



LANDSCAPE ARCHITECTURE: THE FIRST SAUDI PROGRAM AND ITS GLOBALE POSITION

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The education of landscape architecture in Saudi Arabia requires a comprehensive examination within the scope of the Saudi Vision 2030. This paper aims to compare the first Saudi Arabian bachelor's program of landscape architecture with other international programs, which were established in the same timeframe – 1970s. Thirteen international curriculums of landscape architecture were compared against each other and with the current curriculum of landscape architecture of King Abdulaziz University, Saudi Arabia. The comparisons were based on the twelve areas required for landscape architecture education as highlighted by the International Federation of Landscape Architects. Findings indicated that King Abdulaziz University's curriculum has a comparable content to other curriculums. However, through the comparisons, King Abdulaziz University's LA program was found to have the highest percentage for general education courses and university requirements. This high percentage resulted in the reduction of the percentage of other areas such as: Theory and Methodologies, Ecological Studies and Principles of Sustainability as well as the non-existent area of Public Policy and Regulation. Some recommendations on improving the current landscape architecture program are suggested.

Key words: *Landscape Architecture Education; Curriculum; King Abdulaziz University; Saudi Arabia; IFLA*

1. Introduction

In 2016, the Kingdom of Saudi Arabia developed its Vision 2030, which is a comprehensive plan to tackle all the challenges and issues facing its economic and social development as well as its environmental issues [1]. Embedded in this vision is a clear directive towards the improvement of the standards and quality of life for Saudi society by making and providing healthy and livable environments. Education and its future is perhaps a main area that needs addressing in the scope of this vision. In particular, the education of landscape architecture (LA) in Saudi Arabia needs a comprehensive examination within the scope of the Vision 2030. This is due to its prominent position to provide urban, environmental and sustainable solutions to developments as well as its significant contribution to the aim of providing a respectable quality of life to present and future Saudi society.

Perhaps establishing a future in landscape architectural education in Saudi Arabia and elsewhere, requires an understanding of the educational objectives and criteria for LA developed by the International Federation of Landscape Architects (IFLA). In fact, IFLA has provided such objectives to guide educational institutions and the profession to what a landscape architect should master and be adept at [2]. According to IFLA, achieving the educational objectives requires taking into consideration seven main criteria [2]. But what seems to be important here for the purpose of this paper is the first criterion of the seventh, which deals with what a curriculum in LA should include [2]. The first criterion states that education of LA requires the acquisition of skills and knowledge within twelve areas, which are identified as:

“(1) History of cultural form and an understanding of design as a social art; (2) Social, political, economic and natural systems; (3) Natural sciences such as geology, hydrology and biology; (4) Plant material and horticultural applications; (5) Site engineering including materials, methods, technologies, construction documentation and administration, and applications; (6) Theory and methodologies in design, planning and research; (7) Landscape design, management, planning and science at all scales and applications; (8) Ecological studies and principles of sustainability; (9) Information technology and computer applications; (10) Public policy and regulation; (11) Communications and public facilitation; (12) Ethics and values related to the profession” [2, p. 2].

Accordingly, this paper aims to compare different contemporary international curriculums of a bachelor degree in LA programs against each other, and with the current curriculum of LA in King Abdulaziz University (KAU) in Jeddah - Saudi Arabia. Through this comparison, the position of the LA program of KAU amongst other international programs will be defined. The comparisons will revolve around the above highlighted twelve areas. The programs to be compared are the programs that were established in the same historical era, namely the eighth decade of the last century – the 1970s. Thus, all the programs that were established in this timeframe had equal time to evolve and develop. Through the review of the curriculums, variations and concentrations will be highlighted. Differences in curriculums will indicate the importance of the LA field in each country or region along with the general focus of its program.

2. LA Program at KAU

2.1. Historical Overview

In September 1976, with the assistance of Harvard University [3], KAU established the first bachelor program of LA in Saudi Arabia and the Arab World [4]. According to KAU, the reason behind the establishment of this program was due to the importance of this specialization to the future needs of Saudi Arabia and its development [5]. The first program started as a six-year bachelor program with a required 180 credit hours to complete [6]. The establishment of the LA program was accompanied by the establishment of the Architecture (AR), and the Urban and Regional Planning (URP) programs at KAU under the umbrella of the School of Environmental Design [5], which became later in 1998 the Faculty of Environmental Design [7].

