Emergence and Amelioration of Students' Creativity through Practice Based Learning in Relation to Design Education

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Abstract

'Practice-based education (PBE) offers the students an invaluable experience to gain knowledge and improve their skills towards diverse fields which prove the realities in the social and physical context.' (Clifford, Macy, Albi, Bricker & Rahn, 2005). This method becomes more significant when it comes to Design education in university teaching. To provide an effective Practice-based education, university education system undergoes a complex and time-intensive process. The main objective of this research is to explore the possibility and suitability of practice based educational system in nurturing the students to build up a design rational and to find out the essential factors to be considered while at teaching and designing projects. This was experimented through a design project carried out for the Level I students of Department of Integrated Design.

The study describes how student capabilities were gradually developed in forming a design rational by using the **Human body** *as a design context. Here the form of education becomes more unique and significant, that their approaches became successful more than to the expected level. It was through practice and experience that the students achieve expected targets in the design project. The final outcome of the project is a result of different activities followed with workshops and immense experiments. A solitary observation was followed throughout the project as to understand how beneficial is practice based education in improving student skills and how the projects must be designed setting out certain goals and objectives with special reference to Design education.*

The results of the research analysis concluded that practice or activity based learning system becomes more effective for design education, when students' physiological and psychological abilities are evaluated and gradually expanded by offering them the understanding about the context, method of integration, theoretical knowledge while developing an own sense for design.

Key words: *Practice based learning, design rational, creative thinking, physical and psychological development*

Introduction

Design can neither be taught nor instructed. It is through continuous practice and experiment that someone needs to improve his creative skills and design rational. This becomes more vital when it comes to design education at higher educational levels, such as universities. Universities are usually meant for students to research and learn through practice where they are offered with guidance and improvement. Hence the university becomes a lab where he experiments, practices and excels with knowledge and experience. A student as a beginner for design education only carries considerable amount of capabilities for creativity and aesthetics, as he only carries the knowledge extracted from different streams from Advanced Level education. Hence, design or designing means an inexperienced task where the student feels alienated and unexplored. This is when a strong foundation of design education is essential at the very beginning.

Identifying the most effective method on educating designing becomes the main source of research in this paper. The problem arises when penetrating into an answer for, whether objectives of a project set by the academics are achieved by the students through the method of educating design. This can be measured by analyzing whether the set objectives or goals are achieved by the students as expected. However, this all follows a great deal of efforts in programming, organizing and designing a project prior to introduction of it to the students. While designing a project, certain tasks must be set to achieve its optimum outcome, such as (A) setting objectives for students and as well as for the academics (B) an understanding on the students' learning capacity (C) identifying the most suitable method of teaching. According

to Nigel Cross (2001) and Yrjö Engeström (2001) by Peter Goodyeara and Yannis Dimitriadis (2013); a theory of 'design for learning' should focus on:

1. 'Who is doing the designing? Who is doing the learning? Who else is involved?
2. Why is the design work being done? Why are the learners doing what they do?
3. What is designed? What is learned?
4. How is the design work undertaken? How does the learning activity occur?

And of course it also needs to account for any significant relationships between the entities (people, places, artifacts, etc.) implicated in the design and the learning activities.'

Then the problem is why a proper learning system needs to be identified? However, reasons for introducing design projects for students must be identified. The main purpose becomes delivering and developing a sense for design to realize three main objectives as; what is design, why do we design and how do we design. The other objectives are acknowledged throughout the process such as; learning of commonly identified design theories and principles, how to apply them at given situations and regulate their own learning and understanding the context around them, where they should work. While these objectives may vary depending on the project, a general focus on its outcomes are expected. The earlier researches prove positive aspects derived from practice based learning within the two distinguish systems. Thirdly, the paper describes how such methods are implemented. Hence, the project is comprised of multi-disciplinary activities arranged in sequences, where the student is upgraded at different levels of learning. The research explores and proves above findings through a project introduced to Level I students of Design.

What is design?

