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Guest Editor: Prof JP Odoch Pido

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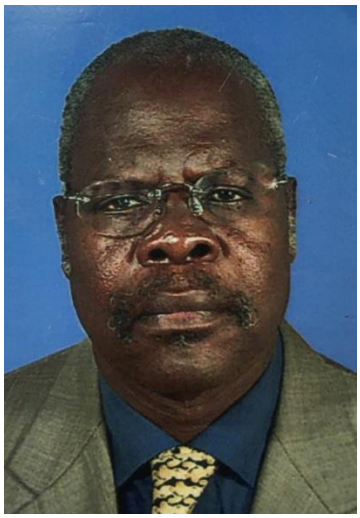

JP Odoch Pido

Odoch Pido is a design educator and professional designer. He is an Associate Professor of Design at the Department of Design and Creative Media, the Technical University of Kenya. He has served on numerous administrative positions, boards and committees, setting curricula and judging Kenyan art and design projects and competitions. He has been a strong force in the preparation and development of more than five generations of Kenyan designers as they make their first halting steps and then flourish as professionals. His many professional credits include exhibition designs, graphic design and product development.

Odoch's many publications include papers and chapters in books, conference presentations and journal articles focusing on the deep analysis of culture in relation to design, emerging trends in cultural expression, health and development. He has concentrated on issues in design education but the closest to his heart has been alternative communication techniques for controlling HIV-AIDS, especially for orphans and vulnerable children in rural Kenya. Together with other scholars he is examining groundswell as a cultural revolution in weddings and connecting African thought system with mainstream philosophy, design and related disciplines.

Odoch's photography of abstract forms in nature is his way of expressing his sensitive vision by focusing on small scale natural beauty that might otherwise go unnoticed.

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Historical Dis-Connects in Kenyan Design Education

By Prof. Odoch Pido,
Director,, The School of Creative Arts and Media, The Technical University of Kenya
odochpido@gmail.com, Phone +254 722 720891

Abstract

Drawing on participant observation, reading, professional and teaching experience over fifty years, I conclude that the stakeholders in design education have not yet engaged adequately with one another. I support this with citations, where they exist, and with well-remembered anecdotes that exemplify repeated experience. I submit that all stakeholders have fallen short of establishing appropriate links among academia, government, industry, the international community, designers, students and communities in Kenya. As a simple understanding among educators and practitioners, 'design' means creative problem solving. There are many subfields in design that are often, associated with other academic and professional disciplines to the neglect of the importance of design in those disciplines. As an example, 'Social Change Design' is often termed 'National Development Policy'. This situation has grown out of both Kenyan and global history.

Key words: ***Kenya, Design, Design Education, DisConnects, Design History***

Introduction

This article is based on years of participant and non-participant observation of design processes and response to outcomes of design. As a discipline, design is changing always and everywhere,

yet it seems design education does not always keep up the pace or engage adequately with the community in Kenya. Consumer response to design is often subjective and uncritical. Some designers and enthusiastic non-designers love to link design to 'high technology' and the future yet doing so further complicates rational development. As a result, interaction among design stakeholders in Kenya seems to have changed very little in the last 50 years.

As a widespread understanding among design educators and practitioners, 'design' means basic creative problem solving with add-on considerations for the users and society as a whole. Carrying this basic definition into the field of community development, design is aimed at expanding the range of choice and enhancing life in, with, by and for communities and the individuals who comprise them.It also means liberating the body, mind and soul from the vagaries of oppressions that earlier professionals used to call needs, not desires, not requirements or rights. In the 20th century little did designers know that a time was coming when desires would be inescapable needs. That time has now come i, in the 21st Century. A glaring case in point is rural electrification. Once it was only a fantasy before becoming an aspiration, then a luxury and now an internationally recognized requirement.

Among the many subfields in design, are fashion, product, packaging, visual communication, furniture, surface, fashion, service, and interior design. The design of experiences, systems, settlement patterns, living and work environment, logistics, production, marketing, and distribution are, associated with other academic and professional disciplines to the neglect of the

importance of design in those disciplines. Some examples are 'event design' called 'event planning' that is dominated by East African garden weddings because what remains of African indigenous culture plays only a small role (Pido, O 2020). Finally there is 'social design' that can be a force for good or bad in all aspects of life.

Assuming that there is good, efficacious, well functioning, user-friendly design as opposed to bad, ineffective, dysfunctional, user-hostile, hazardous and destructive design, we can assume that good design should be the objective of all stakeholders. The stakeholders in design for development are individuals, communities, government, non-governmental organizations, international governmental organizations, professional designers and design educators. All are directed towards maximizing widespread individual, social and economic development through well thought out, well-functioning projects, systems and products. In order to understand the roles and activities of all these stakeholders in East Africa, we can take a brief look at the history of design and design education in this region.

Statement of Intent

This paper focuses on stakeholders' failure to network and enable Kenya and Kenyans to benefit from Design. Policies are drawn and activities are scheduled without adequate consultation with design educators and professionals. Consequently, design educators and professionals feel reduced to passive observation. Education authorities are often hell-bent on qualifications and will bar any professionals, who lack the required credentials, from teaching students. Meanwhile, profit is everything to many business

leaders because it makes or breaks businesses; in this case design is good only when it is profitable. Concerns that business considers peripheral are also viewed as unwanted distractions from the essence of the office. Failure to network and the consequences of that failure are fodder for discussions in this paper.

The History of Design in Kenya

The first designers on Earth were East Africans over a million years ago. As those early humans developed their manual and ideational skills, their thoughts could become more complex and they could improve, innovate and fend off boredom by creating functionality, beauty and novelty (Pido, D 2018a). Fast-forwarding to the early 20th century, many changes took place in the design of life, society, material culture and activity. The long term and recent history of design in Kenya is firmly linked to long term environmental factors and foreign incursions (Jacobs 1965, Pido D 1987).

Lack of large-scale deposits of metal ores and fossil fuels has prevented a design developmental parallel between East Africa and other regions (Garlake, 2002; Brown ND). Irregular periodicity of rainfall and laterite soils combine to limit food production and to prevent the accumulation of surplus of any kind (Pido 1987). Where there is little or no surplus, many political structures become impossible and occupational specialization is limited as people have to be deployed in food production rather than in 'creative' pursuits. No surplus also means no patronage; there was nobody wealthy enough to support artists or designers for specific large-scale projects before the colonial incursion (Pido 2011, 2012). The

absence of soft, long filament fibers, both animal and vegetable, means there can be no long-term tradition in spinning, weaving and textile manipulation. Until the 20th century when commercial cotton growing was introduced, cloth had to be imported. This phenomenon is described as early as the 1st century CE (Casson 1994). Ironically, we now have *mitumba (*second hand clothing*)*, which is the recent end of that phenomenon.

Lack of a huge, renewable fuel supply means no glass manufacturing, limited and localized ceramic production and little leeway to innovate in making glazed pottery or any kind of impermeable container other than with stone. In short, the nations of East Africa, especially Kenya, suffer from an environmentally predetermined paucity of excellent materials that could have enabled the widespread development of the material arts. They have also suffered from geographical barriers like the *nyika* (a wide belt of scrubby bush with very little water*)* and social barriers in the form of the slave trade that have limited interior peoples' contact with other regions of the world for several millennia.. The design of social and economic systems has been primarily for survival in marginal to harsh surroundings and for defense against human and non-human predators. (Jacobs 1965)

Over several thousand years, Egyptians, Chinese, Indonesians, Arabs, Persians, Africans and Europeans have all entered East Africa for various reasons. Some of them died off while some adapted to their new environment and became Kenya's 'indigenous communities.' Some were absorbed into those communities already on the ground, others came and went regularly (Arab slave traders)

while others were forced out (the Portuguese). In the 19th Century, when European nations were fighting for geopolitical hegemony, waves of various Europeans tribes arrived, and took control of this region using superior military weaponry and cultural bullying. (Davidson 1974) Regardless of their backgrounds, or intentions, they all held in common the belief that East Africans stood at the bottom of a cultural ladder and that they themselves were at the top. This conviction, along with the assumption that East African cultures were static and unchanging, spawned unparalleled arrogance and intense efforts to bring East African peoples to 'civilization' and the 'true religion.'

The colonial, and later the international, incursion into Kenya was spearheaded by peoples who came from resource-rich regions of the world. Parts of their struggles against each other were based on the manipulation of surplus. (Marx 1867) They brought with them the mistaken notion that the sustained production of surplus is possible everywhere and that people who do not produce surplus are lazy or somehow defective. For unknown reasons they also equated ignorance with defect; consequently; to be ignorant was to be defective. A casual view of the design process reveals that it is a search for a solution to the problem at hand; essentially there is ignorance up until the eureka moment (solution to the problem). Ignorance as an inherent characteristic was a bedrock belief about Africans in the colonial Africa.

Starting in the late 1800s, Massive redesign took place without anyone ever identifying the process as design and without extensive consideration of the consequences both positive and negative of

each step that was taken. In the British-controlled territories, Christian missionaries played out the 'ignorance' belief and colonial governments committed themselves to replacing whatever Africans knew with European 'truth' As design educators we are still unsure at to whether design is or is not about the truth. European negative attitude towards ignorance underscored their determination to establish a new order in Africa without attention to the simple fact that they, too, were ignorant.. While a new order was being imposed, everything that had been in place was disrupted. Communities were seldom, if ever, consulted in the redesign of their environments or their lives. Suggestions of different ways of doing things or of local participation were out of the question because 'natives' had no meaningful business but to follow approved plans set by the colonizers . It was in this setting that education through schooling was introduced and imposed on hapless individuals who later grew into political elites. Children were separated from their families to the detriment of their holistic education, and elitism of the literate was cultivated. An outstanding feature of the brainwashed elites was disdain for anything local. School education was greatly responsible for 'Black British', a socially important label for Africans who tried to think ad do all that is British.

British superiority was also contrived and mythologized. The British did not stop at commitment to replacing anything local but actually planted British lackeys in public administration in positions of power. Any man likely to promote and entrench British interest became a powerful public administrator even with rudimentary knowledge of Christianity, English language and Arithmetic. The British also forced the cash economy on locals through legislation

and taxation. The cash economy forced or encouraged local youth to leave their rural homes and look for employment in towns and large-scale farms. Rural homes were thus left without a youthful labor force and families were disrupted while the young failed to learn all they needed to know at home.

With Africans just beginning to get a handle on the cash economy, the colonial government deliberately set a standard of low cash remuneration for those who were employed as wage earners. They could get away with this as long as the vast majority of Africans could grow most of their food in their rural homes while sending cash remittances to their rural relatives. That pattern changed observably around 1990 when food production started dropping and the standard of living rose in urban areas. It became clear that the employed could no longer send enough cash to their rural families and the rural dwellers could no longer send enough food to their relatives working far away.

Low pay means low purchasing power to acquire manufactured goods. Very few people could afford to pay for products whose manufacturers had employed designers to make them user friendly. Costs had to be kept low or markets would be lost. Industry was hobbled by this economic limitation and by the need to import machinery, materials and manufactured goods from other countries thus incurring duties and taxes that priced good products out of the market. A foreign businessman in nariobi once remarked that 'in Kenya, you don't sell quality, you sell price,; (Nathan Shapira PC) Haphazardly designed, dysfunctional products abounded. Product

dumping by foreign manufacturers became the order of the day, and Kenyans learned to either accept inferior products or to do without.

This combination of factors led to development of the Jua Kali, sector where cheap goods are produced informally 'in the hot sun.'. Efforts at 'import substitution' and in-country manufacturing industries were often disastrous. Equally, very few Kenyans had the discretionary cash/disposable income that could be used to buy creative works of art, craft or design. The Asian community, brought to Kenya as virtual though not nominal slaves, came to dominate small-scale trade and manufacturing. The colonial government prevented them from integrating with Africans and Euro-Kenyans through legislation that would reinforce the envisioned apartheid-like scheme. People who have small shops and are forced to make their living entirely through cash without access to agricultural land (as the Jews in Europe) are normally hated by their customer base and disdained by the power elite. When Asian families tried to set up large-scale production industries, they could not make them cost effective because of the limited and irregular supplies of the raw materials that were needed to sustain production. They could do very little in the way of innovation because of extreme conservatism in the underpaid market and hostility directed at them from above and below. They had to 'play it safe', just to stay in place and clamped in the jaws of a social, political and economic vise. Those who became wealthy undertook major and also small-scale charitable works in their effort to gain acceptance.

For over a century none of the stakeholders in design and design education have identified themselves as such, at least not

effectively. Colonial governments seldom promote indigenous design and 'frill' subjects such as Fine Art, Craft, Music and Drama in schools. In the 19th and 20th centuries, the design profession was in its nascent stages in other parts of the world, and designers were just beginning to make their presence felt as a dignified profession. Design education in the colonial metropoles (London, Paris, Amsterdam, Berlin and Lisbon) was confined to a few schools and movements, notably the Arts and Crafts Movement and the Bauhaus, to mention only two. In the three-tiered Kenyan colonial system, Africans were to be managed by Asians and Whites. They were considered 'trainable' in manual and clerical skills for relatively low-level employment. Art and Craft were available in the schools but there were few teachers with the competency to teach anything but the basics.

Foreign religious groups attacked and demonized local beliefs. Skin and bark cloth garments had to be replaced by imported woven cloth (from Britain, America and the Empire) to avoid burning in Hell for eternity. Glass beads, a product of the Austro-Hungarian Empire and Italy were associated with heathenism and the devil. Missionaries in Kisii demonized '*Ekeigoroigoro*' a very effective educational sculpture installation, because they saw it as "graven images" and yet they placed small dolls depicting the nativity in their churches at Christmas time and put up statues of Jesus, Mary and the Saints. They demonized the worship of 'animal gods' but represented their Holy Spirit as a bird.

If the colonial government, NGOs and the international community failed to recognize the importance of the indigenous arts

and design, they were not alone. Discouragement of innovation and creativity are often built into cultural systems that are age and gender segregated. Suppression of youthful creativity by older generations is a human universal as established social order wants to replicate itself. The East African gerontocratic age grade systems have placed too little value on encouragement of the young to come up with new ideas. Globally, youths often act out innovations as statements of defiance of earlier generations. In East Africa, however, each generation has also tended to lock in certain knowledge for itself.

To date, African parents generally have not encouraged creativity or innovation. Anybody who behaves out of line with what society prescribes is said to 'have something in his body,' meaning something like madness. In many cultures, children are expected to listen to what adults have to say, not to speak until spoken to, and not to ask questions. East African parents share with parents in other places a fear that the kids will ask questions they cannot answer. General fear of spiritual manipulation by anyone who does things differently is also a factor as is the fear that doing anything different will attract negative spiritual attention. In many East African communities creative and craft skills are passed individually from older to younger people in a gendered setting. In some cultures, craft specializations are the preserve of specific individuals, families or clans.

While colonial governments were trying to rework the cosmopole in the image of the metropole, NGOs, both faith-based and humanitarian, were also driven by the replacement agenda.

Individually and collectively, East Africans were stunned by the massive affront to all they knew. This led to secrecy and the long-standing practice of letting the foreigners go ahead with plans that could never work and watching in amusement while benefitting from the money and hardware that flowed into their hands. A culture of deliberate failure grew up as a parallel. Design was not to be negotiated as long as the foreigners were bringing money. Naturally, there was always hope that whatever the foreigners were doing would actually work and local people would benefit in one way or another.

Discussion of community stakeholder involvement in design and design education must include deliberate placement of bad, inconveniencing and hazardous design. While there is little discussion of this phenomenon in the literature on development, the author has observed it time and again in the field all over Kenya. (Pido 2018 d) Seniors claim to be training the young to 'keep on their toes' while men proclaim that 'our women know exactly how' to deal with a design challenge that should never have been there. Refusal to divert cattle from the steep, rocky path of people carrying water on their backs, failure to allocate funds to repair a pump, placement of a water tank far from the kitchen, are examples of placement of user hostile features in design for development. Some members of various communities do not identify themselves as stakeholders in making things better for the whole communities.

As tertiary education in design took hold in the late 1970s, Kenyans saw a market niche for their own design offices. These began to parallel and compete with the international advertising and

design firms. The big international agencies began to absorb Kenyan trained designers many of whom later set out on their own. The vast majority of trained designers however, was absorbed into the civil service and locally based small firms catering to a local and regional clientele. Yet, even at this writing, there is no named government office for design and no budget lines for designers anywhere within the civil service. To understand the confluence of the dysfunctional consideration of design in communities and a1dministration we must examine how it came to be taught in schools.

History of Design Education in Kenya

The focus here is on the development of education in the academic discipline of design. Throughout the 20th Century, there was a general failure of those in power to recognize Design and the Arts as infrastructural and fundamental to 'development' in Eastern Africa. Since British education emphasized sciences leading to professions in medicine, engineering and agriculture, education in East Africa was expected to follow suit. The argument was that doing as Europeans did would make our education international and recognized throughout the world, Essentially this failure was fairly universal as these subjects were equally ignored in the schooling systems of the so called 'developed' countries.

In keeping with the post-Industrial Revolution pattern of production for mass consumption, education for the masses in the colonies was located in the schooling system. 'Mass' rather than 'individualized' was the determining aesthetic; anything standardized and mass-produced was beautiful. There was a

cataclysmic switch from many teachers for each child to one teacher for many children. The mass economy meant that the school had to cater for large numbers receiving standardized curricula and being weeded out with standardized examinations. 'Up to standard' was the buzzword of that time. Indeed, pupils were dismissed from school when their conduct was deemed to be 'below standard'. There was much talk about 'standards,' even the notion of dressing up to 'standard' came to school education.

Around the 1950s schools became more widely visible, especially faith-based schools of the Catholics, Protestants and Muslims. From primary school recollections in the 1950s, Arithmetic and English were the most important subjects, Religion and Geography were second, Nature Study and Hand Work were third and least important. Design education began as a part of Hand Work, Art and Craft, and, eventually, Art and Design in the 1980s. Drawing and painting dominated the scene augmented by craft skills. The schooling system neither identified nor fostered talents or skills outside numeracy and literacy.

Primary-Leaving examinations were infamous but they determined those who entered secondary schools, technical schools or became 'out-of-school youth'. The hierarchy of subjects continued into secondary schools with Mathematics, Physics, Chemistry and Biology at the top followed by English, Geography, History, Religion and Literature and the Arts and Crafts bringing up the rear. Fine Art, Music, Drama were pastime activities intended to beef-up grades and relieve pressure from the academically more taxing subjects; they were not serious engagements. Design was

never named but was included in Fine Art. Those whose grades were reasonable but barred them from joining secondary school were admitted to technical schools where education was more technical, hands-on and aimed to produce blue-collar workers instead of creative, innovative workers. No one was formally rewarded for high levels of pictoracy, manual dexterity or spatial understanding, or musical or kinetic ability, and certainly not for coming up with new ideas or designing anything.

At some point in the history of Britain, reaching the 'peak' was the objective in every walk of life. Getting to the peak has been the principal objective in sports, education and professions everywhere. As a product of the exclusionary system that sloughs off multitudes of people at every step, those who passed the O level exams went on to higher school. Once again, the rest were tracked into technical schools or out of the system. The Arts were offered only in very few A Level schools. For those who made the cut, Fine Art continued at the tertiary at the Margaret Trowell School of Fine Art at Makerere University in Kampala. That School had separate departments for Sculpture, Painting, Ceramics and Textiles whereas the Fine Arts in Kenya are taught in a single department. The Trowell model is used at the University of Dar-es-Salaam in Tanzania and at Kyambogo University, in Uganda. (Trowell 1970) The view of Design as Fine Art and Craft is prevalent at both Kyambogo and Dar-es-Salaam though their focus is on teacher training rather than preparation for practice.

Specific design education began in earnest at the University of Nairobi, the then Royal Technical College of London University and

Nairobi University College of the University of East Africa. The first cohort of students arrived in 1968. Selby Mvusi, a South African artist was the driving force behind industrial design education at the College. When he died in a road accident in late 1967, industrial design education was left to others including architects, who imprinted their different marks on the original plan. Among them was Prof. Gregory Maloba, The first Dean of the Faculty of Architecture Design and Development. He was a product of the Margaret Trowell School who sought to emulate the design education model at the Royal College of Art (RCA). In short, Prof. Maloba believed that Design is part of Art with only minor differences. Alongside Prof Maloba and Prof Mvusi, came Terrence Hirst armed with degrees from prestigious art schools in the UK. He, too, thought differences between Art and Design was not of a kind; Terrence is best remembered for his pioneering work as the Father of Kenyan cartooning.

In 1970, Prof Nathan Shapira, from the University of California became the first official chair of the Department of Design. In his view Design is everything and everywhere, even including actions so simple as neatly arranging the contents of a desk drawer. His other view was that design is an ever-ending process, is multidisciplinary and is both engineering and art. Danish designer Kristian Vedel, was seconded from the Danish International Agency for Development (DANIDA). He saw industrial design through experience and as simplified and modular. Those were the views that he and Shapira wanted to imprint on Mvusi's original plan.

By 1972, the Department of Fine Art had hived off and moved to Kenyatta University College. The Department of Design now included the Triestian Shapira, a Dane, a German, an Israeli, a Scot, a Rumanian, a Kenyan Asian and an American. All brought unique influences and perspectives within an industrially oriented framework and design ethos of their own countries. One of the lecturers stopped short of connecting their ideas with Kenyan communities; the idea of engaging Kamba jewelers in teaching undergraduate students traditional crafting skills. The University forbade it because the Kamba jewelers lacked university degrees; the line between formally and informally trained designers was drawn firmly in the sand.

I have noted that the design profession was coming into its own in the early to mid-20th century. This was at a time when designers everywhere were riding a wave of self-serving hierarchical attitude including the idea that design talent and skills are esoteric and confined to a special few. But the design profession and design education have democratized over the decades. Design is now more concerned with environmental issues than ever before, to the benefit of all concerned. We also see Kenyan designers and design students panic when they have to think outside the proverbial 'box.' This comes as no surprise considering the complex backdrop of Kenyan design and education.

As the cradle of design education, the University of Nairobi was committed to establishing a role for design in overall national and regional development. However, it was never clear exactly what was meant by 'development.' Community engagement was never on

anybody's map. Academic authorities were unclear as to what is or isn't design. The view that design is everything made it easy for students to lose direction. 'Development' was flaunted as the reason for design education in East Africa. The question students asked was whether or not development could take place without design yet development was and is happening without professional input. With this narrowed focus on the very broad and ill-defined concept of 'development' there grew a design-blind culture that has persisted over nearly five decades. This culture has failed to address students' aspirations and has failed to engage communities both large and small.

The Stakeholders in Design and Engagement

I turn now to design practitioners as outgrowths of both formal and informal training. Efforts are being made to segregate the degree certified professionals from the rest and to accord them higher status and advantage. Practice is a leveling factor regardless of formal or informal background. This can be seen very clearly in the subfield of graphic design. Only a few years ago, the graphic designer had special knowledge and understanding and could command substantial fees. Then computer programs put the tools of graphic design into everyone's hands, and it all changed. Graphic Design – now known officially as Visual Communication Design or VISCOM, has been thoroughly democratized. Professional Kenyan designers continue to turn out ghastly graphics, but no one pays any attention. At the same time, graphic designers with little or no formal training produce masterpieces of cartoon art and other graphic forms as they dominate the profession. Whereas the fine artists had dominated the studios of advertising agencies, today's

designers are the art directors who develop and address design briefs.

Product design began in small crafts workshops in the late 1960s and took more elaborated form with government vocational rehabilitation workshops the YMCA and the private African Heritage starting in the early 1970s. The first visual communication design office was established around 1974, in Nairobi at Car and General House. An interior design office was established around 1978, in Nairobi. By 1980, there were many design offices in Nairobi, Mombasa, Kisumu and other parts of Kenya.

Community engagement was never and is not yet firmly on the map of university-educated designers. Professionals in Kenya today operate the world of big contracts and government or the private sector; along with the world of small scale and individual enterprise. Freelance designers, part timers and others form the mass of practicing designers in East Africa. They are often in the informal or Jua Kali sector and they tend to serve a specialized or localized client base. Many are housebound because of family while some are carrying forward the traditions of their communities learned from their elders. For reasons unknown, stakeholders and other people often ignore this important sector. They [the JuaKali practitioners] often lack literacy and numeracy skills and/or money to enroll in training programs. Some examples of this very widespread group are the Kisii stone carvers, Kamba basket makers and Maasai bead workers. Many cannot read technical drawings or sketches but can work only from 3 dimensional objects. They are rich in capability but are hampered by lack of training that could be delivered by

design extension services if such existed. These people are now able to access instructional and exemplary videos on YouTube, Pinterest and other websites.

