

Designing a gauge to help People with visual disabilities to identify the denominations of Egyptian banknotes

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Abstract:

The world seeks with all organizations, authorities, governments and researchers to promote services for people with visual disabilities (the blind and the visually impaired). Since the French Scientist Braille began lighting the world to the blind by inventing the language of Braille and since then the development and research continue to ensure a better life for them, President Abdel Fattah Al-Sisi declared that 2018 is the year of people with disabilities and issued Law No. 10 of 2018, It was a lifeline that holds many gains and rights that protect their rights and guarantee them a bright future and put them on the list of priorities of the state, The law guarantees providing a safe environment for people with disabilities, and not being subjected to economic or commercial exploitation or affecting any of their rights. The law guarantees the conduct and promotion of research related to the rights of people with disabilities, providing a safe environment for people with disabilities.

In response to the human conscience, the laws of God, the commandments of the Prophet and human laws towards people with disabilities in general, their right to a better life and overcoming the obstacles facing them, from here the idea of research came to design a gauge for the Egyptian banknotes denomination, The gauge combines simplicity, ease of use, low cost and potential for use by different social and age groups with visual disabilities. The research solves the problem of identifying denominations of Egyptian banknotes, for one pound, five pounds, ten pounds, twenty pounds, fifty pounds, one hundred pounds and two hundred pounds, this gauge is the first of its kind in Egypt, which is characterized by the measurement of the seven denominations of banknotes of variable length and width. This compact gauge different from the previous gauges, which were intended to measure 4 banknotes denominations with variable width and fixed length represented by the sterling pound or the other gauge which measure 5 banknotes categories of the New Zealand dollar with fixed width and variable length.

One of the research results that the design of this gauge was exceeded all the difficulties faced by people with visual disabilities during use smart mobile applications to identify the different Egyptian banknote denominations, which require expensive smart phone, up to date applications and a certain age category of peoples can be familiar with modern technology In addition to the condition of smart phone and the charge of the battery to perform the purpose of the application.

It is worth mentioning that the Egyptian banknote gauge covered all categories of the people with visually disabilities, whether whom of learned Braille method or those who didn't learn. because the combined of embossed numbers of the banknote denominations in Arabic were integrated alongside with the Braille embossed numbers language, which made it easy to identify the denominations of the banknotes for all visually disabilities peoples.

By measuring the effectiveness of the Egyptian banknote gauge on a person with visual disabilities, I tested group of people consists of 30 persons, their ages between 14 to 58 years old, some of them use smart phone applications, and long-practiced in Braille language, and the rest don't use smart phones, and don't learn the Braille language, The overall result was satisfactory in favor of using the Egyptian banknote categories gauge by 85%.

This research recommends that the Central Bank of Egypt (CBE) distributes the Egyptian banknote gauge on banks operating in Egypt to distribute it to their visual disabilities customers to help them identify the denominations of Egyptian banknotes. As well as raising awareness of the use of the Egyptian banknote gauge and it's important to protect the people with visually disabilities and facilitate the process of banknote exchange between them and others to practice their daily life easily and safely.

Key words: Banknote Design, Banknote Gauge, Banknote Features for blind, Banknote Measuring device, Vision Impaired Community, Currency Features, The Blind, visual disability, the Visual Rights of People with Disabilities.

Research Problem:

Although there are many programs and applications for mobile devices to identify the denominations of Egyptian Banknotes, but characterized by some constraints in usage and inevitability of mobile phone available running Android or OS systems.

The research problem limited in the absence of a cheap, simple tool that Features easy to use by all different social classes of visually impaired in Egypt to identify the denominations of Egyptian Banknotes, As a result of the absence of special signs that denominations of Egyptian Banknotes to help Vision Impaired Community, except for the two hundred pound banknote denomination containing lines in its design to identify it.

Research Methodology:

The research uses the analytical, descriptive approach, which is based on the description of Egyptian banknotes and their analysis in order to reach to the desired result that serves the visually impaired through the practical application of design of a gauge tool of identify the denominations of Egyptian Banknotes.

Research Sample:

Egyptian Banknotes denominations of (one pound, five pounds, ten pounds, twenty pounds, fifty pounds, fairy pounds, two hundred pounds).

Past experiences:

1. The British Barclays Bank's experience to create a standard gauge to identify the denominations of British pounds that fixed-length and variable-width .

In December 2014, Barclays Bank designed a gauge to identify fixed-length and variable width sterling banknotes denominations of (five, ten, twenty, fifty) using Braille language numbers for each denomination on the side of the gauge. (1)

2. New Zealand reserve Bank experience to create a standard gauge to identify the denominations of New Zealand's Dollar which is variable in length and fixed width. (2)

The results of Past experiences are summarized in the following:

1-Barclays Bank has designed a gauge to measure only the banknote cross-section. British banknotes have a variable width and a fixed length, and the gauge is used to identify 4 banknote denominations (five, ten, twenty, fifty pounds).

2. Reserve Bank of New Zealand designed a gauge to measure the longitudinal trend only for banknotes. New Zealand's banknotes have fixed width and variable length, and the gauge was used to identify 5 banknotes denominations (five, ten, twenty, fifty and one hundred New Zealand dollars).

Research Objectives:

The research objective is to design an integrated Egyptian gauge to help the blind to identify the denominations of Egyptian banknotes of variable length and variable width, for 7 denominations (one pound, five pounds, ten pounds, twenty pounds, fifty pounds, one hundred pounds, two hundred pounds).

In order to achieve the desired research objective after take advantage from past experiences, the research plan will be based on:

1- The first axis / descriptive:

A - The dimensions of 7 denomination Egyptian banknotes .

B- Marks on denomination Egyptian banknotes to help visually impaired people.

2- The second axis / applied:

Designing an integrated Egyptian gauge to identify the denomination Egyptian banknotes.

Results:

1 - found that the non-standardization of the Egyptian banknotes dimensions leads to an increase in the number of variables for people with visual disabilities to identify denomination Egyptian banknotes.

2- the built-in gauge design collect a variety of banknote dimensions in a one segment to facilitate identification for denomination banknote by the people with visual disabilities.

3 – The gauge collecting both the embossed numbers in Braille and Arabic languages, which made it easier for all the visually impaired segments to read the categories of Egyptian currency through it.

4 – The gauge facilitates folding, handling and use by the visually impaired people.

5 - By experimenting the gauge in a group of 30 young blind people in different stages of education who study Braille, and their ages are between 14 to 28 years old. The gauge has met desirability of 85% of them, despite the use of 40% of them mobile applications that identify the denomination of banknotes.

6 - By experimenting the gauge on a segment of 10 blind people, not-learned Braille and their aged between (39 years to 58 years). The gauge has met the desirability of everyone because they do not use smart phones, but they identified the Egyptian banknote denominations through the embossed Arabic numbers Next to the embossed Braille numbers.

Recommendations:

- 1- The research recommends Central Bank of Egypt to design stable banknotes in either width or length in order to facilitate their identification by the manual gauges in a simpler way.
- 2- The research recommends that the Central Bank of Egypt distributes the scale to the different operate's branches of Egypt's banks to deliver the gauge to their visual disabilities customers to facilitate the identification of Egyptian banknote denominations.
- 3- The research recommends that the Central Bank of Egypt with the importance of awareness campaigns work on and TV advertising to spread the use of the Egyptian banknote gauge to protect the visually impaired people, and facilitate the process of banknote exchange between them and others. And exercise their daily life easily and safely.

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