TEACHING UNIVERSAL DESIGN: EXPERIENCES FROM TEACHING THIS THEME AT MAKERERE UNIVERSITY KAMPALA, UGANDA ON 2013-2014 BERKELEY PRIZE TEACHING FELLOWSHIP

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ABSTRACT

The UN Convention on the Rights of Persons with Disabilities (CRPD) (2006) urges architects and educators to embrace teaching Universal Design. While many architecture schools have woken up to the necessity and desirability of teaching Universal Design, they do not seem to figure out exactly how to teach this subject matter. The international Berkeley Undergraduate Prize for Architectural Design Excellence inaugurated its first Teaching Fellowship in the 2013-2014 academic year for developing a practicum exactly for this purpose. As one of the inaugural Fellows, the author documents his efforts as a Senior Lecturer at Makerere University (Kampala, Uganda) to address the basic issues of accessible design to Foundation Studies students in the B. Arch program. The questions of how to foster and eventually insure equal accessibility to people with disabilities in the Kampala built environment, where little if any effort is made to institute Universal Design principles, is examined. In doing so, this Paper establishes a base line for teaching the subject matter in one of the most heavily-impacted and minimally-serviced regions in the world. Both successes and failures are addressed in the attempt to determine how best to confront lack of knowledge, disinterest, and/or disregard for the subject.

INTRODUCTION

This Paper bring forward a series of reflections at the level of personal sense of the teaching experiences gained on the 2013-2014 inaugural Berkeley Prize Teaching Fellowship for Universal Design. For background, Berkeley Prize Teaching Fellowship for Universal Design was launched world-wide for the first time in 2013 to attract viable proposals for teaching Universal Design from faculty who teach undergraduate architectural design. The agency arose from the understanding that persons with physical and mental disabilities generally continue to face long-standing discrimination, ridicule, and socio-cultural prejudices of all kinds together with inaccessibility to varied aspects of the built environment in many parts of the world. Yet under varied UN protocols, persons with disabilities have equal rights of accessibility within the civic built environment. The most powerful of these instruments is the United Nations Convention on the Rights of Persons with Disability (UNCRPD) (2006) which in its articles 4 and 9, urges governments, civil society organizations, architects and other key players in the building industry, and educators to embrace theory and practice of Universal Design.

However, the situation on the ground is that there are still many unfavorable terms and conditions not permitting practical embracement of Universal Design in different parts of the world in both aspects of teaching and practice. While both of these aspects are appealing to the urgency of research and documentation, this paper is a corporate series of responses to best practice experiences of how superlatively the subject matter would be taught to beginners in an undergraduate architecture program. The responses were propagated from teaching experiences on the afore-mentioned Teaching Fellowship based in the Department of Architecture & Physical Planning at Makerere University Kampala, Uganda. The positioning of this fellowship in Uganda was most fitting in the African context given the fact that Uganda represents the broader African context, which appears to be the most heavily impacted and minimally serviced geographical span in the world, characterized by lack of knowledge, disinterest, and disregard for Universal Design, (Ingstad and Grut, 2007).

Why Universal Design, Where it came from, Why it Matters

First, it became important to gain a historic perspective of where Universal Design came from, its contemporary configurations and why it matters so much in present times. The impetus to step into the historical perspective was upon the realization that without such a background, it is not satisfactorily feasible for learners to fully appreciate their own current and future mental, institutional and professional obligations towards promotion of sustainable Universal Design practices within their discipline and beyond particularly for the Ugandan learner's context and that of entire Africa.

Thus the ensuing historic perspective, insightfully informs that gurus of architectural education are aware that designs of buildings must accommodate all categories of people alike, with or without disabilities. Connectedly, Esherick (1984, p.26) documents antique Vitruvian guidance that "… architecture and the work of architects is for the welfare of society in general and for the health, security and enjoyment of…" all individuals, which spells one among the earliest architectural connotations of the concept of Universal Design. However, it is Ron Mace, who contemporarily defines the concept as the act of "… designing all products and the built environment to be aesthetic and usable to the greatest extent possible by everyone, regardless of their age, ability, or status in life…", in unison with antique Vitruvian thoughts, (Rao et al,

2014). Thus, with such clear Vitruvian guidance to date, it became the concern in my lectures as to when and how things must have gone wrong for all-inclusiveness and Universal Design to diminish at the expense of persons with disabilities.