I have mentioned the challenges of design faced by industry and business above. The social isolation of the mercantile and industrial sector has cost Kenya dearly as products have continually been turned out that are user hostile or dysfunctional.

To name a few, we can begin with the steel tableware made by a prominent local manufacturer. For at least 5 decades the milk jug has been dribbling milk down its side but not into the teacup. The simple solution would be to slightly curl the spout under, but this would require additional tool and add to labour costs. Packaging of fast-moving consumer goods is for the convenience of the producer, not the consumer. Reclosable packaging has been the norm in other countries since the 1950s, Kenyan packagers make sure that packets for items like bread and cereals cannot be reclosed for temporary storage. The ends of toilet paper rolls in Kenya are glued down so that the user has to struggle thus wasting at least one round of paper from each roll. The cost of these small design glitches, if multiplied by many millions, is quite enormous.

Another result of isolation is the neglect of products that imitate the shape or function of their traditional counterparts. At the Nairobi Show in 1971, the South Koreans showed a plastic split gourd but that product did not inspire any manufacturer in Kenya. It was not until 2014. That Nakumatt marketed a tabletop water container (with a tap) that replicated both the color and shape of the

***Dapi*, a traditional Luo water pot. It was only by coincidence that the Maasai community was able to find the impermeable glass Treetops orange squash bottle that mimicked their milk gourds. And only by opportunism that the Luos were able to switch from carrying their water in heavy clay pots to the much lighter and plastic Elianto cooking oil container.**

Designers and design educators are well aware that the government of an independent Kenya has always had to prioritize and utilize limited resources for maximum accomplishment. A fantasy, shared by many designers, is that Government will someday include 'Designer' as an important job title in every ministry and that county and local governments will do the same. A County Designer would be able to work with graphics, systems design, product design, environmental design, and a host of other aspects of desperately needed work at the county level. Kenyan designers like to think that Government would act if design is presented in meaningful ways. Several design graduates have been elected to parliament, but they have done little to promote design and design concepts to the State.

Within the Civil Service, graduates are often employed in 'parent' ministries; thus, engineers work in the Ministry of Works, doctors in the Ministry of Health, teachers in the Ministry of Education. Unfortunately, there is no Ministry of Design; design graduates work in many government offices without recognition of their profession by their superiors and HR departments. Voice of Kenya once employed design graduates of the University of Nairobi and similar institutions in television production. The Ministry was

reworked and is now the Ministry of Information and Communication Technology, the fate of design graduates in the new ministry is not yet clear. Designers continue to be employed at the Kenya Broadcasting Corporation, the parastatal that succeeded the Voice of Kenya. The Ministry of Information and Communication Technology is not yet the parent ministry for design professionals. Confusing design with 'fine art' and viewing it as an 'extra' rather than an essential are among the reasons why designers are often employed as illustrators or embellishers rather than for their skills in making things work well and correctly.

There are no design extension officers in any government ministry. We note that ministries such as Agriculture, Commerce and Livestock development have extension officers, but there is no extension program that would take designers to local levels to advise on packaging, recycling, placement of amenities, product design, post-harvest value addition - the list is endless. Such extension officers would-be one-way design can effectively engage with and benefit communities. They could help demonstrate the use of design, stimulate employment of trained designers and entrench interest in the field of design.

While government is usually the scapegoat of last resort in solving problems, a clear eyed and sober assessment of the present situation in Kenya must absolve government of final responsibility for shortcomings. Government has been the least informed about the role of design as the answer to many questions and challenges. The responsibility for informing Government should belong to the design educators throughout the primary secondary and tertiary

institutions. This is just beginning to happen, and not a moment too soon.

There is a vast pool of functioning and potential designers who go unrecognized even by themselves. The distinction between the formally educated and the non-school educated confounds any approaches to community engagement. University design students and their families and communities frequently ask 'what is design?' Families may be trying to understand the value the design profession for their child after graduation. The question presupposes that many Kenyans have no or only vague ideas of contemporary design and do not realize that they are 'doing design' themselves. Of course, even those who do not know that design exists are brainwashed enough to prefer acting 'modern.' If acting 'modern' fails to do the trick, the educated few would rather pretend that they know design, to show that they are educated and have little connection with Kenya's past. In general, local communities do not know that they have DESIGN in their cultures and have bought into the colonial idea that good can only come from the outside.

International agencies and bilateral aid organizations take a keen interest in development throughout Africa. They report back to their boards of directors and/or national legislatures and must prove their worth on the ground to their taxpayers/donors. All too frequently, they have to tailor their activities to fit the aspirations and understandings of their ill-informed law makers and donors. These agencies appear to be dominated by lawyers, doctors, economists and engineers but rarely if ever designers. Often, they do not imagine or believe that design has a role to play in

Development or they may believe themselves to be competent in design because of their technical training and imagination. Often the percentage of money allocated to a project or is very small at the end point because of bloated foreign personnel structures and expensive equipment with no budget space for designers.

The authors have seen and/or participated in several projects that suffered from good intentions unsupported by good design. In one massive project covering 9 districts of Rift Valley and Eastern Provinces in the early 1990s, a European bilateral aid organization funded a number of environmental health interventions. After several years they hired a Medical Economist, a Water Engineer and a Social Scientist to do an evaluation. One of the projects was the installation of Ventilated Improved Latrines without first checking local toilet habits. The result was that people walked around to the back of the latrines to relieve themselves because the 4-inch space between the floor and the bottom of the latrine door threatened privacy. Until today, we still see latrines with tall PVC pipes sticking out of their roofs in an effort to make the latrines look like VIPs. The European government agency also tried to remove all smoke from houses by encouraging local people to raise the level of their ceilings. This created additional burdens on women and the environment because more firewood was needed to keep families warm while losing the fumigative benefits of the smoke. In one community, the women asked the evaluation team to explain what actually constituted 'a good house. (Pido Shuftan and Mbugua 1994) The International Community seems to share colonial assumptions that their knowledge is superior and that they will bring the right 'fix' for local challenges that they can only assume to understand.

Before the establishment of technical universities in Kenya, tertiary academia suffered from the assumption that manual and cerebral work are mutually exclusive. You were either white collar or blue collar, you used your head OR your hands but not both. The designer was the brain and held higher status than the maker, who was only to follow instructions. These ludicrous assumptions have driven academic life and social ranking systems for several thousand years (Pido, 2018a; Pido, Khamala and Pido 2018c). The integration of formal knowledge transfer by people who have written qualifications with knowledge transferred through other means, notably hands on experience, has been anathema in Kenyan academia. The contribution of Kenyan tertiary academia to the preservation and perpetuation of 'traditional' knowledge is both paltry and pitiful. Academic arrogance has cut off tertiary level access to local knowledge and innovation thus severely limiting our understanding of how things work, can work or should work. Vast bodies of local knowledge have disappeared (Pido 2018b) because of academia's failure to engage with communities.

The authors know of no tertiary institution that actually strives to outreach into communities whether through design research or training off campus. One such project in the early 2000s was driven by a foreign development NGO and carried out halfheartedly by the leading design education institution at the time. There has been complete failure in University of Nairobi and later design education institutions to promote the Design Profession to Government as a whole, to specific ministries, to parliament and more recently to County and Regional governments.

Given that design education has been a part of formal education in Kenya, for over 50 years, we can note proudly that Kenya now boasts over thirty public universities and colleges at least 4 of which offer degree courses in Design.

Dynamics of Design and Engagement with Other Stakeholders

The bottom line of the engagement in design calculus is that all stakeholders have failed to connect with the idea of design (Margolin 1995) and with one another. Like concepts of development, 'community engagement' has not found a specific place for a number of reasons. Complacency in dealing with colonial governments and international agencies has been cited above. Educational and occupational compartmentalization and ranking have also been major contributors. Educational systems that dwell on myopic categories of acceptable knowledge and skills have contributed to occupational ranking and exclusion of creative talent from the resource pool. The system by which the literate and 'educated' are ranked higher than the illiterate and uneducated has served to exclude indigenous knowledge and those who carry and use it.

Early in the 20th century, the few who gained literacy were placed and placed themselves over and above the ones who did not participate in schooling. School teachers and government servants at least as late as the 1960s saw themselves as too good to do manual labor and socially better than those who did it. At some point, blaming colonialism, foreign religious groups, foreign governments and the like wears out, and Kenyans have to look at themselves to answer questions of lack of stakeholder engagement

in design. Who can be held responsible for complacency, snobbery, disdain of the less fortunate if not Kenyans themselves?

My conclusion is that, while all stakeholders have created the disconnects from design as a concept and a field of work, academia has to bear the greatest responsibility for failing to make an effort to sensitize other sectors due to its 'ivory tower' mentality. With the elevation in 2013 of the Kenya Polytechnic University College to university status as The Technical University of Kenya, we see a future of integrated knowledge transfer, research and innovation that will include Kenyans and foreigners from all walks of life and all cultural and socio-economic backgrounds in 'Design for the Real World.' (Papanek 1984)

References Cited

Brow
n Jean (ND) The Traditional Crafts of Kenya. Nairobi: Kenya MuseumSociety, unpublished.

Garlake, Peter (2002) Early Art and Architecture of Africa. Oxford: Oxford University Press.

Casson, Lionel, translator (1994) Periplus Maris Erythraei. Princeton: University Press

Davidson, Basil, (1974) Africa in History, New York: MacMillan

Jacobs, Alan. (1965) The Traditional Political System of the Pastoral Maasai. PhD Thesis Nuffield College, Oxford

Margolin, Victor and R. Buchanan. (1995) The Idea of Design. Cambridge Mass. MIT Press,

Marx, Karl (1867) Das Kapital. Hamburg: Verlag otto Meisner

Papanek, Victor (1984): Design for the Real World. Chicago: Academy Publishers. Completely
Revised Second Edition

Pido, Donna.
(1987) Maasai Art and Society:Age and Sex, Time and Space,Cash and Cattle. PHD T hesis, Department of Antrhopology,Columbia University University Microfilms.

1994 with C. Shuftan and J. Mbugua, Evaluation of SIDA Water and Sanitation Projects in Rift Valley and Eastern Provinces, :Naitrobi: Swedish International Development Agency

(2011) The Flashless Spirit, A paper presented to the 15th Triiennial Symposium on
African Art Los Angeles. March 2011

(2012) Kenyan Art in the Fusion Period. A lecture presented to the Goethe Institute, Nairobi, September 19

(2018a) Brain and Hand, a paper presented st the Fourth TUK Conference on Innovative Technologies for Development. February, 17, Nairobi

(2018b) The Wages of Epistemicide: Fusion, Transformation and Innovation in Kenyan Heraldry. In CAIANA, Vol 12, Buenos Aires
http://caiana.caia.org.ar/template/caiana.php?pag=default.php

(2018c) with Martin Khamala and Odoch Pido The Brain Gyre: An Inclusive, Dynamic 'Science' Paradigm. A presentation to The Kenya National Academy of Sciences for the Scientific Revival Day of Africa Celebrations, June 28th 2018 at the Nairobi Safari Club

(2018d) with Martin Khamala and Odoch Pido. Indigenous Knowledge and Identity Formation in Tom Kwanya, Joseph Kiplang'at, Dorothy Njiraine eds
Digital Technologies for Information and Knowledge Management Nairobi: The Technical University of Kenya, Nairobi

Pido, Odoch (2020) Groundswell, an Unavoidable Democracy in Oduor, Reginald M.J. Ed. Africa beyond Liberal Democracy: The Quest for Indigenous Models of Democracy for the Twenty-First Century. Unisa Press.

The Technical University of Kenya. http://tukenya.ac.ke/

Trowell, Margaret. (1970) African Design. New York: Praeger

***Prof Dr. Donna Pido** is an American Anthropologist with several decades of experience in product and graphic design as well as formative research for health education campaigns. She has designed collections for various art galleries in the US and for African Heritage in Kenya. Among Donna's credits are the period beaded ornaments worn in the Hollywood film, Out of Africa. She has mentored several successful art jewelers and has worked closely with Maasai women's groups in developing their designs. Her publications, dealing mostly with analysis of East African material culture, can be found on Academia.edu. Her experimental jewelry was featured in the Kenya Arts Diary of 2012. At present she divides her time between teaching in the Department of Design and Creative Media of the Technical University of Kenya and research on archaeological materials in the National Museum of Kenya, both in Nairobi. She is an active member of the Arts Council of the African Studies Association (US), the Kenya Quilt Guild and the Kenya Embroiderers Guild.*

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SOCIAL RANKING, SEXISM AND EMBELLISHMENT NEEDLEWORK IN EDUCATION AND THE ECONOMY

Prof Donna Pido, Technical University of Kenya

Abstract

This paper brings together a number of historical facts and trends in explaining why the things that are done by hand to decorate fiber objects of personal, and domestic and institutional use are largely ignored in higher education and, where they are recognized, are given low value and/or are associated primarily with women. The neglect and disdain heaped on women's embellishment crafts has been an entry point into a study of the complex historical, intellectual, economic and social factors that place these pursuits in a deficit position in the worlds of design and higher education.

Keywords: ***handwork, multiple intelligences, sexism, micro industries, national economy, women's work, stitching***

Introduction

We designers like to think of our discipline as all encompassing and highly eclectic in terms of the materials, tools and processes we use in achieving our intellectual and practical goals. We regularly refer to Design Methodology and the Design Perspective as points from which we can develop creative and innovative solutions to an infinite number of challenges. We can also examine the form, the positions and roles of some of our products in and within our cultures, societies and national economies.

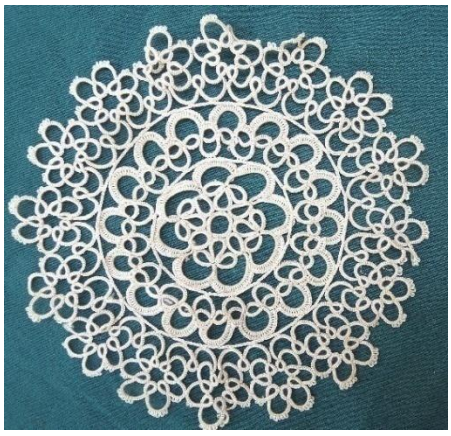
One such category of products spans most of human history and all cultures that we know of. This is the fiber or thread- based embellishment crafts that involve hand, needle and textiles either as a foundation, a component or the end product. We admire our neighbor's doily draped sitting room, the lace trim on the altar at church, the embroidered edge of a table cloth or a collar, yet we seldom ask how these beautiful things came into existence. We know instantly that a piece of lace is Belgian, the embroidery is Hungarian or the beaded handbag Maasai.

1. A Dutch or Belgian lace maker painted by Vermeer in the 1600s

2. Hungarian embroidery found in a second hand clothing market Nairobi, Private collection, DP Photo

2. A beaded skin handbag for a Maasai bride. Private collection, DP Photo

We seldom realize that the cotton doily and the Irish crochet collar were made in China, more than a century apart, A plethora of products surround us and enormously contribute to our pleasure and sense of well-being yet we don't know the systems that produce them. In short, we tend to take them for granted. Entering the 'field' in Narok in 1982, I learned that both my academic colleagues and my neighbors in Maasailand thought that the study of beadwork was frivolous. Some Maasai used the word 'stupid.' Some people in America, Europe and Kenya even thought that they had misheard me and that I was studying bees. (Kllumpp/Pido, 1987)



3. Tatted doily purchased in an art supply chain store, New Jersey, USA. The style is European, the workmanship, Chinese. Private collection. DP Photo

4. The 'Irish Crochet' collar in this image was made in China to cater to American fashion of the early 1860s The needle lace doily also made in China, century unknown but probably early 20th. Private collection, DP Photo

As designers we have, in our DNA, the analysis of the Human Products; meaning, all the material and non-material things that our species has designed and created. The products range from chipped stone tools to laser beams, from family organization to political ideologies from chunks of raw meat to chicken tikka masala. For those of us who are concerned with transmitting design understanding, skills and processes to the young, the embellishment crafts stand out not just for their ubiquity but for the socio-economic rankings and hierarchies that they enact, support and change. Let us consider some of the fiber crafts from basketry to embroidery to fabric craft to lacemaking in terms of ranking by technology, gender and socioeconomic status.

The design and execution of embellishing handwork is primarily a women's undertaking, during our 'free time.' Historically, this work has been ignored or given very low status in schooling, design education and the design profession. School-based education, in general, tends to overvalue types of intelligences and

activities that are associated with males at the expense of kinds of intelligence usually, and often falsely, associated with females. Female low self-efficacy and self-esteem in the classroom are the subject of considerable scientific literature from many countries. Colonial and post-independence governments as well as governments of the so called 'developed' countries have broadly diminished the importance of rural and urban women's craft skills by 'feminizing' them to the exclusion of male students from their pursuit even under the relatively equalized 8-4-4 system of education in Kenya. That effort to neutralize gender ascription to tasks was one reason for the widespread objection of the 8-4-4 systems. Male students who want to learn and/or design for these crafts are subject to persecution in homophobic environments, whether they are homosexual or not, because of the conflation of skills with sexuality and gender.

The Issues

The first dimension of inter- and intra-disciplinary ranking is the brain/hand dichotomy, which leads to the diminishment of importance of manual intelligence and, consequently, forms of expression that are related to manual intelligence. The second is gender segregation, which in the not-yet-distant-enough past, excluded women from and higher education up until the 19th century. Until the mid 20th century women's access was severely limited and the subjects many of us studied were given low intellectual rank. Within my memory, female students couldn't get into law or medical schools and women in domestic science were ridiculed in spite of having PhDs in chemistry. Until very recently the 'feminized' academic pursuits were ranked as second class or

nonentities in university education. We remember a Kenyan woman in the 1960s who qualified to study dairy technology but was forced into 'Domestic Science' because of her gender.

In the present, design professors are challenged by the persistent, negative differentiation between work done by brain and hand and also with false gendering. We are told that the designer has the brain and the craftsperson, who executes the design, is of lesser intelligence. Engineers and architects, while looking down on designers, will tell us that the draftsman does only what the higher ranking 'professional' tells him to do. Yet experience shows that the engineer is often unable to translate drawings and takes his draftsman to sites and does so for purposes of linking drawings to on-going construction. This is nothing new. The separation of brain from hand has been with us since ancient Egyptian times.
Consider this quote from around 2000 BCE

"Put writing in your heart that you may protect yourself from hard labor of any kind and be a magistrate of high repute. The scribe is released from manual tasks; it is he who commands … Do you not hold the scribe's palette? That is what makes the difference between you and the man who handles an oar. I have seen the metal worker at his task at the mouth of his furnace with fingers like a crocodile's. He stank worse than fish spawn. Every workman who holds a chisel suffers more than the men who hack the ground; wood is his ground and the chisel his mattock. At night when he is free he toils more than his arms can do; even at night he lights [his lamp to work by] The stone cutter seeks work in every hard stone; when he has done the great part of his labor his arms are exhausted, he is tired out … The weaver in a workshop is worse off than a woman'

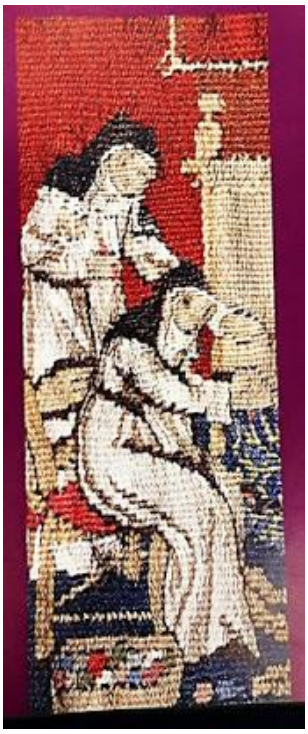
[he squats] with his knees to his belly and does not taste [fresh] air. He must give loaves to the porters to see the light. Egyptian document from the New Kingdom period **(Mayer and Prideaux, 1938).**

Apparently, to these ancient men, there was one fate even worse than being illiterate or working with one's hands: being a woman. Marriage purports to provide permanence and a firm base for women to bear and raise their children. The other part is that it forces females to become servants to their husbands as the price for protection. While gaining social endorsement and children for support later in life, women have long had to sacrifice their mobility, independence and freedom of choice. Societies have immobilized females in part by imposing embellishment crafts on them as a ticket to social acceptance through home décor and clothing. So, women are first immobilized and then kept busy with tedious slow growing projects that lend them a kind of validation. Apart from wives, nuns are a case in point, sequestered and in the service of the church for all that beautiful lace and embroidery. European nuns, for centuries have made and decorated both the under and outer garments of rich women in addition to creating all the tapestries clerical garb and table linen for their churches and to earn money for their congregations. Because they have renounced all earthly things, they can't sign their work with names so many have put little pictures of themselves making the tapestries. (Derounian, 2017)

5a, Passion Tapestry, Woven in Heilig Grab Dominican monastery in Bamberg, ca. 1500.

Bamberg: Diozesanmuseum. Bevin Butler Photo

5 b The Passion Tapestry detail



5c the Passion Taoestry Detail

There are many other dimensions of academic and occupational ranking, segregation, exclusion and value-based snobbery, among them the putative theoretical/practical, pure/applied, creative/noncreative professional/educational divides. The beauty, psycho-social status, and cultural centrality of embellishment craft work can be seen as masking its use in excusing the devaluation of women's labour, their exclusion from empowerment through economic reward and the deficit rank that women endure in human society. From a more cynical but no less demonstrable perspective we can also discern the long term exclusion of females from participation in 'intellectual' pursuits, especially those requiring literacy and the further exclusion, based on circular logic, that drives academic institutions K-PhD to devalue and exclude embellishment crafts from their curricula and research. The 'feminization' of needle and thread-based embellishments that has led to the self-imposed exclusion of males from their pursuit is a sad phenomenon carried to extremes in many societies, especially in East Africa. Very recently, we were told by a colleague in engineering that 'stitching is not technology.' A native of East Africa he apparently did not know that Lamu has been famous since the 1st century CE for its stitched boats, made by men (Casson, 1994). We don't normally find engineers devising ways to enable basket makers or crocheters to improve their productivity or to make the work environment more comfortable. Neither have we heard of economists concentrating their efforts on analysis of the household, national and global contributions of embellishment crafts to any economy. When we try to introduce the so called 'feminine' techniques and processes to mixed gender classes, the male students usually become withdrawn, uncooperative and sometimes even angry.

This is not true everywhere. In the Andean region of South America, women spin the yarns and men do the knitting. No wonder the hat below shows us a row of crouching footballers.

6. Hand knitted alpaca wool hat from La Paz, Bolivia showing a register of men subduing condors above a row of football players. Private collection DP Photo

Among the Pokot people of Kenya, men stitch beads to skin as well as women do. And in the Lamu archipelago, men of Asian, African and Swahili origin embroider fine eyelet stitch patterns on Kofias, the traditional Islamic caps. Even among the British colonizers, there has always been a tradition of brave men doing embroidery and patchwork during long months of military inactivity or out of plain gumption in spite of the social strictures against that.

7. Bakari, a master embroiderer from Faza, Kenya (DP photo)

Among the embellishment crafts normally associated with and taught to girls and women are, garment making, embroidery, patchwork, quilting, knitting, crochet and many kinds of trimming and lacemaking in which various kinds of threads, needles, bobbins, shuttles, frames and hooks are used. All of these crafts require refined dexterity, micro agility of the hands, fingers and sometimes feet and toes coordinated with hapticity and visuality. Execution of the work aside, the preparation for the deployment of all these forms of intelligence as a suite relies heavily on ideation, imagination, associational intelligence, visualization, drawing, computational and spatial measurement, coloration, principles of composition and an understanding of symbols, meanings, time allocation and that special kind of change we know as 'fashion.'

While the Digital Revolution has changed the world as we knew it up until about 1990, it is the internet that has changed the work of embellishment done by hand. The explosion of access and communication among the people everywhere who do hand embellishment work has both enabled and disseminated innovations

and exchanges. Now crafters off all kinds from China to Chile, Kamchatka to Capetown, including Europe and Australia can see, appreciate and learn how to do all the embellishment crafts known to humans. We can also do the work regardless of gender- and social class-based definitions of appropriateness. Nowadays men can, and do, stitch in the privacy of their homes without fear of bullying.

