

Arabic Typography and Visual Identity in Online Newspaper: Case Study in the Egyptian online journalism

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Abstract

Unique Arabic typography has different applications in local newspapers whether traditional newspapers or online forms. It started as an art and developed as a science which has been utilized to improve the way of communicating ideas. In Egyptian newspapers, typography has been used as a medium for transmitting news with roughly similar identities among different newspapers. This similarity has been reflected clearly in online newspaper versions due to either missing the visual identity criteria or technological deficiencies, or both. This study tries to explore three main Egyptian national newspapers' visual identity as represented in their Arabic typography traditionally and via the web. The paper also discusses the readers' and designers' feedback regarding visual identity and technological changes in a bid to rebrand online newspaper visual identity.

Keywords: Arabic Typography, Visual Identity, Egypt, Web Font, Newspaper, Case Study

1. Introduction

The art of typography is older than a computer yet they influence each other. It plays a vital role in forming the first critical impression about communication of a message. Typography is one of the effective elements, giving feeling and individuality to the typographic design.

Newspapers communicate ideas often distorting the message even before it is read through typographical shapes that are either friendly, aggressive, traditional, modern, feminine, masculine, calm or chaotic. They transfer information not only through written content, but also through the visual design elements. With the increased number of local newspapers and the content providers' technologies, the resultant competition means there is an acute necessity for strong brands. They can be considered as powerful brands in their own right with their very own typographic visual identity and strategies. This paper tries to identify the current status of local online newspapers, and how to help them in developing ways of imaging themselves through their online visual identity with the typographic variable. In order to achieve this, the data analysis and subsequent discussion focus on local online journalism and the typographic influences on its identity in the past and present. The article concludes with proposals on how newspapers can develop their identity online so as to compete vigorously in the media market.

2. Conceptual Framework

2.1 Calligraphy and typography

Alphabets began as the mark of the hand. Pictographs were limited in their ability to tell a story so ideographs evolved to show actions and ideas. Eventually ideographs were associated with certain sounds and their forms evolved into the precursors of letterforms. The letterforms were combined into what we now know as words. All of these alphabetic systems were handwritten and treated differently through two main writing approaches namely calligraphy and typography. [5] Today, if we look into any typeface it is easy to imagine the mark of the hand behind it. This has been termed typography. It is one of the most important tools to transfer the feelings and ideas in a large field. Typography as a design element carries the idea of transferring knowledge and message in an understandable form. It can also be considered a style, a visual language, a different image idea.

On the other hand, calligraphy development is directly related to the evolution of writing. The term calligraphy was initially used to describe writing in an aesthetic way using a pencil, brush, bamboo, etc. on paper or ideographic equipment. This was achieved by arranging aesthetically the spaces between letters following different design rules. The word "Calligraphy" comes from the Greek word "calligraph" as "kallos" (beauty) and "graphos" (writing, writer, written). [5] Although the development phase for writing and calligraphy is the same, both have been treated differently. They share the same general rule, but differ in perceiving them.

2.2 Digital Arabic type characteristics

In Arabic typography, it is common to determine the visual shape of any digital font object by its outline as the general term "boundaries" cannot be said to be the shape. Hence, there are the main features that characterize the digital Arabic type such as:

- a. The Arabic type text set consists of the letters of the Arabic alphabet, numbers and symbols which are written from right to left.
- b. The Arabic letters differ from Latin ones not only in the writing direction (right to left) but also in the absence of the upper and lower cases. They are classified according to their position in the word which could mean they are initial, middle, final or isolated letters. Each letter has a single computer code regardless of its form which is managed by the systematic algorithms to call the proper form according to its position within a word. (Figure 1)
- c. Encoding systems have been developed to represent a specific set of characters of different languages. This invention has led to a sort of conflict between different encoding systems, as the same code may be allocated to two different characters. This has forced companies to invent the UNICODE system to manage different characters in case of conflicting systems.
- d. Arabic words, sentences and paragraphs are separated by spaces and punctuation like Latin script. Arabic, however has a different approach to deal with such diacritics for vowel information and consonant lengthening.
- e. As Arabic letters are cursive, it is difficult to add letter spacing like Latin script. They are forced for some justification thus adding so called Kashidas (Elongation or Tatweel) which we can find in certain applications such as in heading or street signage, alongside transcriptions for text width box justification purposes, and to emphasize the voice and stress on some words. (Figure 2)
- f. Cursive Arabic letters have one, two, or four different joining forms, which allow the letter to join its neighbors, if applicable. Beside the isolated form, these joining forms could be categorized in their turn into two main groups which are: Join-to-left forms (Initial or Medial) and Join-to-right forms (Medial or Final).
- g. There are three main joining behavior categories which are: Non-joining letters, Right-joining letters, and Dual-joining letters. Most Arabic letters belong to the last two. (Figure 3)

h. In dealing with this cursive overlapped joint letters, some visual styles should also be considered such as applying transparency, Line breaking and shifting the baseline especially with bidirectional Algorithm (or bidi, for short) (mixed-script text) and adding borders to the text which will distort the letters aesthetics. (Figure 4)

i. When combining specific letters in Arabic script, we use special shapes (Ligatures) for example, when joining Lam and Alef letters.

j. Arabic numbers like Latin, are written from left to right though using different symbols. We can identify some differences between Arabic-Indic numerals, Eastern Arabic-Indic numerals, and Western Arabic Numerals (European Numerals).