The LA program at KAU underwent two major modifications since its establishment. The first was initiated in the early 1990's and aimed to reduce the length of the program from six to five years [3]. The modified five year program came into effect and implementation during the autumn session of 1999 after the School of Environmental Design became an independent faculty in 1998 [7]. The teaching of the five years program continued for fourteen years until 2013. In 2014, the program underwent a second major modification again focusing on the reduction in its length from five to four years [8]. This current program will be discussed further in the coming section.

2.2. Current Program of LA at KAU

The current LA bachelor program at KAU consists of one compulsory foundation year and four years of specialization. During the foundation year, students undertake several general university requirements such as: English, math, physics, chemistry, biology, communication and statistics [9]. The university requirements also go beyond the first year as students are required to complete six more courses of Arabic and Islamic studies before graduating.

Upon completion of the foundation year and entry requirements, students commence their first year of the LA program. In the first year within the department, students are introduced to some of the built environment's themes, components, evolution and the different variables that affect its social, economic and natural spheres. Furthermore, students are educated in the skills of communicating ideas and designs. This exposure is through theory courses and design studios. In addition, students are exposed to topics in information technology and computer applications.

The second and third year of the program is the time in which the curriculum focuses on preparing students to become landscape architects. During these two years, students are exposed to intensive design tasks, technical theory, history and planning courses. Furthermore, students are encouraged to interact with the local community and environments through their work (i.e. through urban design and environmental planning projects). In addition, students during these years are required to get some practical experience provided for them in summer training programs. It is important to point out that embedded within the second and third year are topical issues relating to the environment and sustainability as well as issues of local heritage and identity [9].

The final year of the program is designed towards refining and polishing the students' knowledge in the arts and crafts of the profession. In addition, students are required to undertake and complete a final graduation project, which covers all areas of a project from the planning to the design and construction details. Additionally, courses in this year focus upon professionalism and advanced technical topics. During the final year students are also encouraged to explore different areas of the profession through elective courses [9] (Tab. 1).

Table 1. The current LA Program at KAU.

Year	First Semester	Credit Hours	Total	Second Semester	Credit Hours	Total
KAU Gnrl.	Math	3	11	Statistics	3	16
	Physics	3		Chemistry	3	
	English (1)	0		English (3)	2	
	English (2)	2		English (4)	2	
	Computer	3		Biology	3	
	-----	0		Communication	3	
LA - Year 1	LA 192 – Basic Elements of LA Design, Studio 1	4	16	LA 193 – Basic Analysis & Design, Studio 2	4	16
	URP 113 – Introduction to Town Planning	2		AR 120 – Architecture & Heritage	2	
	AR 110 – Free Hand Drawings	3		URP 134 – Urban Design	2	
	LA 181 – Introduction to Environmental Design	2		LA 182 – Environment & Man	2	
	GEOM 101 – Geomatics for Environmental Design	2		URP 112 – Computer for Environmental Design	2	
	Arabic (1)	3		GEOM 102 – Surveying for Environmental Design	2	
	-----	0		Islamic Studies 1	2	
LA - Year 2	LA 294 – Design Process in LA, Studio 3	5	16	LA 295 – Detailed Design in LA, Studio 4	5	16
	LA 252 – Plants in LA	3		LA 254 – Planting Design in LA	3	
	LA 244 – LA Construction Technology 1	3		LA 245 – LA Construction Technology 2	2	
	LA 261 – Computer Applications in LA 1	2		LA 222 - Site Planning	2	
	Arabic (2)	3		Islamic Studies 2	2	
	-----	0		KAU – Free Course	2	