When and How the Architectural Profession Overlooked Universal Design

From hind-sighted literary perspectives, inter-continental commonalities unsympathetic to persons with disabilities throughout past and present epochs of civilization are apparent though contemporarily on a lesser scale, which have divided the world into binary oppositions of some all-inclusive built environments on one hand, and built environments totally excluding people without any disabilities on the other hand. In further retrospect, it also became apparent that this predicament arises from deep-seated socio-cultural, egoistic and attitudinal injustices, demonology, and prejudices hostile to persons with disabilities throughout civilizations. Case-specifically for pre-colonial Africa, many associated myths and stigmas did catalyze aggravated discrimination and prejudice against persons with disabilities.

Incidentally, individual cultural-based testimonies of my students showed that most African tribal groupings still view disability as a curse allegedly emanating from witchcraft, maternal promiscuity or displeasure of the gods or some ancestral spirits. In ignorance, fathers of such children usually blame the disability on the mother. Noticed with any significant deformities or disabilities at birth, infants would be battered to death, or abandoned in forests as prey for wild animals among some Sub-Saharan tribal groupings.

The historical perspective also scanned continental Europe, given that current modes of conventional architectural education have roots in this region (namely the French based Ecole des Beaux-Arts and Germany's Bauhaus curricula). Accordingly, the scan showed that from as early the 8th Century BC through the Industrial Revolution, the Renaissance period, up to late 19th Century, persons with disabilities were considered sick, unproductive, and worthy of elimination. In fact, the Roman Emperor Lucius Aurelius Commodus (AD 161-192) often enjoyed killing persons with disabilities dressed up as mythological monsters, (Shapiro, 1999). "Under his direct order, those with physical impairments were brought to Rome for his use as moving targets for archery practice," (Scheerenberger, 1983, in Shapiro, 1999, p.156). Also, Plato in his book 'De Republica' erroneously recommended the banishment of persons with disabilities in some unknown locations or outright death. Aristotle also postulated the

placelessness of persons with disabilities in society while Herodotus misleadingly argued that a world in quest for happiness should free itself from such frightening deformities dangerous to mankind, (Shapiro, 1999).

Biblical scripture namely Leviticus (21: 17-21) also influenced the European Renaissance churches to outlaw persons with disabilities from priesthood, (Onwegbu, 1979, Choruma, T. (2006). In this connection, since the church also patronized artists and architects, their role in molding lethargical art and architecture was vested with priestly virtues to augment worship. Consequently, architects were expected to design without considering persons with disabilities. This tended to conflict with antique Vitruvian guidance, which rightly obliged architects to design for maximum user comfort, security and enjoyment of all individuals, with or without disabilities. In fact, the appearance of the 'Vitruvian Man' illustrated by Leonardo da Vinci in about 1509 controversially aggravated diminution of the concept of Universal Design. To date, the original Vitruvian man is diagrammatized as the perfect human being without any disability as the epitome of architectural design.

Retrospectively, much as the world entered the 20th century with greater enlightenment from modern science and technology, by which one would have expected better things for people with disabilities, diminution of all-inclusive design progressively got consolidated by the appetite for architects to perceive house designs for the conventionally perfect human beings as the symbols of excellence in varied professional architectural output, as persons with disabilities and older adults were regarded as absolute minorities unworthy of comparable attention. Incidentally, some of the most horrendous accounts in the history of modern times of inhuman deviation from ideals of Universal Design occurred during Adolf Hitler's Nazi regime in Germany. The regime contemplated disability to be a precursor of degeneracy and sub-human compost of worthless and useless eaters. Envisaging a society void of any persons with disabilities, Hitler's strategy progressed in distinct stages of destroying anyone with a disability though parallel excesses also occurred in some countries too (Shapiro, 1999).

Growth of Advocacy for Universal Design and Birth of Disabled People's Movement (DPM)

In a significantly notable concurrence, however, the historic perspective enlightened my students that the above narrated backdrop of torture, discrimination and other forms of debasement of

persons with disabilities has not transpired uncontested. In this connection, the Egyptian civilizations came as a strong case in point as disclosed by Shapiro (1999, p.152):

> The early Egyptians represented one of the most humane societies of the time and were the first to display an interest in both the causes and cures of handicapping conditions as well as the personal and social well-being of individuals with disabilities.