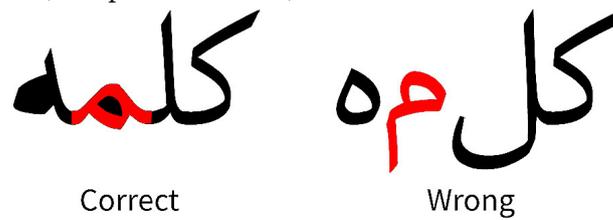


Fig. 1: Systematical contextual analysis algorithm for Arabic letter position



Fig. 2: Elongation / Tatweel (Kashida)

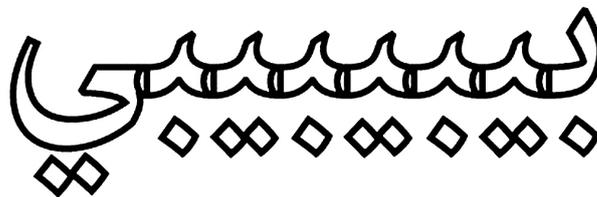


Fig. 3: Outlined joint digital Arabic letters

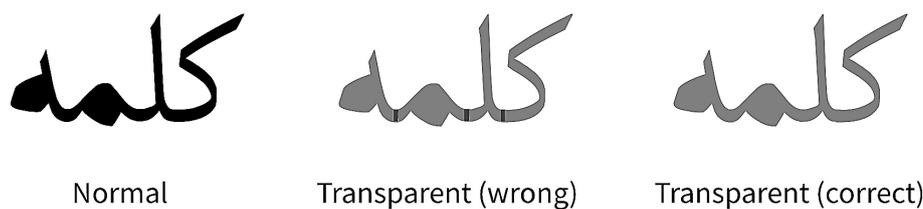


Fig. 4: Joint Arabic letters with transparency Influence

2.3 Arabic typography and Egyptian newspapers

In the history of Egyptian Newspaper, headlines and text typography were usually written by calligraphers. (Figure 5)



Fig. 5: Old issue of Al-Ahram newspaper with its unique visual identity using calligraphic Masthead and Headlines

After using typesetters they started depending on the machinery in producing the text and maintaining the calligraphic headlines. Until the 1990s, they started shaping the headlines by copyists to go with the body text. The Linotype phototypesetting and Linotronic imagesetters were considered the beginning of digitized Arabic page layout. They avoided many printing problems such as worn type, uneven inking and poor letter joining and were able to produce quality text. (Figure 6)

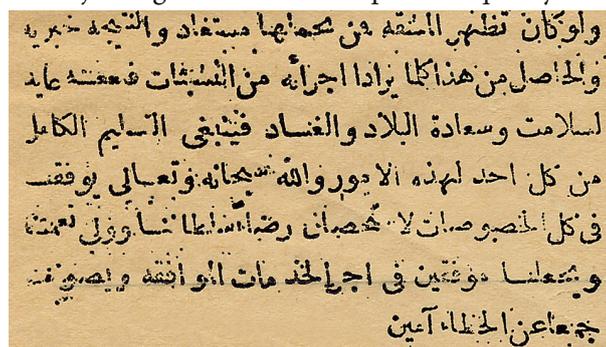


Fig. 6: Arabic type printing problem

Diwan Company has created their Arabic version from PageMaker, Quark Xpress, Ready Set Go, and Design Studio, and called it "AlNashir AlSahafi". It is the first specialized application software in page layout and color separation. These efforts were successful but struggled tremendously when compatibility issues arose. This forced Linotype-Hell company to create their support through Oryx software to support Arabic language in windows environment. The quick development paved the way in 1992 to desktop publishing revolution with the first 'Arabic XT' software based on Quark Xpress with its unique protected Arabic fonts. At the same time this has caused the unmatched calligraphic

and visual vocabulary applications to decline even on the newspaper's headlines. It was decided that the newspaper would keep their brand names in a calligrapher form only. [7]

Newspaper online transition

Newspapers find new methods to communicate with their audience and constantly create interactive and engaging brand experiences such as online journalism. [8]

This paper will not compare formatting HTML and CSS for web purposes with DTP applications "Adobe InDesign", "Adobe Illustrator", etc. Both use tracking options to represent letters and word spacing, text-indent, limiting the paragraph width using width property, etc. The transitional progression from traditional to online distribution will be discussed in the following sections:

2.4 Web font development

In the mid-90s, developers of browsers started to find the best way to display websites. Initially, they tried to resolve the conflict between what the users wanted to see and the intent of the author. For the most part, they focused on information and not design. Design choices were limited and most browser development communities were interested in granting more control to the viewer over information presentation. In 1996, CSS 1.0 model was designed to help authors to control HTML visual presentation, and to allow both user and designer to control the font. The main problem was the slow speed of internet which required a long time to download the fonts (resource and size). At the same time, some problems arose regarding the font format standardization procedures. Users were forced to install designed fonts on their client systems. W3C tried to solve this issue by giving the author a Font declaration option that would allow a web designer to specify multiple font families, in the event the designer's fonts were not allowed locally on the client's system.

In 1998, CSS2.0 developed a new way to allow an author to specify fonts as an external resource through "add font face method :@font-face". "Add font face" capability allowed an author to point a browser to a font resource which would download and display to a user. Although this was a new creative method, it faced other problems such as connection speeds, lack of adaptation and implementation errors in browsers and font licensing issues which eventually caused W3C to remove "Add Font Face" in 1998 and subsequently created the modified CSS2.1 version. Microsoft® developed and designed its Embedded OpenType (EOT) font format, which became more feasible and led to the developing font working group to reintroduce "add font face" again in 2002 in their new CSS3.0 Specs. This ultimately supported the current web font capabilities and used various evolved font formats and licensing issues. In CSS writing modes, level 3 defined CSS support to Arabic on mixed language within the same context. Different terms have been developed to reintroduce the font in the structure such as font emphasizing (em) as a relative unit of font size measurement and line height to represent font leading. [11]

