The Application mechanisms of the practice-based education strategy on raising the student's Skill capabilities " an applied study of 3D Visualization course"

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Introduction:

All of the occupations which human existence and advancement rely on, have largely been developed in the circumstances of practice. Moreover, there is much to suggest that the innovations and development of the technologies, processes and practices that have advanced these occupations also largely arose through activities in practice settings. So, it is the case that practice-based learning experiences are largely the reasons that have brought humanity to this phase of its development. Which means that the development of occupational competence and the generation of new ideas have depended upon specialized programs within educational institutions or researches within universities that's based on practice. The capacity of development processes through practice-based experiences and through engagement in those experiences.

Design education is a process oriented and structured to build an innovative personality with special knowledge and skills to generate ideas, solve problems and make decisions in an innovative way. The designer combines excellence in his aesthetic perceptions and competence in possessing technical knowledge and the logic of dealing with information on functional, environmental and humanitarian factors.

The research problem emanates from the need to identify the application mechanisms of practice-based education and its role in promoting the student creative aspects through an applied study on "3D Visualization" course.

The research aims to explore the application of the practice-based education strategy on raising students' skills. Through an applied study on 3D Visualization course for students of the Faculty of Arts and Design at 6th of October University for Modern Science and Arts (MSA) for the academic year 2017/2018.

The study follows the descriptive Methodology.

The research emphasizes on the importance of practice-based education in developing the mental skills and creative abilities of students through the following topics:

1- art in Practice design education .

Practice-based education (PBE) is a broad term, referring in this paper to design education that prepares students for their practice occupations, and work, roles, identities and worlds they will inhabit in these occupations. In design practice as in theory, PBE operates at design curriculum level and through particular teaching and learning strategies. A PBE design curriculum is one that frames goals, strategies and assessment around engagement with and preparation for practice; it values both learning for and learning in practice and occupational contexts.

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2- Characteristicsof practice-based education strategy in design

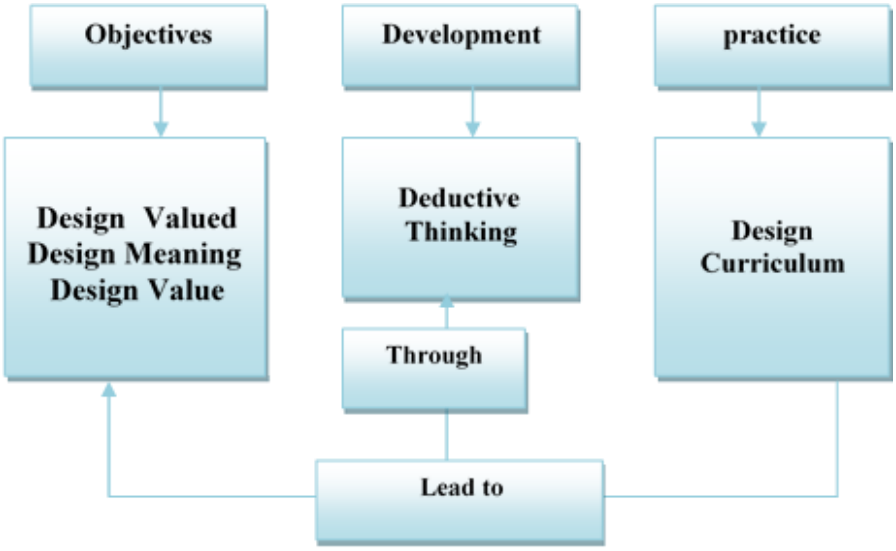
Despite the considerable enthusiasm for the general concept of practice-based education in education, they are a relatively recent development in education, and many educators are not well versed in why practice-based education are important for increasing student outcomes, how practice-based education are identified, and how they might be implemented broadly? Before exploring these issues, we briefly discuss the evolution of terminology related to practice-based education to clarify the meaning of the term.

We consider best practice to mean instructional approaches recommended by experts or others that may or may not be evidence-based or effective. Although the popularity of the term best practice appears to signify a desire among educators to identify and implement instructional techniques that work, the term has been applied ubiquitously to intervention approaches that were recommended on the basis of theory, expert opinion, and personal experience, often in the absence of research support.