Inherently, a growing section of the global society from as early as 500 BC had in fact set in motion a pragmatic mindset in disagreement with discrimination and criminalization of others inflicted with disabilities albeit on a small scale of recognition. As already noted, such discrimination and/or criminalization became a machination of laws and practices of some aristocracies, monarchies, dynasties, dictatorships, monocracies, autocracies, states, social norms, customs, traditions, beliefs, religious beliefs, etc. Notably, the rise of Judaism guided by the Torah[1], the Hebrew Bible, was among the earliest religious initiatives that resisted discrimination and/or criminalization of persons with disabilities, (American-Israeli Cooperative Enterprise, 2014). In a comparable context, it also became apparent that the Qur'an, written by Mohammed (570-632 AD timelessly perceives persons with disabilities as God's own innocent ones since, according to the very Qur'an, God also meant no such thing as standardization of the very human beings, (Bazna and Hatab, 2009).

Thus, the above-enumerate part of mankind provided a ray of light for countering long-standing discrimination against persons with disabilities. In doing so, by the late 1800s, some think-tanks had began to view persons with disabilities at least as medical anomalies, thereby attracting scientific scrutiny instead of deploring them as evil omens, (Bogdan, 1988). However, this medical perspective did not offer lasting means for militating against discrimination and denigration of persons with disabilities since it transformed into a model for seeing persons with disabilities as the problem, rather than attitudes of society. Critically dissatisfied with this look of things in early 20th century, a section of persons with disabilities propped by an upsurge of religious ethics slowly and unwaveringly birthed the global 'Disabled People's Movement' (DPM).

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[1] The Torah, or Jewish Written Law, comprises of the five books of the Hebrew Bible - commonly referred to as the "Old Testament" among non-Jews, which God gave to Moses on Mount Sinai, all with the biblical laws of Judaism. The Torah is also known as the Chumash, Pentateuch or Five Books of Moses.

Unquestionably, the 20th century growth of the Disabled People's Movement particularly after World War II stirred profound outcomes on the lives of the disabled. Another powerful trigger resulted from the world's realization about the extent of atrocities of Adolf Hitler "race purification," as well as the horrors of his eugenics-driven elimination of persons with disabilities. Consequently, overt hostility and rejection of disabled persons associated with previous centuries and the vulgar perceptions of the medical model of disability begun to ward off as new societal empathy, tolerance and acceptance intensified. This was epitomized by the emergence of the universal declaration of human rights upon the founding of the United Nations in 1948. In this connection, demands of persons with disabilities for equal rights, options, opportunities, inclusion in society, and access to various amenities surged and though a small number of countries initially responded, it signaled a major step forward on a long difficult trek from past times of persons with disabilities expressly being murdered, left to die in forests or thrown off cliffs into rivers or lakes because of their disabilities, to the present times of growing social acceptability. Looking back, among the initial countries that signaled positive responses was Britain and its Disabled Persons Act of 1944, which gained greater strength though it was replaced recently by its 1995 Disability Discrimination Act. Another country was the US with its first Civil Rights Act for persons with disabilities that appeared in 1973, followed by its Disabilities Act of 1991, (Shapiro, 1999). Other countries responded after 1990.

Contemporarily, an international consensus in favor of persons with disabilities is unstoppable and there is a corresponding rise in documentation such as the Convention on the Rights of Persons with Disabilities of 2006, on the rights of persons with disabilities, which serves as a check-list for the growing consensus in the international community for minimum disability standards applicable to but not limited to legal systems, and built environments.

It is now appropriate to turn attention on best practice experiences of teaching Universal Design, which proliferated on this Fellowship. How I proceeded to interest my students in the subject of Universal Design on a day-to-day basis would perhaps be of utmost interest to this Conference.