This situation is but one of many factors and spinoffs from drawing a division between hand and brain, hard labour and cushy work, high status and low, as well as gender based control over resources. Relative physical strength aside, not the least of these many factors is the well recognized contrast between men's ability to do one thing at a time and women's ability to perform multiple tasks both simultaneously and efficiently.

Bringing this phenomenon directly home to Kenya in comparison to what we know about gender differences and outside history, we can look back not too far in post independence history for an example. In Kenya for at least several decades there has been a tradition of women crocheting bright, complex mats for all the furniture in their houses. As a show of their embellishment prowess and ability to do all the housework, hold a job and raise the kids at the same time, women launder their sets of doilies and hang them out to dry on a clothesline thus showing all the neighbors that they've got it all under control. Some women have up to 15 or more sets of no fewer than a dozen pieces, all made by their own hands in their 'spare time.'

University education for women was virtually non-existent until the 1860s when Home Economics was introduced in the American Land grant Universities. There were already many girls' schools whose curricula included the standard academic subjects along with the domestic subjects. that would come to characterize the Land Grant schools. By the late 1900s, Hoe Economics, Primary Teacher Education and other 'girls majors' were still ridiculed and looked down upon in most American and other tertiary institutions. It was still considered that a woman's place is in the home and that the discipline and self-containment inculcated through the diligent pursuit of needlework would provide young women with a sedentarizing, calming set of activities that could keep them close to the hearth while producing works of much denied creativity to enhance their families, and husbands' social status. This was the life experience of my own generation and of our mothers and grandmothers.

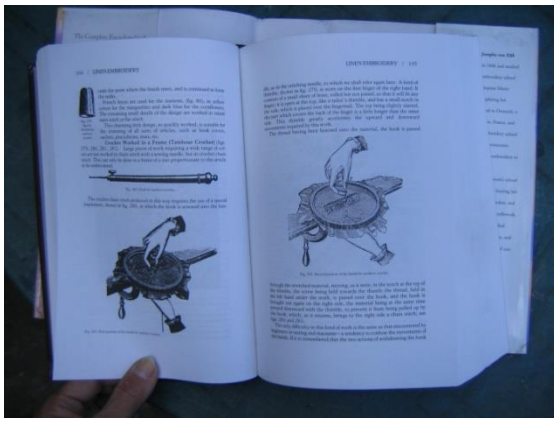
No one seems to have been thinking about anger management at that time though it became important in the late 20 the century. An often-overlooked point in consideration of women's embellishment crafts is their role in alleviation of boredom on the one hand and anger management on the other. Knitters often refer to their craft as a 'post apocalyptic survival strategy.' At least as early as the 1980s, psychotherapists were prescribing heretofore-gendered embellishment crafts for men who had anger regulation problems. The most famous of these was football star Rosey Gieer, who took up needlepoint, published a book on it and became equally if not more famous among women stitchers than male sports fans.

8. The cover of "Rosey Grier's Needlepoint for Men. 1973 The sexy look on his face was NOT for men.

The so-called Victorian Era was not characterized by an efflorescence of textile based embellishment crafts for nothing. The Industrial Revolution had reduced women's domestic workload thus enabling them to sedentarize even more than before. Handmade domestic embellishment became a status symbol for well-financed women in stable marriages. It also became the focus of girls in the form of the 'Hope Chest' a hypothetical box in which the young stitchers saved up their work in anticipation of marriage. I grew up accumulating embroidered linens for a Hope Chest that retrospectively, seems like a silly joke.

9 Fingertip Towel embroidered by The Author from a stamped pattern. 1956 DP Photo

Along with this development there was also an eruption of pattern catalogs, instructional books, and articles, and the social status gained form having 'handmade' rather than textiles produced in the wake of the Industrial Revolution. .A notable example is the comprehensive needlework guide book by Therese de Dillmont, now classic published in 1884. (Dillmont: 1884)



10. An illustration from The Encyclopedia of Needlework. By Therese de Dillmont 1884

I have looked briefly at the role of embellishment crafts at the aspirational upper end of the socioeconomic ladder in western societies but this is far less than half the picture. Throughout history the plight of orphans had been intimately linked with the need for cheap labor. Especially from the late 1600s onward, and poor orphaned and destitute children were placed in 'schools' that were little more than covers for exploitation of their labour for the benefit of the state church and entrepreneurs. By the 1800s this pattern was well developed and we have whole museum collections and records including photographs of the shunting of poor children, especially girls, into the needle trades, that were low energy, high time consuming and low paying in order to salve the consciences of

the richer classes. Many of these girls were denied access to literacy in favour of training them as low paid workers. The history of sexually transmitted diseases in Europe in the 1800s suggests that many young women combined commercial sex work and needlework in order to get by. Most of them ended up dead at a relatively young age

11. Infant Orphan Girls Learning to Sew in One of the Bristol Orphan Houses, c. 1905. Image taken from Centenary Memorial 1805-1905 (Bristol: J. Wright and Co., 1905). Copyright, and reproduced by permission, of the Bristol Central Library.

A lifetime of participant observation (from age 6) in the production of embellishment crafts including needlework and beadwork, has revealed that an occupational commitment to this type of work requires a subsistence base already in place. That means that unless the basics of food clothing and shelter, are catered for from other sources, parents, spouse family wealth, etc, an embellishment worker cannot sustain a comfortable living only on the proceeds from embellishment work. For women whose husbands can and do support them comfortably, the embellishment

crafts are an 'extra' that tells the world that the husband is a good provider. In my 1987 PhD Thesis, I mention this as an issue in the production of ornamental beadwork by Maasai women. I was looking at the transfer of cash resources from the male to the female domain by men's purchase of the beads from distant shops and bringing them home to the women who them made and sold beadwork and kept the proceeds. One observation made during my research was that, while it appeared that the women were benefitting from this arrangement, by supporting their household needs for commodities like sugar tea leaves, soap and salt, they were actually protecting the men's ownership of cattle by enabling them not to have to sell or slaughter to meet household expenses. However, as land and cattle resources have diminished in the last 4 decades, the Maasai community's reliance on women's beadwork for basic sustenance has increased to a point where some men are actually breaking the cultural taboo and are making beaded ornaments for sale. This is especially true of the Samburu community whose young males often migrate to the Coast to entertain and do business with foreign tourists. Because of the expense and complications of bringing wives, sisters and mothers all the way from Maralal to Malindi, Samburu men now also do beadwork for sale.

Another permutation on the theme of women's embellishment crafts as a supplementary income earning pursuit is the role of secrecy. A woman who can keep her lace making or beadwork hidden, can amass some money unbeknownst to the men in her life. We know a Kenyan woman who stitched tablemats to sell. When her

husband started to beat her regularly she showed him her bank statement just before kicking him out of her house.

A similar pattern persists in the entry of development organizations and workers in Africa who provide small industrial development projects in which women, in particular, are given the impression, sincerely or otherwise, that they can become financially self-sufficient through their hand needlework or with a single simple sewing machine. This is the bright side of embellishment craft brokerage, which is rampant in East and South Asia where, in many countries, women eke out a living under harsh conditions working for brokers who take no interest in their conditions. There is a gradation from the individual woman to family and community based groups who feed into this system. Some are grossly exploited while others are able to comfortably supplement their subsistence base.

At this moment in Kenya there is at least one program that sincerely purports to enable women to support themselves entirely by producing cross-stitch embroidery. We have seen their exhibit at a Kuona Trust Art Fair and have photographed both their products and testimonials. It remains to be seen how viable this new industry will be. Incarcerated women in Kenya are taught hand needlework skills without consideration of the impossibility of making a living solely with those skills. Meanwhile, incarcerated men learn carpentry, metalwork and other economically viable skills. (Awory 2021)

12. A sample of cross stitch embroidery shown at a recent Art Fair in Nairobi as a money making possibility. DP Photo

For over a century, Kenyan and foreign women have been exchanging embellishment ideas and techniques, sometimes by force but mostly through observation and admiration. There was the forceful introduction of embellishment crafts during the colonial period through various facilities including the Jeanes school. This was part of an effort to make Africans act like Europeans under the mistaken assumption that they would also think like Europeans. Though many Kenyan women could embroider and crochet tablecloths, very few knew how to knit. Sometime between late 1972 and early 1982, Kenya became a hand-knitters country as the vast majority of women learned or figured out how to create the full range on intricate patterns used by knitters in other countries. Another result of crafters' interactions in East Africa has been a hybridization of many crafts

13. A Kenyan basket called Kyondo made by a Mkamba lady from acrylic yarn in patterns that reesesmble Scandinavian knitting. Private collection, DP Photo

For the Kyondo, this began in 1978 when a Kyondo appeared in the American movie Annie Hall. For Maasai beadwork, there had been a tradition of items made only for tourists since the 1880s, Embroidery patterns had been hybridized by the 1960s as local women tried to imitate foreign patterns which were very scarce and hard to get. By the late 60s, foreign women coming to Kenya started using Khangas in their own creative ways and also trying to imitate 'African' beadwork. The cross fertilization of embellishment crafts was well underway by the time that the computer, the internet and all the craft focused internet websites developed in the final years of the 20th century up until now and going forward into the future.

In Kenya the search for a 'national dress' began at least as early as 1971 when the first design competitions were held for that purpose. Many efforts to establish a National Dress by contest or competition failed. By about 2004, the Government put considerable effort in to the National Dress designed by a team of 4 Kenyan designers. The result was excellent from a designer's perspective but it did not resonate with the public and was ignored. At about the same time, tailors began spontaneously making dresses and shirts

from Maasai shukas with beaded trimmings. These became the 'de facto' national dress alongside the jeans and T shirt ensemble.

As a spinoff of the industrial Revolution, mechanized lace making of poor quality and low cost was developed in the late 1800s. Just as motorized looms had wiped out hand weaving industries in Europe of the early 1800s, mechanized lace production destroyed the widespread handmade lace industries of northern Europe. Relics of these industries survive today in museums such as the Pit rivers Museum in Oxford England. Handmade laces survive in some European countries,, notably Belgium, France and Italy, today as expensive souvenirs. At the same time there is a thriving almost unseen industry in production of laces and lace inserts by sedentarized women who sell them to gain small supplementary incomes.

14a A tray cloth from somewhere in Western Europe, found in a second hand clothing market in Nairobi. Private collection, DP Photo. 14b Four needle lace medallions sold in a thread shop in Western Europe for insertion into decorative linens, 20th centeury. Kind gift of Heather Campbell to the author. , Nairobi, DP Photo

There is a long standing tradition of women producing small embellishment items to sell nearby their homes for small amounts of cash. Notable among these are the lace insert makers of France an

Belgium who parallel to the mainstream hand lace producing industries, make small pieces of lace that other women can then insert or attach to their own cloth work. Another embellishment craft that makes small increments of money for women is beaded flower making. We know a woman in the USs who paid for her annual trips to Europe and elsewhere through the money earned by making little pots of beaded flowers and selling them to her colleagues in the factory where she 'worked.'

The economic bottom line on women's embellishment crafts is that you have to be either rich or poor to do them. For the well off, comfortable women, embellishment crafts become a leisure activity that feeds the social capital of their families through display on their families and in their homes. For the very poor women, embellishment crafts are a way of making an additional small income whether through exploitative employment or by individualized `piece work. For women in the economic middle, these crafts can openly supplement their household economies or can be done in secret in order to circumvent other people's control of their lives and/or appropriation of their resources.

So far we have considered the social and physical need to sedentarize and sequester females for the protection of male interests. Experience has shown that relying entirely on embellishment crafts is impossible without the recruitment of additional labor to do the work. A housewife with a working husband supporting her and the family can, and they do, produce needlework or beadwork to supplement the household income or to cater for her personal choices. Money can be saved up for school

fees or home improvement. Women who need to exit from harsh environments can use their income from embellishment craft work to assist themselves. In the 1980s I observed a pattern while living in Narok town. Desperate, undernourished, barely clothed women would arrive in town to take refuge from abusive homes. They would attach themselves to one of several female beadwork contractors who travelled regularly between Narok and Nairobi. These ladies would enable their new workers to settle, get food and clothing. Within 2 months or so, the new comers would gain at least 10 kilos and would begin to smile and interact with other women and work on bringing their children from their rural homes. As the AIDS epidemic increases in some places and wanes in others, there is also a need to provide employment, full or part time that requires minimum energy output for people whose lives would be shortened by more vigorous work.

We can now also think of the need to enable both genders to avoid life in the cities in order to maintain their home bases for food production, schooling for children and distribution of resources at their local levels. Textile based embellishment crafts can enable men and women to stay close to home, work irregular hours and seasons and still earn some income provide for there families in a way that can perhaps be called a 'post-industrial mode.' Odoch Pido and I have advocated a similar model in our 2011 paper (Pido and Pido 2011) their subsistence base in in other means of support.

Summary and Conclusion

The neglect and disdain heaped on Women's embellishment crafts has been an entry point into a study of the complex historical,

intellectual, economic and social factors that place these pursuits in a deficit position in the worlds of design and higher education.

Market forces have made others commercially viable on a large scale (Image 2 mass Maasai beadwork) while others remain in the household realm.

15 American studentss in Kenya wearing their newly purchased Maasai beaded bracelets. DP Photo

A century of Western hegemony has seen the widespread acceptance of needlework skills that require cloth and machine made threads and needles. In Kenya's fused culture of the 21st Century, crafters can access and contribute to a plethora of websites that illustrate and demonstrate the intricacies of a global commitment to embellishment crafts in spite of this gender division, social ranking and refusal to recognize the intellectual components and validity of hand work, especially by women, prevents their full development at tertiary level and in general recognition.

Today's *mitumba, (second hand clothing and household textiles)* has changed the story of hand needlework by providing African women with mountains of cheap, recyclable cloth and concrete examples from many countries as a generation disposes of

its grandmothers' handwork. Likewise, embellishment designers, both professional and amateur from outside Africa, have been able to acquire African craft articles and to aspire to learn how to make them themselves. Digitization through sites such as YouTube an, Pinterest and Wiki how, has enabled global access by everyone to everyone's craft history and skills including African skills, techniques, and design, through images and demonstrations online. This new global narrative is bringing manual skills for embellishment into the foreground as surface and embellishment designers exchange and learn from one another.

In in spite of all this, gender division, social ranking and refusal to recognize the intellectual validity of handwork, especially by women, prevents their full development at tertiary level and in general recognition. While the geo-political the setting has changed drastically, we are still using models that have merits and demerits in our present situation as population increases and resources dwindle. There is a need for motivated designers to come together with producers, engineers and business planners to develop production/business and promotion models that can enable the embellishment crafts to flourish.

In changing technological setting where Virtual Reality and Augmented Reality and other new technologies distance learners ever further from the material, hand work becomes more important in maintaining contact with real materials, tools and processes. As long as we, as educators, continue to place verbal/numerical intelligence at higher rank, as long as we observe and serve the dichotomies of the hand/brain divide and the gender based

ascription of talents, capabilities and skills to either males or females but not necessarily both, we will fail to prepare a large number of agile, resilient and multi-skilled workers whose combined intelligences and skills can be validated with university degrees.

References Cited

Awory, Jayne. Analysis of Pottery Production in Rehabilitation in Women's Prisons in Kenya. PhD Thesis, Department of Design, Maseno University, 2021

Butler Bevin. Frau Bevin's Adventures in Germany. http://fraubevin.blogspot.com/ accessed Jan 1 2018

Casson, Lionel, The Periplus Maris Erythraei. Princeton: University Press, 1994

Derounian, Flora. How Nuns Changed the Workforce, From The Conversation11 September 2017 ="https://sa.bbc.co.uk/bbc/bbc/s?name=capital.story.20170908-the-extraordinary-undervalued-work-of-nuns

Dillmont Therese de Encyclopedia of Needlework. France,: Dollfus Mieg 1884

Grier, Roosevelt. Rosey Grier's Needlepoint for Men. New York: Walker and Company Jan 1, 1973

Klumpp/Pido, Donna. Maasai Art and Society: Age and Sex, Time and Space, Cash and Cattle. Phd Thesis, Anthropology Department, Columbia University Septembr, 1987

Mayer, Josephine and Tom Prideaux. Never to Die: The Egyptians in Their Own Words. New York, Viking Press 1938

Pido, Odoch and Donna Pido.'Exploring Micro Industrial Potentials in Kenya, Nairobi: Nairobi International Design Education Conference, U of Nairobi 2011

Martin Aaron Nawayo Khamala

Occupation: ***Animator, Interactive Media Systems Designer***

Nationality: ***Kenyan***

Current undertaking: ***Registering for a PhD in Interactive Media Systems: A split-site study in both the University of Manchester, UK (principle institution) and the Technical University of Kenya (partner institution).***

Qualifications: ***(2017), MA in Interactive Media Systems, Augsburg University of Applied Sciences, Germany.***

(1989), BSc in Civil Engineering, University of Nairobi

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Silo Walls – from the front line
Imperatives for integratinglearning processes in postgraduate education

Abstract

As a lecturer and member of department in a local university in Kenya, I see first-hand how part of the problem of the decline of public universities in the country, can be attributed to the prevalence of the silo mentality when developing and deliveringacademic programmes. Despite the much-touted virtues of multidisciplinary approaches that create opportunities to collaborate, we still build these programmes to encourage deep learning in isolationfrom other subjects. We habituallyfall back on the now classic precolonial,intra-disciplinary modelwhichencourages the restriction ofscope of scholarly interaction to the people active in a particular discipline.

The problem is proliferated in higher education, by a copy and paste culture, in attempts to establish offshoot programmes in descendant institutions endowed with alumni from traditional universities.The result is university programmes are still delivered as disparate courses in independent standalone departments. We see pure scientists not ready to share their learning or work practises with social scientists and business faculty who are unenthusiastic about reworking their courses to better suit those delivered in the creativearts. This is the silo wall milieu at its most destructive. Because of this practise, sharing information across programmes happens through a cumbersome processes of servicing where one department services another on written request.This mode of

operation encourages departmentsto treat their programmes as intellectual property of their own bodies of knowledge.This practise compounds the problem by casting programme silo walls in concrete making them an impediment to collaborative and interdisciplinary approaches better suited to a world of scarcity. The result is departments find it easier to simply ignore market and societal demands to upscale programmes and dismiss calls to meet students' expectations.In the long term there is little or no foundational unity amongst programmes in higher education.The consequence is the erosion of the cohesion needed to build homogeneous communities of learners aligned to industry and community needs.

Against a historic background and general introduction discussingthe origins of the silo effect, this paper examines some key issues ininterdisciplinary postgraduate curriculum development. These key issues comprise philosophical foundations, content and methods, strengths and weaknesses.The central theme of this paper questions the value of erecting silos walls in academia, and conceives future curricula, as built up academic real estate without walls. The paper outlinesthe thinking that informed the adoption of an interdisciplinary method for a Master of Technology curriculum in Design and Interactive Media. The programmeis put togetherusing people-centredand industry-guidedstrategies targeting the leaners the Technical University of Kenya is trying to serve. The overarching aim is to develop new areas of focus by taking an interdisciplinary view of the whole curriculum. By recognizing the interconnections amongst objects of learning in related fields, then by synthesizing them into unified pathways,we aptly engender collaboration and

cooperation in education with a view to solving the complex nature of today's societal and industry problems.

To solve the myriad of issuesemerging from our increasingly knowledge-based local economies,every learning process needs to be eventually integrated.

Keywords: silo mentality, silo effect, interdisciplinary, multidisciplinary, intra-disciplinary, curriculum integration, integrate, Design, Interactive Media

A Background on Contextual Influences

The development of teacher education in Kenya today can be examined and reflected from a classical epoch, through the medieval, renaissance, agrarian, industrial, precolonial, colonial and postcolonial eras. (Omachar, 2016).

The basis of the curriculum of the mediæval monastic schools by the beginning of the eleventh century was the beginning of the essence of university education. The study of seven liberal arts, as the subjects taught was what were thought suitable for the development of intellectual and moral excellence. In the renaissance there was classical education based on the Latin language in universities. There was also education through apprenticeships for those who planned to pursue a trade. Both mediæval and renaissance higher education systemswere markedly different from what we are familiar.

The educational style that defines the way todays universities are organised, with the emphasis on orderly progression and the silos of individual subjects is largely the creation of the agrarian and industrial age. These systems were understood to have first emerged in Europe in the late 18th Century in the Victorian era in what were called public schools. The characteristics of this factory model typifythe basic and higher education systems of the mid to late 20th century. They comprise, top-down management, separation from the community, emphasis on behaviour and institutional management, centralized planning, standardization and outcomes designed to meet societal needs, and efficiency in producing results.

European education systems were radically reoriented during the course of the 18th century as part of the age of the Enlightenment. A more intellectual and philosophical approach to learning that laid emphasis on the scientific method, in favour of the more interpretivist methods that tended to favour more of creative thinking. These influences impacted on the colonial and postcolonial modern education curriculums.

In a comparative study of four African countries, Woolman (2001) explained how before and after independence, a number of African intellectuals engaged in critical evaluation of the goals and practice of education. Their thoughts regarded contemporary education as most effective when it integrated the values and strengths of traditional culture with the knowledge and skills required by modern life. With few exceptions, if any, traditional educational practices in precolonial African societies were predominantly utilitarian

(Adeyemi, Adeyinka, 2002). It was an imperative of colonial masters, to replace indigenous ways of learning with systems closely aligned to the values espoused in the West. The goal at the time was to indoctrinate rather than to educate through scholarly inquiry. This is the backstory of many of the content's educational systems.Cultures and societies are dynamic, not fixed in one posture (KTakayama, A Sriprakash, R Connell, 2016).Precolonial societies were not silos, but interacted with each other over long periods of time, absorbed outside influences, and had a shared existence.

In modern times we find subjects in curricula within our education systems sandwichedinside walled-garden silos.

An Introduction to the Cocktail of Disciplines

This paper will discuss the relevance of Design and Interactive Media studies in postgraduate education. By Design and Interactive Media studies, I refer to the new interdisciplinary field amongst Designers, Computer Scientists, and Cultural Anthropologists concerned with the collective and systematic execution of all three practices. Thisnew field has emerged as an extension from similar interests and problems in these respective disciplines. In Design, it was observed that the processes governing user interaction cannot be properly accounted for in terms of the frameworks of Design principles alone. Art and Sociology have traditionally contributed to the digital content creation and user experience analysis of Interactive media systems. More recently however, Mathematics, Psychology and Artificial Intelligence have also become interested in the processes underlying comprehension of interactive environments. Sociology has made a great contribution to the study

of the structures and strategies of social networks, whereas anthropology has a tradition of the study of myths, folktales, riddles and the interpretation of cultural paradigms.

Mass communication, a subject shared with social psychology, is crucially paying attention to processes of belief, opinion and attitude formation including change in communicative contexts. It involves the important analysis of audio, visual and audio-visual media in relation to social groups.

While, this cocktail of disciplines is by no means exhaustive.The meaningful practice and study of interactive media systems requires the subject areato draw from multiple disciplines to create a study path that give learners the requisite cognitive and practical knowledge to solve critical problems facing 21st century communities and organizations. To apply the study requires an understanding of the Design ideation and execution, scientific functionality and experimentation as well as user interaction and their communicative contexts.

In order to appreciate the specificity of constructs and concepts as they are studied more exclusively in theseconvergent disciplines, a more general understanding of interactive media systems is necessary. In this paper, then, I would like to discuss a number of points where such an approach can provide useful insights to higher education. I will limit myself to institutional education in technical universities. The paper systematically deconstructs the nature of the problem obstructing the development and implementation of interdisciplinary approaches to education and how such problems

influence learning processes. Secondly, the paper attempts to suggest probable solution to the acquisition of interdisciplinary knowledge and skills, through a systematic review of the philosophy, rationale, needs, justification and goals of a Masters in Technology curriculum for Design and Interactive Media. Finally, we will look at expectations and future impact of trans-disciplines in higher education.

Although I will assume that serious insight into the nature of a postgraduate trans-discipline study might provide some useful suggestions for applications in the higher educational practice in general, I do not want to claim it will solve important social and workplace problems right away. I would like to avoid such an overly optimistic approach. I only state that subjects are currently taught, predominantly in isolation of each other, or at best, with weak connections to one anotherestablished through cross-curricular collaboration. This is the silo structure that is pervasive in academia and was built for specialization and territorial ownership. These silo walls are thick and inhibit meaningful, innovative and relevant learning.