We use research-based practices as a broad term referring to educational approaches that are supported by research findings of some sort. In our conception of the term, research-based practices represent an advance over best practices because research-based practices must be supported by research. However, in contrast to evidence-based practices, research based practices can be supported by research findings of any kind. For example, a practice might be touted as research based even though it is supported by findings from studies of less than high methodological quality, studies that utilize research designs that do not address well the question of whether a practice works, or a single study?

The term evidence-based practices represent a systematic approach to determining which research based practices are supported by a sufficient number of research studies that (a) are of high methodological quality, (b) use appropriate research designs that allow for assessment of effectiveness, and (c) demonstrate meaningful effect sizes such that they give merit for educators' trust that the practice works. We use effective practices more abstractly to refer to those practices that actually result in meaningful outcome gains for the vast majority of students.

3- The application mechanisms of practice-based education strategy on 3D visualization course.



The relationship between basic concepts in design education

practice-based education strategy encourages educators to facilitate students' engagement and bring empathy to show impacts on how successful students will be in expressing their needs and motivation toward learning. through:

1- Design their course by using combining theory and practice where course design is starting with learning objectives and goals and ends by measuring these goals.

2. prepare material and structure/format each class by including a variety of professional practice mechanisms for 3D visualization to engage students and being mindful of the diversity of learning styles and needs (e.g. mini-lecture, case study, scenario, question period, debate, etc.);

3- present information related to practice mechanisms for 3D visualization in a variety of ways, by bringing flexibility in delivering course content and provide flexibility in training and practice.

4. support and guide students in their learning by using technology.

Applied study on 3D Visualization at MSA University

Fig.1 Visualize the model by drawing with a pencil using silhouettes.

Fig.2 Visualize the model using a minimized model.

Fig.3 Variety of models using different and varied materials
(1) gypsum (2), (3) foams (4) wire.

Fig.4 The variety of formal treatments using deletion and addition.

Fig.5 The variety of formal treatments using wire adaptation to achieve the desired dialogue.

Fig.6 The variety of formal treatments using deletion and addition.

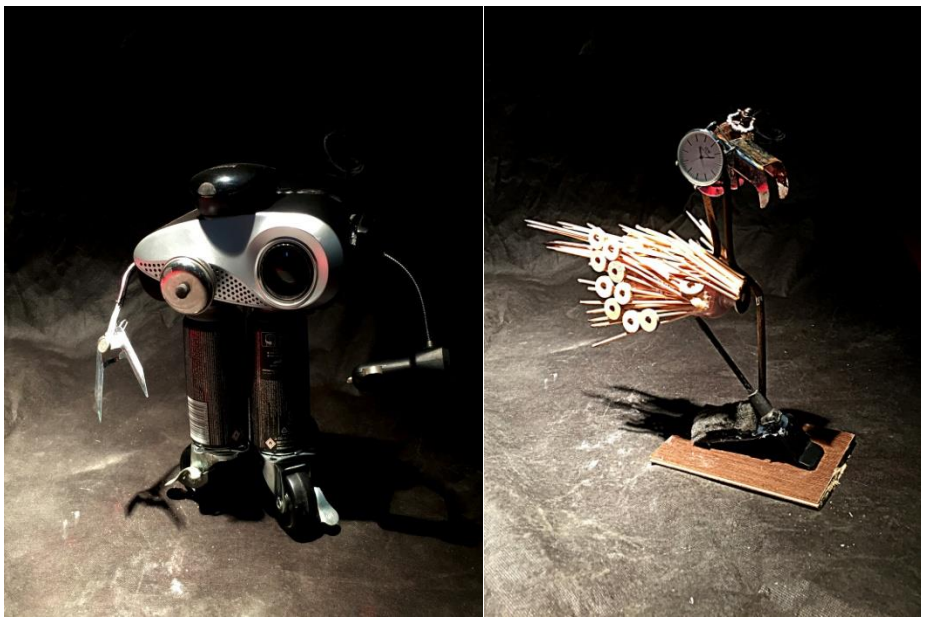


Fig.7 The variety of formal treatments using junk art.

Fig.8 The diversity of creative visual vision from multiple vision angles.

Conclusion:

1. The applied results confirmed the extent of the creative abilities of students resulting from the practice during the first semester of the academic year 2017/2018, applying many cases of deletion, addition and modification confirms the appropriate of applied educational strategy with 3D visualization course.
2. practice-based education strategy provides a complete framework of goals in a critical reference framework to achieve the required outputs. The practice in 3D visualization course has facilitated students' involvement and responsibilities towards their learning and towards building their creativity in art and design.

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