Before penetrating into how designing should be accomplished, a study should be carried out to understand what is design and why design is required. A definition is hard to find when the question asked 'what is design?'. However, the answer always relies between science, technology and art as two extremes of a path. Science and technology withstand continuous changes and improvements through time and experiments. Art, on the other hand, is an expression or communication of emotions and ideas, typically exhibited through a visual form such as painting, sculpture, music, literature dance. 'Design' floats in these two extremes. Although it becomes sometimes difficult to separate design from art, it is not purely an art, as it does not stand for mere amusement, appreciation or to provide visual sensation.
'We cannot say science, art or technology does not affect design, but the designer cannot escape the influences of these three broad categories of intellectual endeavor. One of the essential difficulties and fascinations of designing is the need to embrace so many different kinds of thought and knowledge.' (Bryan Lawson, How Designers Think, 2005) Usually this realization is the process rather than the end product of design which chiefly interests in this research.
An extravagant design will always reach fame through eternity, such as a piece of art, and will be sometimes a problem solving product which is improved through science and technology. Designs such as the Barcelona Chair by Mies Van Der Rohe in 1929 stands through time and his design became iconic, which fits todays interiors alongside the furniture designed today. The unique bottle design in a contour shape by Coca-Cola from 1916 proves how influential a design can be to achieve success and popularity through time. Likewise, the most famous designs and many other utensils that make things better for people have stand through time while providing the optimum feasibility and aesthetic sensations for its user.

'What Design Can Do! is unique, in that it highlights the role of the designer in imagining and realizing a more sustainable future world. Thus for all those whose daily lives are affected by design which are commonly all human beings. Because design in its strongest and most effective form is about smaller and larger changes for the better.' (Christine De Baan, What Design Can Do!, 2011).

Design education

In relation to the research topic, the findings prove, a student needs to understand the unique quality that a design should carry. Developing a sense for design on students' mindset will be the key factor for such educational system. An intuitive sense for design does not emerge spontaneously. It should undergo a moderate and steady process obtaining the student, a physical and psychological development. Mere theoretical education does not accomplish student requirement for design education. This is when practice based education takes place in facilitating the student with optimum knowledge and experience. A task, when practically experimented and experienced provide more solidity and strength, rather than with theoretical work.

'It seems almost impossible to learn design without actually doing it. What is certain is that design is a distinctive mental activity, and we shall progressively explore its characteristics through the mindset of student. If we are not careful then design education might restrict rather than enhance the ability of the students to think creatively. Design is also a highly complex and sophisticated skill. It is not a mystical ability given only to those with recondite powers but a skill which, for many, must be learnt and practiced. Beginners however must first analyse and practice all the elements of their skill.' (Bryan Lawson, 2005) 'Practice based education provides a suitable idea that, it is what students *do* that really matters.' (J. Higgs: Practice-Based Education: Perspectives and Strategies, 2012). In these perspectives on the educational significance, mental and physical activities of students are synchronized together to gain better results. Thinking and reflection, as well as action are mainly concerned in this scenario. Thus, the two activities can be hardly separated.

Since the quality of students' activity results in what they learn, it is necessary that educators think hard about what influences student activities. It is also questionable whether the academics at a design education institution can serve as educators for students. We cannot teach them how to design, but only guide and instruct them for the correct path to achieve a successful design, as the sense of design births spontaneously.

Practice based education can be introduced in different perspectives and can be identified as an effective, collaborative and enjoyable approach towards teaching systems. They can experience practice and practice/ context relationships. The opportunity to understand the community and adaptation to the context is another positive aspect. Awareness about latest technology, industrial exposure is also obtained at such situations. However, to offer such capabilities, projects should be planned and well organized by educators, which is extremely a hard role. While designing a practice-based learning project, they will need to focus on certain areas which will be explained in the forthcoming sessions.

The education system explained above becomes more significant when it comes to Design within the university education. When understanding the person, persons or the context who's experiencing a designed product or service is essential, understanding their mindset and requirements also become important. To obtain such knowledge, the designer needs to work within the context and experience the surrounding. This is another place where practice based education becomes a fundamental requirement in Design education. In the forthcoming sections the effectiveness of this learning system will be discussed in relation to the design project carried out by the Department of Integrated Design.