These views on interdependent and connected rather than as individual and isolated subjects and environments are proffered from the perspective of a practisingDesign and Interactive Media specialist interested in education, and not from the point of view of a professional educationist.

The Dual Nature of the Problem

The kind of education we need begins with the recognition that the crisis of global ecology [and human resource] is first and foremost a crisis of values, ideas, perspectives, and knowledge, which makes it a crisis of education, not one in education (Orr 1994, p. 5). Higher education in its presently constituted form, appears ill prepared to produce human resource capable of solving the complexity of problems we find today at industry and community level.The teaching aims of higher education, remainentrenchedin a silo mentality that resultsin a two-fold problem.The development of curriculums on one hand constrainslearning tocore subject areaswithin departments and on the other confines teachers and students to think along the narrow limitations of their fields.

Public universities in Kenya conventionally organise the frameworks of core knowledge and competencies according to levels of expertise as outlined in Bloom's taxonomy of educational objectives(Bloom et al., 1994; Gronlund, 1991; Krathwohl et al., 1956)comprising knowledge-based, skills-based, and affective goals. Thesecapabilitiesare taught within the silos of different subjects. These frameworksare studied and applied as specialized skillsets that draw from core subject areas.A closer look at the demands of an increasingly global society and workplace, would suggest otherwise. Addressing a gathering, Subramaniam Ramadorai, adviser to the Prime Minister of India, explained at a lecture, how today's jobs require interdisciplinary skills and businesses are realising that the best innovation happens not when a bunch of scientists come together but when people from business, science, [mathematics,] humanities, design and art come together (Ramadorai, 2016). The

same can be said of study programmes and departmentswhose courses can be best delivered through a cross fertilization or better still, integration with related subject material. There is a growing realisation within the African content, on the need to break down silo walls between subjects and programmes inhigher education.

There is a tendency for university faculty to suffer from what has been called "the silo effect," which we define as the effect encompassing the larger human condition of the silo mentality, which includes a predisposition away from sharing information within an entity or with outside entities (Crow, 2009). This occurs when lecturers become isolated in their own little part of their academic neighbourhood and consequently experience minimal subject specific interaction with colleagues. Confined within silo walls, Africa's institutions of higher education have struggled to keep pace with market demands to educate for tomorrow's workforce, citizenry and life. Higher education curricula need to vigorously challenge students to critically appraise some of these emergent industry and societal realities:

i. ***The workplace is constrained with a scarcity of resources.***

ii. ***The job market can assimilate all graduates from the education system.***

iii. ***Technology will solve most of humanity's problems.***

iv. ***All individual and social needs can be met through financial and material means.***

v. ***Individual success is separate from the well-being of communities, cultures, and environment.***

Contributing factors to the problem

Several structural aspects of current institutional systems contribute to the problem. These include limited interactions amongst colleagues across academic boundaries, disparate curricula and educational strategies, lack of integrated technologies and dearth of policies for the most complex and interdependent issues with which society must deal. These issues obstruct sharing of information across disciplinary boundaries. Higher education has unique academic freedom and the critical mass and diversity of skills to develop new ideas, to comment on society and its challenges, and to engage in bold experimentation in sustainable knowledge practises. Local institutions however remain unenthusiasticabout risk and slow to change.Meadows (1997) suggested the most imperative change for institutional transformation is a deep seated cultural shift.

With few exception, this is the situation in which we find local academic institutions in today. At the heart of the issue is the reluctance to accept change as inevitable. Teaching staff seldom accept even the simplest and most obvious truth if it would oblige them to admit the falsity of conclusions which they have delighted in explaining to colleagues, which they have proudly taught others, and which they have woven, thread by thread, into the fabric of their lives (Bridges 2001, p. 17). The silos of higher education are organized into highly specialized areas of knowledge and traditional disciplines. Designing aninterdisciplinary learning environment requires a paradigm shift toward a systemic perspective emphasizing collaboration and cooperation. Much of departmental practices and teachings stress upon individual learning and

competition, resulting in professionals who are ill prepared for cooperative efforts. The result is learning that is fragmented, and facultyend up responding to the long-established attitudesthat pander to the whims of central management or become subservient to the demands of research.Operational influences and factors relating to course management, systematically disincentivise scholars from extending their work into other disciplines or inviting interdisciplinary collaboration.This impacts adversely on students who graduate with aningrained silo mentality and struggle later in delivering on the demands of the modern workplace.

The Walls Barricading Learning Programmes

The inability in higher education of public universities to adapt meaningfully to change, can be attributed in part to the prevalence of a silo mentality barricading departmental programmes. Built into these programmes are silo walls that encourage deep learning in isolation rather than addressing multidisciplinary problems and ideas in collaboration. Theydraw from a traditional precolonial, factory educationalmodel.

There exists an observablecopy and paste mind-set from University of Nairobi (UoN) or Kenyatta University (KU) to establishing new programmes. Descendant institutions of higher learning, endowed with alumni from UoN and KU, in an attempt to establish offshoot programmes, copied their strategies, structures, and programme methods – structures, which are themselves a carryover from colonial times. It works in well-funded environments that don't facethe constraints of scarcity that are the reality most universities find themselves in today.

University programmes tend to be delivered as disparate courses in independent departments. We see pure scientists not ready to share their learning or work practises with social scientists and business faculty who are ill prepared to rework their courses in line with those delivered by faculty in the creative arts. This is the silo effect at its most destructive. Because of this mentality individual disciplinestend to treat their body of knowledge as their own intellectual property. Sharing information across programmes happens through cumbersome processes of cross fertilisation where one department services another and on written request.This model reinforces the walls of programme silos and becomes an impediment to collaborative and interdisciplinary approaches better suited to a world of scarcity. The result is departments find it easier to simply ignore market demands to upscale programmes and dismiss calls to meet students' expectations. In the long term there is little or no foundational unity across departmental programmes. The consequence is the erosion of the cohesion needed to build homogeneous communities of learners aligned to industry.

Trends Dramatically Changing Work And Workplaces

Imagine someone going to sleep in 1960 and waking up to a work day in 2018. How different would their work life be today, compared to what it was back then? Trends dramatically changing work and workplaces include,the prevalent distribution of organizations, the widespread availability of social collaboration technologies, the shortage of knowledge workers, the demand for more work flexibility and pressure for more sustainable workstyles. These trends call for workplaces that are not shackled within disciplinary

constraints but rather, are spontaneous, dynamic and multiplicit. Industry further demands that students are prepared for current and unimagined economic, social and technological challenges at places of work.

To meet market demands and students' expectations, it is necessary to implement learning processes grounded in industry-focused curricula and centred on design systems that respond to social needs and appropriate technology. Such a study should engage students in an environment of rich and contrasting cultural perspectives, multiple intellectual disciplines and diverse learning styles. To meet the complex needs of the workplace, it helps when approaches to learning are participatory and delivered in settings where lateral thinking is rewarded, collaboration is celebrated, and failure is understood to be an essential to success. To remain relevant, higher education programmes must increasingly harness knowledge from a cocktail of related disciplines with the goal of addressing social needs and improving livelihoods.

The need for multidisciplinary programmes, has been in the domain of academic discourse for some time now. And there exists sizeable consensus for change. The discussion needs to shift to examine the practical toolsetto providing faculty with a clear passage to accomplishing the goal of partial or complete dissolution of academic silo walls.

The Hero

There is a growing consensus that new approaches to curriculum development must accommodate the characteristics of today's

students, bemore inclusive and address twenty-first century interdisciplinary themes (Carneiro, 2007).

Perkins endorses the practise of teaching of 'thinking skills' as a "meta-curriculum" interwoven with traditional core subjects'. Tucker and Codding of the US-based National Center on Education and the Economy (1998) encourage the adoption of a thinking curriculum (Scott, 2015, p. 3). They emphasise both an in-depth approach to knowledge acquisition in the subject area coupled with an ability to apply understanding to solve complex, real-world problems that students would face in the workplace and life.

The common features of these models highlight are the building of core knowledge and skills through multidisciplinary approaches. A curriculum based on these learning methods blended with more direct forms of sharing across fields is necessary to adequately arm students with the right capacity.

Building new programmes by integrating two or more fields seems a logical next step.

This paper reviews one approach to building courses without silos. It examines the thinking that informed the adoption of interdisciplinary methods for a Master'sdegree programme in Design and Interactive Media. The programmes syllabus is put together using purposive strategies targeting a people-centred, technology-driven, local Kenyan market the department of Design and Creative Media at the Technical University of Kenya is trying to serve. The overarching aim is to develop new areas of focus by taking a multilateral view of the whole curriculum. The programme is

constituted along the lines of an academic multilateralism in which an alliance between the Design and Computer Science departments alongside the study of cultural Anthropology is formed to advance common goals. Integrating these subjects gives students the opportunity to learn from even broader spectrums thus developing deeper perceptions of knowledge.The importance of interdepartmental and inter-subject communication is strongly encouraged amongst lecturers to engender collaboration and teamwork with a view to accomplishing the programme's goal of industry inclusivity.Structured in this way, the programme is better able to focus on practical application that meets the demands of the regional and global design industry. At the same time, a more diverse learning environment well positioned to embrace dynamic learning approaches that meet individual student needs. This affords students' realisticinsights into the rationale behind the problem solving process.

The Super Hero

What makes the MTDIM programme uniquely placed to educate learners to solve problems is that they are taught and encouraged to demonstrate capacity for deploying ideas in real-life, multidisciplinary situations of varying degrees of complexity.Teaching modes include seminars, roundtable round table discussions and workshop production, are geared toward raising conceptual understanding and practical application of technology across the social and pure sciences as well as the arts.

Industry demands that students are prepared for current and unimagined economic, social and technological challenges in the workplace. There is therefore a need to give students at

postgraduate level, the opportunity to participate in research and to work collaboratively on practical projects and problems while developing true mastery of knowledge. A contextual learning approach enables students to understand early on the societal impact of the discipline and what it means to be a Designer. This educational requirement needs close collaboration with industry practitioners on developing innovative curricula, flexible programming methods, open standards and new tools to advance the field.

How students learn matters to employers because it shapes how they think and what they do at work. The masters programme incorporates collaborative, experiential learning styles into its courses. This way core curricula can be implemented to produce graduates who can think for themselves and integrate into fast-paced work environments.

The programme considers the Design of both the product and the assembly system that will be used in production and implementation. The study seeks to build competencies in constructing the processes that emerge when deploying artefacts and digital archetypes for market consumption. It presents opportunities for anyone desiring to undertake a graduate education by studio or field research project. The study provides opportunities for students to enter industry directly or to advance to the doctorate of technology study level.

The programme also provides openings for tailor-made studies, especially in fields such as engineering, culture, development and

education which are essential but, to date, are outside the well-travelled paths of the Design practise. The Master of Technology in Design and Interactive Media takes into account the academic rigour that is predicated on applied research, to extend boundaries of knowledge, and address unmet needs. It strives to address local, national, regional and international challenges while laying emphasis on the interdisciplinary, collaborative concerns for the disadvantaged as well as the national development goals.

What the battle will look like

What if higher education were to take a leadership role, as it did in the space race and the war on cancer, in preparing students and providing the information and knowledge to achieve a just and sustainable society? What would higher education look like? The education of all professionals would reflect a new approach to learning and practice. A college or university would operate as a fully integrated community that models social and environmental sustainability itself and in its interdependence with the local, regional, and global communities. In many cases, we think of teaching, research, operations, and relations with local communities as separate activities; they are not (see figure 1). Because students learn from everything around them, these activities form a complex web of experience and learning. All parts of the university system are critical to achieving a transformative change that can only occur by connectinghead, heart, and hand. "However well-intentioned, formal education cannot compete with the larger educational effects of highways, shopping malls, supermarkets, urban sprawl, factory farms, agribusiness, huge utilities, multinational corporations,

television and non-stop advertising that teaches dominance, speed, accumulation and self-indulgent individualism" (Orr 2002, p. 31).

Expectations and planning for the future

To graduate students who can overcome this larger, pervasive form of learning, the educational experience of graduates must reflect an intimate connection among curriculum and (1) research; (2) understanding and reducing any negative ecological and social footprint of the institution; and (3) working to improve local and regional communities so that they are healthier, more socially vibrant and stable, economically secure, and environmentally sustainable. Just imagine if, in this millennium, the educational experience of all students were aligned with the principles of sustainability. To achieve this, the content of learning will require interdisciplinary systems thinking, dynamics, and analysis for all majors, disciplines, and professional degrees. This kind of thinking is critical to addressing environmentally sustainable action on local, regional, and global proportions over short, medium, and intergenerational time scales. Education would have the same "lateral rigor" across, as the "vertical rigor" within, each discipline. Compartmentalized knowledge without connection to larger system interactions results in viewing many interdependent challenges as separate, hierarchical, andcompetitive. The net results are often unintended narrow, ineffective solutions, or worse, can be harmful to our communities and environment over time.

The content of education will include ways to preserve and restore cultural and biological diversity, both of which are critical to a sustainable future. This will mean learning how to live off nature's

interest, not its capital (e.g., practicing sustainable agriculture, fishing, forestry). The context of learning will change to make human/environment interdependence, values, and ethics a seamless and central part of teaching of all the disciplines, rather than isolated as a special course or module in programs for specialists. All students will understand that we are an integral part of nature. They will understand the ecological services that are critical for human existence and how to make the ecological and social footprint of human activity visible and as benign as possible (Chambers, Simmons, and Wackernagel 2000; Ryan and Durning 1997). Environmental specialists are necessary but not sufficient. Understanding how to create a just and sustainable society must be a fundamental principle in all education.

The process of education will emphasize active, experiential, inquiry-based learning and real-world problem solving on the campus and in the larger community. It is widely known that for long-term retention of knowledge, skills, and values, we retain 80 percent of what we do and only 10 to 20 percent of what we hear or read. For example, as part of the curriculum, the learning experience for students would include working on actual, real-world problems facing their campus, community, government, and industry. The process would also increase group work and learning so graduates will be able to collaborate effectively on complex problems as future managers and leaders.

Finally, the learning and benefit to society of higher education forming partnerships with local and regional communities to help make them socially vibrant, economically secure, and

environmentally sustainable will be a crucial part of successful higher education. Colleges and universities have an obligation to support local and regional communities, making every action lead to community improvement. Higher education institutions are anchor institutions for economic development in most of their communities, especially now that the private sector moves facilities, capital, and jobs frequently as mergers, acquisitions, and globalization become the norm for corporations.

A well developed curriculum should be timeless, able to supporting learners beyond the university context, guarantee mobility between contexts and throughout an individual's entire work life. Existing curricula should be restructured to make them capable of adapting to the time incorporating new methods, tools and process from related subject areas.

Call for action

The issue is not the ability of higher education to take on this challenge; it is the will and the time frame for doing so. Most of the world's major international governmental, scientific, and nongovernmental institutions, as well as many business organizations, agree that the changes needed in individual and collective values and action must occur within the next one to two decades. After all, a child in kindergarten today will graduate from college in 2020. If higher education does not lead the sustainability effort in society, who will?

Albert Einstein, purported to have said, "The significant problems we facecannot be solved at the same level of thinking we usedwhen we created them" (Calaprice 2000, p. 317).

The most successful changes are those in which the formal curriculum is an integral part of the other three functions of higher education. Most are driven by faculty and student pressure, but an increasing number should be driven by academic administrators and management:

i. ***Environmental and sustainability literacy.***

ii. ***Curriculum incorporating environmentally sustainable design on campuses.***

iii. ***Curriculum involving improvement in local communities.***

References

i. ***Bloom, B. S., Englehart, M. D., Furst, E. J., Hill, W. H., & Krathwohl, D. R. (1956). The Taxonomy of educational objectives, handbook I: The Cognitive domain. New York: David McKay Co., Inc.***

ii. ***Krathwohl, D.R., Bloom, B.S., & Masia, B.B. (1964). Taxonomy of educational objectives, the classification of educational goals, handbook II: Affective domain. New York: David McKay Co., Inc.***

iii. ***Orr, D. W. 2002. The Nature of Design: Ecology, Culture, and Human Intention. New York: Oxford University Press.***

iv. ***Orr, D. W. 1994. Earth in Mind: On Education, Environment, and the Human Prospect. Washington, D.C. Island Press.***

v. ***C. L. Scott (Nov, 2015), The Futures of Learning 2 - What Kind of Learning for the 21st Century? UNESCO***

vi. ***M. Crow 2009, University Task Force Deepens Academic Involvement in ERP System, Kansas State University, USA***

vii. ***B.S.Omachar, 2016, History of Education: A Reflection on the Role of Educational Foundations in Programmes of Teacher Preparation, Moi University***

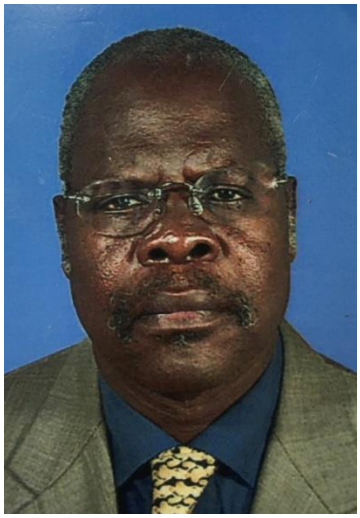
viii. ***M B. Adeyemi, A. A. Adeyinka, 2002, Some Key Issues in African Traditional Education, McgillJournal of Education, Vol. 37 N° 2 Spring.***

Karani George Washington

g.washie@gmail.com +254 73 5529450

Karani George Washington is a professional Interior Designer with 16 Years' Experience. He has been instrumental in championing the design industry and profession regulation and codes of conduct. Karani is the Founding President and Chairman of the Interior Designers Association of Kenya (IDAK), an organization that has brought together interior designers in Kenya and related professions. He is also a member of the steering committee that is working on the Built Environment PractitionersBill 2020. With his skills, he has a great passion to maximize student learning opportunities by integrating multidisciplinary teamwork as a learning tool in Kenya and Africa at large. He is currently an Assistant Lecturer at The Technical University of Kenya having taught in other design institutions in Kenya. Karani is a champion for innovation and research in the design industry in Kenya amongst other activities geared towards advancing the Universal Design agenda as a major economy booster in Kenya.He advocates for an all-inclusive environment with a special interest on Persons with Disabilities(PWDs). Karani has played a fundamental role in advancing the interior design role in the new economy having

served as the Chief Judge during the Ideal Interiors Expo and was instrumental on giving expertise knowledge on Ideal Interiors TV Show. He has featured on a number of local and international TV stations including Design TV, KTN, NTV, CNBCetc. He is currently the CEO, Design Television Ltd, a 24 hour free to air channel focusing on design. Karani is a workplace design strategist and expert bringing in new trends in the workplace.He believes today's workplace is more than a workspace. That's where we spend our lives and get our livelihood. Utmost care and concentration needs to be taken in the design of these spaces



JP Odoch Pido

Odoch Pido is a design educator and professional designer. He is an Associate Professor of Design at the Department of Design and Creative Media, the Technical University of Kenya. He has served on numerous administrative positions, boards and committees, setting curricula and judging Kenyan art and design projects and competitions. He has been a strong force in the preparation and development of more than five generations of Kenyan designers as they make their first halting steps and then flourish as professionals. His many professional credits include exhibition designs, graphic design and product development.

Odoch's many publications include papers and chapters in books, conference presentations and journal articles focusing on the deep analysis of culture in relation to design, emerging trends in cultural expression, health and development. He has concentrated on issues in design education but the closest to his heart has been alternative communication techniques for controlling HIV-AIDS, especially for orphans and vulnerable children in rural Kenya. Together with other scholars he is examining groundswell as a cultural revolution in weddings and connecting African thought system with mainstream philosophy, design and related disciplines.

Odoch's photography of abstract forms in nature is his way of expressing his sensitive vision by focusing on small scale natural beauty that might otherwise go unnoticed.

***Prof Dr. Donna Pido** is an American Anthropologist with several decades of experience in product and graphic design as well as formative research for health education campaigns. She has designed collections for various art galleries in the US and for African Heritage in Kenya. Among Donna's credits are the period beaded ornaments worn in the Hollywood film, Out of Africa. She has mentored several successful art jewelers and has worked closely with Maasai women's groups in developing their designs. Her publications, dealing mostly with analysis of East African material culture, can be found on Academia.edu. Her experimental jewelry was featured in the Kenya Arts Diary of 2012. At present she divides her time between teaching in the Department of Design and Creative Media of the Technical University of Kenya and research on archaeological materials in the National Museum of Kenya, both in Nairobi. She is an active member of the Arts Council of the African Studies Association (US), the Kenya Quilt Guild and the Kenya Embroiderers Guild.*

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An Analysis of Legal and Institutional Design for Sustainable Urban Public Transport Systems and Accessibility Standards in Kenya: A Case of Nairobi City

George Washington. Karani[1], Prof. Odoch Pido [2], Ph.D. Prof Dr. Donna Pido, Ph. D [3].
[1]g.washie@gmail.com;[2]odochpido@gmail.com;
[3] donnapidokenya@gmail.com

Abstract

In recent years, there have been efforts at enhancing the legal and institutional framework to redesign transport and settlement form for the provision of access to people, goods, services, and information in cities. The more efficient this access, the greater the economic benefits through economies of scale, agglomeration effects and networking advantages. This paper discusses the concept of sustainable urban planning and the extent to which institutional framework/designs guide urban public transport and accessibility. Along with the effectiveness of existing legal and institutional design, this paper examines challenges and prospects of integrating universal design into urban planning and development for accessibility for Persons with Disabilities in Nairobi. This article provides guidance for applying various types of accessibility analysis in transport planning. The study is an effort to help policy makers understand the recommendation and the importance of strong legal and institutional frameworks that guide urban planning policies.

Keywords-Legal framework, Institutional Framework, capacity building, Universal Design; Disability; Accessibility; Social inclusion; Barriers; Awareness; Public transportation; Urban planning.

Introduction

Public transportation is key to socio-economic development of any nation. It facilitates accessibility and enhances people's livelihoods (Mupfumira & Wirjodirdjo, 2015). Moreover, it is now clear that a well-performing public transportation sustains economic prosperity. In other words, a poorly performing transportation undermines economic prosperity, which seems to be the case in Kenya and other developing countries. Rapid and poorly planned urbanization in developing countries reduces the efficacy of public transportation contributing to congestion, movement delays, high travel costs, and construction of holding bays. Governments have attempted to wrestle with poor public transportation. Such attempts include deregulation, liberalization and focus on sustainability (Dirgahavi and Nakumura 2102). Other efforts are introduction of commuter omnibuses in Harare (Maunder & Mbara 1995), interrogation of policies (Kodero 2005) and investment (Musakwa and Gumbo 2017). The discourse is towards transport infrastructure investments that facilitate the attainment of the so-called 'smart city' and 'smart mobility' status. 'Smart' is nowadays the panacea for all public transport problems that, among others, include traffic congestion and unreliability.

Universal design is the focus of this article and is the main problem in Nairobi City where we conducted the study. In Nairobi, people use buses and trains to get to work or to access facilities and

services; only a few people go to work or their businesses in private instead of public transport vehicles. The busses and trains do not seamlessly connect with each other and passengers walk long distances to and from public transport termini. Commuters often come face to face with and persevere pickpockets, muggers, rain, darkness, rough roads or no sidewalks. Most important, public transport is not inclusive; the system of transport does not take people with disabilities into account. The lack of universal design in public transport creates inconvenience and great difficulties for the elderly, impaired and disabled, especially those in wheelchairs. The elderly or persons with disability who dare to access Nairobi Central Business District (CBD) pay a big price. Achieving more convenience and easier public movement transfers at connection points is needed to achieve overall public transportation that everyone can use smoothly.

One of the World Bank (2013) reports indicates that most cities have difficulties in planning and managing the development of their urban transport systems. Overlooking inclusivity is a reason for such difficulties. In addition to overlooking critical considerations, planners hardly put in place sound legal and regulatory frameworks, planning is provincial or local instead national. Yet establishing favourable conditions for addressing existing transport problems requires a national framework that would create pre-requisites for sustainable development of urban transport systems. Preceding submission explain why Nairobi urban public transport does not meet the growing demands for mobility. It can be argued that the Nairobi urban transport system actually impedes the growth of the urban economy.

