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# Utilization of Digital Tools in Architectural Education and Practice

<sup>1</sup>Asst. Prof. Shazia Abro, <sup>2</sup>Prof. Dr. Bhai Khan Shar, <sup>3</sup>Ar. Mahjabeen Memon, <sup>4</sup>Ar. Rida Hussain, <sup>5</sup>Ar. Aqta Memon

<sup>1</sup>Assistant Professor, SABSU, Jamshoro, Sindh, Pakistan <sup>2</sup>Vice Chancellor, SABSU, Jamshoro, Sindh, Pakistan <sup>3,4,5</sup>Post Graduate Student, Department of Architecture, MUET, Jamshoro, Sindh, Pakistan

*Abstract* - With the fast growth of computer applications within the design firms, it was essentially required to investigate the relevance of current education program with architectural practices in Pakistan. In this backdrop a study has been conducted to look at the relevance of education system with the design profession's needs to discover an efficient system for building instruction. This research paper relied upon the data collected through questioner of 387 respondents which includes fresh graduates, professionals along with people who served in architectural institutes in Pakistan. This study conclude that despite of need of the further improvement and integration of education with practice, the current extend and scope of use of modern technology in academics institutes is meeting the need of architectural practices.

**Keywords:** Digital Tools, Architectural Profession, Architectural Education, Software Courses, Computer Education Methods.

## I. INTRODUCTION

As in all other science fields, innovations are seriously under-utilized in compositional structure of architectural education. Traditional techniques are still used in architectural education, and emerging technologies are used as additional tools. Presently duel teaching structure is reflected as a time of transition for emerging technologies. Two-three dimensional sketches and models in the conventional architectural design phase, it uses those which gradually become more concrete. The use of computers in the process of design, while old-style appearance tools are not left, software knowledge are used in design visualization as additional instruments. Every kind of collected data were generally utilized in instruction and graphic perception recognition it's important in learning education. For this purpose new teaching plans remained established using computer to emphasize roles of computer in education and to make evaluation of computer assisted education and practice. Digital education organization is a crucial in the direction of progress the competence in addition value of architectural instruction system plus architectural practices. A computer education method a part of the school

and college curricula, as it is important for each individual today.

## 1.1 Problem Statement

The research focuses on the two main aspects, the architectural education and practice. The problem of this study is the lack of technical base to funding the method of software subjects into architectural programs effectively. Several software courses have developed and are presence accessible but need more addition as per practice required.

## 1.2 Aim of Research

Identifying the implementation to digital technologies that improve learning outcomes in the practicing filed of architecture.

• To investigate the relevance of current usage of various digital tools in architectural education and practice.

## **II. LITERATURE REVIEW**

## 2.1 Digital Transformation Architecture Education

Digital transformation is global. It is changing how we work, how we communicate and how we create and form relationships. It is transforming every aspect of our lives. A digitally transformative culture enables collaboration and innovation. These, in turn, have the potential to radically improve productivity and efficiency.

We found that 'digital transformation' isn't a familiar term to architects and built environment professionals. However, whether they recognize the terminology or not, we see below that the architectural and design community is, by and large, embracing digital transformation and the opportunities that it brings.

Digital transformation is about reimagining how you bring together people, data, and processes to create value for your customers and maintain a competitive advantage in a digital-first world



With more and more new ideas and demands of architecture, it has become an increasing problem of the architecture lag, severely affecting the quality and efficiency of the architecture. The application of modern educational technology leads to the further research on architecture education reform. The paper explores the architecture education based on modern education technology of digital and internet. Through the experiment of construction of digitalized teaching management system and exchange teaching of the architecture design, this paper demonstrates the revolutionary effects of modern educational technology, which will inevitably serve as the non-substitute teaching method of the architecture education.

## **III. RESULTS AND DISCUSSIONS**

### 3.1 Adopted methodology

Questionnaire has been used as main tool for collecting the data from the sample. Two closed ended questionnaires were designed to enquire about different areas of the research topic. The first questionnaire was designed for the academics and contained 12 questions. The second questionnaire was designed for the Professional and fresh graduates:

#### 3.2 Results and discussions

How do you see the interaction and collaboration between architecture practice and Architectural Institutes in Pakistan?



Figure 1: Showing response of how do you see the interaction and collaboration between architecture practice and Architectural Institutes in Pakistan?

What Skills a fresh Architectural student should have after obtaining the degree? Name any of the important skills in context of their relevance with the practice? Volume 5, Issue 3, pp 41-44, March-2021

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Figure 1: showing response of What Skills a fresh Architectural student should have after obtaining the degree? Name any of the important skills in context of their relevance with the practice

Which of the hurdles or issues you faced when you started architectural practice?



Figure 2: Showing Response of which of the hurdles or issues you faced when you started architectural practice

Which software demands more in architectural practice now a day?



Figure 4: showing response of which software demands more in architectural practice now a days?

Architecture is viewed as "Art" the most or as "Science and technology" in the Professional practice.



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Figure 3: Showing Response of Architecture is viewed as "Art" the most or as "Science and technology" in the Professional practice

On the scale of 1 to 5, how do you rate the relevance and effectiveness of theoretical and practical learning of skills in the 5 Year B.Arch. Program with the professionals skills required in Pakistan?



Figure 6: Showing Response of on the scale of 1 to 5, how do you rate the relevance and effectiveness of theoretical and practical learning of skills in the 5 Year B.Arch. Program with the professionals skills required in Pakistan?

Does your office adapted (BIM) building information modeling?



Figure 7: Showing Response of Does your office adapted (BIM) building information modeling?

Does the fresh graduate meet the knowledge required in (BIM) building information modeling?



Figure 8: Showing Response of Does the fresh graduates meet the knowledge required in (BIM) building information modeling?

### **IV. CONCLUSION**

The objective was achieved by the survey questionnaire distributed among the teaching faculty of selected institutes and the practicing architects in Pakistan with a focus on selecting at least half fresh architects and half experienced architects to find out what the gap they come across to face in the field. The perception and the attitudes of the teachers and academicians play a great role in the development of the disciplines in all type of educational sectors also the perception and the attitudes of the field play a great role in the understand and identification of skills and knowledge expected after the graduation. A set of skills was compiled at the end of the survey questionnaire.

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## AUTHORS BIOGRAPHY



Asst. Prof. Shazia Abro, SABSU, Jamshoro, Pakistan



#### Prof. DR. Bhai Khan Shar. SABSU,

Jamshoro, Sindh, Pakistan.

AR. Mahjabeen Memon, Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan.



AR. Rida Hussain. Mehran University of Engineering and Technology, Jamshoro, Sindh, Pakistan.

AR. Aqta Memon, Mehran University of Engineering and Technology,

Jamshoro, Sindh, Pakistan.

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