Web-Font implementation problems

- The early CSS authors understood the importance of allowing the font family property to have more than one value. Passing these multiple values into a font family property allows designers to specify full pack fonts the client should use in case of the absence of the desired font from the system. This is referred to as the font stack property which, if failing to find the first font from the stack fonts, goes to the predefined default font. This font stack property allows one to request multiple fonts to gain control over the fallback process.
- Due to the font limitations of earlier CSS versions, designers had to develop different strategies to cope with these problems. They used to pixelize the used online font using any image processing application software such as Adobe Photoshop®. They then explored it as a web graphic and used the image tag to place the text in a desired location which has led to different problems such as:
 - a. Search engine failure in indexing the written pixelated text.
 - b. Screen reader inaccessibility or any syndication.
 - c. The possibility of missing text image context in some browsers if the setting has been turned to showing off images. (Figure 7)



Fig. 7 Text conversion into Image for online newspaper

As a solution, some local designers circumvented these problems by using their created CSS to place the texted image as background, and then placed over it an indented text which was accessible for screen readers and search engines instead of the image. The created structure was matched with headers, headlines, accented characters or larger passages of text without using additional plug-ins.

- In 2004, Shaun Inman and Tomas Jogan created their sIFR Scalable Inman Flash Replacement technique that relies on the ubiquity of the flash player as a means of serving up the desired fonts which utilizes both flash and JavaScript (JS). [9] If the client PC does not support JS or flash, the user will be exposed to text with the default CSS styling. This will keep the text searchable and accessible which provides cross browser rendering. The main problems in using these techniques were:

- d. Its reliance on flash plug-in, so the client must have Adobe Flash® application installed.
- e. The consumed time in rendering, together with the interaction for Flash and JS to create the rendered text, resulted in slowness compared to other techniques.
- f. Using developed HTTP and their requests slow these techniques down.
- g. Font implementation complexity for any designers, especially with body text.
 - Cufón technique followed sIFR to allow designers using a web generator to render any font included in the site. It was convenient at that moment for the following reasons:
 - h. Adobe Flash® independency because the font was first rendered as SVG converted to JS, and rendered on a browser using JS based renderer which happened behind the scenes.
 - i. The designer’s task was only limited to uploading the latest version of Cufón to his/her server.
 - j. The designer can use the Cufón generator to generate a font .JS file for the desired font.
 - k. Easy referral to the requested file when the designer needs to use it.
 - l. Consistent and quick rendering across browsers within CSS.

Web font formats

The main problem with using web font arises when dealing with multiple font formats to achieve good cross browser results. Designers have to know which browser supports specific font rule and formats: (Table 1)

Table 1: Web font formats supported by the browser’s version

	Chrome	Explorer	Firefox	Opera	Safari
@font-face	4+		3.5+	10+	3.1+*
TrueType (.ttf)	4+		3.5+	10+	3.1+*
Open Type (.otf)	4+		3.5+	10+	3.1+*
SVG fonts (.svg)	4+			10+	3.1+*
SVGz fonts (.eot)	4+			10+	3.1+*
Embedded Open Type (.eot)		4+			
Web Open Font Format (.woff)	6+	9+	3.6+		

* iOS supports SVG with an added support for TTF as for iOS 4.2 and prior to this were SVG and SVGz only

The main problem in shifting from print design to web design using TTF & OTF fonts is that most of their manufacturer user agreements don't allow for online distribution. Secondly, using multiple fonts can be an unnecessary strain on the server. There are three main font formats designed specifically for use on the web. These are mentioned below.

a. SVG (Scalable Vector Graphics)

- In 1999, XML language created vector graphics within a rendering device which has been published by W3C.

- SVG fonts are included in the standards.

- It has been designed to deliver only in a display environment.

- SVG is small in size and appear consistent across supported browsers.

- They are very popular in mobile devices, especially iOS.

- SVGz is a compressed format of SVG font.

The main problem in working with SVG is that it is lacking in containing hinting, and is not universally supported. [1]

b. Embedded Open Type (EOT)

- This is a proprietary font format developed by Microsoft® in 1997.

- It was essentially “TrueType” font that goes around subsetting and compression.

- EOT is a wrapper that subsets and compresses “TrueType” fonts optimized for web usage.

- Additional format properties allow fonts to be bound to a specific web page.

- Microsoft® submitted EOT to the W3C in 2008. It was never formally adopted which ultimately resulted in rejection in favour of the WOFF format.

c. Web Open Font Format (WOFF)

- This format was developed in 2009 by Mozilla in cooperation with several font foundries.

- Originally called “We otf”, the name was later changed to “WOFF” and jointly submitted by Mozilla, Microsoft and Opera to the W3C as a standard in July 2010. W3C hoped that “WOFF” would be embraced by all browsers, and become the single interoperable font format for web fonts.

- “WOFF” is not a font format in the standard sense. It is rather a lightweight wrapper that can contain “TT, “OTF” or “OFF” fonts.

- It compresses fonts and includes XML based meta-data that allows one to see where the font originated. The ability to embed this meta-data have led to the format being supported by a large number of foundries and font designers.

Web Font Hosting Options

Using web fonts online depends on two main categories of hosting: the first one depends on whether the designer is hosting the font and allows access through them, which is called self-hosting, and the second being via a service which host it for the client that called font hosting services.

The general self-hosting approach is to upload the fonts one wants to use in one's site to the web server, then create an “add font face” rule in the related Cascading Style Sheet “CSS” to refer the font. Both approaches have their strengths and limitations inline with their creation and/or purpose. These pros and cons are discussed below.

a. Font Self Hosting

- Most preferable for designers who like to take care of required minutia themselves.

- Suits large scale enterprise sites that have to manage assets internally and have restrictions in the use of outside services or resources.

The main problems in dealing with this hosting method are:

- It requires a targeted usage as the license for the hosted font is either used for DTP or Web or both.