HOW STUDENTS' INTEREST IN THE SUBJECT OF UNIVERSAL DESIGN WAS GALVANIZED

Accordingly, the wide literary review refreshed and prompted the assemblage of viable teaching and classroom/learner management strategies represented under the following sub-headings:

i) The Right Controls on Classroom Psychology to Support and Strengthen Fascination with Universal Design in Each Student

This strategy included provision of a creative and supportive climate for the learners to gain the sense of absolute security in the studio so as to fascinate themselves with the concept of Universal Design. It also doubled as a stimulant for creative and innovative thinking while according me best practices in classroom management for effective teaching and learning about the subject matter. The 'supportive climate' in this Teaching Fellowship denoted establishing a credible, consistent, reliable, enjoyable, motivating, and sustainable learning regime for grasping principles, theories and practices of Universal Design in fulfilling user needs of persons with disabilities regarding accessibility in the built environment. In particular, the thrust was towards:

a) determining responsibilities and opportunities central to students' understanding of Universal Design;

b) identifying imaginative approaches to make learning about Universal Design psychologically interesting and effective;

c) directing attention of the students in detecting prevailing shortfalls in Universal Design within their own built environment particularly Kampala City, which formed the 'laboratory' for this Teaching Fellowship;

d) Exploring and exploiting new credible directions of making the learners to unlock their own unique and creative thinking, innovativeness and representation of Universal Design;

e) Creating internal and external opportunities of scanning case studies with best practices in Universal Design;

f) Creating an atmosphere and opportunities in which the learners' creative abilities towards Universal Design would maximally unfold.

For instance, aware that I was dealing with young adults of both male and female gender at the most exciting age of their lives, full of emotional livelihood, energy and conscious of desiring to

be noticed, commended, and appreciated across the studio space that each of them was working in, and constantly experiencing the delights of physical expression and the excitement of encountering and engaging in the new concept of Universal Design, I utilized dramatic body language, humorous voice variations, fine phrasing of sentences or explanations, inspirational eye contact, emotive facial expressions, and enthusing articulation of ideas. I also made sure that there was no room for mere gambling or guesswork on my teaching job, but rather I made sure that at all times, I was acceptably organized, systematic, professionally dressed and pleasingly presentable as a boundary of good taste and setting the pace of a role model for exploring the subject matter.

On the frontier of group work, I mixed gifted students with the less gifted in terms of designerliness, which awakened high academic rigor among both categories of students, willingness to share

Fig. 1: One of my students leading a peer teaching session during Semester II.

Fig. 2: A study on improving accessibility of wheelchair users in Semester I by one of the initially weak students who improved tremendously by the close of Semester II.
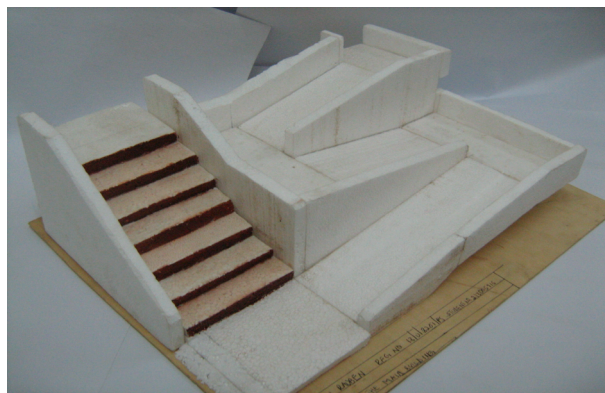

Fig. 3: 3-D modeling became a popular activity, which capacitated weak students to configure Universal Design more appropriately.

ideas, and to attain the best of each other.

Apparently, I also applied the 'peer teaching' strategy of learning in the groups on a fortnightly interval, which was characterized by each student taking a turn on a teaching role in the peer group setting (Fig 1), thereby enabling each of them to share their knowledge and experiences with other students. This instilled in them the art of inter-personal skills' and confidence building. This strategic approach captivated curiosity of every student and it evidently linked the low achieving students with the high achieving peers. Furthermore, this peer teaching component enhanced greater sense of socialization and pleasant mood of friendliness among my students.

