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The Effectiveness of the Workshop-Based Approach in Ceramics in the Framework of 21st Century "Life and Work Skills"

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Introduction:

"From 1919 to 1932, the German Bauhaus School carried out pioneer experiments in developing art students ceramics skills, especially on work and leadership. These experiments makes a historic shift in linking ceramics courses with craft, industry, production and marketing. Because of these experiments, the Bauhaus School has created a new concept for teaching art and linking it to success in life and work⁽¹⁾"

However, the teaching of ceramics continues its academic traditions, which means its techniques and aesthetics without any connection to the social and developmental values in life and work. This research presents a field experience to teach ceramics from a broader perspective to meet the requirements of the 21st century skills, capabilities, concepts and practical situations interacting with the economic and social conditions in order to support micro-enterprise projects that enable students to create financially rewarding jobs for themselves.

Research Background:

The 21st century requires college graduates to acquire special abilities and skills to face economic and social conditions and develop their abilities. Since the requirements of the work market do not depend on obtaining a university degree, the graduate must be qualified to deal with the variables of society, which requires them to study a qualifying in five-year plan that makes them aware of how a special program works and develops every three to five years. Some studies have shown that this period often involves a clear change in the labor market and the needs and requirements of society.

"In a recent American study, the work skills that are currently required and learned by most employees today are useless three to five years later.²"The workers need to have the ability to become lifelong learners who are able to update their knowledge and skills independently

This comes through studying life skills and integrating them with the entrepreneurial skills so that the students can implement a micro-project and have the experience to manage and plane their work well, with organized steps so that students can develop themselves. "The Egyptian work environment suffers from weakness in the technical education and training system resulting in a lack of skills and a gap between supply and demand

1 Von Buol Camelia: The Ceramics Workshop in the Bauhaus, h.f, ¹¹ Ullmann Verlag Gmbh 2006, P.P.439 -451.

² تقرير منظمة العمل الدولية واليونسكو (٢٠١٠) ص ١٠٨، ١٠٩.

linked to labor market needs, which negatively affects productivity and growth.”¹

“We expected Graduates to be the leaders of Egypt's economic growth in the coming decades, thus contribution to the creation of a variety of job opportunities for steady population growth. These projects account for more than 99% of Egypt's private non-agricultural economic projects and contribute with almost three-quarters of employment opportunities provided in this sector”²

”The development of these projects is one of the most important means of addressing the problem of unemployment because of its low capital and intensive labor. These projects can also play a major role in the development of Egyptian exports.”³

In this context, the current research aims to design a training program for the teacher students in the Faculty of Specific Education in a ceramics course to produce micro projects in accordance with the standards and requirements of the local market. So that the students can develop themselves to use the available materials specially the local materials like Aswan clay and local manufactured glazes and adapt them to produce products that meet the needs ,tastes and artistic qualities of the local market , and qualifies them with opportunities to work.

"The modern approach to entrepreneurship has started in the early 21st century," Yasser Salem, "2013, noted that the entrepreneurial approach has begun as an inevitable means of changing the concepts of competition and advantages and intensifying the competition that led to the shift from comparative advantages to competitive advantages. In addition, support entrepreneurs to establish their own projects to provide employment opportunities for them and others through the provision of innovative products in areas they succeed and be creative.

The concept of entrepreneurship in this research relates to the creation of new ideas in the field of ceramics to provide new services and products or developing an old product to fit with the market,

The following examples are international experiences in entrepreneurship in small enterprises:

1 - Study (Alchimmery and Mperek, 2011)

“The study aimed to identify the fundamentals of entrepreneurship, the qualities and skills of the entrepreneur, the relationship between creativity, innovation and entrepreneurship, how to transform creative ideas into projects, entrepreneurship in small enterprises, obstacles to entrepreneurship in small enterprises, and the requirements of entrepreneurship success in small enterprises.”⁴

¹ منى البرادعي: "المشروعات الصغيرة والمتوسطة (الوسط المفقود) والحصول على التمويل" مؤتمر المؤسسات الصغيرة والمتوسطة – ما وراء الحدود الوسط المفقود، ٢٦ سبتمبر ٢٠١٦، ص ٢٩.

^٢ حسين عبد المطلب الاسرج: "مستقبل المشروعات الصغيرة في مصر" كتاب الأهرام الأقتصادي، مطابع

عدد ٢٢٦، اكتوبر ٢٠٠٦، ص ٢.