- It requires more tracking time and responsibilities for the implementation of the “font face” method, monitoring of CSS working consistently across multiple browsers and platforms, and maintaining rendering issues on them especially when inevitable changes are happening.

b. Font Hosting Services (FHS)

There are different companies working online to allow designers as well as their clients to use the embedded font file in designers’ developed CSS code. When users access the website, their web browser automatically downloads the embedded font temporarily for their online browsing. (Figure 8)

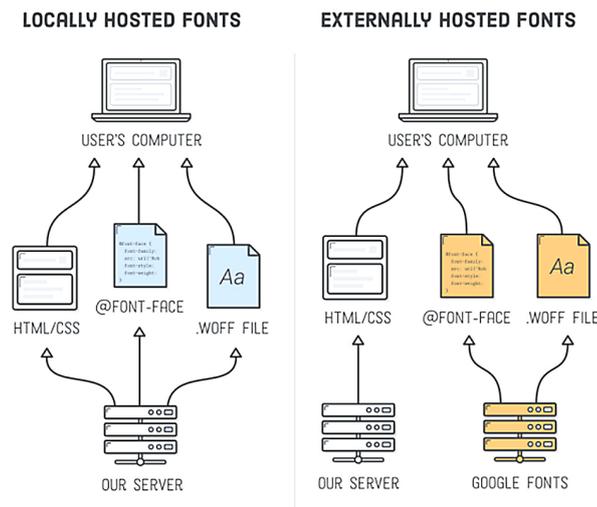


Fig. 8: Web font hosting

There are many FHS companies working commercially such as: “Typekit, Font.com by Monotype imaging Co., Fontslive, FontDeck by clear Left & Omni TI, Webink, Webtype, Fontspring, Fontshop, Typotheque, google font directory, Kernest, and Typefront”. These companies are serving developer and/or designer through three main categories which are:

- Subscription based services,
- Font licensing services, and
- Open source hosting solutions.

The Font Hosting Services type is characterized by the following:

- Most FHS allow signing up for a plan based on the users’ needs such as number of sites used and their requested font numbers.

- FHS allows picking of fonts from its library and adding them to the site in a few clicks.
- It provides a code which will be added to the designed web pages. When these pages are loaded, the browser will request the fonts from the hosting service which in turn will serve them to the page.

- This is the most ethical method for acquiring fonts online as the hosted fonts contains the legitimate license.

- Most online web font users prefer it as the font delivery and fallback methods are handled automatically. This helps in upgrading the plans and providing robust options for unsupported devices without disturbance.

The main drawbacks are:

- Hosting service entail an overhead to the website as it adds additional calls.

- Many FHS are using different kinds of obfuscation to prevent end users from downloading and installing the fonts. This means additional calls that harm probabilities of the font's integrity.
- There are fine print restrictions on font usage and how used fonts are tracked and monitored for security and privacy reasons.
- Some FHS restricts specific bandwidth usages and number of domains that the font will be used for.

There is different web-font tools to allow the designer to preview, render, test and compare fonts. They can use a variety of online tools such as: "webfontspecimen, goodwebfonts, typetester, awesome-fontstacks, typekit, browsershots, adobebrowserlab, google code, dafont, the leagueofmovable-type, fontsquirl, eotfast, onlinefontconverter".

2.5 Print versus web font

Not every font can be used interchangeably between web and print. Web fonts are specifically designed to be viewed on a screen. However, print fonts such as "PostScript", "TTF" and "OpenType" are meant to be viewed on paper. Thin fonts, in particular, look appealing in print but not on screen. Noted that Sans-Serif fonts look the best Online, in websites, emails, and HTML newsletters; they are clean, clear, and easy to read. The biggest difference between print and web fonts is how the browser renders this particular font; for example, if using a light weight font, Mozilla Firefox® will show it heavier than other browsers. Furthermore, measurement units differ for both print and web. In print we handle fonts with point, pica, cicero, etc, while on the web we use pixel, ems, rems (root ems), etc. Locally, 47% of Egyptian designers prefer using "px" at the root, "rem" for components, and "em" for text elements. 9% of them use type-scale website as an aid to identify the font's shape and preview the applicable size.

Designing for Web is complicated as used fonts should be installed on the computers of the site's user. Otherwise, the text will appear in the default browser's font. In the absence of CSS, it will be difficult to control the size and appearance of these fonts as standard font tags in HTML do not offer precise sizing control.

2.6 Re/branding newspaper website

Brand is built within a newspaper which targets and engages its audiences. Newspaper branding differs from many other products or services as it is characterized by its longevity, trust and consistency. [4] On the other hand, most other goods are faddish, hip and can ride one marketing wave following the other as new iteration. A branded newspaper website is considered a foundation of an online presence that is shaped by its consumers. It is a channel platform used to communicate and convey the planned message in such a way that the targeted audiences will engage with the message constantly. [2]

As rebranding is a part of marketing tools, we can regard it as a sort of reorientation of most newspaper functions and structures targeted towards customers. Generally, re/branding a newspaper requires stating core values, and conducting an internal and external analysis. Rebranding a newspaper's website is a reflection of the electronic technological development which exposes readers to websites. Although several digital online tools have been invented to measure the website's efficiency and satisfaction ratio, very few have tried to consolidate the newspaper's website on its brand image. [10]

A well designed identity system is an overall plan indicating how the logo and all other graphic elements are used to create an experience of a brand. These elements which include typography create a unique and relevant visual voice for a newspaper that controls the public experience.

A branded newspaper website should utilize the visual identity system to give a clear picture of the newspaper's values³ by the way it presents the information and the user experience of the site. It offers another approach for an online presence, broadens the communication scope, and increases and engages readers through fulfilling their satisfaction.