In some instances, I detected students who lacked confidence in the visual language of drawing and physical model-making, (Fig. 2 and Fig. 3), on grounds of having not been exposed to the fine arts in their earlier primary and secondary education, which tended to create some fear in them: that they lacked faith in 3-D thinking; that they were not artistic enough; that their own work was out of place when displayed with the work of others, etc. In this regard, I was careful not to criticize them heavily in their weak instances. Rather, I endeavored to dissolve away or alleviate the above-enumerated fears by instilling in them the 'Yes I Can-Do' attitude. Furthermore, I attempted varied ways of increasing their individual self-esteem with words of encouragement and mini demonstration projects of how to draw, which I carried out from time to time on both a one-to-one basis and group tutorials. I also devised a strategy of 'rewarding' this category of students, for instance, by means of according them extra sheets of paper for additional practice in their free time.

Another experience was my realization that teaching on hot days with afternoon lectures tended to make learning less interesting. Students tended to dose and get exhausted halfway of each afternoon lecture. To overcome this problem, I found it profitable to modify some of my lecture plans for instance by converting them into classroom discussions punctuated with video exemplifiers, animated power point projections, or some short story or puzzle in between related to the topic of the day. A brief but interesting story told at the beginning of a lecture often captured attention of the students to fully be absorbed in the learning enterprise. Undoubtedly, this strategy turned out to be quite fruitful in that it made the students more engaging and the lectures more interesting.

Looking back, my realization was that by the close of the second semester, my explorative endeavors towards proliferating the right controls on classroom psychology to support and strengthen students' fascination with Universal Design turned out to be some artistry of teaching this subject matter, which I had never envisaged prior to embarking on the Fellowship. Schon (1987) distinguishes artistry as the competence by which a practitioner successfully handles, new, capricious, complex, unclear, uncertain, unpredictable, conflictual or indeterminate zones of his or her practice by translating knowledge or theories into effective action of excelling in his or her profession beyond presently known performances to greater levels never seen or experienced before. In this connection, I look back further with a sense of gratitude to this Teaching Fellowship in that it enabled me to unprecedentedly explore new spheres of the artistry of teaching Universal Design in a surpassing and fulfilling manner I had not anticipated. It is to the extent that there are moments of good performance of teaching I attained, which I could gauge from the levels of enthusiasm, attentiveness, feedback from and output of my students. Whereas, for instance, I acted like a coach in some instances by practically getting a pencil and demonstrating how an aspect of good Universal Design is attainable and thereby empowering the student to initially imitate me but progressively develop his or her own individual signature of design, there are still many outstanding outputs that occurred, which I cannot explain exhaustively as to how I managed to attain such fineness of teaching. To me, that was artistry at its best. In instances in which I gauged that students were experiencing difficulties in understanding something, I would recall advice from the play by Goldsmith, 'She Stoops to Conquer'. Thenceforth, I would extend my willingness to afford concession and open up lines of communication with the class in a non-intimidating and all-inclusive manner. On the occasions I made such compromise, it yielded beautiful win-win break-throughs with my students to spectacular levels of satisfaction.

In another related scenario, to fully cultivate a positivist frame of mind for ideals of Universal Design I stirred the students to develop some form of empathy for or belongingness regarding disability with the background reality that any of them and I without disabilities stood at a 50% probability of becoming disabled anytime, anywhere, and anyhow. This perspective was further linked to a working assumption that in traditional African sociological reality, no one exists in isolation and this being the case, any of us is already or was likely to be related to somebody with disabilities or knowing some other persons in that category whose lives required uplifting

through knowledge of Universal Design. Looking back, this perspective tended to have the impact of uniquely inspiring each learner's present or future individual and corporate design endeavors. It also tended to passionately create a sense of reward and profiting the learners to eagerly learn as much knowledge as possible about Universal Design.

ii) Building Harmonious Working Relationships with My Students

In some meaningful overlaps with some other actions I have already narrated, the notion of a strong rapport with my students opened for me the doors of structuring a dependable relationship with the students. Consequently, right from onset of the Teaching Fellowship, the classroom atmosphere remained pleasingly positive, accommodative, collaborative, supportive, and fulfilling. It is also pleasing to note that this very sense of rapport with my students tended to cut back on any potentialities of intellectual dishonesty. On my own part, the trust that the students placed in me was one among the fulfilling experiences I came to appreciate on this Teaching Fellowship.