Research method

Context based learning becomes the initial stage for beginners in design education. As the third design project for Level I students, the Human body becomes the context in understanding the core values of design theories. The intention of identifying the Human body as a design context is to explore the unseen artistries as the space within and in between body and outer environment. Further these artistries were intended to convert into a non-verbal medium for communication. 'Space In Between'; a project gets designed in exploring the unobserved inventions in and within the body.

The idea of context based design learning is a major task that demonstrates the working environment, culture, society and other physical and psychological factors affecting designing a product or a service for the beginners. The designers must constantly build interaction with the context, to where he is designing. These interactions can take the form of physical or virtual connections. It creates an environment that educates them, enabling them to make more informed design decisions. When the body becomes the context for designing, it is more crucial and interesting that one will need to explore his own body. Hence, the project was planned to let the student start from the most reliable method to understand his own body. Later on, this was developed into contact with other bodies, building interactions, non-verbally. At certain other stages, the bodies and bodily connections had to be synchronized/ contrasted or modified to the physical environment to deliver different types of messages. As the main objectives the students were expected to understand the fascinating characteristics of the body identify the spaces created within and in between the body and physical environment, identify how body can be used as a medium in communicating a message and explore different levels of idea generation by adding extensions or external elements to the body. At the end develop a sense for design and understanding body as a design context become the major intentions from the viewpoint of academic curriculum.

The project was planned, setting out the above objectives and goals methodically accelerating the learning abilities of the students. The project initiates from days and weeks before the final event, developing the students design thinking ability mentally and physically through several stages. It was designed with workshops and activity based learning where the students gradually understand the possibilities that the body can be used as a strong medium. They study and experience through taught discussions and experiments. The workshops initiated the students to work independently, freed by the restrictions and breaking the feeling of modesty. A five days' workshop was organized in Dambulla, where the students were assigned to develop certain ideologies and understand through activities. These were continuously guided and instructed by the academics. The batch containing forty four students were categorized into five groups and

were offered with a mentor for each team to guide them with students' work. These mentors were some practitioners excelled in different streams within the field of design. Our intention was to extract their experience which they practice in realistic situations and provide their expertism in reshaping students' mindset. It was an asset that the students also had to work with twenty five foreign undergraduates from diverse fields, in their internship to achieve experience in a different cultural and social background. These students were from Russia, Ukraine, Pakistan, India, Columbia, Poland, China and Egypt. A blend with people from different socio-cultural backgrounds brought a new atmosphere to the project while sharing the expertism within the individuals.

The body and space as undetectable forms from each other, was made a question on how to realize the artistries they generate when identified and exaggerated. Human body itself is a magnificent work of art by nature, when touched by its form, shape and volume. Above all, the body with its movements expresses unlimited boundaries enhancing most impressive feelings. This is where the 'space' in, within and in-between the body can be expressed, exaggerated and explained. To identify these diversifications, experimenting is an essential part. To feel its variations one can understand only through practice or live experience. Initiating from the body itself, the students were driven for progressive approaches to identify its unique qualities and then make additions for exaggeration. These experiments guided the students to invent new ideas and unimaginable outcomes to reality.

The journey began in exploring such elegances by the touch of skin, identifying its sensitivity to self and other. Non-verbal communication through gestures and touches was the first step. Secondly, different bodies were bonded physically in breaking the boundaries within the personal spaces. At this time, the approaches were extremely successful in breaking the personal spaces in between the bodies. Students' modest and diffident reactions to touch each other made barriers to build interaction. This is when the students are dragged on to a floodplain and start with simple mind blowing games. Deliberate improvements were envisaged while the games changed to psychological approaches from physical approaches. As the next stage, the body, bodies and bodily spaces got gradually minimized when bound together in recreating different expressions within a context. The bodies got camouflaged, contrasted and elaborated to the surrounding. Through experience and experiments the students studied what happens to their bodies when mud is applied over the bodies and how different bodies are linked to each other forming shapes and forms in camouflaging and creating contrasts within the context.