^٣ حسين عبد المطلب الاسرج: "مستقبل المشروعات الصغيرة في مصر" كتاب الأهرام الأقتصادي، مطابع مؤسسة الأهرام، القاهرة، عدد ٢٢٦، اكتوبر ٢٠٠٦، ص ١٦.

^٤ أحمد عبد الرحمن الشميمري، وفاء بنت ناصر والمبيريك: "ريادة الأعمال" مكتبة الملك فهد الوطنية، الرياض، ط٢، ٢٠١١.

2. Study (interview, 2009)

"It is a scientific paper submitted by the Arab Labor Organization in the Arab Employment Forum in Beirut, aiming at identifying unemployment in the Arab country and the role of small and medium enterprises in facing unemployment.

The study reached a number of results, the most important of which are:

1. The average unemployment rate in the Arab countries estimated at 14.0%, which is the highest among unemployment rates in the rest of the world.
2. Small and medium-sized enterprises (SMEs) create diverse employment opportunities that can contribute to the problem of unemployment if better directed.
3. SMEs are an appropriate mechanism for self-employment.
- 4 - The most important factors for the success of small and medium-sized entrepreneurial projects Provide the entrepreneurial spirit of the project owner.

Parker study 2008

(Parker, 2008).

Scientific paper presented at Oxford University. It aimed to identify the role of entrepreneurship in providing jobs for entrepreneurs or others through new ideas that offer new products and services.

The study reached a number of results, the most important of which are:

1. Entrepreneurship has not only encouraged the introduction of new products, but also contributed to the creation of new jobs.
- 2 - Entrepreneurship gives the owner of the job an opportunity to put himself in the market.
- 3 - Entrepreneurship contributed to the good use of capital and calculated risk to find more quality products.
4. Entrepreneurship has contributed to improving the performance of employees.
5. Entrepreneurship has earned the necessary skills to improve their recreational and marketing efforts.
6. Entrepreneurship has opened the way for SME success."¹

In light of the rising rates of unemployment and the deterioration of the standard of living because of high prices, it is necessary to qualify university students to establish innovative micro-enterprises and industries that enable them to rely on themselves financially as a start to self-support through creating jobs for a product in the field of art education.

The Faculty of Specific Education aims at graduating well-trained art education teachers trained in the various art fields. In the context of re-defining the programs of the Faculty of Specific Education in the framework of the 21st century skills, which focused on the labor market is changing in a pivotal way to develop the work culture, enabling the student teacher not only to establish small projects but also to transfer them to school students and

¹ إيهاب مقابلة: " دور المنشآت الصغيرة والمتوسطة في تحقيق أزمة البطالة"، ورقة علمية من قبل منظمة العمل العربية إلى المنتدى العربي للتشغيل في الفترة من ١٩-٢١/١٠/٢٠٠٩، بيروت، المنتدى العربي للتشغيل.

community institutions. Therefore, the research aims to link the ceramic courses with work skills by training students on 21st century skills, such as planning, teamwork, initiative, effective communication and evaluation. Including the development of (the artist's habits of the mind).

The research provides an educational model based on specific steps starting from the selection of products according to the study of market requirements through questionnaires and field visits to the marketing industries and shops of the competing products. Conduct a simplified feasibility study on the cost of manufacturing and selling the product from the design and Implementation stage to the final product marketing stage.

The program applies ongoing formative evaluation of the review and promotion of ideas and problems solution that faces the students during the work stages. The final stage focuses on self-assessment. Each student collects his or her observations into a portfolio to assess the success of his / her experience and to share experiences in their study of successful ideas and difficulties encountered during application.

Research problem:

In light of the increasing rates of unemployment and deterioration in standard of living of citizens because of high prices. it is necessary to qualify university students to establish innovative micro-enterprises and industries that enable them to rely on themselves financially as a starting point of self-support through creating jobs by manufacturing and selling a ceramic product .

We can identify the problem of research in the following question:

is It possible to design and implement a training program in the ceramic course at the Faculty of Specific Education, to enable students to create micro-projects that generate a material profit as a starting point to self-support through creating job opportunity's ?

Research Importance:

- 1 - Changing the objectives of teaching ceramics in the college from teaching ceramic techniques to teaching ceramic techniques to produce utilitarian products
- 2 - Enabling students to study the market and find opportunities for themselves by finding out the ceramic products needed in the local market.
- 3 - Enabling students to sell their products, determine the price of the product to compete with imported products.
- 4 - Provide students with the skills of interaction with colleagues, planning and constructive criticism.
- 5 - Enabling students to evaluate their own experience to see how successful they are, and to learn from their work experience to improve their performance

Research objectives:

- 1 - Design a training program for ceramics course to produce micro projects that ceps with the standards and requirements of the local market.