LA - Year 3	LA 396 – Urban Design in LA, Studio 5	5	16	LA 397 – Landscape Planning, Studio 6	5	16
	LA 353 – Planting Technology	2		LA 356 – Soil & Hydrology	3	
	LA 322 – Planning & Management	3		LA 314 – Professional Practice	2	
	LA 312 – Field Training 1	1		LA 331 - Landscape of Man	3	
	Islamic Studies 3	2		Islamic Studies 4	2	
	LA - Elective	3		KAU – Free Course	1	
Total LA Program Credit Hours 155						
LA - Year 4	LA 498 – Professional Studio, Studio 7	5	16	LA 499 – Graduation Project, Studio 8	6	16
	LA 401 – Graduation Project Research	2		LA – Elective	3	
	LA 413 – Field Training 2	2		LA – Elective	3	
	LA – Elective	3		LA – Elective	2	
	LA – Elective	2		KAU – Free Course	2	
	KAU – Free Course	2		-----	0	
Total LA Program Credit Hours 155						

3. Methodology

From April 2018 to July of 2018, a search for landscape architecture programs on the World Wide Web was conducted. In this search, 334 landscape architectural academic programs were identified throughout the world. Only 185 out of the 334 programs were designed for a bachelor’s degree. These 185 programs were then examined through the information provided by their internet websites to determine the year of establishment. Programs that were searched for establishment dates ranged from 1970 to 1979. From the 185 reviewed programs, only fifteen (not including the LA program of KAU) were established in the timeframe outlined above. These programs were then examined from the information available on their internet websites concerning the content of the programs to establish a basis for comparisons. Two of the LA programs had no available internet information. The authors corresponded with these two programs by means of electronic mail to obtain the information but to date there was no response. Therefore, the programs that were included in the examination and comparisons were limited to thirteen (Tab. 2).

The thirteen identified LA programs were examined and their contents were categorized according to the twelve areas identified by IFLA as highlighted earlier. These curriculums were then compared against each other, and with the current curriculum of LA in KAU in order to define its global position amongst other curriculums. Results from these comparisons and examinations will be presented and discussed in the findings section of this paper.

Table 2. Bachelor’s LA programs established between 1971 - 1979.

University	Date of starting the program	Country	Region
Texas A&M University	1971	US	North America
University of the Philippines Diliman	1971	Philippines	Asia & Australia
Weihenstephan-Triesdorf University of Applied Sciences	1972	Germany	Europe
University of New South Wales	1974	Australia	Asia & Australia
University of Arkansas	1975	US	North America
King Abdulaziz University (KAU)	1976	Saudi Arabia	Middle East
University of Kentucky	1976	US	North America
Kyung Hee University	1976	South Korea	Asia & Australia
Gyeongnam National University of Science & Technology	1976	South Korea	Asia & Australia
Ege University	1977	Turkey	Europe
Colorado State University	1978	US	North America
University of California - Davis	1978	US	North America
Chulalongkorn University	1978	Thailand	Asia & Australia
Chonnam National University	1979	South Korea	Asia & Australia

4. Results and Discussion

In general, results indicate that the fourteen LA curriculums, when compared to each other, show little to moderate variations in most of the fields of LA education as identified by IFLA. However, the curriculums showed some weaknesses when examined in the light of the twelve areas. The most striking finding is the poor showing of all curriculums in the area of *Public Policy and Regulation*. Ten out of the fourteen programs did not cover this area at all. The four programs that do cover *Public Policy and Regulation* do so at a minor level, granting 3% of their credit hours. Another notable finding is the lack of coverage amongst the Asian and Australian curriculums of the area of *Natural Sciences*. Whether these curriculums are not specifically allocating subjects dealing with the area of *Natural Sciences*, and/or whether this area is covered within design studios or other courses, this requires further investigation beyond the scope of this paper.

Regional variations seem to be in general non-existent. However, in the Asia and Australia region, a slight stress of the curriculums on the two areas of *Site Engineering* as well as *Theory and Methodologies in Design, Planning and Research* seems to be present. Furthermore, in the European curriculums, a stress comes in the area of *Plant Material and Horticulture Applications* (Tab. 3).

It is worth mentioning here that some curriculums score high percentage in some areas due to some variations of the percentages in other areas. For example, some programs do not offer any electives to their students, which as a principle is not very beneficial. It is important to highlight here that the lack of such courses contrasts sharply with the international educational view, which considers elective courses important for students' education and the development of their personal and professional skills; electives allow students to integrate knowledge of many subjects to enrich their professional experience [10]. The National Architectural Accrediting Board (NAAB) also stressed on the importance of students' special interests. NAAB states that curriculums must be developed in a flexible way to allow students to develop their knowledge in other areas inside or outside their study programs [11]. In addition, some percentages maybe skewed due to the low number of programs in the region as in the case of the European programs; this again may provide a non-representative result for the area of *Ethics & Values Related to the Profession*, which scored significantly the highest (Tab. 3).

