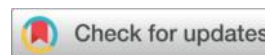# Arabic calligraphy between traditional and digitalusage

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ABSTRACT

Arabic calligraphy has gone through multiple stages that made it move from one font to another, calligraphers from different regions of the Islamic world have appeared, they have mastered writing it, it has taken different forms and Arabic calligraphy has been used in writing letters anddaily transactions in the countries of the world, they have developed and have been computerized, and from this point of view we say how Arabic calligraphy was able to enter the world of computing.

Keywords: Arabic speech, writing, computing.

Introduction

Arabic calligraphy is one of the Islamic arts by which the Arabic language was harnessed, in service of its nation and its Islamic religion, and to refine the minds of Muslims and their queens in order to create, develop and improve it, so different types of fonts were invented, and Arabic calligraphy has gone through multiple stages that made it move from one font to another, so calligraphers appeared from different regions of the Islamic world, so they mastered writing and decorating it, so it took various forms, the most important of which is Kufic calligraphy, which is considered one of the oldest Arabic fonts, and also Naskh calligraphy, which is one of the authentic Arabic fonts, Thuluth calligraphy, Tomar calligraphy, comment calligraphy, patch calligraphy, Diwani calligraphy, tafra calligraphy, Crown calligraphy, ijazah calligraphy, and Arabic calligraphy is authentic and unique that no other calligraphy is the same, and since Sunnah Life is evolution, Arabic writing is evolving, Arabic calligraphy was used inwriting letters and daily transactions in the

countries of the world, and continued to develop and perfect it until it reached the introduction of the world of computing and digitization, and the computer has many innovations at the level of shortening time and surrounded by a large amount of stored information and mechanisms of output of this information.

Arabic calligraphy:

The knowledge of writing is an important step planned by mankind, as it senses the location of its feet from the long path of life, an event that can be considered the beginning of the history of a stage of human life. "writing is a general human phenomenon, it began its journey since ancient times" **(Al-jeraish, 2014, p. 2)**,calligraphy and writing are two of the features of human civilization and thei reappearance a great significance inhuman life. it can be said: «when writing first appeared, it set the boundary between long and absurd eras that man lived be fore knowing writing"**(Nahed, 2008, p. 9)**, those eras represented history in the stone age, so"ritingis history"**(Nahed, 2008, p. 10)**

Researchers in archeology are still looking for the origins of writing in the ancient era, proceeding from the hypothesis that man knew writing since the fourth century BC and these studies relied on "deciphering the Sumerian, Babylonian and Assyrian writing, and after the Assyrians there were civilizations known as the Arab civilizations of the second century BC, such as the civilization in the north-west of Iraq, and they wrote" "**(Nahed, 2008, p. 10)**

Phases of the writing journey:

Some studies confirm that the writing journey has gone through five main phases:

1-the pictorial phase (idéographique), in which the ancient man resorted to depicting what he wanted to express with pictures and drawings, if he wanted in this phase to send a message to another saying that he was going to hunt animals, for example, he was drawing a spear with his hand

2-syllabicphase (ponogram)which is the beginning of writing in spelling words that have nothing to do with images, as it was in the Babylonian civilization and the ancient Egyptian civilization , for example: if he writesa word, he enters it, he depicts hand.

3-the phonetic phase :in which the writer resorted to using images of objects, when he pronounces them with a thousand of its first spelling, he pronounced the word, so it is symbolized to the word drinking, symbolized to the letter Uby the sun, and so on"**(Abdelbaset , 1992, p. 6)** these lines were written on leaves, Stone, boards, clay, engraved on mosques and gardens, and written in letter son animal skins, antiliterate.

Division of Arabic calligraphy :

Divide Arabic calligraphy into two parts :

* The first section: with straight dry letters, which is Kufic calligraphy with its many types and its many derivatives, Kufic calligraphy is not held accountable by the calligrapher because it is a wide field, and the calligrapher can act through it, and show his creative talents "**(Iskander, 2001, p. 52)**,

Kufic calligraphy is usually written with a ruler and is closer to drawing, specialists mentioned the types of Kufic calligraphy, including :" simple Kufic calligraphy appeared since the origin of Islam, lush Kufic calligraphy appeared around the second century, flowery Kufic calligraphy was widely used in the fourth century, braided Kufic calligraphy during the fifth and sixth, the geometric square Kufic line"**(Nahed, 2008, p. 85)**.