Recent internet and technological device development have given different practices of networked consumption, which have changed the communication scope between newspapers and their audiences. To create a unique visual voice for an online newspaper, the following elements for the developed site's visual vocabulary should be considered:

- Maintaining the consistency of the overall feel with the newspaper brand personality; [6]
- Studying user experience includes (usability, functionality, navigation, etc);
- Creating a proper information hierarchy to show its priority;
- Applying color scheme through a balanced use of color to convey the planned emotion;
- Using logo and tagline effectively;
- Representing the required actions clearly;
- Testing the functionality of the coded links;
- Updating information to cope with the running news;
- Proofreading the typed text to avoid any typesetting or grammatical errors; and
- Designing the site to match browsers, screens and OSs available in the digital media market.

Rebranding and typography

A new trend arose at the beginning of the new millennium which invested in newspaper rebranding and relaunching. This trend focused on the visual identity of typography, used typefaces, colors, layout and their techniques, and how the eye travels around the page. Because of psychological factors, a reader perceives interplay of directed tension between an individual object, color, shapes, movement and size arrangements.

Developed technologies constantly force some newspapers to rebrand or build their new visual identity. This paper sheds some light on the way this can be achieved, partially by emphasizing the impact of typography on newspaper appearance while at the same time adding uniqueness to the concerned website. To do this we have to answer the following questions:

- What is the newspaper's specialty?
- Who are the current and potential audiences?
- Do we require a formal style?
- What is the best grid layout to reach the targeted audience?

The main important communication tool here is the font typeface. Many markets invest in creating and implementing multipurpose digital fonts either for print or web application. The typeface may evoke different feelings. Heavier and broader font will be more appropriate for example, in an action movie poster while lighter, slimmer and curved shapes may be more suitable for a comedy one.

3. Research problems

a. Lack of adequate references, scientific guides and frameworks that regulate Arabic online journalism compatible with multi operating systems.

b. Lack of Arabic web designers' knowledge in promoting newspaper visual identity using web-fonts.

c. The decline of the role of the main newspapers in providing the reader with information since the emergence of social media force.

d. On the academic side, very little research on branding has focused on newspaper branding and brand extensions.

e. Conversion and usability confusion from print to web designs.

4. Objectives

The aim of this explorative study is to shed light on and empirically test the relationship between current readers and their newspapers by examining their feedback on traditional and online newspapers. In this context the aims of the current study are:

- to investigate a method/s to reform traditional newspaper font glyphs to create unique, sustainable and distinguishable online newspaper identity;
- to promote meaningful discussion and interaction through the process of rebranding online newspaper.

5. Methodology

This research utilizes both qualitative and quantitative methodologies. It will start with a description of qualitative methods. The quantitative aspect covers the raw technological and responds feedback data. The quantitative part comprises the Egyptian newspapers' sample status for the last 10 years, which has been collected online randomly. In addition to this data was gathered using a pre-designed questionnaire and industrial surveys distributed to different local newspaper audiences and graphic designers respectively. The accumulated data were analyzed not only in relation to aesthetic or individual choices made by the text producer/designer, but also the choice made by public consumers. The combination of methods facilitates data interpretation and subsequent implementation.

6. Results and Discussion

In the light of the previous theoretical framework, results have shown that some Egyptian newspapers are progressing slowly in the digital world because of compatibility issues to integrate them successfully into a dynamic web presence with their print editions.

The author distributed two different questionnaires for web designers and random local web users. Results from this empirical study have focused on the response of web users who navigate three main newspapers in their digital website form which are: "AlAhram", "AlAkhbar" and "Algomhuria". These focal newspapers have been represented online almost simultaneously.

The main limitations of this study are:

- The research targeted online users by announcing them through social websites which may have influenced results.
- The research didn't discuss precisely the browsing time and repeated visits for each user.

Egyptian newspaper status

The current observed state of Egyptian newspapers could be described as follows:

- a. They are used mainly as information carriers and address mainly one market.
- b. They can be divided into three major categories: Arabic Newspapers, English Newspapers and other regional language newspapers.
- c. Though diverse, many publications lack distinction and uniqueness. (Figure 9)
- d. Design in some cases may be considered a decoration rather than a means to attract readers.
- e. The current layout designers and operators use is centered around activities such as right and center text alignment, thus ignoring the use of color and tints for their fonts.
- f. Most of them are under certain constraints, censorship and information control which delimit innovative designs to a certain extent.
- g. Their distribution channels are controlled by different means.
- h. Despite the technological boom, the old design concept inherited from the hot-metal era and adopted for the current designs may be the result of static old management mentality.

i. For various reasons, economical, digital, and technological limitations hold back development and retain the static designs.

j. Because of constraints on information sources and new channels the new generation has been diverted towards social media and eventually this will trigger a profound alteration of the structure for information dissemination.

k. Print technology has succeeded in giving added value for newspapers who invested in it, although after 2011 they have been suffering in fundraising their consumable materials as well as maintaining their machinery.

l. The poor newspaper designs are the result of a lack of educated design staff as most designs are produced by non-designers and operators.

m. Newspaper owners are trying to present their news in different accessible ways and digital channels.



Fig. 9: Left: Instability visual identity for the same newspaper, right: similar visual identity for different newspaper samples

Conventional Egyptian newspaper visual structure

Whatever the earlier and current status, Egyptian newspapers share the same content layout structure such as: Masthead, Issue date, Secondary cover line, Image caption, main cover line, subhead (for the main cover line), Indicia (legal language), Headline logo, Date, Headline, Description, Byline, credit (or caption for image), Folio, slug, subhead or deck, second story, body copy, main story, etc. (Figure 10)

The striking features we can identify in the visual structure of the conventional version are:

- Newspaper nameplate (Mastheads)

It is considered the most prominent typographical visual identity element, which has been placed carefully within the website as the main inherited element from the print version and treated as a unique logo. It is devoid of any kind of renovation as it carries the cultural value. The 3 newspapers use the title or the name as emotional components since their lettering is iconic.