The landscape architecture curriculum of KAU seems to follow and closely mirror other curriculums in most of IFLA's twelve areas required for LA education. Furthermore, the percentage of electives offered to the students of LA in KAU also closely follows the percentage of electives provided in other curriculums. However, the LA program at KAU shows the highest percentage allocated to the general university requirements when compared to other regions and programs. The LA curriculum of KAU needs to review the need for allocating several credit hours for the general university requirements. By doing so, the program and curriculum could be strengthened in areas that seem to be behind other curriculums such as: *Theory and Methodologies in Design, Planning and Research*; *Ecological Studies and Principles of Sustainability*; or the non-existent area of *Public Policy and Regulation*. The European Council of Landscape Architecture Schools (ECLAS) highlight that theory and methodologies are essential components in LA education. *Theory and Methodologies* focus on the integration of theory and practice and on interdisciplinary procedures that will prepare LA students for a further research career [12]. In addition, the ecological component is also a fundamental part of the LA educational objectives as without such component it would be difficult to build the capacity to understand natural systems which are always linked to our built environment [2]. IFLA also stresses that: "Landscape architectural students should be made critically aware of the political and financial motivations behind clients' needs within the context of public policy and the environment in order to foster an ethical framework for decision making" [2, p.2]. Thus, the LA curriculum of KAU must increase its percentages in the areas that have low percentage and include a stand-alone course of *Public Policy and Regulation* to provide profound understanding for related procedures required in the development of all types of LA projects in Saudi Arabia (Tab. 4).

Table 3. Average percentage analysis of the four regions of the fourteen international LA curriculums (including KAU program) according to IFLA's twelve areas required for LA education.

IFLA's Twelve Areas Required in LA Education	Middle East - KAU's LA program	North America's (5) LA programs	Asia and Australia's (6) LA programs	Europe's (2) LA programs
1- History	2%	4%	3.5%	1%
2- Social, political, economic & natural systems	2%	2.8%	3.7%	2.5%
3- Natural sciences	4%	4.8%	0.3%	2.5%
4- Plant material and horticulture applications	5%	5.2%	6.2%	13%
5- Site engineering	7%	6.8%	8.5%	5%
6- Theory and methodologies in design, planning and research	2%	4.8%	7.5%	4%
7- Landscape design, management, planning and science at all scales and applications	28%	26.8%	30%	35%
8- Ecological studies and principles of sustainability	2%	4%	4.7%	2.5%
9- Information technology and computer applications	4%	5.4%	3.8%	5.5%
10- Public policy and regulation	0%	0%	0.8%	1%
11- Communication and public facilitation	4%	5.6%	4.7%	3%
12- Ethics & values related to the profession	3%	4%	4.8%	8%
Electives	10%	12.8%	4.6%	10%
General university requirements	27%	13%	13%	7.5%

Table 4. Individual percentage analysis for each of the fourteen international LA curriculums (including KAU program) according to IFLA's twelve areas required for LA education.