Discussion of field and archival findings

Whereas gaining access is the ultimate goal in designing public transport, Nairobi houses many examples of 'access-denied'. No matter differences in our views of access, mobility, quality,

affordability of options, connectivity, mobility substitutes, and land use patterns can and often frustrate such a goal. Poor planning denies us access when cannot comfortably move from one place to another, afford transport, connect with other forms of transport and operate in a poorly planned land use pattern. At times planning overlooks and undervalues some of these factors and perspectives.

Good land use planning can expand the scope of potential solutions to transport problems (Litman, 2017). This happens when it involves trade-offs between different forms of accessibility. For example, road design features that maximize motor vehicle traffic speeds may reduce active transport (walking and cycling) accessibility, and transit accessibility since most transit trips include walking and cycling links. Locations convenient for automobile access, such as along urban fringes where parking is abundant and inexpensive, tend to be difficult to access by other modes of transport. Central locations that are easier to access by walking, cycling and public transit tend to have lower traffic speeds, more congestion and parking that is more expensive.

More often than not, experts who evaluate the performance of public transportation ignore accessibility. Instead, they tend to evaluate transport system performance based on motor vehicle travel conditions, especially roadway level-of-service, traffic speeds and vehicle operating costs to the neglect of other accessibility factors. The style of evaluation favours mobility over accessibility and automobile transport over walking, cycling and other modes of transportation. The socioeconomic class of the urban experts who make decisions on but do not use public transportation tend to make

them inexperienced and biased against public transport. Many of these planning biases are subtle and technical, resulting from the statistical parameters used to measure travel demands, the selection of performance indicators, and the formulas used to allocate resources.

One sees a need for new planning paradigms, to be used in Kenya and other developing countries. The designs of the new planning paradigms require more comprehensive accessibility analysis. Our ability to evaluate accessibility is improving as transportation and land use planners develop better tools for quantifying accessibility impacts, including multi-modal level-of-service indicators, and models which measure the travel distances, time and costs required by various types of transport system users to access various types of places, services and activities. However, accessibility-based planning techniques are still new and practitioners are still learning how to apply them to specific decisions. There is a need for designers to work alongside the engineers, architects and planners in developing use friendly systems. Comprehensive accessibility analysis therefore requires creativity and judgment to incorporate new accessibility factors. It also cries out for qualitative tools of data gathering, analysis and evaluation. Numbers yield false clarity. We are burdened with strictly quantitative analyses that cannot tell planners the full story.

The UN 'Declaration of the Rights of Disabled Persons' states that disabled persons and their families, irrespective of their race, colour, sex, language, religion, political opinion, national or social origin, and state of wealth, should be respected in their human dignity.

They should share the same fundamental rights as their fellow and able-bodied citizens. This means that persons having any sort of impairment have the right to a normal life and are entitled to the necessary support in order to enable them to be as self-reliant as possible. They have the right to special education, medical assistance and rehabilitation in order to develop their abilities and to promote their social integration. They also have the right to have their special needs taken into consideration at all stages of the design process (Agarwal, 2009). There is a great disparity of knowledge, resources, and practical assistance between developed countries, Kenya and fellow countries in development (Jacobs, 2003).

City planning standards need to reflect extensive research on and clear understanding of accessible, barrier-free environments and should include stakeholders as designers, architects, doctors, sociologists and historians. According to Kadir and Jamaludin (2013), designers should go beyond existing accessibility regulations, standards and guidelines, and incorporate the principles of 'universal design' that benefit people of all ages and abilities. Bade (2011) emphasizes that designs are now expected to reflect equity and context and to balance pedestrian and vehicular use. Indeed, design and layout of buildings as well as roads have dictated accessibility and mobility within the Nairobi urban environment. Yet both design and layout, in their separate ways, have created unsafety, undermined pedestrian confidence and curtailed movement and travel choices amongst disadvantaged groups. In Nairobi, benchmarking of accessibility does not reflect everyday

journeys and trips taken or desired, and the perceptual barriers felt by many people. We need to change.

In practice, standards in accessible design tend to isolate particular elements such as the design of building features and their approaches (Disability Discrimination Act – DDA, 1995) not if and how the user actually reached the destination itself, or whether transport is integrated with service delivery, e.g. opening times. Official benchmarks classify a service or activity as 'accessible' if we can reach it at reasonable costs, in reasonable time, and with reasonable ease. We do not, however, define and use 'reasonable' in DDA terms and context; we prefer to define and use it in the context of active users, especially those who, with this value judgment, decided by the provider (e.g. facility or transport operator) not the user, let alone those most excluded from travel and transport. Access guidance arising from the DDA legislation takes up less than one and a half pages out of over 100 (Ratcliff, 2007), with a focus on building, workplace and vehicular access.

According to Abiero-Gariy (2006), public transport plays a major role in facilitating office-type of work because a majority of the office based population do not own private automobiles. However, its role in facilitating work and the overall pattern of development is greatly reduced because the following reasons. One, roads are not designed to slow down traffic flow. Traffic often come to a standstill when it rains. Two, there is little courtesy on the road; drivers do not respect pedestrian and other drivers' rights of way. The problem is built into the way drivers are trained in Kenya. Three, owners and managers do not maintain their vehicles in good working conditions.

Thus poor maintenance goes to make roads unsafe. Overall, the buses do not and cannot run according to schedule. Numerous potholes on highways and feeder roads indicate poor maintenance by government leading to inefficient service (Abiero-Gariy, 2006).

For the developing countries, emerging institutional structures do vary considerably across nations, even in those with similar levels of economic development. However, establishing effective legal and institutional frameworks is crucial to management in order to enable the effective implementation of sustainable urban planning for public transport. Africa's rapid urbanization challenges have many aspects that highlight urban sustainability. The concept of urban sustainability calls for African municipalities, companies and citizens to achieve a better urban planning (Dietz, 2017). Consequently, Africa's cities cope with huge demands and challenges, with many unplanned residential areas, and many working and living conditions that are inherently hazardous. Nairobi is experiencing rapid growth facing and emerging challenges in mainstreaming universal design principles into the public transport system. The provision of local development needs, especially regarding the provision of adequate infrastructures and access to basic services are enshrined in Kenya's "Vision 2030" and in key targets of designated Sustainable Development Goals.

Cities require high levels of infrastructure to deliver essential services that are intend to link cities to one another to other systems (Chachavalpongpun, 2011); the services account for urban resilience. They include physical infrastructure, which includes the public transport system. Agents, or actors in urban systems,

comprise the second key element in the framework. They include individuals and private and public sector organizations (government departments, private firms, civil society organizations). They have identifiable but differentiated interests and are able to change behaviour based on strategy, experience and learning. In order to work effectively with agents, it is important to recognize the opportunities and constraints they face and the incentives to which they respond (Hodgson, 2006). On the other hand, institutions may be formal or informal, overt or implicit. Whatever the type of institution may be, we create it to reduce uncertainty, to maintain continuity of social patterns and social order, and to stabilize forms of human interaction (Campbell, 2008). Institutions condition the way that agents and systems interact to benefit all users. Institutions of property and tenure, of social inclusion or marginalization and of collective action influence the vulnerability of particular social groups (Adger et al 2005).

Universal Design is about accessibility for all; it means ease to approach, enter, use something and leave with a good user experience. It should be the embodiment of user friendliness. As a design concept, it entails placing diverse users at every stage of the design process and ensuring the practical suitability of the designed space or system. Universal Design has its origin in studies of spatial accessibility and their origins in the field of geography. A geographical definition of the concept state that, 'accessibility is determined by the spatial distribution of potential destinations, the ease of reaching each destination (Handy & Niemeier, 1997).

Going on foot is at the foundation of public transportation in Kenya. Before the onset of motor vehicles, most of us walked to and from where we wanted to go; very few people journeyed on camels, donkeys or bulls. Horses have never been a mode of transport in Kenya. Obviously, walking was hardly inclusive since those with physical disabilities got around only with the help of relatives or kind-hearted friends. Individuals found it easier to go about on back of camels, donkeys or oxen. Pedal bicycles and motorbikes added to walking and riding animals; they too were hardly public transportation in the way we defined in our studies. Lorries came on the scene and they were the precursor to buses and trains. Among these transport options, our study centred on buses. Essentially, the history of public road transport in Kenya dates back to 1934 when London based Overseas Trading Company (OTC) introduced the first fleet of buses. The fleet comprised of 13 buses covering on 12 routes in urban Nairobi. For not-yet-known reasons, OTC initiated Kenya Bus Service (KBS) and assigned it to serve urban Nairobi on the style of London. KBS did very well until Nairobi's population explosion and bad politics killed it towards the end of the 20th Century. In the spirit of liberalization, there are now many public transport players that are operating in Nairobi, and these include intermediate modes of public transportation that we call *bodaboda.* small to medium sized motorcycles.

Kenya has been experiencing challenges that impact negatively on road safety. Some of the challenges are disjointed institutional framework, disjointed legal framework, poor infrastructure and general disregard of existing laws. Because of car crashes and loss of life, the police paid greater attention to road

safety omitting universal design from consideration. Between 1979 and 1988, the Government of Finland helped initiate and supported the National Road Safety Council under the Kenyan Ministry of Transport and Communication. Due to factors, the Council ceased to exist in 1988. Again, the focus was on road safety rather than inclusivity in public transportation. Between 1988 and 2012, various Government ministries and departments engaged in road safety; design for all in public transportation was not a serious concern.

Though parliament and other bodies adopted several subsequent policy papers, none gave much attention to universal design for public transportation as a way of entrenching inclusivity. Adoption by the 10th Parliament of the Integrated National Transport Policy (Sessional Paper No. 2 of 2012) was a big stride. In order to address road safety challenges and harmonize management of Kenya's road transport, the Government formed the National Transport and Safety Authority (NTSA) through the National Transport and Safety Act Number 33 of 2012. Despite this progress, the public transport sector in Nairobi City continues to work with out-of-date regulations. The current 1954 Traffic (Amendment)Act Cap 403 that is full of contradictions and perhaps has unconstitutional sections due to so many amendments, is not skewed to manage modern transport trends. A critical analysis of the new Transport and Safety Authority Act 2012 that repealed the Transport Licensing Act Cap 404 does not fully address issues of an integrated modern transport system. Maybe that is why huge traffic jams continue to disorganize all Nairobi residents.

Summary of discussions and recommendations

From the study, we are clear that inclusivity is not yet an important criterion in planning Nairobi public transportation. Yet Nairobi city policy directs investment towards public transport and other infrastructure. Currently, the discourse is moving towards transport infrastructure investments that facilitate the attainment of the so-called smart city, and smart mobility status is disjointed. A smart city is not necessarily an inclusive city.

A fragmented institutional framework for the management of public transport accounts for the lack of inter-modal integration. Institutional inadequacies undermine the development of a comprehensive urban transport policy. History shows that Government has failed to develop efficient transport facilities under public ownership and that management generally has weak and ineffective structures. Moreover, lack of capacity and shortage of resources seriously further negates Government's already not-so-good corporate governance, sound decision making and efficient management. In any case, the Nairobi County Government lacks the technical know-how to integrate universal design in planning public transport that enhances accessibility for all. Allowing the private sector to participate fully in public transportation can only be politically correct; in practice, the private sector is only doing the dance instead of treating public transport with a sense of commitment and finesse. The non-functional legal framework confounds private sector participation. Provisions in the Kenya Roads Act, 2007 and the Public-Private Partnerships Regulations, 2009 are inadequate in dealing with the private sector.

Planners and the public have yet to appreciate Universal Design while architects, engineers and geographers appear completely ignorant of it. Meanwhile business goes on as usual and does so at the expense of design for all. A large percentage of participants in our study were unable to distinguish Universal Design from superficial treatment. From observation, it was clear that the design of transport network systems does not consider the needs of people with disability; in many instances, current planning immobilized people with partial mobility. Lack of Universal Design-awareness is one reason why physical and psychological abuse of persons with disability continues in silence. There has been a slow but noticeable improvement in public perception towards and treatment of persons with disabilities even in employment, but the design of bus stations and buses is a major obstacle.

Increase in demand for urban transport is directly linked to the growth in population and the economic activity and services offered in a particular urban area. Urban transport plays a vital role in the economy of Kenya, particularly in Nairobi, which generates a major share of gross domestic product (GDP). Providing an efficient urban transport system should therefore be a high priority. Such efficiency and supply levels are lacking in Kenya's urban areas, not just in Nairobi.

Low maintenance and lack of investment in network capacity have caused urban road networks to decay. Severe competition for road space at peak hours results in traffic congestion, high transport costs and reduced productivity of public transport vehicles. More meaningful urban transport improvements should be based on the

development of an urban transport policy; institutional strengthening and management; improving road safety. In addition, the Government needs to actively consider developing a metropolitan growth strategy that relieves development pressures in the center of Nairobi

Incorporating urban transportation as an important parameter at the urban planning stage is essential rather than being a consequential requirement. Encouraging integrated land use and transport planning is needed in all cities so that travel distances are minimized and access to livelihoods, education, and other social needs, especially for the marginal segments of the urban population are improved

The government together with respective agencies in the transport sector should adopt universal design as the conceptual approach for the design of buildings and roads that serve the public. More important, full compliance should be required for new construction of buildings and roads that serve the public. This comprises features such as ramps and kerb cuts and accessible entries, safe street crossings, an accessible path of travel to all spaces and access to public amenities such as toilets. In the public and private sector, there is need to adopt policies on procurement which take into consideration UD criteria.

There is need for the County Governments to develop a comprehensive source of accessible information about universal design and standards. Moving forward, a change in culture to improve attitudes and behaviours is a priority for all stakeholders. Ensuring

PWDs' transport needs should be included at the start and not as an afterthought. High-level actions in the plan on accessibility and universal design standards need to be prioritized, broken down, assigned for completion, monitored and reviewed. In addition, continuous engagement and participation of PWDs is key throughout the lifetime of the Framework and beyond. With all due respect to the other professions mentioned above, governments should be including Designers and Anthropologists in the planning and implementing of universal access in Public transport systems. Those two disciplines can support the other in data gathering, analysis and the development of innovative and functional plans. It will also be up to government to enhance qualitative monitoring and evaluation in the implementation of universal design and accessibility laws and standards. Specifically, an impartial monitoring body, preferably outside government, and with a significant membership of persons with disabilities, could be designated and funded to track progress on universal design and recommend improvements.

REFERENCES

[1] J. Aarhaug, J. and B. Elvebakk, "The impact of universally accessible public transport–a before and after study. Transport Policy, vol. 44, issue C, pages 143-150, 2005.

[2] A. Agarwal, Guidelines for inclusive pedestrian facilities and training manual to promote universal design, Samarthyam Pr., 2009.

[3] American Association of Retired Persons, Mature America in the 1990s: A special report from Modern Maturity magazine and the Roper Organization. New York, NY: The Roper Organization, 21, 2002.

[4] F. Askalen, S. Bergh, O.R. Bringa, and E.K. Heggem, Universal Design: Planning and design for all. GLADNET Collection, 12 January 1997. The Norwegian State Council on Disability, 1997.

[5] I. Audirac, Accessing Transit as Universal Design. Academic Network of European Disability experts (ANED), 2014.

[6] E. Axel, Making Visual Art Accessible to People Who Are Blind and Visually Impaired. Art Education for the Blind. New York, NY, 2016.

[7] T. Bade, Universal Design in an Era of Global Demographic Change, 2011.

[8] K.A. Beasley and T.D. Davies, "Access to sports and entertainment." In W. F. E. Preiser, & E. Ostroff (Eds.), Universal Design Handbook. New York: McGraw-Hill, 2001.

[9] N. Bramley, S. Dempsey, C. Power, and D. Watkins, "Social Sustainability and Urban Form: Evidence from five British cities, "Environment and Planning A, 41, pp. 2125–2142, 2009.

[10] R. Brynn, Universal design and accessibility – policies and legislation at home and abroad. Oslo, 2009.

[11] S. Burgstahler and R. Cory, Universal Design in Higher Education: From Principles to Practice. Cambridge, MA: Harvard Education Press, 2008.

[12] S. Burgstahller, Universal Design: Process, Principles, and Applications, 2011.

[13] R. Carvero, "Accessible Cities and Regions: A Framework for Sustainable Transport and Urbanism in the 21st Century," Working Paper, UCB-ITS-VWP, 2013.

[14] C. Choguill, "Developing sustainable neighborhoods. Habitat International," Vol. 32, (1). 41-48, 2008.

[15] H.L. Cline, The evaluation of universal design kitchen features by people in wheelchairs Virginia: Polytechnic Institute and State University, 2006.

[16] N. Cowen, Universal design rules from product pairs and association rule-based learning. Texas: A&M University, 2010.

[17] N. Dempsey, G. Bramley, S. Power, and C. Brown, "The social dimension of sustainable development: defining urban social sustainability," Sustainable Development, 19, 289-300. 2011.

[18] R. Duncan, Universal Design Clarification and Development. A Report for the Ministry of the Environments, Government of Norway, 2007.

[19] N. Fearnley, and A. Nossum, Public transport packages of measures 996e2000. Economic evaluations (in Norwegian) Report Institute of Transport Economics, 2004.

[20] V. Fletcher, Universal Design. Historical perspective. Institute for Human Centered Design, 2014.

[21] S. Goltsman, Universal design in outdoor areas. In W. F. E. Preiser, & E. Ostroff (Eds.), Universal Design Handbook. New York: McGraw-Hill, 2001.

[22] D. Gomes, Design for all. FSU, 2010.

[23] M. Gossett, A.K. Mirza and D. Barnds, "Beyond Access: A case study on the intersection between accessibility, sustainability, and universal design Disability and Rehabilitation: Assistive Technology, 4 (6) 2009, pp. 439–450.

[24] E. Graeme, Accessibility, Urban Design and the Whole Journey Environment. London: ODPM, 2011.

[25] S. L. Handy and D. A. Niemeier, "Measuring accessibility: an exploration of issues and alternatives, Environment and Planning A, vol. 29, pp. 1175-1194, 1997.

[26] M. Hankinson and A. Breytenbach, Barriers that impact on the implementation of sustainable design, 2010.

[27] N. Mansor, Usable and accessible design features in Malaysian Houses for the independent aged. Thesis Submitted to The School of Graduate Studies, Universiti Putra Malaysia, In Fulfilment of the Requirement for The Degree of Master of Science, 2008.

[28] J. Harrison, Achieving Equality through Universal Design Thinking. PowerPoint presentation. ICUDBE, IIUM Gombak, 2011.

[29] R. Imrie, and P. Hall, Inclusive Design: Designing and Developing Accessible Environments, Spot on Press, New York, 2001.

[30] J. Jacobs, The city Unbound: "Qualitative approaches to the city," Urban Studies, vol. 30, nos. 4/5, pp. 827-884, 2003.

[31] J. Odek, Economic appraisal of universal design in transport: Experiences from Norway. Social Research in Transport (SORT) Clearinghouse, 2010.

[32] M. Jones, and J. Sanford, People with mobility impairments in the United States today and in 2010. Assistive Technology, 8.1, 43-53, 2006.

[33] A.S. Kadir, and M. Jamaludin, "Universal design as a significant component for sustainable life and social Development." Procedia Social and Behavioral Sciences, vol. 85, 179-190, 2013.

[34] J. M. McNeil, "Americans with disabilities: 1994-95. US Bureau of the Census," Current Population Reports, P70-61. Washington, DC: US Government Printing Office, 2007.

[35] M.F. Mueller and R. L. Mace, R. L. The universal design file: Designing for people of all ages and abilities. Raleigh, NC: Center for Universal Design, 2008.

[36] A. Nossum, and M. Killi, "Passengers' valuations of simple public transport measures; in Norwegian). Institute of Transport Economics, 2006.

[37] M. O'Cnnor, Pedestrian Accessibility. Scottsdale, AZ; Barbara McMillen, 2013.

[38] J. Odeck, T. Hagen, and N. Fearnley, "Economic appraisal of universal design in transport: Experiences from Norway," Research in Transportation Economics 29, 304-311, 2010.

[39] D.H. Ros and A. Meyer, A. Teaching Every Student in the Digital Age: Universal Design for Learning, 2010.

[40]

[41] Y. Saito, Awareness of Universal Design among Facility Managers in Japan and the United States. Automation in Construction, 15 2006, pp. 462–478.

[42] J.P. Shapiro, No pity: People with disabilities forging a new civil rights movement. New York, NY: Times Books (Random House). 2004.

[43] G. Soren, Achieving full participation through Universal Design, 2009.

[44] F. Vescovo, Accessibility as universal design: legislation and experiences in Italy. In W. F. E. Preiser, & E. Ostroff (Eds.), Universal, Design Handbook. New York: McGraw-Hill, 2001.

[45] N. Wolford, Universal design standards for single-family housing. Unpublished doctoral dissertation. Oregon State University, 2010.

[46] K. Yoshihiko, Toward Universal Design: Improving Mobility for Seniors in Japan, 2012.

[47] B. Murray, Brief prome for people with disabilities. Employment for social justice and fair globalization. International Labour Office. Geneva, 2012.

[48] B. McCann, "Complete Streets: Best policy and implementation practices." American Planning Association Planning Advisory Service Report Number 559, 2010.

[49] R. Muntasir, Planning for sustainability of non motorized public transport in a developing city. PhD thesis, Queensland University of Technology., 2013.

[50] Litman, T. (2017). Evaluating Accessibility for Transport Planning. Measuring People's Ability to Reach Desired Goods and Activities. Victoria Transport Policy.

[51] Musakwa, W. & Gumbo, T. (2017). Impact of Urban Policy on Public Transportation in Gauteng, South Africa: Smart or Dumb City Systems Is the Question; in Evaluating accessibility for Transportation Planning, CFIL, 339-356.

[52] Allen, H. (2013). Africa's first full rapid bus system: The Rea Vaya bus system in Johannesburg, Republic of South Africa (Unpublished case study prepared for the Global Report of Human Settlements).

[53] Alves, D., Martinez, L. M., & Viegas, J. M. (2012). Retrieving real-time information to users in public transport networks: An application to the Lisbon bus system. Procedia-Social and Behavioural Sciences, 54, 470–482

[54] Angelidou, M. (2015). Smart cities: A conjuncture of four forces. Cities, 47, 95–106.

[55] Bruglieri, M., Bruschi, F., Colorni, A., Luè, A., Nocerino, R., & Rana, V. (2015). A real-time information system for public transport in case of delays and service disruptions. Transportation Research Procedia, 10, 493–502.

[56] Calabrese, L. M. (2013). Smart mobility: The cases of Hong Kong and the Netherlands. GSTF Journal of Engineering Technology (JET), 2(1), 145.

[57] Dirgahayani, P., & Nakamura, F. (2012). Fostering partnerships towards sustainable urban mobility from the national to local level: Matsuyama, Japan and Yogyakarta, Indonesia. IATSS research, 36(1), 48-55.

[58] Holden, E., Linnerud, K., & Banister, D. (2013). Sustainable passenger transport: Back to Brundtland. Transportation Research Part A: Policy and Practice, 54, 67-77.

[59] Kodero, K. (2005). Pro-poor transport policy: Meeting the challenge in Zimbabwe

[60] Mbara, T. C. (2002). Transport: How have African Cities managed the sector? What are the possible options. urban and city management course for Africa, Uganda.

[61] Pirie, G. (2013). Sustainable Urban Mobility in 'Anglophone' Sub-Saharan Africa. In U. Nations. (Ed.), Global Report on Human Settlements. Un-Habitat.

[62] UN-Habitat. (2013). Sustainable Cities Programme.

[63] UNEP. Public transport. United Nations Environment Programme Retrieved 22 October, 2013, from http://www.unep.org/transport/.

[64] Mupfumira, P. & Wirjodirdjo, B. (2015). An Economically Sustainable Urban Public Transport Framework: System Dynamics Modelling Approach to Reduce Public Transport Liberalization Impact in Harare City. International Journal of Science, Technology and Society, Vol.3, (2), 11-21.

[65] World Bank (2013). A National Framework for Sustainable Urban Transport Systems: Proposals for Improving Urban Transportation in Russian Cities. World Bank.