2 -Training students to conduct group studies of the market and exchange experiences between groups so that they can get the maximum amount of information and experience in the shortest possible time.

3 - Teaching ceramics from a broader perspective to meet the requirements of the 21st century skills.

4 - Promoting work culture among college students by presenting the success stories of their colleagues.

Search assumption;

Through the design and implementation of the ceramics program in the Faculty of Specific Education, students can create micro-projects that give them a financial profit as a base self-support.

Research limitation:

1 -9 session training program, the program limited to seven applied lectures and two theoretical lectures one interview with a total of 36 hours.

2 -all Students attending 2nd and 4th grades(47 +7 hearing impaired) of the Faculty of Specific Education, Cairo University, studying ceramics in 2018.

3 - Students use clay, kaolin, oxides, and glaze materials.

4 -Students purchase materials, fire and glaze their products in workshops.

5- Students produce ten glazed copies of the product.

6- Students search for places to display their product for sale.

Research Methodology

The research depends on the qualitative method.

Research procedures:

- **The first Phase**

Developing Student / Teacher work skills and the work culture to enable them to face the unemployment.

Theoretical framework:

1-Ceramic techniques and small projects

2-Student / Teacher Education Skills in the 21st Century

3 - Work skills and leadership

- **The second Phase**

- Designing the steps of the Ceramics Workshop program leading to student successful outcome, while training the students to develop and achieve objectives of the. Dividing the program sessions into weekly activities and home assignments.

- developing students' group activities, time management, market study, s ceramic technics, feasibility study, product price based on the prices of the competing product in the market, Table (1)

Session no.	Class activities	Procedural objectives	assignments	Learning Resources instructions	Grade 20
1	<ul style="list-style-type: none"> - brainstorming and voting to choose 10 ceramic products from 35 suggested products - designing a simplified questionnaire of photos of the chosen product potential buyer prefer 	<ul style="list-style-type: none"> -Demonstrates the ability to work effectively with a variety of groups. -Researching market requirements to maximize the prospects of product sales. 	<ul style="list-style-type: none"> -Collect questionnaires by 25 prospective buyers in designed form. 	<ul style="list-style-type: none"> -35 photos of hand made ceramic products - worksheet with guiding questions to support and assist students in selecting 10 products 	1
2	<ul style="list-style-type: none"> -Students divided themselves into four groups. -Finding the results of the clients preferred products in the questionnaires. -Conducting designs, experiments and models of their products. -Design questionnaire to collect targeted clients views to choose best design for implementation within each group 	<ul style="list-style-type: none"> -Detects innovative solutions for final product based on market standards. 	<ul style="list-style-type: none"> -Collect questionnaire to choose best design for implementation 	<ul style="list-style-type: none"> -Students divide themselves into four groups, and distribute clear responsibilities between group member 	
3	<ul style="list-style-type: none"> -Students self assess their ideas to reflect, modify and revise their design -Discuss the collective division of marketing campaign tasks within each group. -Start the implementation of their project. 	<ul style="list-style-type: none"> -Experimenting multiple techniques for the final implementation of the product. -Divide the students into four working groups according to their wishes. 		<ul style="list-style-type: none"> -practical training for each group on ceramic technique suitable for their artistic product to implement their project. 	2
4	<ul style="list-style-type: none"> -finishing three copies of their product and store them well for the drying stage. 	<ul style="list-style-type: none"> -Depends on himself and trust in his abilities to reach the goals. 	<ul style="list-style-type: none"> -Preparation marketing campaign according to group roles: face book Group- -researching prices to determining their price -Choose the product packaging method 		
5	<ul style="list-style-type: none"> Making and finishing another three copies of their product and store them for drying stage 	<ul style="list-style-type: none"> -Initiate in the planning of entrepreneurship projects based on small crafts. 	<ul style="list-style-type: none"> -Search for market selling place -Determining prices, location and quality of visitors, display space, available dates, how to book and means of communication with the marketing manager. 	-	
6	<ul style="list-style-type: none"> Finishing three copies of their product, store them for drying. -Firing one copy for glaze trial 	<ul style="list-style-type: none"> -Identify competitor's strengths and weaknesses. 	<ul style="list-style-type: none"> - Research the cost of displaying the product for sale at outlets. 		