*The second section: the one with soft letters that are flexible to the movement of the pen during writing, which is flat and curly, and the letters are never straight, and the calligrapher can not write letter or part of a letter with a ruler, but writes with the pen directly"**(Nahed, 2008, p. 86)**the second section includes the following lines: Thuluth line, sender, verifier, compound, copy, patch, Diwani and comment:

1-Thuluth calligraphy: itis the origin of the Arabic fonts, the most beautiful and the most difficult, and this type is mostly used in the book of lines of mosquesin the warrior, domes and facades" **(Iskander, 2001, p. 53)**the Kufic calligraphy is a beautiful font that can bea lot of formation and movements.

2-copyingfont: the copying font is meantas" the rounded font and has been called by several designations, including the rounded and verified, and the copying font was used in correspondence, commercial transactions and the reproduction of books, and from this process tookitsname copying" **(Nahed, 2008, pp. 93-94)**. the copying fonthassoft, pliable letters and there are many tides.

3-Persian comment font: itis a beautiful font and it is also called Persian, and it seems that it took this name "comment" because itis used tow rite comments in foot notesandmargins" **(Iskander, 2001, p. 56)**the comment fontis characterized by its beauty and accuracy of the extension of its letters and tends to simplicity and far from complexity, and the patchf ont is used in large writings and commercials

4-Diwanicalligraphy: invented by Turkish calligraphers, it shares many letter positions and shapes with the patch calligraphy, and the Diwani calligraphy has its lines mostly flat from the bottom, and some letters, such as C, H, etc., eye, and M, may descend from it, and its lines do not level from the top, and Diwani as a patch calligraphy is unlikely to form"**(Iskander, 2001, p. 58)**

Arabic calligraphy, with its beauty and art, is an important element, and a phenomenon in the Arab-Islamic civilization, in addition, it represents "an unsurpassable Foundation in the field of visual communication, because of its role in the transfer of knowledge and science and documenting it, and this requires taking care of it and developing it in accordance with the requirements of visual communication in publications in general."**(Hicham, 2013, p. 225)** technology in all its fields is a requirement and a mainstay in the Twenty-First Century, which we live and coexist with the walks of life in general, especially technology, watched him, so Arabic calligraphy was able to reach the printing public Digitalin its various forms, it appeared in various forms, including artistic and

functional"**(Hicham, 2013, p. 225)**since technology included all walks of life, calligraphy, in turn, is influenced by this civilizational structure, and about the concept of calligraphy, Al-qalqashandi reports1987", the word has a static meaning, which, ifit is static, it does to the animator bydeliveringeverythingit contains to understanding" **(Hicham, 2013, p. 288)**therefore, the researcher defines calligraphy as those symbols and idiomatic forms of linguistic sounds.

Arabic calligraphy specifications:

AbdulAzizAl-suwaie1989 reported: that the Arabic letteris characterized by a special flexibility in its drawing that the letters of other languages lackon many letters that are similar in their status. "**(Hicham, 2013, p. 229)** so the Arabic letter has its own advantage that it is unique from the rest of the other fonts, andReda Al-KadiStatesaboutthe characteristics of the Arabicscriptthat"it has many features that distinguish it from the restof the letters of other languages , it is characterized by the fact that its letters are written from rightto left, and it uses dots, punctuation marks and commas to separate the two letters" **(Hicham, 2013, p. 229)**these characteristic include set of formal qualities, including: "Vertical extension, simple, rotatable, stretchability, compressibility, interlacing, overlapping, multiplicity of The Shape of a single letter" **(Hicham, 2013, p. 229)** due to the characteristic of the font of permanent flexibility, it is offset by the increasing computer applications in advanced technical fields, it never occurred to anyone that human creativity and human touch could be dispensed with "the train of technology applications in the world of art and heritage continues to run rapidly from one station to another, until not so long ago it reached the station of Arabic calligraphy"**(Marzouk, 2016, p. 12)** instead of a talented calligrapher writing a banner or an advertisement that takes weeks to complete this work, now we can press a computer button to get ready-made models of Fonts, after it turned out that a computer can "do Operations other than mathematical computers and that the speed with which a computer performs its operations can be used for many non-mathematical tasks, it turned out that there is the possibility of making decisions and there is the possibility of image recognition, and this field has evolved to include many aspects of natural language processing in terms of typing, spelling correction, grammar and morphology"**(Khader, 2001, p. 6)**, in a short time, the computer font industry font developed after the spread of the computer, and this development "accelerates over time with the emergence of new technologies and solutions, and the number of font designers in the world typ ographieras is growing exponentially, because it is a specialty available in many universities He studies in the Departments of visual arts or Optical communication in the art colleges and architectural colleges."**(Al-zaghli, 2010, p. 10)**with the development of printing technology and showing writing on the screen at a higher resolution, special techniques in Latin letters and others appeared, and one of these techniques is the so-called" True type of font turetaupefont. This technique is based on storing the general

specifications of the desired character and showing it no matter what the print size is"**(Khader, 1996, p. 11)**