***Melisa Achoko Allela** is an Interactive Media Lecturer at the Technical University of Kenya, Department of Design and Creative Media where is she is also enrolled as a PhD student. She also dabbles as an illustrator, animator, researcher and eLearning specialist.*

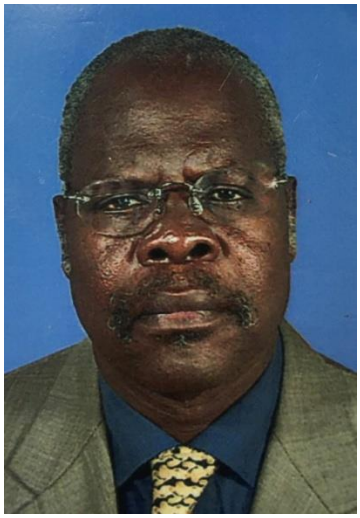
Her creative and research work explores the convergence of experimental animation and emerging technologies in storytelling. Her current focus is on how such technologies can be used to digitize works of African Orature and therefore contribute to the safeguarding of intangible cultural heritage.

She is the co-founder of LESO Stories, an interactive media startup that seeks to interrogate how new and emerging technologies can be used to digitize works of African Orature and contribute to the safeguarding of intangible cultural heritage.

She is a winner of the Digital Lab Africa 2020 (Immersive Realities category); recipient of the 2019 HEVA Cultural heritage seed fund and a 2018 Mawazo PhD Scholar. She looks forward to the tipping

point moment for women in tech and their increased participation in the fields of Animation and Interactive Media production.

Twitter:@lisaachoko
Website: www.lesostories.com, www.melisallela.com



JP Odoch Pido

Odoch Pido is a design educator and professional designer. He is an Associate Professor of Design at the Department of Design and Creative Media, the Technical University of Kenya. He has served on numerous administrative positions, boards and committees, setting curricula and judging Kenyan art and design projects and competitions. He has been a strong force in the preparation and development of more than five generations of Kenyan designers as they make their first halting steps and then flourish as professionals. His many professional credits include exhibition designs, graphic design and product development.

Odoch's many publications include papers and chapters in books, conference presentations and journal articles focusing on the deep analysis of culture in relation to design, emerging trends in cultural expression, health and development. He has concentrated on issues in design education but the closest to his heart has been alternative communication techniques for controlling HIV-AIDS, especially for orphans and vulnerable children in rural Kenya. Together with other scholars he is examining groundswell as a cultural revolution in weddings and connecting African thought system with mainstream philosophy, design and related disciplines.

Odoch's photography of abstract forms in nature is his way of expressing his sensitive vision by focusing on small scale natural beauty that might otherwise go unnoticed.

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DEFINING THE UNKNOWN:THE ROLE OF PRACTICE AS RESEARCH IN ANIMATION

Melisa Achoko Allela, OdochPido
Technical University of Kenya

Purpose: **This paper seeks to establish clarity on the nature and structure of practice-based research (PbR) in animation studies. It is also an attempt to situate PbRdiscourse on research. The focus is on justifying PbR as a valid, rigorous methodology supported by clear pedagogy.**

Methodology:Reflections from practice based research as well as desktop research was used to investigate methods of artistic and animation production as these demonstrate knowledge and the criteria/quality assurance measures to assess this knowledge in an academic setting.

Findings: Preliminary findings indicate that Practice based Research (PbR) is a relatively new approach for doctoral research within Kenyan Universities, where scientific modes of inquiry dominate. There is a lack of clarity around the use of PbR in animation studies at PhD level, and this affects the ways in which creative research outputs are understood. Further, it explains the dearth of policy papers on the evaluation of such creative outputs and innovations.
Practical Implication:The study contributes to our understanding of PbR as a valid research method in the arts and related creative fields in Kenya, how such research is carried out, evaluated and presented, as well as debunking the assumption that textual research as having more value than artistic research.

Originality: There is scant research by Kenyan scholars on PbR as employable to animation studies at PhD level. This paper contributes to discourse on artistic/animation.
Keywords: Practice based Research, material thinking, artistic research, Animation research

INTRODUCTION

While developing the PhD proposal, I arrived at a crossroad, attempting to establish an ideal methodology to undertake this study and realize the objectives. I was confronted with two primary choices. One, to use methods that are closely related to those used in the sciences. Two, to pursue a practice approach as a practitioner where visual materials formed a significant part of the thesis. The methods used in the sciences were somewhat foreign and presented challenges with regards to providing a methodology that reflects the practice of artists and designers. My impetus towards artistic inquiry, as echoed by Gray and Malins(Gray &Malins, 2004), was driven by a professional stimulus, to seek alternative ways of practice in animation for the purpose retelling of African orature in digital media. Such is the practitioners' desire to respond creatively to an identified research problem. Out of preference as a practitioner in animation, I settled for the latter to pursue a study that results in a practical output through practice, and where such practice informs the bulk of the research itself.

As an early-stage researcher, the decision to use my own animation work as the primary mode of inquiry prevailedas this would provide a more direct and firsthand approach as a practitioner than through solely relying on conventional sources of data. While the research

was largely experimental and empirical, this route is beset with challenges due to a dearth of guidelines on practice-based research and lack of policy documents on the evaluation of creative outputs. A stark contrast to not only the plethora of material in the sciences, but also to growing international discourse from as early as the works of Rudolf Arnheim(Arnheim, 1954)and Susanne Langer(Langer, 1951a) "who validated the cognitive aspects of the arts to large academic audiences and established the intellectual basis for approaching art making as serious inquiry"(McNiff, 2008). Cursorily, within the academic culture in Kenyan universities, this seems to imply a relegation on the value of practice-based research at doctoral level or simply, a lack of awareness on the potential of such an approach.

ANIMATION RESEARCH

Animation draws upon artistic practices such as illustration, painting, sculpture, choreography/performance, and photography(Callus, 2015)that are further extended by the affordances of emerging technologies that provide the potential to define new ways of working. This is facilitated by an ever-increasing range of areas that open up animation as a confluent medium of hybridization, where art, narrative, sound, photography, physical crafts, drawing and so many other processes can come together and stimulate cross disciplinary research in the arts and design, computer science and social science to advance animation research. Although there has been growing academic interest in African animation within the last decade (Azi, 2012; Callus, 2015; Ghazala, 2013), more studies are directed at the historical development of animation in Africa and few are directed at exploring through

practice, the creative opportunities of research though animation, that culminates in works of animation which allows for reflective practice.

My interest in animation is thus fueled by the wide-ranging methods of artistic practice and aesthetic devices used in animation, their employability in varied narrative contexts such personal narratives and a need to contribute to the scarce discourse of animation and expanded cinema from the African continent. At present, a lot of the research in animation is directed at computer graphics and computational technology to develop new narrative formats for animation and is largely carried out by technical teams from the field of computing using research methods that are well rooted in the sciences. Furthermore, a large amount of animation research is conducted by non-practitioners — scholars who contribute to discourse on animation as observers and are far removed from the actual production of animation work. In addition, quite rarely do we see animation being produced for research purposes and most texts on animation studies focus on animation production and animation theory, with little attention paid to connecting challenging theoretical ideas to practical work in a way that can result in new ways of working. Lastly, a common problem in animation research amongst practitioners seeking to engage in practice research is that practical approaches are limited to either recording animation techniques or studying their productions and seldom on the awareness of embodied knowledge and self-advancement in the process of making. This problem arises on the one hand from the wish of practitioners to use their creative practice in research, and on the other from uncertainty about the role of creative practice in

relation to the requirement for contributing to knowledge within research.

PRACTICE- LED- RESEARCH

In as much as individuals are driven to engage in research for various reasons, research in academia is sustained by a need to address a problem through an original systemic investigation to find things out, and/or to establish new insights (Nelson, 2013). While such a pursuit is not novel in the arts, it is only recently that labels such as practice-based research, practice-led research or practice as research have been ascribed to research in the arts. Nelson (2013) posits that these terms are likely to have come about as more artists started to pursue higher education at PhD level, and their practices began to be recognized as knowledge-producing. So one might be prompted to ask, how does an animation practitioner conduct animation (practice) research within an academic context?

To answer this question, it is thus useful to establish some understanding of the notion of research in the creative arts. Frayling (Frayling, 1993) in defining research in art and design points towards a stereotype among creative practitioners as to what research is. The R-word, as he labels it implies an activity that is a long departure from their practice. One that seems to be not only concerned with going over old territory (though creative pursuits are concerned with the new) but is also characterized with esoteric ideas and whose outputs are characterized by words and not by deeds. He further asserts that it is only recently, from the early 1990s, that government funding for higher education embraced the activities of artists, designers, and craftspeople as research.

Although describing the art and design research landscape in the UK, the international debate continues to revolve around what, where, when and why of the varied typologies of practice as research. For the practitioner as an animation researcher, these questions can be understood within the context of understanding the purpose of research. Frayling proposes three models in art and design, which have been contextualized in this study for animation research:

- ***Research into animation***
- ***Research through animation***
- ***Research for animation***

Research into animation alludes to historical research, research on aesthetics, and research into the varied theoretical perspectives on animation such as economic, political, technical, and cultural. It is a straightforward inquiry with a considerable base of supporting models and procedures. A growing number of animation research on African animation, such as (Callus, 2015) revolves around this category.

Research through animation is a smaller category that entails a blend of studio work and a research report and entails either:

i. ***Materials research which refers to varied modes of making in either 2D or 3D animation;***
ii. ***Development research where an animator can appropriate technology and use it for a different novel function such as digital photogrammetry to create hyper-realistic 3d models for animation;***
iii. ***Action research which is characterized by reflective journaling detailing step-by-step experiments conducted in the studio with a final report (exegesis) serving to contextualize it.***

The last category, research for animation, refers to research where the end product is the resulting artefact and the contribution to

knowledge is embodied in the artefact itself. The goal of research for animation is not immediately discernible through verbal/written means but rather visually, where the work 'speaks for itself'. Because of this, its validity is often hampered by the lack of documentation of the research process that resulted in the artefacts in cases where the only evidence of the process is the ensuing artefact.

CHALLENGES AND METHODS OF REPORTING IN PbR

It is worth noting that Practice Based Research in academic work, is beset with challenges due to a dearth of guidelines on PbB and lack of policy documents on the evaluation of creative outputs. A stark contrast to not only the plethora of material in the sciences but also to growing international discourse from as early as the works of Rudolf Arnheim(Arnheim, 1954) and Susanne Langer (Langer, 1951b) whose work validated the cognitive aspects of the arts to large academic audiences and established the intellectual basis for approaching art-making as serious inquiry" (McNiff, 2008). Cursorily, within the academic culture in Kenyan universities, this seems to imply a relegation on the value of practice-based research at the doctoral level.

Studio-based or practice-based research can often be subjective, especially when the inquiry is of an artistic process in which knowledge is generated through action and reflection. This holds because what motivates the research process is personal interest and experience rather than objective 'disinterestedness' (Barrett & Bolt, 2010). This can also be attributed to the embodied knowledge

of the animator due to their being extremely close to the study itself while the sciences seem to favour a more distanced objectivity.

For animation research, another problem area pertains to methods of reporting and evaluating the work. This is not problematic in situations that use methods that are much closer aligned to well-established practice in Sciences and Humanities where traditional forms of writing pervade and are suitable and sufficient. For early-stage animation researchers, exploring appropriate forms of communication that are more accessible than conventional text formats are akin to making a massive leap into the unknown. This is driven by the absence of generally accepted approaches that take into cognizance what can be achieved.

One possible strategy for reporting is through a progressive experiential approach via a few achievable goals that eventually lead to something useful which provides ground for understanding the knowledge contribution of the artefact. While this is rooted in two educational philosophies, progressivism and constructivism, it is more apparent as a process in psychologist Graham Wallas' theory, *The Art of Thought,* where he outlines *four stages of the creative process as follows:*

1. ***Preparation: perceiving or identifying a problem.***
2. ***Incubation: thinking divergently about the problem, making new links and associations.***
3. ***Illumination: becoming aware of the novel possibility, a solution or interpretation.***
4. ***Verification: checking and evaluating the novel outcome.***

This progressive model typifies how animators work since they tend to focus on improving their craft or developing new techniques of working. It takes into cognizance the animators accumulated explicit

and tacit knowledge and encouragement of reflective practice. This is rooted in existing approaches to cognitive design theory, such as models for reflection for practitioners to examine their work. As stated below:

> ***"When a practitioner reflects in and on his practice, the possible objects of his reflection are as varied as the kinds of phenomena before him and the systems of knowing-in-practice that he brings to them. He may reflect on the tacit norms and appreciations that underlie a judgment, or on the strategies and theories implicit in a pattern of behaviour. He may reflect on the feeling for a situation that has led him to adopt a particular course of action, on the way in which he has framed the problem he is trying to solve, or on the role he has constructed for himself within a larger institutional context".*****(Schön, 1983, p.21)**

While few animators engage in such reflection for academic research purposes, a luminary example is the 1987 paper by then animator John Lasseter. The paper detailed the application of principles of traditional animation to 3D computer animation. This process resulted in the short, animatedfilm*Luxo Jr* which wasfirst presented at the 1986 SIGGRAPH. The film is regarded as a breakthrough in the animation medium, changing traditional interpretation of computer animation and exemplifies the animation practitioner working on academic output.

Regarding the evaluation of PbR in animation research, Elkins (cited in Nelson 2013) remarks that:

> ***"...the problem of evaluating creative-art PhD simply cannot be solved unless disciplines give up their shapes and readers step outside their normal interpretive habits: exactly what might make the new degree so interesting, and at the same time ensure it cannot be commensurate with other degrees."***

This implies that there is a mismatch in evaluating through the lens of traditional sciences and not evaluation from a practice-based standpoint in the arts and design. As observed by Schön(cited in (Nelson, 2013)) "we cannot readily treat (practice) as a form of descriptive knowledge of the world, nor can we reduce it to the analytic schemas of logic and mathematics". As such, it is difficult to prescribe a process as constrained by a theoretical framework since theoretical frameworks are "based on a body of facts that have been repeatedly confirmed through observation and experiment".

Lesage(Nelson, 2013) posits that evaluation of PbR study at PhD level "should focus on the capacity of the doctoral student to speak in the medium of his or her choice. If this medium is a film, or video, or painting, or sculpture, or sound, or fashion, or even if the graduate student wants to mix media, the assessment will require from a peer jury ways of reading, interpretation and discussion other than those required by a written academic text" (Lesage, 2009, p.145). This advocates for the presentation of works only, without a textual component as the requirement for a written supplement seems to infer a lack of confidence in the practitioner and in the capacity of the arts to speak meaningfully of its contribution to knowledge. In South Africa, for example, notable progress has been made since 2005 when the first forum was convened to propose

evaluation criteria for PbR. Some of the proposed procedure for evaluating submissions of PbR is as follows (Lesage, cited in Nelson 2013):

i. ***How does the product/process viewed relate to the framing (contextual framing document outlined by the researcher?***
ii. ***Does it contribute to current practice and the advancement of knowledge in the discipline? How and to what extent?***
iii. ***Does it reflect theatrical and/or dramatic accomplishment and a creative signature, relative to the specific nature of the project and its context?***
iv. ***To what extent does the product and/or process impact upon the context, the discipline, or the viewer (scope/complexity/effect/affect).***
v. ***Upon completion of the project, the researcher would then have to provide a self-reflection on the project as well as report on the reception of the work in the public domain.***

Even though there seems to be no consensus on evaluation and quality assurance criteria for Practice-based research in countries such as South Africa, New Zealand, Australia and United Kingdom where PbR is generally accepted, existing quality assurance criteria typically range from exhibitions at national and international institutions, exhibitions at international festivals and biennales, publications in credible journals, patents and commercialization of design amongst others. Such criteria have drawn intense criticism because they tend to lean in favour of outputs that demonstrate commercial success, industry esteem and/or the perceived 'quality' of the performance orexhibition venue and exclude exhibitions of work at the researchersacademic institution.

PERSONAL REFLECTION

My practice as an animator began almost by serendipity. Although I had immense interest in the medium, my undergraduate specialization in Graphic Design did not provide training in working with time-based medium. Instead, my design training facilitated in gaining skills transferable to animation such as illustration and layout design, technical/instrumental drawing and colour theory. During my third year, I was fortunate to be in the employ of a local animation studio that partnered with a UK based animation studio to develop Kenya's first animated TV series, TingaTinga Tales. The series was based on traditional African folklore and visual style that borrowed heavily from the Tanzanian TingaTinga art style popularized by its founder Edward SaidiTingaTinga. TheTingaTinga art style is characterized by brightly coloured patterned landscapes that often include stylized animal and human figures. They are traditionally made using cheap art supplies including masonite and painted with bicycle paint which yields the bright hues. Elements including the patterned backgrounds and stylized animal forms inspired the design of the animal characters in *TingaTinga Tales* (*figure 1, 2 and3*). My training as a graphic designer lent itself well to my first role as a character designer and following in-house training at the studio; I quickly transitioned to Layout Design and Animation. During this time, the wide-ranging skills (from ideation to post-production) that feed into the practice of animation became apparent.

Figure 1: TingaTinga paintings (source: https://www.businessdailyafrica.com/lifestyle/art/A--Tinga-Tinga--Renaissance-at-Nairobi-Gallery/3815712-5068618-e6y6hu/index.html)

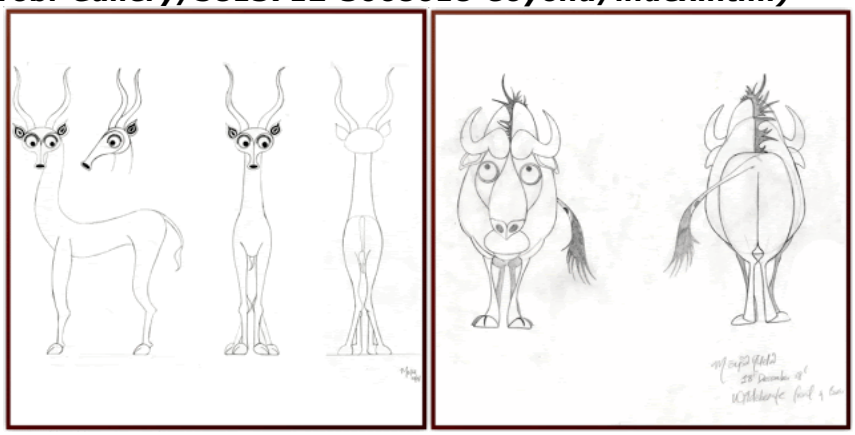

Figure 2: Examples of characters designed by the researcher for the TingaTinga Tales animated children's TV series.(source: author)

Figure 3: Characters from the animated children's TV series TingaTinga tales (source: https://iview.abc.net.au/show/tinga-tinga-tales)

Furthermore, I became aware of the different approaches by different artists and animators, which in retrospect, constituted artistic research. Artistic research can be understood as research in and through the arts to infer an investigation conducted by an artist, and where the artist's experiences and insight seek to improve the knowledge needed in the artistic process and production. The undertakings of animation encompassed a "systematic activity undertaken to increase the stock of knowledge", such as the tools, methods, work by predecessors and artistic approaches, and "the use of this knowledge to devise new applications" (OECD, 2003). As such, my practice and that of other animators, characterized by diverse forms constituted artistic research. Here was a process of deliberate inquiry including the methods, motivation, inspiration, reflection, discussion, formulation of research questions, conceptualization, implementation and evaluation, which provided ground with which to gain new knowledge and further engage with the medium.

Nevertheless, although my Masters' research work also yielded a practical animation output that formed the basis of the investigation on using animation to enhance learning amongst Primary school children in Kenya, it was my later collaborative projects using animation, creative programming, and interactive media that ingrained the idea of animation practice as a research process. This included the decisions made by animators, knowledge, experience and constraints that lead to novel ideas, influence and external inputs that affect the final production. Towards this end, I have engaged in the production of several experimental animation

projects that have been exhibited at local and international film/digital art festivals such as *Space a Digital Art Festival(2016)* and the *NODE Forum for Digital Arts (2017).* These projects form part of the reflection that build-up towards the final research example.

The main works that elicited the research questions in the PhD study that motivated this mode of inquiry, included a series of animated projects. The first is titled *Zamani Yajayo,*[1]which combined different animation techniques to give visual form to audio interviews. The second project was *What the Fuss?,*which is a 360° Video that draws its narrative content from Social Media posts. The third project was *Mindscapes and Genesis,*which incorporates traditional African dance. The fourth project was*Avenue of Baobabs (Anxiety!Anxiety!)* which is a VR project presented as part of a larger performance piece. The fifth project was *Nobody,*which isa 2D animation based on a poem. These early projects culminated in the final project, a retelling of *Song Lawino,*which was implemented in VR using Virtual Humans.

Additionally, the research was situated within the milieu of digital art and film projects developed by creatives from or based in Kenya, that explored notions of nationhood and African futures. The works include: *Who I Am, Who We Are* — a process-based project that, as described by the project authors, "uses art and self-expression to create spaces and conversations for personal reflection on the themes of citizenry, civic responsibility, race, belonging, ethnicism and nationalism" with the resulting works including recorded

[1] Link to project website: www.zamaniyajayo.com

interviews and life-sized paintings called body-maps (Kuona Trust, 2016); the short film *Yellow Fever*, a mixed-media documentary animation by NgendoMukii that explores themes on the globalization of beauty, skin colour and race (Mukii, 2015). The other defining project that contextualized the study was the African Futures Festival held in which positioned several questions on what African futures will look like including how artists and academics imagine this future as well as the forms of narratives developed by African artists. In summary, my prior experience and knowledge in experimental animation are the basis of reflecting on the process of working with animation production techniques that cut across film and gaming technologies.

These animation projects served as a means to work within animation production techniques such as 2D rotoscoping, 2D hand-drawn animation, 2D digital cut-out animation, that the researcher was already skilled in. Further, the projectsprovided an opportunity to acquire new skills in the use of new technologies such as 360-degree video or Virtual Reality, and spatial audio in storytelling; and even borrow from other fields such as the use of photogrammetry and fractal geometry for 3D model creation. These production techniques/technical approaches are not exhaustive of all that is possible with the animation medium. Instead, they served as a representative sample of 2D animation, 3Danimation, and new and emerging technologies; to inform the discussions on the affordances of animation and new media technologies. Moreover, they enabled the researcher to make more informed decisions on the design and implementation of the digitization of the oral storytelling research example.

REFERENCES

Arnheim, R. (1954). Art and Visual Perception. Retrieved from Monoscop: A wiki for collaborative studies of the arts, media and humanities. https://monoskop.org/images/e/e7/Arnheim_Rudolf_Art_and_Visual_Perception_1974pdf

Azi, J. I. (2012). Appraising the Role of Afrimation (African-Animation) in Promoting Africa's Rich Cultural Heritage in a Digital Age. International Journal of Computational Geometry and Applications, 2, 37–54.

Barrett, E., & Bolt, B. (2010). Practice as Research: Approaches to Creative Arts Enquiry. I.B.Tauris.

Callus, P. (2015). Animation, Fabrication,Photography :Reflections upon the Intersecting Practices of Sub-Saharan Artists within the Moving Image. MIT PRESS JOURNAL - AFRICAN ARTS, 48, 58–69.

Frayling, R. (1993). Monograph, Research in Art and Design. Royal College of Art Research Papers, Vol 1, No 1.

Ghazala, M. (2013). Animation in Africa.

Gray, C., & Malins, J. (2004). Visualizing Research: A Guide to the Research Process in Art and Design. Routledge. http://www.upv.es/laboluz/master/seminario/textos/Visualizing_Research.pdf

Langer, S. (1951a). Philosophy in a New Key: A Study in the Symbolism of Reason, Rite and Art.

Langer, S. (1951b). Philosophy in a New Key: A Study in the Symbolism of Reason, Rite and Art.

Lesage, D. (2009). Who's Afraid of Artistic Research? On measuring artistic research output. Art and Research A Journal of Ideas, Contexts and Methods.

McNiff, S. (2008). Arts-based research. In J. G. Knowles & A. I. Cole (Eds.), Handbook. Thousand Oaks, CA: Sage.

Nelson, R. (2013). Practice as Research in the Arts Principles, Protocols, Pedagogies, Resistances. Palgrave Macmillan.