- Most of Arabic typeface originated from : Naskh, Al-Ruq'ah and Thuluth styles, and were then implemented to match the digital procedure in DTP systems.
- Used font typefaces are commonly designed for print and not for screen. Even typeface strokes and spaces may not be legible onscreen and the used editable font are mostly generic.
- Title fonts don't present meaningful expressions through their variables. They have been used unnecessarily in different cases. The variables mentioned include size, weight, expansion, curvature, orientation, connectivity, alignment, etc.
- The three newspapers do not follow a definite rule for formality or informality.
- Newspapers are visually static.
- Some of them depend on the pdf linked files for the updated news.

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Fig. 10: Printed Egyptian newspapers' visual structure

Online Egyptian newspaper visual structure

In contrast to conventional Egyptian newspapers, we can identify some conventional layout items can be found in their online channels alongside other means of navigation and map links. There were some differences in results among the three focal online newspapers which are represented in (Table 2):

Table 2: Online newspaper samples' features

#	Feature	Case I <i>الجمهورية</i>	Case II <i>الأخبار</i>	Case III
1	Masthead Calligraphic Style	built on Kufi Style	built on Ruq'ah	built on Thuluth
2	Headlines	Created as Image	CSS font	CSS font
3	Headline font typefaces compared to press	Similar (an Image)	Different	Different
4	Character width (same or different)	Different	Different	Different
5	Font typeface	Tahoma, Geneva, sans-serif*	DroidKufi-regular**	OS, CSS***
6	Font format	OS dependent	ttf, woff, woff2, CSS(svg)	ttf, woff, eot, CSS(svg)
7	Diacritic signs and dots if typed	Avoided	Avoided	Avoided
8	Numbers (Arabic or Hindi)	Arabic numbers	Arabic numbers	Arabic numbers
9	Font type	Mostly bitmap	Arabic Encoded	Arabic Encoded
10	Font measurement unit	Pixel "px"	Pixel & em	Pixel & em
11	Text Font inheritance/identity	Different	Different	Different
12	Typed Kashida (Elongation)	Avoided	Avoided	Avoided
13	Overlapped letters (problem)	OS dependent	OS dependent	OS dependent
14	Body text color	#000	#000	# 000
15	Maximum Line length	15	14	9
16	Heading color	#C00 when Hover over: #039, Date: #666 Continue Hyper-link: #039	hot news #FFF, #FFF	#CA0707, #000 and #7C7C7C
17	Background	#FFF, on hover-over and #E1FOFF	Hot news #191B29 and #D2232A	#FFF and #C3C3C3

#	Feature	Case I	Case II	Case III
				
18	Headlines text alignment	Center	Right & Justify	Center & left
19	Subtitles	Right	Right	Right
20	Body text alignment	Right	Right	-
21	BiDi text	OS adjustment	OS, CSS Adjust-ment	CSS Adjust-ment
22	Symbols	Font-family symbols	fontawesome	Glyphicons
23	Web Font hosting	-	FHS	-
24	Basic common templates	Created CSS theme	Commercial CSS theme	Commercial CSS theme
25	Elements arrangement on the page	Horizontal navigation bar, single middle column for text, right navigation buttons and left pane for Ads.	Horizontal navigation bar, main column divided in two parts for titles, subtitles and body text. JS right updated news caption	Horizontal social media navigation bar, listed AlAhram publications, main Nav. bar, fixed right and left Ads borders main column for news' titles, right pane for Ads and news subtitles and left
26	Bidirectional behavior in mixed script texts on the page	Fewer problems	Major problems	Major problems
27	Text columns	Single	Single	Single
28	Header	Masthead, browsing buttons, titles, and Adv.	Masthead, browsing buttons, titles, and Adv.	Masthead, browsing buttons, titles, and Adv.
29	Footers' "Div" and footnotes	Aligned right categorized news sitemap hyperlinks	Aligned right for listed Akhbar Alyoum publications	Aligned left categorized daily and weekly sections
30	Multimedia: Illustrations, images and video	Colored images with different qualities, video and thumbnails for linked pdfs and Ads	Colored images with different qualities, Caricature, icons and dings from fontawesome and thumbnails for linked pdfs and Ads	Colored images with different qualities, Caricature, icons and dings from fontawesome and thumbnails for linked pdfs and Ads, calendar for archived published issues

* On Windows Tahoma, Geneva, sans-serif which mostly are not appearing on Mac OS.

** DroidKufi-regular through online googleusercontent

***Arial, Times New Roman, SocialGlyphs, Helvetica Neue, Helvetica, Sans-serif "alt", Glyphicons Halflings, Menlo, Monaco, Consolas, Courier New, Monospace and Serif fonts "alt".

The link to the published questionnaire was sent randomly to users through social media websites ('Facebook', 'Twitter' and 'LinkedIn') in addition to direct email to the targeted designers. The questionnaire was designed to review their artistic, technological and usability feedback towards the newspaper samples and web design criteria. They were invited to visit the newspaper sites, if they had not already visited any of them, for (Case I AlGomhuria) (www.algomhuria.net.eg), (Case II AlAkhbar) www.akhbar.akhbarelom.com, and (Case III AlAhram) www.ahram.org.eg), and requested to fill the related questionnaire (scale of 5) which was kept open online for 21 days. (Table 3)

Table 3: questionnaire results' means

Question	Means		
	Case I الجمهورية	Case II الأخبار	Case III [Logo]
Interesting news website	1.05	4.3	2.15
Content richness	1.2	3.9	2.35
Short webpage loading time	3.65	4.45	4.1
Navigation simplicity	2.65	4.55	4.05
Fast updated news	2.65	2.8	2.85
Visually different than others	2.9	4.65	2.95
Revisit intention	2.7	4.45	3.25
Welcoming interface	2.9	4.55	3.4
Getting information easily	1.95	4.45	2.35
Getting information quickly	2.95	4.7	3.45
Layout design consistency	3.25	4.8	3.6
Typeface consistency with print	0.65	0.65	0.6
Quick linked pages to navigate	2.95	4.2	3.15
Loading pdf files to get news	3.7	1.95	3.55
Information searching time	3.15	4.3	3.45