7	-Finishing three copies of their product and store them for drying. -glaze one copy of their product to train on the technique suitable.	-Identify marketing determine appropriate selling method. -Demonstrates flexibility and adaptability with new data and conditions.	-Transporting firing works and glazing their products.	-Training on the methods of applying glaze coating suitable for their project
8	Packing products and adding needed finishing details. -creating online invitation and downloading products photos. - Preparing price list	-Plan his career in light of his potential and goals.	-Conduct a simple feasibility study of market price and sell their product. -Written research on learning guides.	-Worksheet of the simplified feasibility study.
9	-Presenting images for the selling stage and sharing information and experiences gained from the display and sale process. -Present the feasibility study to choose the group that achieved the highest profits -Submit the final research.			-group evaluation of the project success and exchange experiences ,ideas and difficulties. Final evaluation

Table (1)
Ceramics Workshop program

- theoretical study carried out by each student through photographing the work stages, recording the obstacles and the procedures they took to solve these obstacles as shown in Table (2).

student's name:			
group names:			
Use the following instructional questions to prepare a t file to provide learning guides and study for an executive work plan for a small project	Explain in points	Issues you have encountered how you dealt with them suggestions to avoid these problems in the next project	Time taken for implementation
How was the Working Group selected?			
How was the product selected?			
What are the foundations of design that you relied upon?			
What techniques used to implement the product?			
What modifications made on the design during implementation?			
How was the right place to burn and glaze the product selected?			
How was the drying, and transfer of the product			

proceeded?			
What is the glaze technics used on your ceramic product?			
How did you search for places to market the product and how was the right place chosen?			
How did you displayed the product for sale?			
How did you do the feasibility study and how did you determine the price of the product?			
What will you do differently in the next project to make your project better?			

Table (2)
Action Plan for a Micro-Project (Student File)

•The third Phase

Training students to document their experience and their participation with colleagues in the search for ideas, sources of raw materials and workshops to fire and glaze their products and selling outlets and self-evaluation and peer assessment in a portfolio.

The student is asked to:

" -Provide with the research all the learning evidence related to the questionnaire guiding questions and preparatory sketches and pictures of the stages of the work and places for buying materials, firing and glazing their product " as shown in Table (2).

•The fourth Phase

Students Support:

- Worksheets for the working steps and guiding questionnaires, and a tables showing the tasks of each activity, and home assignment and the distribution of grades on each activity.

Creating a closed group on the Facebook social networking site for easy communication to enable them to receive continuous support throughout the week.

Support strategies for low achievers and special cases:

-Two additional sessions were offered in mid-year vacations for students who could not complete the project due to their inability to apply what they had been trained on in the local studios, whether they needed further training or because of circumstances beyond their control such as a sudden cut of electricity during the fire or inability to communicate With the workers, which led to their interference in the way students work and damaged the product.

two sessions were planned to reflect upon difficulties and how to avoid them and re-training students on techniques and implementing firing and glazing their product under supervision.

-Hearing impaired students were given a simplified questionnaire that was designed to enable them to gather through signs and images because they could not read and write. Allowing them to collect questionnaires in pairs to encourage them to integrate and communicate with others.

-Hearing impaired students integrated with the rest of the students in the sales stage. The products of two students out of seven were presented without mentioning their situation, which gave them a lot of self-confidence when selling their products to assure them that their products were sold for their quality and not sympathy.

Stimulation strategies:




-The program is based on immediate assessment. Assessing students on each session, student's daily activity and home assignments through an evaluation form that accurately determines how they get their grades.

-Students who are not committed to performing their roles within the group are removed from the group and worked alone.

-Work has been divided into each group through clear tasks that clearly define the responsibility of each member of the group.

•Fifth Phase

Results:

	Product Type	Product Photos		
	Plates			






































	Product Type	Product Photos		
	Frames and hanging Units			
	Censer			
	Product Type	Product Photos		
	Candle holders			
	Accessories			

Table (3) shows pictures of some of the student's final products that have been shown for sale

	technique	Method of implementation	Implementation steps		Final product
١	Colored clays	<ol style="list-style-type: none"> Using different colors of 1 millimeter thick slabs overlapping pressing them to blend in one block cut vertical slabs using the ruler and cutter Arrange them to make your design on a cloth press a plain slab on the back using a wood roller , remove the cloth to get a slab with the colored design 	 	 	
٢	Clay Stamps	wood	<ol style="list-style-type: none"> Sprinkle talk powder on clay slab. Put the wood stamp design on it Cover with wood and press until all empty arias are evenly filled with clay Remove wood stamp to use the designed slab 	 	
		Foam	<ol style="list-style-type: none"> Put the foam stamp design on it press until all empty arias are evenly filled with clay brush with colored clay remove foam stamp 	 	
		Tree leaves	<ol style="list-style-type: none"> chose leaves with clear vanes put the leaf with its ruff side on the clay press using wooden roller remove leaf 	 	