OECD. (2003). OECD Glossary of Statistical Terms. https://stats.oecd.org/glossary/detail.asp?ID=2312

Schön, D. (1983). The Reflective Practitioner: How Professionals think in Action. Basics Books. https://www.sopper.dk/speciale/arkiv/book49.pdf

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Letter from the Chairman's Desk By Sunil Bhatia PhD

One day I was in crowded local market and a loud argument was between group of people were on political topic at the roadside tea shop and both side were with fixed mind and adamant character and there was no sign of flexibility in their argument. There was war of proving supremacy and ultimately it turned violent and a few people died in clash. As riot broke we started running away from the clash site because we do not want to involve in any untoward incidence ,I found a shop owner of earthen pots was nervous and fearing riot may damage his displaced items shop , was trying to quickly place those products in safe inside the shop . He was fearing it should not be damaged because it is designed for holding that much item for that is designed not to meet the any type of external challenges. I felt safe and took rest but my mind was busy in nervousness of potter .That potter who made the earthen pot knows the value of the flexibility. I admire the role of potter who so had thought that first make the soil flexible by adding that much water where it can be given a desired shape that remain and can stay and second stage is to allow to dry in under sun for making that shape that strong where it can hold in its own for staying in that shape but it is delicate and cannot hold the material for it is designed . Final stage is where the potter allows to bake the pot in high heat that can stay in shape and hold the material for it is designed without breaking .

As knowledge improved the same principle was used: what potter was applying with soil and ironsmith used the same actions for shaping the metal by turning into liquid by using high heat and mould into desired shape. Wherever liquid consistency was not required they used to heat and strike with a hammer for turning into desired shape. Next level of hardening is really marvelous idea where heated metal turned to desired shape thrown into cold water or oil for taking metal into a unique way of hardening. As I realized I have ran and in safe place I found our body is flexible yet it is strong enough for making desired actions. Plants and trees also enjoy this phenomena and flexible yet strong enough to survive any challenges of environments for survival.

As I imagine the carpenter where they understood that shaping of dry wood is required and wet wood is highly flexible after dryness it may turn to its own shape He found the solution for shaping the wood into desire shape foremost requirement is dry wood. Applying external force for shaping has limited role and more than can breal the wood.Experimented with physical external force with haeating the wood but result was not satisfactory for shaping into desire shape. Ultimately they realized that shaping the dry wood into desired shape need various tools of cutting and for joining. Best use of concept of flexibility for meeting the impact of earthquake for prevention of damage of the structure is visible in foundation of seventh wonder of the world TAJMAHAL where foundation was laid on log and site was selected deliberately close to the bank of river so that wood of the foundation should always wet and remain flexible. Meson in early stage made the house with mud but strength was not enough for meeting the challenges of vagaries of weather. They looked for alternative material and found baked bricks as units and

for joining used lime with sand. The entire exercise of shaping the house in the desired way used first turned the material into wet by adding water as potter does and allows it to dry under sun for hardening.

When I go for an interview a different job profile in various organizations has a different age factor for candidate . In defense services we have an age limit of 18 to 25 years for turning the flexible mind of the person into desired behavior by training and after that it is difficult to mould the person because of maturity and questions too much. Judges should be mature for understanding the case we prefer above 35 years of age. It is all matter what age is good in shaping where his/her acceptance of flexibility is required.

Entire Agriculture is based on flexibility and ploughing provides moist soil and softness for seed to pop up in a conducive environment. One day one of my students was planting the stem for growing into a tree . After making the pit he erected the stem and was regularly watering the soil. Gardner objected and requested him not water the plant in such way let it allows for sprouting the roots with soil heat. I understood what he was meaning and realized in the pot we make the hole at the bottom and place something hard piece for allowing a flow of extra water that may damage the roots if excessive water stays. Entire cooking is based on first making the flexible and later on harden. Making bread we first make the dough by adding water into flour and turning it into desired shape and put into fire for hardening. Medium may vary; it may be baking, frying or roasting.

When I visited a barber shop for shaving I found first he uses water for moisting face and uses a razor for shaving beard. After

finishing he dries the face and applies antiseptic for covering and protection from foreign elements that may damage the face.. .

3- D printer has some substance like plastic that turns into desired shape by heating and place over one another bit by bit.

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Design For All Institute of India
www.designforall.in
dr_subha@yahoo.com
Tel 91-11-27853470®

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Forthcoming Issues

Africa Origin Designer year 2021

July 2021 Vol-16 No-7 Raja Schaar

Raja Schaar, IDSA is Program Director and Assistant Professor of Product Design at Drexel University's Antoinette Westphal College of Media Arts and Design. She also co-chairs IDSA's Diversity, Equity, and Inclusion Council. She is an industrial designer with an extensive background in museum exhibit design who is passionate about ways design can make positive impact

intersections with health, the environment, and education.

Raja's interdisciplinary research focuses on addressing inequities in maternal health; methods for engaging black girls and underrepresented minorities in STEM/STEAM through design and

technology; innovation and entrepreneurship education; and biologically-inspired design and sustainability.

Raja currently co-leads two collaborative research projects. She works with faculty from Drexel's College of Nursing and Design and Merchandising Programs the development of low-cost wearables for maternal health. She is co-PI on an interdisciplinary research project funded by the US Department of Education Promise Neighborhood Grant entitled "Black Girls STEAMing through Dance," where she works with students and faculty from Drexel's departments of Computing and Informatics, Dance, and the School of Education to uncover STEAM identities, literacies, and self-concept in African American girls through the development of wearable technology. Raja is also PI on a Venture Well Faculty Grant that connects Product Design, Biomedical Engineering, and Entrepreneurship to examine the role of clinical immersion on product innovation on campus.

As an educator, Raja works to infuse Drexel's Product Design Curriculum with society-centered design principles that address impactful, real-world problems. She teaches a number of traditional and research-based studios across the curriculum, but her favorite courses to teach are Interdisciplinary Product Design, Bio-Inspired Design and Sustainability, Design and Waste, and Wearables for Health.

Before joining Drexel's Product Design faculty, Raja taught at Georgia Tech School of Industrial Design and the Wallace H. Coulter Department of Biomedical Engineering at GA Tech and Emory University. Raja received her BSID from Georgia Tech in 2001 and completed her graduate work at the School of the Art Institute of Chicago in 2003.

May 2021 Vol-16 No-5

***Dr. George Vikiru** is a Lecturer in the Department of Fine Art and Design, School of Visual and Performing Arts, Kenyatta University, Nairobi, Kenya.*

His area of specialization is Graphic Design with emphasis on the utilization of the New Media Arts for Effective Communication and Social Transformation. His other areas of interest are in gender, technology and media studies. Dr. Vikiru has had over twenty years teaching experience at University where he has also carried out research, published widely and gained managerial experience.

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June 2021 Vol-16 No-6

Dr. (Ms) Ketna L Mehta,PhD ***is a thought leader on social and inclusive development of persons with disabilities, transformational change and leadership.***

She is Founder Trustee & Editor, Nina Foundation an NGO for rehabilitation of people with spinal cord injuries in India; an Author, Management Researcher-Curator and inspirational speaker.
www.ninafoundation.org
ketnam@gmail.com

December 2021 Vol-16 No-12

Ricardo Gomes, IDSA

Professor Ricardo Gomes has been a faculty member in the School of Design at San Francisco State University for over 29 years. He was the Chair of the DAI Department from 2002-2012.
Prof. Gomes coordinates the Design Center for Global Needs and the

Shapira Design Archive Project in the School of Design (DES).

This non-profit international research and development center is dedicated to promoting responsive design thinking methods and solutions to local, regional and global issues such as: inclusive/universal design, health care, the aging, community development, social innovation and sustainability of the built environment.

Prof. Gomes was awarded the 2020 Faculty Award for Excellence in Service Learning, from the Institute for Civic and Community Engagement, SFSU; and the IDSA 2020 Education Award presented in recognition of significant, distinguished, and long-term contributions of faculty to the field of industrial design academia

Prof. Gomes is on the Board of Directors of the Institute for Human Centered Design in Boston. He is also a member of the Industrial Designers Society of America; and Trustee of the Beta Beta Chapter, Epsilon Pi Tau International Honor Society for Technology in the School of Design, SFSU. Prof. Gomes was a Fulbright Research Scholar from 1984-1986 at the University of Nairobi, Kenya. He conducted post-graduate research and product development of a container system for mobile health care delivery in East Africa from 1982 – 1987. In 1986, he was Program Coordinator of Design Projects in Developing Countries, Les Ateliers, Ecole nationale supérieure de création industrielle (ENSCI) in Paris, France where he directed student liaison projects with European international development agencies.

For over 30 years, Prof. Gomes has conducted keynote speeches, presentations, symposiums and workshops at universities and international conferences throughout Africa, Asia, Europe, Latin America and the U.S. In addition, he has served on juries related to

Inclusive Design; Universal Design; Design for Social Responsibility; Sustainability; and Equity for BIPoC in the Built Environment.

Prof. Gomes received his MFA in Industrial Design for Low-Income Economies from the University of California, Los Angeles (Design of a Container System for Mobile Health Care Delivery in East Africa). He received an M.A. in Architectural Building Technology from School of Architecture and Urban Planning at UCLA (Analysis of Alternative Building Materials and Construction Systems for Small-scale Industries in the Cape Verde Islands, West Africa); and a BFA in Industrial Design from Massachusetts College of Art (Design of an Adaptive Structural Environment for Severely Disabled and Developmentally Challenged Children).

New Books

it is available on **www.morebooks.de** one of the largest online bookstores. Here's the link to it:
https://www.morebooks.de/store/gb/book/design-for-all/isbn/978-613-9-83306-1

The Ultimate Resource for Aging in Place With Dignity and Grace!

Are you looking for housing options that are safer and more accommodating for independently aging in place? Do you want to enjoy comfort, accessibility, safety and peace of mind – despite your disabilities, limitations and health challenges? The help you need is available in the Universal Design Toolkit: Time-saving ideas, resources, solutions, and guidance for making homes accessible.

This is the ultimate resource for individuals and professionals who want to save time, money and energy when designing, building, remodeling or downsizing a home. The Universal Design Toolkit will help you take the steps to design homes for your clients or yourself while eliminating the costly trial and error challenges you'd inevitably encounter if faced with this learning curve on your own.

Rosemarie Rossetti, Ph.D., teamed with her husband Mark Leder in creating this unique Toolkit. They bring ten years of research, design and building expertise by serving as the general contractors for their home, the Universal Design Living Laboratory– which is the highest rated universal design home in North America.

Within the Toolkit's 200 richly illustrated pages, you'll find: Insights that distinguish *essential* products, services and resources from the *unnecessary*.

Proven, realistic tips for finding the right home.

Home features you need to look for. Nothing is assumed or left out.

Handy home checklists and assessments.

Interview questions to help you hire industry professionals with knowledge and experience.

Photographs that provide a frame of reference to inspire, clarify and illuminate features andbenefits.

Valuable resources to save you time, money and energy.

Helpful sources of funding.

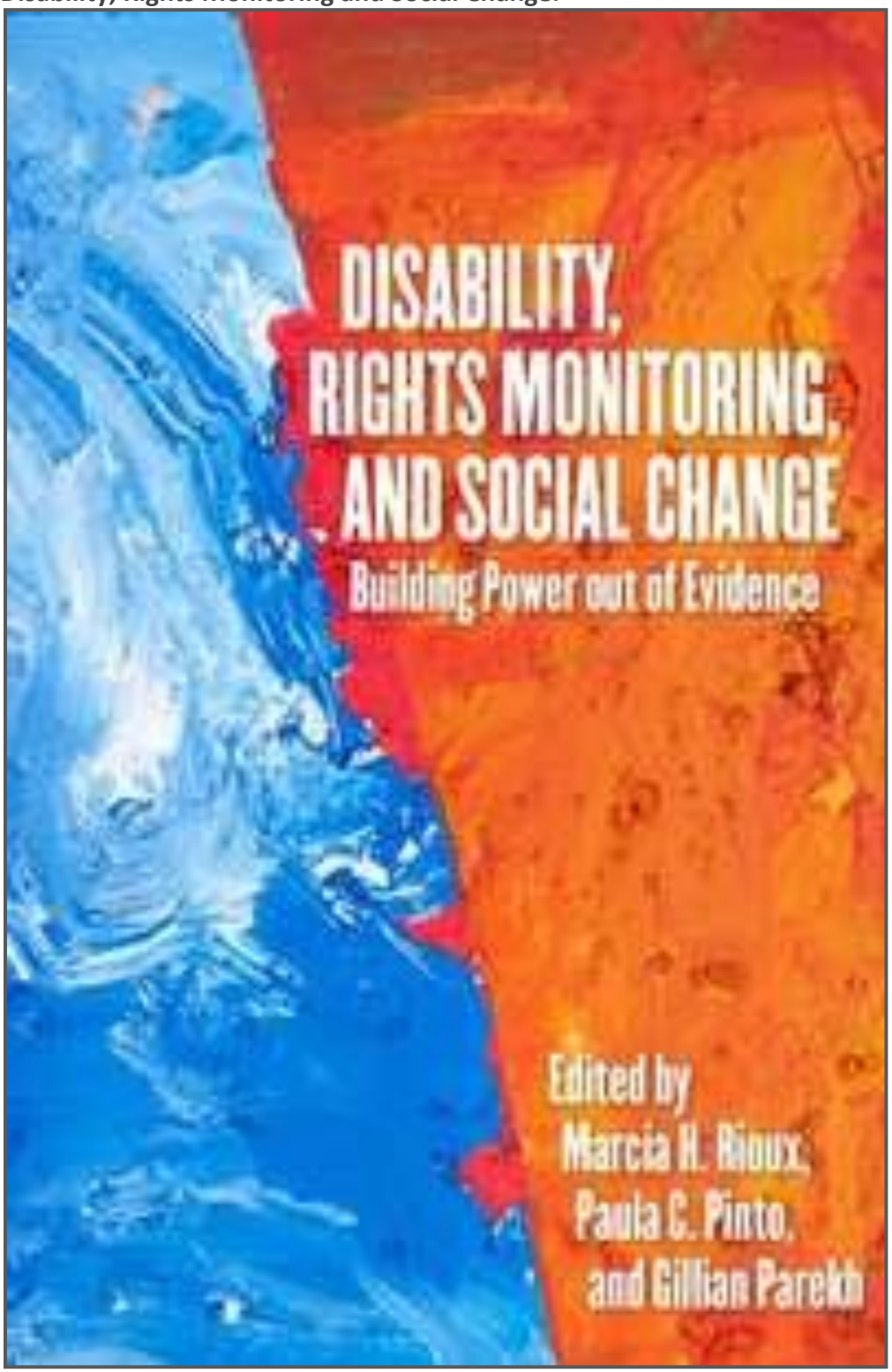
Space planning dimensions for access using assistive devices such as wheelchairs andwalkers.

And so much more!

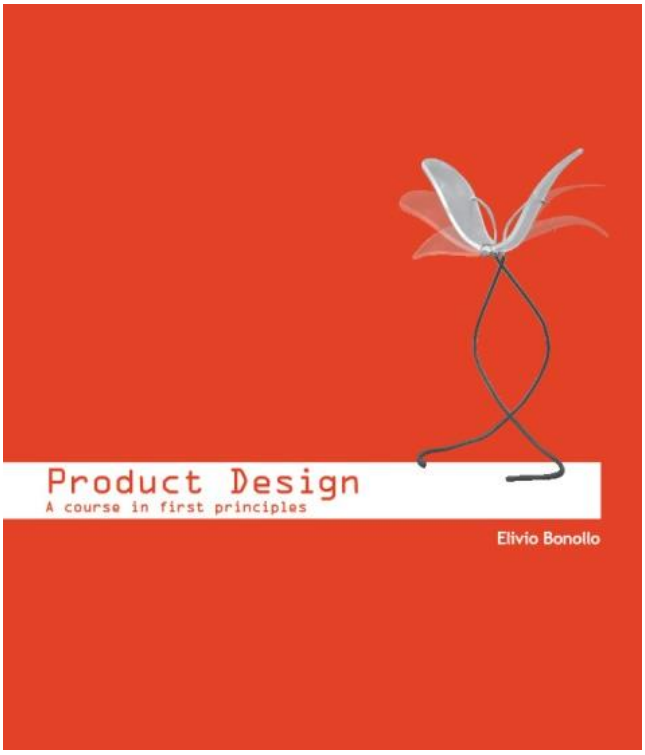
If you want useful, dependable advice and easy to implement ideas from respected experts who know the ropes, you'll love Rossetti and Leder's perspective. As a speaker, author and consultant who uses a wheelchair, Rossetti has helped hundreds of people design their ideal homes. Now her comprehensive Toolkit is available to help and support you!

Get the Universal Design Toolkit now to start your project!

Disability, Rights Monitoring and Social Change:



New Update: ELIVIO BONOLLO (2015/16) PRODUCT DESIGN: A COURSE IN FIRST PRINCIPLES



Available as a paperback (320 pages), in black and white and full colour versions (book reviewed in Design and Technology Education: An International Journal 17.3, and on amazon.com).
The 2018, eBook edition is available in mobi (Kindle) and ePub (iBook) file versions on the amazonand other worldwide networks; includingon the following websites:
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READING HINTS: ePub files can be read with the iBook app on Apple MacBook/iPad devices; ePub files can also be read on Desktops PCs, Laptops and Surface devices using readers such as the Microsoft *freda*ePub reader. The Kindle (mobi file) reader isflexible and suitable for reading the eBook on PCs; Kobo readers can also be used to read ePub files on MacBook and iPad. All formats are very interactive with very good navigation.

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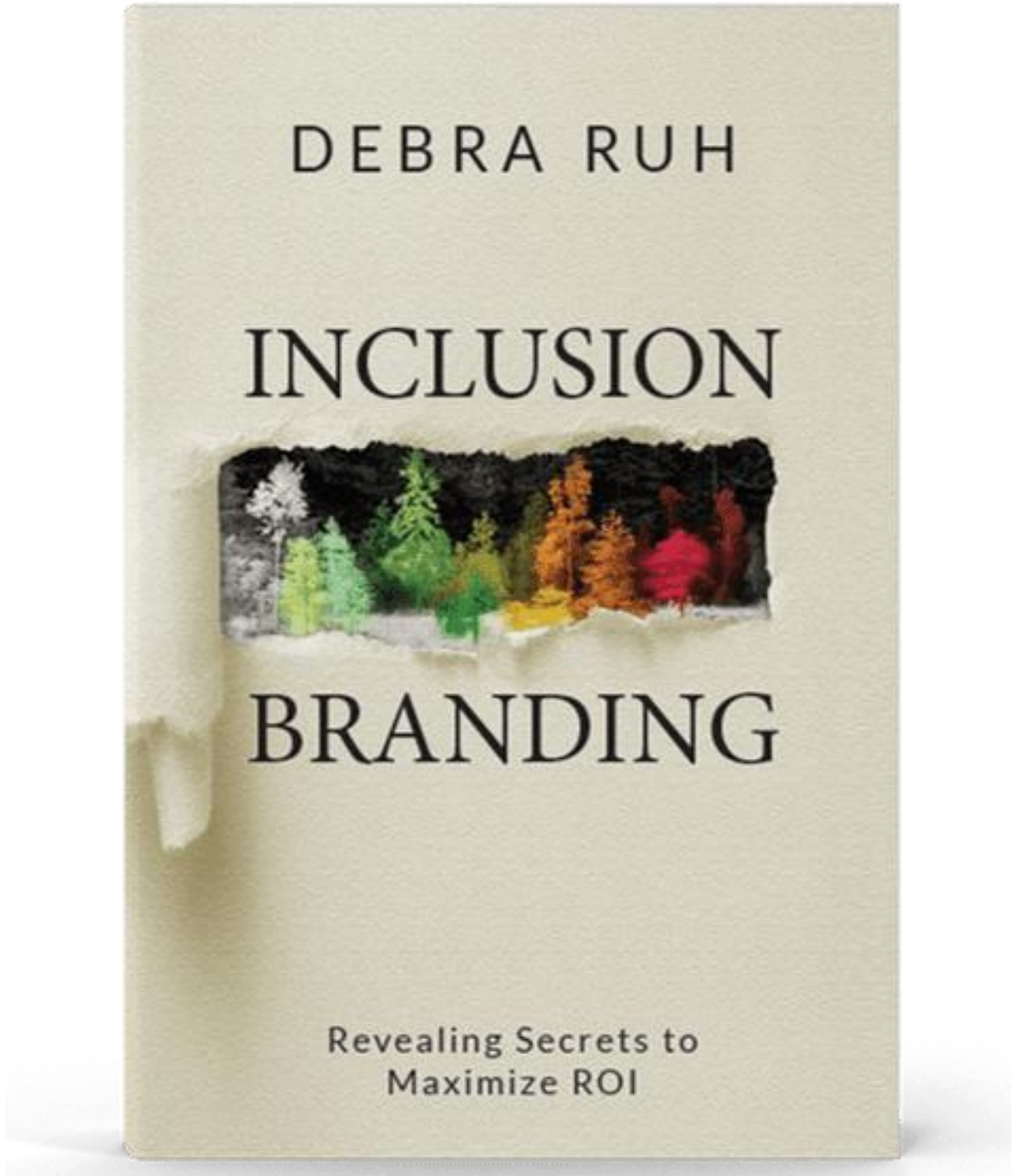
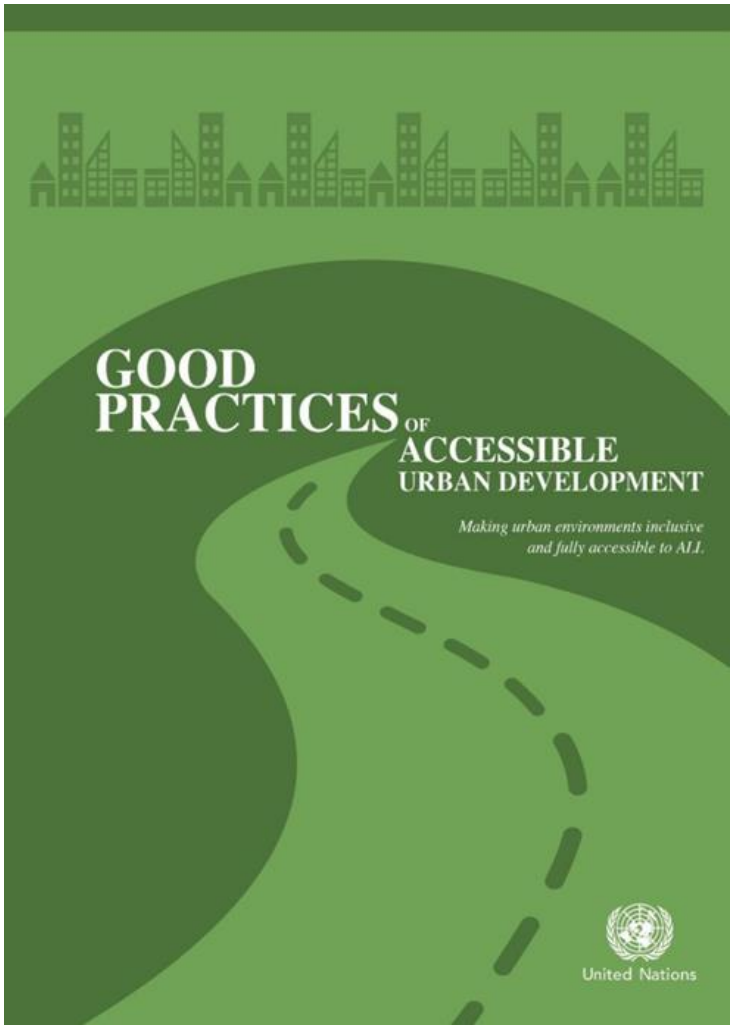


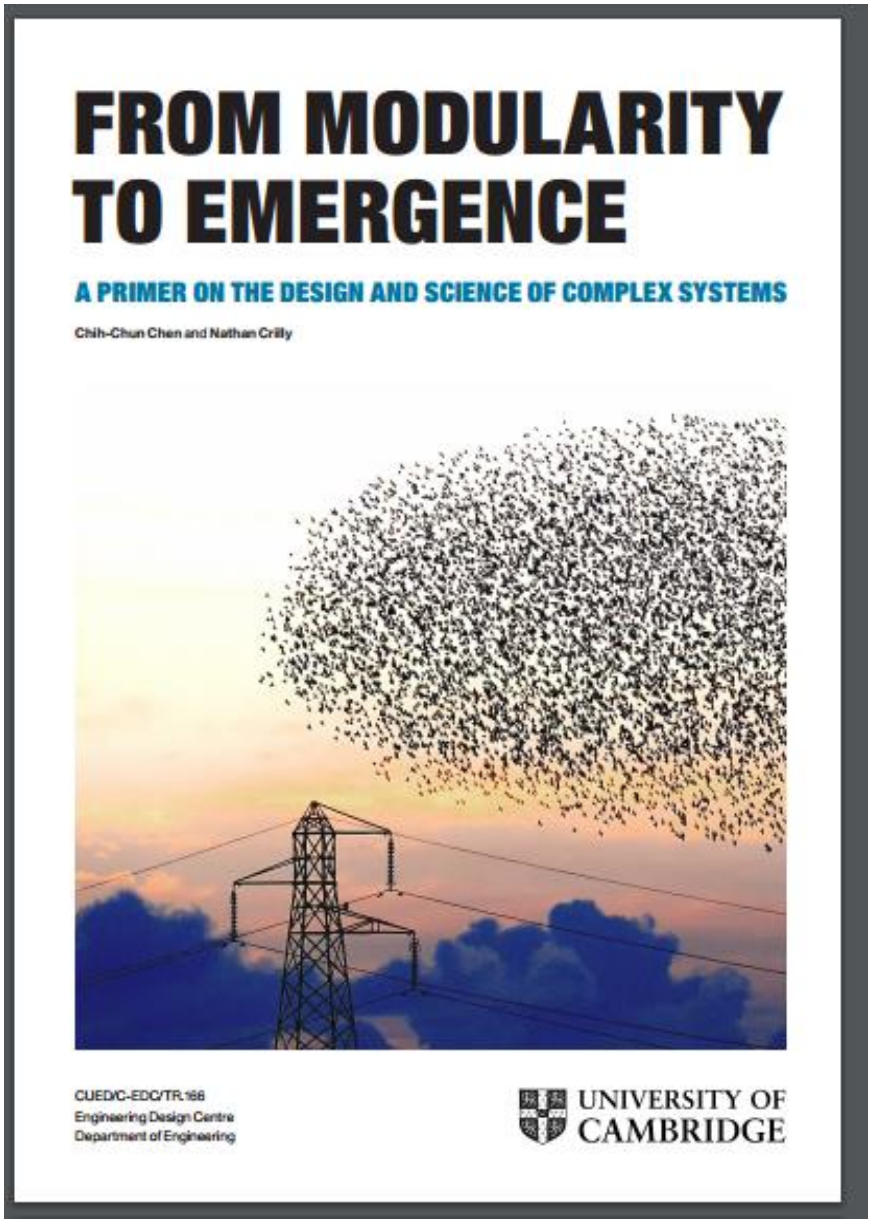


In light of the forthcoming United Nations Conference on Housing and Sustainable Urban Development (HABITAT III) and the imminent launch of the New Urban Agenda, DESA in collaboration with the Essl Foundation (Zero Project) and others have prepared a new publication entitled: "Good practices of accessible urban development".