The sample comprised 244 of which 76.09 % were men and 23.91% women. The respondents' age varied between 14-59, the majority average being 23-38 years. (Figure 11)

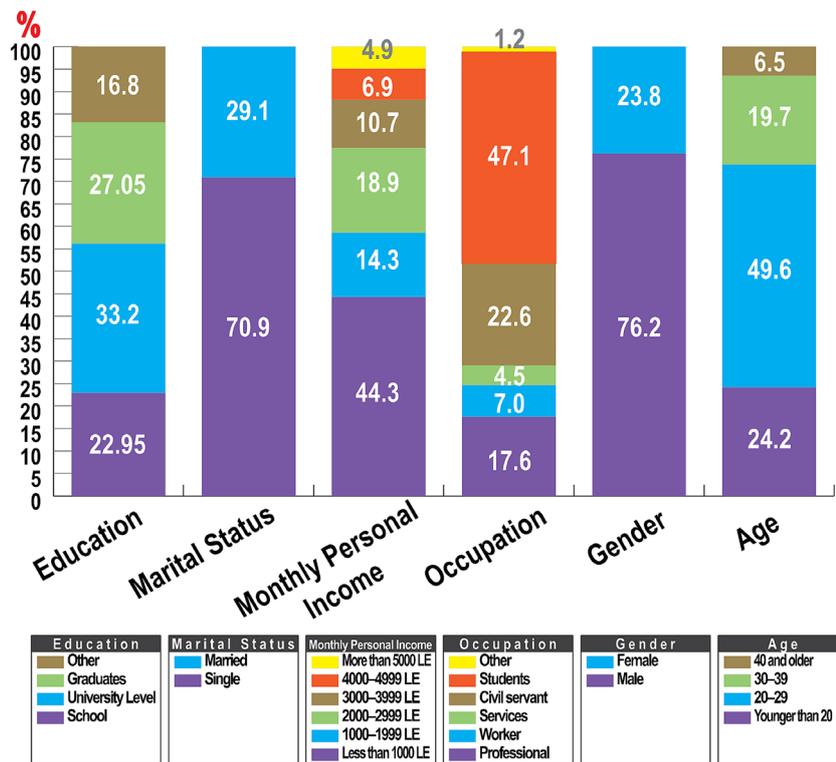


Fig. 11: Respondants demographic information

Observation and the collected data from the target readers in summer 2017 showed that:

- 1) 93% of users can access the internet frequently.

2) 13% of respondents used iOS, 59% used Android, 17% used WIN OS, 7% used MAC OS while the rest used others.

3) In browsing the newspapers, 18% prefer Safari, 22% Firefox, 44% Default mobile internet Application, 4% Opera, and 12% others.

4) Over 65% of the Egyptian sample with internet access visited newspapers' website.

5) 78 % of online readers share the same opinion about the font typeface dissimilarity.

6) 83% of young readers prefer more interaction and web-oriented news rather than using a pdf version.

7) 78 % of readers have indicated that the online newspaper color scheme is very boring, while 88% of the total sample couldn't identify the newspapers' brand easily.

8) 18% admitted that font sizes are smaller than usual, which influence their legibility, while 91% confirm that font's variations (weight, size, color, ..etc) did not transmit anything related to the news titles and sections.

9) 93 % realized that their system fonts play the main role in identifying the font typeface for browsing newspaper samples with an identical appearance.

10) 96% of the targeted sample referred to the importance of the newspaper title name in identifying it, as they couldn't identify the newspaper without the title name or the URL.

11) 92.5 % of readers pay attention to news items that somehow connect with them, so content with a recognizable and relevant voice carrying the requested information to draw their attention.

12) 78% of readers didn't identify the priority of the subheads and their linked body text.

13) 13% admitted that they have found some language mistakes, and 89% of them attributed this to the typesetting errors.

This study also explored the web designer's experiences in creating and dealing with font typeface, glyphs, calligraphy, etc..

1) The findings support the argument that in Arabic newspapers, calligraphy may have a strengthening effect on the newspaper title, but the body text is mainly westernized typeface.

2) 43% faced some problems in identifying the proper Unicode according to the OSs they were navigating through.

3) 66% of designers prefer to use the same DTP application for print versions in redesigning the same item to be addressed online to avoid fonts' adaptation errors.

4) The transition process between Arabic calligraphy and Arabic typography requires more research and understanding as 72% of web designers had difficulties in identifying the differences.

5) 29% of respondents recognized clearly the visual balance and tonal weight impact on the readers.

6) 78% avoided using "@font-face" method in their CSS as they preferred the ready-made call function for fonts.

7) 93% of respondents didn't consider the importance of font hinting, while 67% were not aware of different techniques for acquiring the requested online fonts.

8) Generally, more than half of Egyptian designers (56%) are not experienced in dealing with the whole picture of specialty as they ignore the total knowledge of their target audience and their values to produce the newspaper design that match and connect their readers.