Each night, we had discussions with all the teams, in which they expressed their experience on the floodplain and the activities carried out. The playing on the floodplain was totally a new experience for the foreign students which they had enjoyed a lot, and even for the local students, that reminded of their childhood activities. Applying mud on the skin brought them another new experience first as a disgusting feeling and later discovering it as a form of layer to cover their skin from heat. When the mud started to get dry and crack, they felt the sensitivity of skin and how that reacts differently on different parts of the body. We carried out our discussions further into talking about the skin. As one of the mentors asked from the students, what do you have on your skin, as resemblances of past experiences and memories? Few students started expressing their thoughts on childhood memories and present experiences. The majority showed reluctant reactions to talk openly. Hence, a decision was given to express any of their memories attached to the skin, to be expressed on a paper, by the next day morning. But, the medium of communicating the idea was only through a painting on the body transferred to the paper as a print.

Then, in the early morning of next day, the walls were filled with many extreme stories of their life through a body print with lesser words. All the prints were made anonymous. Different parts of the body were printed on the papers, which was quite unimaginable at some instances. However, the result was successful and we started to bring about discussions by looking at those painting. The teams created different stories, which ultimately formed into a concept for each to continue with the day activities. The teams formed concepts and came up with ideas to express it, through the body itself. Once again they started applying body paint on the skin, as it was converted into a canvas to translate their ideas. An expedition of skin began when it was converted into a canvas and when the canvas got painted. Some groups transferred the prints once again on to a fabric to determine the negative shape and forms of body. The fabric got modified with improved brush strokes and cuts at predetermined distances and wrapped on the body and sometimes on bodies to emphasize its expressions through movements. Through numerous attempts and experiments the students' outcome was overwhelming and unbelievable. However, these outcomes were achieved with students' strong interaction and practice through the guidance and influences from instructors. Such consequences are constantly not pre-planned results but incredible innovations which will guide and stimulate students for further approaches.

As the next stage students were guided to use external elements and body attachments to see the overemphasis of body. A different path at body paint; stressing feelings with external elements such as mesh and ropes, tubes, boards gave an enhancement to the body while reaching unlimited boundaries and an expression of space within the 'body'. They were recorded for later references, as an approach for the final event on the last day of workshop.

Simultaneously some groups were influenced to use technological advancements according to their concept. Casting shadows and reflections on the painted body through multi-media projections was another approach by another group to identify the body outlines and the spaces in-between. Using the technology available at the workshop, the team arranged a set up to perform their ideology. Number of attempts took place to make the body disappear in a moment and once again appear with a second skin. Their experiments became successful when the movements sometimes got synchronized and contrasted giving the audience an unimaginable expression of art.

On the day following, the teams were given the opportunity to develop their concepts further as we took them into a different context, a place where nature's beauty was at its extreme. The findings of the students now had to be synchronized with the surrounding. The students developed their concepts reacting to the context while recording them through videos and photographs. It was evident that the students' minds were freed suddenly, to express their own ideas, as they were diverged from the monotonous life at the accommodation. They came up with innovative ideas, as to how they can express their concepts in a better way. Spending the day near a dyke connecting to a lake and paddy fields on either sides, the students had progressive approaches towards the main theme, by working with the context.

At this stage the students' mental and physical approaches towards the final event were appealing and outstanding. This was a result of the progressive improvements that took place throughout the past experiences and experiments through practice. The ultimate expedition on 'Space-In-Between' through body begins at a state where students' mind-set is profoundly aligned, structured and secured.

The final day at the workshop, Dambulla we focused the students on presenting the findings of each group to a set of audience including their own batch mates and the academics. The event had be organized by themselves to be presented at night, hence they had to think about the light set ups, a stage for performance with a proper background, music and essentially their costumes, props and performances. From the day before, the students started working on preparing props and costumes required for the event. In the meanwhile, the method of communication was also important. They developed their concepts to be communicated through choreography. Although the students of design education were less talented in choreography, they formed their performances with the assistance of a professional, which also brought out their hidden talents. The students were also expected to record and later analyse how they had buildup concepts and interacted with each other during the design process. The presentations of each group started. Although the students had a lesser amount of resources to organize an event in a remote area, their attempts on stage set up, lights, music and multi-media projects were quite outstanding. On the contrary, all the presentations took the mode of a narration which simply represented a drama with certain sequences. During the performances, the students realized themselves, how their own concepts have been deviated from their original ideologies. A narrative story was not the ultimate expectation of the audience.