IFLA's Twelve Areas Required in LA Education	International LA programs established between 1971-1979													
	Middle East (KAU)	North America					Asia & Australia					Europe		
	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1- History	2% (3)	7% (9)	6% (9)	2% (3)	2% (3)	3% (4)	1% (2)	3% (6)	6% (6)	4% (4)	2% (3)	5% (6)	1% (2.5)	1% (3)
2- Social, political, economic & natural systems	2% (3)	4% (6)	6% (9)	2% (3)	2% (3)	0% (0)	8% (12)	3% (6)	0% (0)	9% (9)	0% (0)	2% (3)	4% (10)	1% (3)
3- Natural sciences	4% (6)	4% (5)	5% (8)	3% (4)	9% (12)	3% (5)	2% (3)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	2% (5)	3% (8)
4- Plant material and horticulture applications	5% (8)	5% (6)	4% (7)	6% (7)	3% (4)	8% (12)	4% (6)	7% (12)	6% (6)	10% (11)	5% (9)	5% (6)	11% (30)	15% (36.5)
5- Site engineering	7% (10.5)	8% (11)	10% (16)	6% (8)	8% (10)	2% (3)	11% (17)	6% (12)	6% (6)	15% (16)	13% (22)	10% (12)	4% (10)	6% (14)
6- Theory and methodologies in design, planning and research	2% (4)	5% (6)	7% (11)	2% (3)	2% (2)	8% (13)	5% (7)	5% (9)	15% (15)	7% (7)	13% (22)	10% (12)	5% (12.5)	3% (6)
7- Landscape design, management, planning and science at all scales and applications	28% (43)	19% (24)	27% (42)	35% (45)	23% (29)	30% (46)	23% (33.5)	39% (75)	31% (30)	30% (31)	30% (50)	29% (36)	42% (115)	27% (64.5)
8- Ecological studies and principles of sustainability	2% (2.5)	3% (4)	0% (0)	5% (6)	7% (9)	5% (8)	3% (4.5)	3% (6)	3% (3)	12% (13)	2% (3)	5% (6)	4% (10)	1% (3)
9- Information technology and computer applications	4% (6)	5% (6)	3% (4.5)	5% (6)	6% (7)	8% (12)	3% (5)	3% (6)	6% (6)	5% (5)	1% (1.5)	5% (6)	4% (10)	7% (16)
10- Public policy and regulation	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	0% (0)	1% (2)	3% (6)	0% (0)	2% (2)	0% (0)	0% (0)	2% (5)	0% (0)

11- Communication and public facilitation	4% (6)	5% (6)	4% (6.5)	7% (9)	8% (10)	4% (6)	8% (12)	3% (6)	12% (12)	0% (0)	1% (1.5)	4% (5)	5% (15)	1% (3)
12- Ethics & values related to the profession	3% (5)	9% (12)	2% (3)	4% (5)	3% (4)	2% (3)	5% (7)	3% (6)	3% (3)	6% (6)	2% (3)	10% (12)	11% (30)	5% (12)
Electives	10% (16)	14% (18)	14% (21)	9% (11)	17% (21)	10% (16)	0% (0)	16% (30)	0% (0)	0% (0)	12% (21)	0% (0)	5% (15)	15% (35)
General university requirements	27% (42)	12% (15)	12% (18)	14% (18)	10% (13)	17% (26)	26% (38)	6% (12)	12% (12)	0% (0)	19% (33)	15% (19)	0% (0)	15% (36)
Program Total Credit Hours	155	128	155	128	127	154	149	192	99	104	169	123	270	240

* (1) King Abdulaziz University (KAU), Saudi Arabia; (2) Texas A&M University, US; (3) University of Arkansas, US; (4) University of Kentucky, US; (5) Colorado State University, US; (6) University of California – Davis, US; (7) University of the Philippines Diliman, Philippines; (8) University of New South Wales, Australia; (9) Kyung Hee University, South Korea; (10) Gyeongnam National University of Science & Technology, South Korea; (11) Chulalongkorn University, Thailand; (12) Chonnam National University, South Korea; (13) Weihenstephan-Triesdorf University of Applied Science, Germany; (14) Ege University, Turkey.

5. Conclusion

Through the comparisons of the landscape architectural programs that were established in the 1970s, it has become apparent that there are some regional variations and curriculum specific issues; but in general, the current programs respond very well to IFLA's guiding principles for a landscape architectural education. These very notable programs have in large part maintained a standard that has spanned well over four decades. The current LA program offered by KAU is comparable to the all programs that were established in the same timeframe. While there are improvements that must be made, through this comparison and understanding of programs and their constituents, a more balanced and informed decision can be made regarding the future of the curriculum and the profession. It is also worth mentioning that a large number of bachelor of LA programs were established in the 1980's and beyond. Such a comparison with a wider selection of LA programs will be recommended before alterations and decisions are made to the current LA curriculum of KAU. The development of future LA curriculums must pay close attention to IFLA and other professional associations' principles and guidelines. It also requires a better understanding of the local situations and requirements, which come directly from local stakeholders. Thus, by incorporating the local views to the global trends, the product will be superior enough to benefit future landscape architects, institutions, nations and the world as well.

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