	plastic lace tablecloths	<ol style="list-style-type: none"> 1- cut plastic lace tablecloths to size of slab and spread it evenly on slab 2- impress pattern evenly using wood roller 3- remove plastic lace 			
٣	Gypsum mold	<ol style="list-style-type: none"> 1. create one copy of the product avoiding any undercut 2. make a mold using gypsum 3. brush mold with oil or soap then press slab evenly in mold 4. let until leather hard then remove copy 			
٤	Using plates	<ol style="list-style-type: none"> 1. soak paper stripes in water 2. spread wet stripes evenly to cover plate surface 3. press clay slab in plate 4. remove excess clay 			
٥	Building with slabs	<ol style="list-style-type: none"> 1. create paper stencils of needed shapes 2. cut clay slabs and join them together using a tool to score the edges that are going to be joined, apply slip on scored areas 3. join parts together and press a fine clay coil to joined areas 4. use a flat wooden modeling tool to smoothen the joined pieces 			






٦	Surface treatments	Compressor spraying glaze	Glaze is air brushed using a compressor on pottery to give and even fine coat			
		Brush painting glaze	Glaze can be hand brushed on pottery if it is transparent or if fine coat is not necessary for the design			

Table (4) techniques used in Workshop

Activities carried out by students	Number of students
Total number of students participating in the Program	47 students
The number of students who were able to produce ten identical copies of their product with marketable quality standards	46 students
Number of students who managed to Sell a number of their product with a profit of at least 30 % of the overall cost	29 students
Number of students who were able to purchase materials and complete all stages of fire and glaze in workshops outside the college	30 students
Number of students who were motivated to Repeat the project independently after they completed the Unit to display for sale in the conference	18 students

Table (5)

Measurements of successes of the Program




Activities carried out by students	Number of students	Photos of work
Total number of students participating in the Program	7 students	
The number of students able to produce ten identical copies of their product with marketable quality standards	1 student	
Number of students who managed to sell a number of their product with a profit of at least 30 % of the overall cost	2 students	 
Number of students able to purchase materials and complete all stages of fire and glaze in workshops outside the college	7 students	
Number of students motivated to Repeat the project independently after they completed the Unit to display for sale in the conference	0 students	

Table (6)

Measurements of successes of the Program with Hearing impaired students

• **Sixth Phase**

Research recommendations:

1 - Preparation of materials and tools before the start date of implementation, because many of the needed materials need to be ordered in advance and are not available on shelf this may lead to the need to purchasing expensive exported materials which affects the profit segment.

2 - Training students to develop accurate standards for the quality of their product including proportions, finishing, size, color and texture and commitment to work

3 - Utilization of different ceramics techniques for the manufacture of micro-ceramic products.

4 - Detailed study of the techniques of stamp printing because of its great potential in the application of micro-products.

5. Continuous research and follow-up of the market requirements of products to meet these requirements.

6. Production of a large number of products for its role in reducing the cost in glaze and firing.

7 - Studying the Colored clay techniques for its multiple potentials in the production of distinct products in their details and colors.

8 - Set sales dates with special occasions or places such as (Book Fair) to provide a large number of public attendance.

9 - Linking the subjects of the college to address the problem of lack of time and the variety of materials and techniques for the production of a high quality product.

10- Working with clear and detailed standards to produce identical copies of the product.

11 - Develop a time-tested plan to support students taking into account sufficient time to purchase materials and market study and implementation.

12. Taking into account the size of the product and its function, the products that were most popular in the sale were practical products.

13 - Utilize the study of the artistic heritage in the college and integrate it in an innovative manner with the micro-products.

14 - Training students to display and package their product with high quality. This will make them win the admiration of the buyer.

15- Supporting students in communicating with the market workshops and developing a communication program with the workshops to achieve reduced prices for students.

16- Setting up a productive unit in the college that serves students and graduates from outside and inside the faculty for firing and applying glass coating for their work at fixed prices to generate income for the college.

17- Hearing impaired students need a special 4 year course since they cannot write their motor skills are very weak and they need more training than regular students do.

English References

1 Von Buol Camelia: The Ceramics Workshop in the Bauhaus, h.f, Ullmann Verlag Gmbh 2006, P.P.439 -451.

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