As the second stage of the project, the findings were brought to the university premises for further improvements. The students' negative attitude towards the event in Dambulla influenced them for a strong desire to re-build their ideologies. This is when, the instructors start re-designing the project for an advanced level of communicating an idea towards a larger community. This is where intra-personal communication being transferred to inter-personal communication. We developed an ideology with an unspoken social issue trying to be presented to a larger audience. The medium of communication is still the 'body' adding certain other technological advancements for its quality and exaggeration. This is where different concepts derived from the workshop are merged together to form a fusion of performing art exaggerating the body, space and beyond as a medium of communication. The bodily expressions and spaces created within the bodies will be a medium utilized to convey a message that addresses a transection of society. The conclusion will explain how body and space is a persuasive source in communication and design.

As this ideology was introduced to the students taking 'body' as the main medium of communication to address a community, they needed to imagine how body as a being get disappeared within the society. The ideology emerges within the students themselves as to what they feel about human disappearances in general. They began to realize that disappearance can occur in two different ways. Self-imposed disappearance and enforced disappearance can arise two different consequences. The former describing spontaneous disappearances where people hide themselves from society or own families for personal reasons whereas the latter explains forced disappearances through a powerful hand or state. However both these scenario are put together at a single event, explaining its consequences at different contexts. While an initial idea was formed, the students were asked to build up the story on how they are communicating the message of human disappearances. The story required to have the sequences of screens and the transition from one to another. After a number of tutoring sessions and discussions, the story was finalized as an event to be presented to the university community. The reason for selecting the students of university as the audience becomes the tendency to share almost same ideologies as of the design students, because of their age, educational and social level. Also on the

other hand, it was necessary to refrain from political influences from other parties and state. Project needed to be designed that the students get inevitably integrated with the context or working environment. This working environment can be mostly directing to diverse social communities. Adaptation of students' mentality to work freely, without hesitation is important to extract their concepts and ideas. However, a challenge is always upfront for the students as the working environment may withstand continuous change. Hence, their confidence is pre-built for unplanned factors. On the other hand, project was designed to realize the goals of developing students' technical, professional capabilities, forming their own identities, and supporting their development as positively contributing as designers. Hence, the event included multi-media projections, building and body mapping as supportive mediums in delivering the message. Building mapping required immense contribution and concentration, to design the screen according to the background. The back wall was constructed in a grid pattern, so that the images/videos casted on the wall had to synchronize, to avoid distraction and loss of clarity. The method of communication through body was also concerned greatly. Through choreography, a part of the message was delivered, while composing suitable music tracks. This followed designing costumes for the dancers, their makeup and suitable props. The event also required a setup of lights to aid the performances. Every detail had to be pre-planned by assuming the locations of the performers according to their changing movements.

The ending of the event was the ultimate requirement that the students had to think about. The ending of such message needed to be delivered with a heart touching thought to be felt by the audience. At this stage, the students together with the academics came up with the ideology that, disappearances always follows a hope that the person who is disappeared will come back on some day. Taking this as the concept, the ending was planned to light up hundreds of candles and shared even among the audience, grabbing their interaction. This imitated a thought of hope. Then the most crucial problem arises on how to attract a huge audience to the determined location. If the event with its actual message is advertised the tendency to gather a large audience was uncertain. Hence, the students came up with the idea that, they can organize a musical event with the intention of grabbing people. Finally the location was organized with proper planning and setup design. The students had to divide certain responsibilities among themselves to manage a smooth flow on the event, while on air.

The location becomes the courtyard of the canteen two, where an appropriate context was possible to be formed with the help of its surrounding. A large back wall, to be used as a screen, the spaciousness of the courtyard to accommodate a huge crowd, the different levels of the landscape for the performers to choreograph grabbing the interaction of the audience were some of the assets. The context was subjected to certain other modifications, to improve the quality of event and acquire the integration of audience.

