R²"	.828					
"F-Value"	431.702					
"F-Sig"	.001 ^b					

The table above revealed that the "general education program" had a "statistically significant impact" on the "program learning outcomes", with an (R) of (0.911^a) and a significance level of (0.001^b). The "general education program" also explained 82.9% of the variance in "program learning outcomes" based on the (R²). Moreover, the (F) was (431.702), indicating that the multiple linear regression model had a high explanatory power, the ability to predict the dependent variable based on the independent variable, in addition to the model's validity. Thus, affirming the predictability of the "general education program" impact on "program learning outcomes".

The results indicated that the "general education program" had a direct and clear impact on students' learning outcomes in UAE higher education institutions. Furthermore, this reflects that the quality of program design and implementation, including courses, teaching methods, and student support, played a pivotal role in developing students' skills and knowledge. The program's clear impact also indicated that improving its various components would positively impact learning outcomes, confirming that general education programs were not merely academic requirements but an effective means of enhancing students' cognitive, skill, and value-based capabilities and achieving the goals of UAE higher education.

Summary of Results

- The reality of implementing general education programs in the UAE higher education showed a "mean" of (3.83), a "standard deviation" of (.958), and a (High) "response rate".

- The level of learning outcomes of general education programs in UAE higher education had a "mean" of (3.74), a "standard deviation" of (1.065), and a (High) "response rate".
- There were no "statistically significant differences" at a (0.05) level between the mean degree of the study sample individuals regarding "the role of the general education program in higher education" attributable to the "Gender" variable in each of: (General Education Program and Program Learning Outcomes).
- However, there were "statistically significant differences" at a (0.05) level between the mean degree of the study sample regarding "the role of the general education program in higher education", attributed to the "Type of Institution" variable in each of: (General Education Program and Program Learning Outcomes). The differences favored the type of institution (Applied University).
- There was a "statistically significant impact" of the "General Education Program" on "Program Learning Outcomes", with an (R) of (0.911^a) and a significance at the (0.001^b) level. Furthermore, the "General Education Program" explains 82.9% of the variance in "Program Learning Outcomes" according to the (R²).

Recommendations

- Continuously updating curricula to ensure they are relevant to the local and international labor market needs.
- Integrating new topics such as digital technology, innovation, and soft skills.
- Using technology and digital tools to support the learning process and student assessment.
- Organizing training programs and workshops to develop modern teaching skills.
- Encouraging faculty members to participate in course improvement and enhance the quality of education.
- Providing academic advising and psychological support services to enhance the learning experience.
- Designing general education courses that focus on skills applicable to the labor market.
- Enhancing cooperation between universities and economic institutions to update courses according to market requirements.

Research Suggestions: Conduct Future Research on

- "The role of General Education in Promoting National Identity and Cultural Values in UAE Higher Education."
- "The Impact of General Education on Students' Readiness for the Labor Market in UAE Higher Education Institutions."

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