The publication provides case studies of innovative practices and policies in housing and built environments, as well as transportation, public spaces and public services, including information and communication technology (ICT) based services.

The publication concludes with strategies and innovations for promoting accessible urban development.

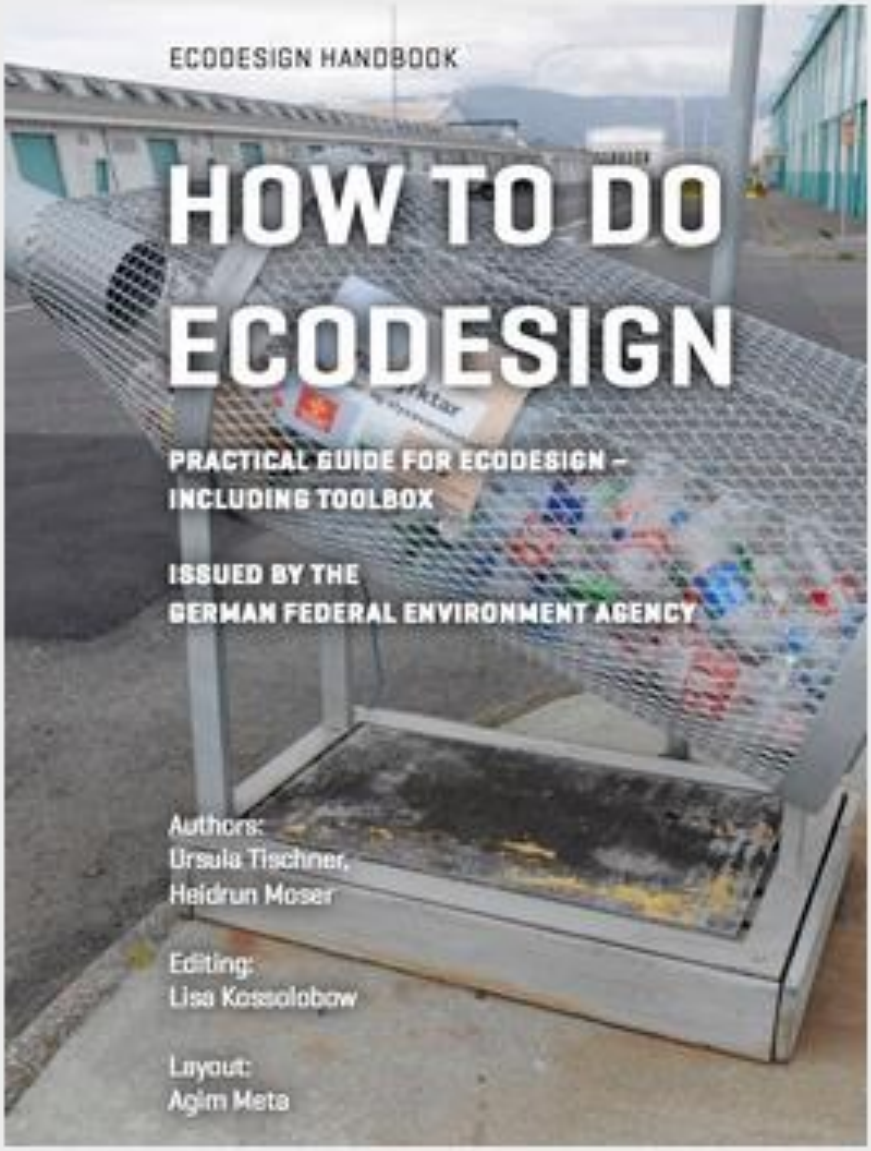
The advance unedited text is available at:http://www.un.org/disabilities/documents/desa/good_practices_urban_dev.pdf



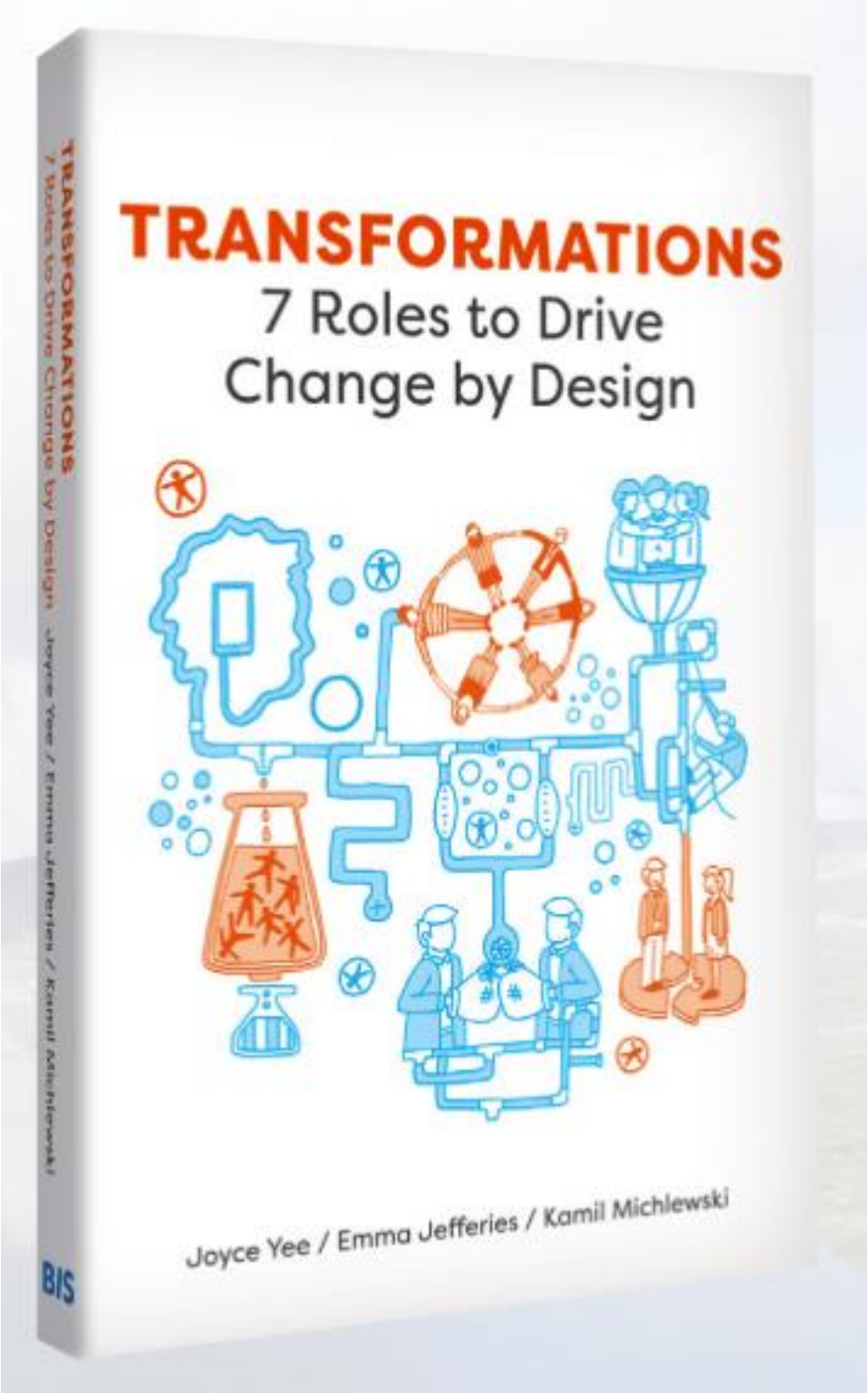
Dr Chih-Chun Chen and Dr Nathan Crilly of the Cambridge University Engineering Design Centre Design Practice Group have released a free, downloadable book, _A Primer on the Design and Science of Complex Systems_.
This project is funded by the UK Engineering and Physical Sciences Research Council (EP/K008196/1).
The book is available at URL: http://complexityprimer.eng.cam.ac.uk

Changing Paradigms: Designing for a Sustainable Future

New iBook / ebook:
HOW TO DO ECODESIGN

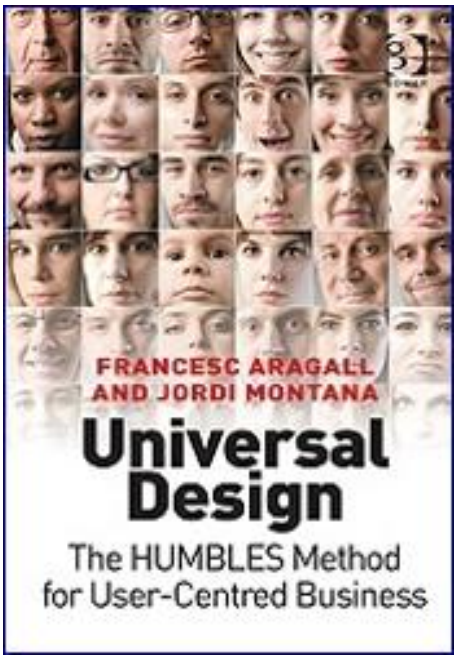


Practical Guide for Ecodesign – Including a Toolbox
Author: Ursula Tischner


TRANSFORMATIONS
7 Roles to Drive Change by Design
Joyce Yee / Emma Jefferies / Kamil Michlewski
BIS


Arnar Árnason and Sigurjón Baldur Hafsteinsson
DEATH AND GOVERNMENTALITY
Neo-liberalism, grief and the nation form

Universal Design: The HUMBLES Method for User-Centred Business



"Universal Design: The HUMBLES Method for User-Centred Business", writtenbyFrancescAragall and JordiMontañaandpublishedbyGower, providesaninnovativemethod to supportbusinesseswishing to increase the number of satisfiedusersand clients andenhancetheirreputationbyadaptingtheirproductsandservices to the diversity of their actual andpotentialcustomers, takingintoaccounttheirneeds, wishesandexpectations.

The HUMBLES method (© Aragall) consists of a progressive, seven-phaseapproach for implementing Design for All within a business. Byincorporating the user'spoint of view, itenablescompanies to evaluatetheirbusinessstrategies in order to improveprovideanimproved, morecustomer-orientedexperience, andtherebygain a competitiveadvantage in the marketplace. As well as a comprehensiveguide to the method, the bookprovidescasestudies of multinationalbusinesswhichhavesuccessfullyincorporated Design for All intotheirworkingpractices.

According to SandroRossell, President of FC Barcelona, who in company withotherleadingbusiness professionals endorsed the publication, it is "requiredreading for thosewhowish to understandhow universal design is the onlyway to connect a brand to the widest possible public, increasing client loyaltyandenhancing company prestige". To purchase the book, visiteither the **Design for All Foundation website**

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Appeal

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News

1.
Refresher program on "Sustainable Product Design and Manufacturing" Started at SMVDU

The phase two of ISTE-AICTE sponsored one-week online Refresher program (15-21 April 2021) on "Sustainable Product Design and Manufacturing" began at School of Mechanical Engineering, Shri Mata Vaishno Devi University, sponsored, as informed by the Coordinators: Dr. Raghvendra Kumar Mishra and Dr. Ankush Anand. The course will be focusing on the sustainability aspect of product design, reuse of materials for engineering products, various sustainable manufacturing methods to make products greener and sustainable.

At the outset the program was inaugurated by Prof. Eswarmoorthy Muthusamy (Dean, Faculty of Engineering & Head, School of Mechanical Engineering), and Prof. Suparan Sharma (Dean, Faculty of Management) who emphasized the purpose of organizing this course, and lauded the efforts of School of Mechanical Engineering for coordinating this event, where 87 teachers of various Engineering colleges around the country had registered.

Dr. Ankush Anand, Faculty, SMVDU, was the speaker for the first session. He highlighted the essentials of sustainable design. In the second session, Mr. Rohit Ranjan of Art of Living, explained how to manage the mind to reduce stress level, and work peacefully and efficiently in the present environment. Various experts from NITs, IITs & other renowned institutes will deliver the lecture on importance and aspects of sustainability and product design.

(Source : Universal News Timeline)

2.

Why COVID-19 Has Made Universal Design More Important for Seniors, Home-Based Care Providers

By Joyce Famakinwa

Seniors overwhelmingly prefer to age in place. That preference has only grown following the COVID-19 pandemic and a general shift toward home-based care, making home safety more important than ever.

But for a home to be safe for seniors and caregivers alike, it must adhere to building best practices, including universal design. Broadly, universal design provides a framework for designing products and spaces in order to ensure accessibility and safety for people, regardless of age, physical ability or other factors.

"Universal design emphasizes equitable use and low physical effort," Rosemarie Rossetti, president of Rossetti Enterprises, told Home Health Care News. "It's a great way to look at good design right from the beginning, so that if people have a temporary or a permanent disability — if they are short, tall, young or old — it doesn't matter."

As part of her business, Rossetti built the "Universal Design Living Laboratory," a 3,500 square-foot Columbus, Ohio-based ranch-style national demonstration home and garden, with her husband.

The laboratory, designed by Patrick Manley of Manley Architecture Group, has served as inspiration for the building industry and consumers alike. It has also given home-based care providers a model for what aging in place — bolstered by home design — can look like.

Kendal at Home is one of the many providers to have visited the lab, HHCN previously reported.

"[It's] a home designed to be sustainable, so aging in place is achievable," Kendal at Home Executive Director Lynne Giacobbe told

HHCN in 2018. "They have a classroom, and we were able to go participate in a week-long training and become certified."

While the home design aspect of aging in place has always been a factor for providers, the public health emergency has arguably created an environment where this becomes even more of a priority.

Between the strain the COVID-19 pandemic has placed on the U.S. hospital system and the considerable toll it has had on nursing homes and other long-term care facilities, it's not surprising that demand for home-based care has risen.

With more people receiving care at home, there has been an uptick in home modifications, Sean Fitzgerald, CEO of TruBlue, told HHCN.

"We've seen a huge increase in bathroom remodels," Fitzgerald said. "That's where it starts — stairs and bathrooms — but we want to expand beyond that. It's really looking at the whole home. That means the outside, the walkways, lighting. With so many seniors, falls could be prevented if they just had the proper lighting."

Fitzgerald also noted that home modifications that made light switches more accessible and door handles easier to use are common ways to increase safety for seniors.

"That's where I think today's technology is helpful," he said. "The use of motion detection, for example, so the senior doesn't have to go look for the light switch."

Ohio-based TruBlue is a national franchise company that specializes in house care, home maintenance and safety modifications to help seniors age in place.

In recent years, TruBlue has positioned itself as a potential partner for home-based care providers. The idea is that traditional home health and home care agencies would deliver actual care, while TruBlue focuses on the homes they live in.

As a company, one of TruBlue's value propositions is that many of its services help lower fall risks. Falls continue to be an ongoing hazard for older adults, as about 3 million seniors are treated in emergency departments for fall injuries annually, according to CDC statistics.

Along those partnership lines, TruBlue partnered with home care franchise company Right at Home in a preferred provider agreement last year.

"In that aging journey, we want to be alongside that senior, helping them to navigate all the hurdles and the challenges that they face," Kerin Zuger, chief of strategic growth at Right at Home, told HHCN at the time. "For us, that means providing them home care and doing everything that we can from a personal companion and skilled level, but also recognizing what community resources, tools, services and other providers need to come to the table to ensure they stay in the home as long as possible."

Another organization, Living in Place Institute, has made a name for itself by providing an educational program aimed at health care organizations, including home-based care companies, that focuses on safe homes.

Louisville, Colorado-based Living in Place Institute works with the Universal Design Living Laboratory for its Certified Living in Place Professional (CLIPP) program. The program is a 16-hour course, divided into 10 classes, including a mix of live and pre-recorded modules.

CLIPP courses focus on the combination of design, construction and medical measures.

Erik Listou, Living in Place Institute's co-founder, has seen an increase in CLIPP participants since the public health emergency.

"When COVID-19 safety measure was first instituted the housing industry and the medical community wasn't sure what was going to happen," he said. "What we found now is the need increased for people's personal safety and comfort in their homes — it didn't go away. Our graduates have increased in this past year, particularly in the medical community."

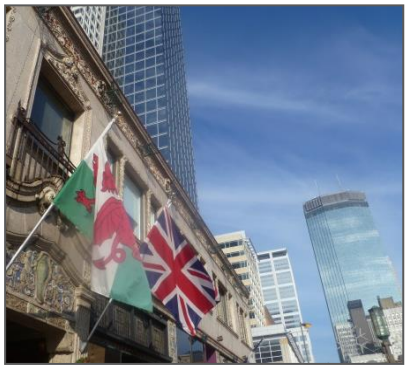
Similarly, TruBlue's business has doubled since the start of the COVID-19 emergency.

Looking ahead, Fitzgerald sees a huge opportunity for growth.

"Home-based care and aging in place were huge before," he said. "It's going to be explosive post-COVID because the senior care and home care industry have done a great job educating the community about aging at home versus in a long-term care facility. We're going to be a great complement to all the senior care and home care companies."

(Courtesy*: Home Health care News)*

Programme and Events



Conferences / 2021 / August 2021 in London / Inclusive Design and Manufacturing

ICIDM 2021: 15. International Conference on Inclusive Design and Manufacturing

August 19-20, 2021 in London, United Kingdom

UD 2021

A! Aalto University

FIFTH INTERNATIONAL CONFERENCE ON UNIVERSAL DESIGN

June 9 - 11 2021 at Aalto University, Espoo

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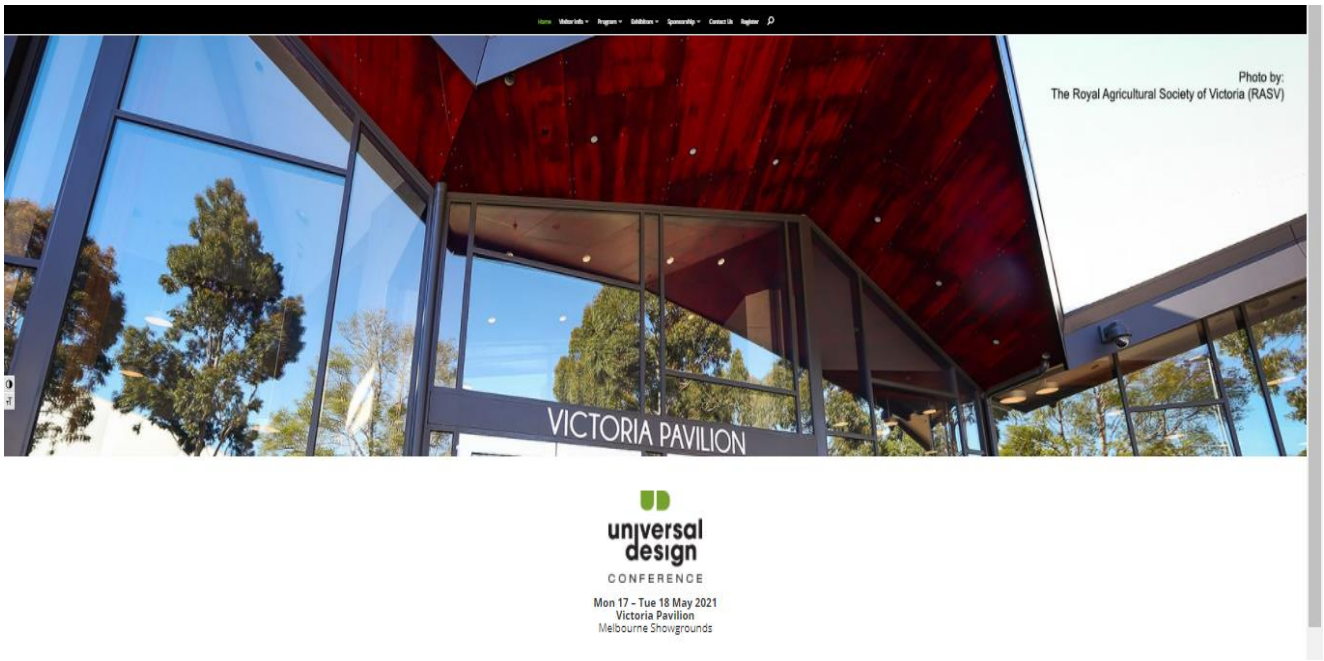
Universal Design Summit 7

Universal Design Summit is a preeminent conference in North America, drawing experts in universal design from across the globe. UD Summit has traditionally focused on universal housing and inclusive communities. Event organizers are pleased to announce the expansion of UD Summit to include inclusive design in digital spaces. Our current plan is to offer simultaneous)



GET READY TO CELEBRATE GREAT DESIGN!

As restrictions start to ease across Australia we can't wait to celebrate the very best in design and innovation with our 2021 Good Design Award Winners. Booked for Fri 17 September at The Star in Sydney, this year's Good Design Awards Ceremony will be one you don't want to miss!

We think our design community deserves an extra special celebration this year, so save the date and get your entries in!

ENTER GOOD DESIGN AWARDS

INTERIOR DESIGN CONFEDERATION SINGAPORE

IDCS Design Excellence Awards 2021

Mar 27, 2021 2:27 am EDT

The Interior Design Confederation Singapore (IDCS) is calling for entries for its 2021 Design Excellence Awards.

The leading awards program showcases the best interior design talent in Asia-Pacific.

The deadline for submissions is August 31, 2021.

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TypoDay2021

6th & 7th August 2021

TypoDay 2021
6th & 7th August 2021

http://typoday.in/

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Job Openings

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Special Correspondent:
Ms. Nemisha Sharma,
Mumbai, India
Nemisha98@gmail.com
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13, Lodhi Institutional Area,
Lodhi Road, New Delhi-110 003India.

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