A Rock musical experience is created with the intention of gathering a large audience to the determined location. 'Rock' music was concerned the most effective stimulant to gather a huge crowd and most suitable style for which we can generate our idea. While people start to gather, suddenly, the story begins to unfold at the courtyard of the canteen when the audience is at the climax of excitement with music and dance. A live act is created and performers enter the stage through the audience. While performing, the audience gets distracted on performers' sudden appearance. Images and videos get projected on to the bodies of the performers while at dance, when a video mapping is casted on the back wall. The audience start realizing the story and mutual interaction is created. The performance brings the audience to its climax when the candles are lighted and shared among everyone who gathered for the event. The act ends illuminating a light of hope in the heart of audience.

This was the story that was lively unfolded to hundreds of audience, by Level I students of Design, as their third design project. The story holds much depth and meaning while on the other hand the method of delivery is even more compelling. A live performance, a live composition of technology, a message delivered lively extracting the interaction of the audience is three massive efforts for the beginners of design education. Above all the final stage of the project carried immense efforts on strategic thinking where planning, understanding the audience and reacting according to their reactions were essential requirements. To compose such extensive event; enormous efforts, experiments and research were required. Making the mind-set of students' for a better approach is the most challenging. While improving their design ideology on 'Space In Between', it was also necessary that the educators influence and acknowledge the students on the working environment. It took days and weeks of hard work making the process continuously improved through assessment and evaluation. After all, the design project achieves success and was learnt through practice, experiment and implementation.

Hence, the project outcome is merely an event rather than an assignment or examination. The experience, knowledge and creative skills achieved will be an asset for the students to react at different contexts in the future, with relation to 'Design'.

Conclusion

'Design' although not having a definite interpretation, is identified as a process comprised of certain levels starting from research and ending with implementation as a service or product in solving a problem at certain time or bringing purely an innovative thinking into reality through aesthetic sensations and usability for its user. Hence, a designer must act and practice in such a way that the user or users are satisfied with the product or service offered by him. Here, the rational of a designer becomes more effective and fundamental in communicating his own idea. Although a designer's creativity and thinking ability is an interpretation of self-developed individual, his education and learning also effects the way he reacts to a design solution. This is when identification and formation of an appropriate educational system in developing a sense for design becomes important.

The paper begins with a study of identifying such educational system through a project carried out for the Level I students of design education. Here, the practice based education becomes more prominent and effective in nurturing the students with technological, professional knowledge while forming their own design rational. As the research method, the paper presents how this is converted into a Design project and analyzes the consequences and learning outcomes through students' achievements. They are explained within the process carried out through a project. Thus, the main objective of this research is reached and understood that certain methodologies affect students' learning procedures.

The objective of the design project becomes, identifying '**body**' as a medium of communication. Thus it is imperative that the project must be designed by the academics in such a way, that the students achieve intended knowledge and experience by the end of the project. As explained, design is not a subject to be taught. We can only help them to build a sense for design while providing commonly accepted design theories, technological and professional knowledge.
The exploration of body starts with activity based workshops at out-stations planned by the academics. To identify the body, it is essential that students start analyzing their own body on how it feels and reacts at given situations. Next, the space created with in the body and expressions when combined with other bodies were identified through certain activities. Reacting and working within a given context becomes the next challenge for the students, where they learn understanding the working space and surrounding is essential for their outcomes. Presentation of their findings to another through a conceptual approach was necessary as the final phase of the project.

All these activities reflected a gradual development of students' thinking process during different stages of activities. Thus, the academics must understand what and how the students' progression must be maintained through activities. Some commonly understood factors affecting a fruitful learning system for design education are envisaged as practice based learning. This follows; projects designed to realize the goals of developing students' technical, professional capabilities, forming their own identities, and supporting their development, get inevitably integrated with the context or working environment adapting students' mentality to work freely, without reluctance to extract their concepts and ideas. However, it is essential that the academics understand students' capacity to avoid alienation and desertion. A progressive development of the mindset is essential to bring the student to a physically and mentally stronger situation. Student progression must be appraised and evaluated on an ongoing basis while building up partnerships between learners and academics, workplace learning educators and practitioners, professional groups and finally the society with whom they will be working in the future.

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