7. Conclusion and Recommendation:

Types and calligraphy have been designed to look like handwritten forms. Nowadays, they have been used widely and became very popular as a reaction to the computerization and mechanization of

forms which we can see in different Egyptian newspapers and advertising campaigns. It has been noted that the western typography concept has permeated our visual culture to some extent. All these trends have misled the local reader in identification and differentiation between the daily newspapers. This paper has tried to find the starting point from which to sort the main problems in developing visual online identity using Arabic typography, while simultaneously addressing the technological issues relating to Arabic typography. Thus, the research has classified the main corner stones in developing criteria, gives some recommendations regarding rebranding of the local newspapers, and identifies the best way of implementing Arabic typography to match the created rebranded online visual identity. (Figure 12)

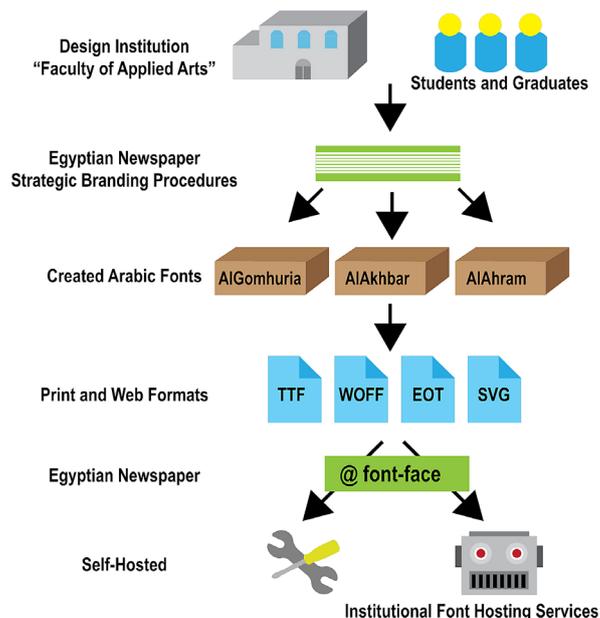


Fig. 12: Conceptual proposed workflow

Branding and rebranding on the internet has received increasing attention recently, so some rules have been proposed here as a way forward to rebrand Egyptian newspapers to meet their current and potential readers' expectations:

- 1) Studying targeted newspapers' readers and their needs either as a product or service.
- 2) Articulating the core values for the newspaper so as to identify the proper typeface, layout and other typographical elements.
- 3) Modify/Develop a new strap-line slogan for the newspaper.
- 4) Choose font sizes which suit: screen, their final rendering, and professionally hinted.
- 5) Ensuring uniqueness of font typeface selection, color, style, weight, and text alignment to be noticeable and attract attention.
- 6) Stay in touch with readers by periodically designing online customer questionnaire regarding their opinions and expectations of the newspaper.
- 7) Use web 2.0 technologies to create a personalization strategy for retaining current readers by predicting their needs with the help of their online browsing behavior.
- 8) Analyze website readers' comments and their social media postings to predict their favorite news, style, items ...etc.
- 9) Create a common CSS and style guide for each newspaper and emphasize the branded newspaper's fonts and styles for both print and web consistently.
- 10) Mobile devices have to be a part of the newspaper branding strategy for carrying information as well as being an advertising tool.

11) Prepare a proper CSS file, consider avoiding the braked text within a line, bidi text, and accept hanging punctuation.

According to this research, drawing is still the core of the type designer, so typefaces and styles have to be selected by a trained graphic designer or typographer who considers design and typographic principles and standards to match the stylistic visual expressions that represent the brand. It is advisable to encourage Egyptian designers and typographers to use a unique set of structures and processes to produce different visual styles in an attempt to develop the Arabian calligraphic heritage identity along with the Arabic script. The following criteria are suggested:

1) Typestyle choice has to be done by trained graphic designers or typographers for the proper stylistic visual expressions, readability and legibility standards.

2) Design new font typeface based on two cores, which are: maintain the inherited visual identity, and balance the calligraphic heritage identity. Thereafter implement the print version and enhance the final created digital typeface for screen reading in another eVersion by increasing x-height, adding heavier appearance of the letters and reducing the weight contrast.

3) Egyptian designers are advised to create or modify their new typeface in TTF.

4) If a designer would like to import and use a foreign font within the designed page he has to check its data and copyright issues on “webfont.info and fffo.grahambird.co.uk”.

5) It is advisable to check the proper used font, CSS and their support in the targeted devices through different technological and informational websites such as “whencaniuse.com, type-a-file.com, ilovetypography.com, and typotheque.com/article/hinting”.

6) Poorly skilled Egyptian digital typographers are unable to modernize the Arabic typeface together with the cultural calligraphic heritage. They prefer to adopt the westernized Arabic typeface. However, the author recommend:

- Including digital typography design courses within specialized faculties such as Applied Arts, Fine Arts, and Applied Sciences. (Figure 13)

- Promoting local competition and final projects for these kinds of courses.

- Deriving the benefit of print font designs in web applications by converting them to web fonts using the appropriate technology and obtaining support from different companies online such as: fontsquirrel converter, and font2web.com.

7) Encourage Egyptian newspapers to have their own webpage for typographers', designers', and developers' opinions about used fonts similar to Nytimes trend in nytimes.com/pages/opinion/index.html.

8) Involving readers in designing newspapers and matching their preferences.

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Figures:

Figure 2: AbiFares, H. S. Kashida Rules - Khatt Foundation [Image]. (n.d.). Retrieved (20th September 2017) from <https://www.khnt.net/en/page/2486/kashida-rules-jpg>

Figure 3: Arabic Text stroke overlap (with zero fill) [Image]. (n.d.). Retrieved (1st August 2017) from <https://graphicdesign.stackexchange.com/questions/77686/arabic-text-stroke-overlap-with-zero-fill/77690#77690>

Figure 6: Printed Arabic Typography. (2011). [Photograph]. (n.d.). Retrieved (14th February 2018) from <https://commons.wikimedia.org/wiki/File:Zune1896.jpg>

Figure 8: James, O. (2017). Web Typography (HTML & CSS Is Hard) [Image]. (n.d.). Retrieved (25th January 2018) from <https://internetingishard.com/html-and-css/web-typography>