So the Arabiccalligraphyis subject to these developments and modern technologies and the first appearance of the printed Arabic character in Europe was in the city of Mainz – German) in 1986, and the first book printed entirely in Arabic Letters lists(the crown of the secret)"**(Hicham, 2013, p. 229)**

and at the beginning of the seventeenth century, printing in Arabic letters spread in many European capitals, and the competition between Lyon, Rome and Paris intensified to print Arabic books, so that increased the interest of the pioneers of those presses in the Arabic letter, and care for the design of treatment of typographical errors among calligraphy learners by means of some programs and technological capabilities For the computer itself, "the computer as a tool has an artistic potential that enables it to perform many artistic variables in the shapes and sizes of letters while retaining the aesthetic proportions of the letters, and also significantly compensates for the skill that the learner lacks in writing Arabic letters, or drawing them by using letters and words actually stored, the memory of the device, which is entered through the light arena, thus saves a lot."**(Hicham, 2013, p. 231)**the computer can easily characterize the writing methods of Arabic calligraphy and analyze them through models that explain and focus on those methods and their artistic impact on the work through the " Arabic calligraphy style an experimenter who treats calligraphy as a vocabulary undergoes a set of experiments that give diverse results The increasing accuracy of the display screens in computers and printers has led to making the current writing a mirror reflecting the finest calligraphy traditions of" **(Hicham, 2013, p. 232)** the requirements for the output of Arabic calligraphy in terms of the number of letters is no different from the input requirements. "reading is for a written font and writing is the opposite of the reading process, however, there are, inter alia, related to the Arabic writing style, the printed letters were the first word, the middle word, or the last word." **(Khader, 1996, p. 13)**the role of The computerware's stealing place that the calligrapher does, when he prepares to present various forms of hand-weighted Arabic calligraphy changing up and down with the difference of Letter, Word and sentence.

The computer has now become "capable of transmitting information through the letter written or Illustrated, and the original in the computerizing information machine, but in the field of writing it isa charming sophisticated machine, we read what we diagonal screen that enables us to control the letter, shape, Type, Size, movement, shadowland Space"**(Ben ariba, 2017, p. 66)**the computerphiles to correct, arrange and delete before we print and automatic processing of Arabic calligraphy includes three stages:

1-pre-processingstage: this stage aims to format the image to facilitate its processing inside the computer, by removing all the emergency impurities of a manuscript sheet first, and then removing

the accidental constants on it as a result of the scanning process, which is excess information crowding out the original information present in the image "(**Ben ariba, 2017, p. 73**)

* Filtering: it is about arithmetic operationist form of a matrix that turns on the image matrix stored in computer memory in a mathematical way"(**Ben ariba, 2017, p. 73**)

* Segmentation: (la segmentation) is the process of cutting or segmenting the image area sintoseveralequalareas to compare them with each other and then determinable general characteristics of the character image in terms of shape and color and even extract its basic components" (**Ben ariba, 2017, p. 76**)the aim of this stagiest determine the overall size of the image in its automated processing, it helps to accurately determine.

2-processing stage: the process of automate dimage processionals variety of methods and specific stages that have been performed using the programming language : request MATLAB, which is an artificial language like other artificial programming languages, and contains an artificial box for each stage in the procedural processes "(**Ben ariba, 2017, p. 78**)

3-post-processing stage : at this stage the results obtained are emptied into the neuron network, after completing this process, that is, after providing the network with the necessary data and training the Neuron on the rules, we perform the efficiency selection process by entering data of the same class" (**Ben ariba, 2017, p. 80**)

The enormous capabilities of the modern computer, and its superior abilities to investigate the linguistic system, have opened wide horizons for the use of computers in its processing of Arabic calligraphy, considering that calligraphy occupies a privileged place in the Arabic language, which made the computer able to identify it correctly in all its methods.

Conclusion

The digitization of Arabic calligraphy and its entry into the computing world made it the focus of the attention of scientists and made them pay attention to it, and the many fonts and calligraphers decorated the fonts and their entry into the computing world increased its splendor.

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