iii) Hands-On Approach

The 'Hands-On' approach was a paramount feature of guiding the learners to make 3-D architectonic discoveries through model-making. The ethos was to capacitate students to 'design-and-build' the relevant architectonic artifacts both individually and team-centrically with a wide range of materials and equipment. Looking back, I note that my students were very receptive to hands-on sessions in comparison with theoretical lecture in-puts. This enthusiasm seems to have been linked to the fact that they tended to enjoy manipulating materials, handling equipment, assembling things together and experimenting with all sorts of 3-D ideas, compositions, geometries, shapes, textures, forms, and structures.

iv) Continuous Focus on My Role and that of the Students

The wide literary review further empowered me to configure multiple motivational interactions with the students. In some instances I acted like a guide, a project manager, a facilitator, an assistant, a director, a friend, an auditor, a doctor, an editor, a patron or colleague as each oncoming teaching/learning situation warranted. On the other side, I caringly, thoughtfully, influentially, flexibly, humanely and persuasively made my students to become explorers, team

workers, pupils, novices, friends, clients, patients, authors, protégés and colleagues on both 'one-to-one' or group teaching as need arose.

However, one of the challenges I faced was that the classroom composition was a 'mixed crowd' with wide visual disparities owing to the nature of Yr I admission to the architecture program. However, I endeavored to optimally create visual and designerly parity among them by non-discriminatorily offering extra 'one-to-one' attention to deficient students through 'take home' analytical drawing exercises from nature outside the conventional timetable. Despite stressing me, it yielded good results since the wide disparity between the two categories had diminished significantly as Semester II ended.

v) Design Crit as a Tool for Confidence Building

The Design crit is a traditional assessment tool in architectural education particularly the design studio. Upon completion of a project, it is common for students to present their work to their tutor(s), a design jury or a team of design reviewers. As I executed this Teaching Fellowship I upheld this practice too. Whereas in the past students tended to resent design crits by regarding them as worrying, traumatic, stressful, and torturous occurrences, I found the zeal and interest of my students in the `design crits on this Fellowship fascinating and cheerful. What I learnt from this Fellowship was the importance of turning sessions of design crits into fora for the students to explore ideas and to develop their understanding of the do's and don'ts, the creative and non-creative, the innovative and mediocre aspects of design through dialogue between the students and the respective tutelage. My reflection on this frontier is that emphasis was on satisfying the 'Why', the 'How', the 'What', the 'Which', and the 'When' questions in getting the design schemes to work well and how best they would be made to work better. This way, the critical thinking of my students appreciated tremendously when I compare between the time Semester I commenced, and the much higher critical thinking that had been attained by the close of Semester II.

CONCLUSION

As I conclude these reflections, it is clear that one of the objectives of this Fellowship was to amass experiences of teaching Universal Design, which would be shared with other fellow academics of other architecture schools so as to globally increase the teaching of this subject

matter and most probably develop some repertoire of relevant pedagogic procedures. This appears to have been attained satisfactorily and I owe this success to the overall component of 'artistry'. However, I conclude with a word of caution, in that the artistry of teaching Universal Design is an intangible virtue that cannot merely be downloaded or 'cut' and 'pasted' or represented by some mathematical formula or algebra in order for somebody else to quickly apply into his or her own teaching situation. Yet it exists and it is truly a vital asset. It is about adeptness at spontaneous inventive power of adding interest to the teaching and learning paradigm, or propping it with some element of fascination or appeal, creative vision, all to make learning by learners more interesting, dramatic and rewarding. It further calls for perceptivity, imaginativeness, patience, persistence, discernment, sense of empathy and a parental attitude towards the learner, unlike the sort of attitude a police officer possesses towards a criminal. I also realized that flexibility in judging the mood of the learners enabled me to choose the most appropriate combination of elements of artistry of teaching Universal Design at the right time, in the right way and in the right context and in some instances with the right improvisation free of any pretentions. It also required me to subconsciously develop capacity to juggle a multiplicity of tasks, techniques and style while flexibly keeping the goals of the program with a clear view. As well, the experience I have gained is that all the virtues of artistry I have talked about must be prefaced with a sound background of wide reading about the subject matter by delving into its history and theory, its written and unwritten norms, principles and practices together with awareness of challenges and opportunities it faces. To me, this is how this inaugural Berkeley Prize Teaching Fellowship has been a most rewarding experience and I am truly grateful to the Committee that selected me to be part of it.

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