

Chapter 1

Is Universal Design a Critical Theory?

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1.1. Introduction

Universal design is a term that was first used in the United States by Ron Mace (1985) although forms of it were quite prevalent in Europe long before. For the purpose of this chapter Universal Design is defined as 'the design of all products and environments to be usable by people of all ages and abilities to the greatest extent possible (Story, 2001, p.10.3). Universal design in recent years has assumed growing importance as a new paradigm that aims at a holistic approach ranging in scale from product design (Balaram, 2001) to architecture (Mace, 1985), and urban design (Steinfeld, 2001) on one hand and systems of media (Goldberg, 2001) and information technology (Brewer, 2001) on the other.

Given the popularity, Universal design still remains largely atheoretical i.e. the researchers of Universal design do not explicitly affiliate themselves to any form of theoretical paradigm. One of the reason is perhaps because Universal design is a melting point between cross paradigms. By paradigms I mean basic orientations to theory and research (Newman, 1997, p.62). In this sense Universal design can come under functionalist paradigm (because it caters to utility), pragmatic (because it is instrumental in nature), positivistic (because it strives for universal principles), normative (because it prescribes certain rules) and critical theorist paradigms (because it gives voice to the oppressed).

Conventionally the word *universal* is synonymous to *general* and refers to a set of principles that are stable, timeless and value free. In this sense universal design could be interpreted as deriving from a positivist paradigm. However, given its history and perspective, and with the universal design examples I provide, I will demonstrate several instances where the universals do change, are time bound and value laden. In this sense I argue that Universal design follows a critical theory paradigm in its conception and knowledge generation. By conception I mean how universal design came into being as a body of concepts and by knowledge generation I mean how the concepts pervade and are shared by the community of researchers.

1.2 Universal Design as a Critical Theory in its Conceptualisation

1.2.1 Social Emancipation

Social emancipation is to help people change conditions and build better world for themselves. Critical researchers conduct research to critique and transform social relationships by revealing the underlying sources of such relationships and empowering people, especially less powerful. Such an emancipatory role is demonstrated in universal design concept as the researchers argue for the importance of making through design, so-called weak component in the society as strong as every other part (Balaram, 2001).

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Mullick and Steinfield (1997) argue that in the beginning years of universal design in United States, the concept sprang up from the new thinking of the era dominated by the famed Brown v/s Board of education case of 1954. In this case the Supreme Court ruled that separate educational facilities are inherently unequal. The decision forced the desegregation of public schools in 21 states. The axiom *separate is not equal* inspired the beginning days of the universal design concept.

This reformation was not unlike the social changes that occurred in other European countries such as Sweden. For example, Universal design emerged when Karl Grunewald of the Swedish Social Sciences Department and his team started to translate the normalisation principle into the built environment (Sandhu, 2001, p.3.5). The normalisation principle was originally created to normalise the way in which one perceived and portrayed people who are disadvantaged and to establish people with a handicap in socially valued roles so far as their capabilities allow. Hence the roots of universal design can be attributed to emancipatory attitudes reflected in that era.

1.2.2 Social Inclusion

Critical theory argues for social inclusion. By social inclusion one means that social reality consists of multiple layers and includes several segments of society. By probing into these layers the critical researcher can identify and provide voice to the oppressed. While, the beginnings of Universal design catered to the special groups of people, i.e. people with diminished abilities such as physical impairment, retardation, advanced age, pregnancy, and so on, the current trend provides for the needs of the majority. According to Lawton (2001) this is demonstrated in the ADA (American with Disabilities Act) venture that has extended the boundaries of

design for everyone by translating special-user design to mainstream designs. This is done by enhancing the aesthetics and the commonplace look of products and give it as much attention as the function. In this way equality and inclusiveness is conveyed socially.

1.2.3 Social Reality as Probabilistic

For the critical researcher reality is seen as constantly shaped by social, political, and cultural factors. The critical science approach considers that people have a great deal of unrealised potential, are creative, changeable and adaptive. In this sense critical theory is probabilistic.

A similar outlook can be seen in Universal design. Lawton (2001) defines Universal design as the best approximation of an environmental facet to the needs of the maximum possible number of users. In recognition of this, Lawton argues that personal need motivates affordances (where affordances are what the environment offers, provides, furnishes, and invites).

Lawton lists a variety of probable affordances that the environment could offer for a variety of needs. Some of them include physical privacy, proper orientation of features, social opportunity and so on. The probabilistic view is also expressed in the principles of universal design which allow for 'flexibility of use' (Story, 2001, p.10.1-10.8). Flexibility means to provide choices in methods of use, accommodate right or left hand access, provide adaptability to the user and facilitate the user's precision. In this sense Universal design is probabilistic in its conceptualisation rather than deterministic.

1.2.4 Social Reality as not Value Free

Critical theory is based on belief that facts require an interpretation from within a framework of values, theory and meaning. Theories are based on beliefs and assumptions about what the world is like and on a set of moral-political values. In order to interpret facts, one must understand history, adopt a set of values, and know where to look for underlying structures. Hence, different versions of critical science offer different value structures (e.g. Marxism v/s feminism). Although the word universal could be attributed as value neutral, in the recent times, Universal design researchers have embraced cultural differences as an integral part of social reality.

Balaram (2001) for example, argues that in the non-industrialised majority world, where there is overwhelming diversity in language and customs, disability refers to issues beyond physical disabilities, and is essentially a social construct. He argues that in Asia it is an extremely unsociable act to send their disabled or elderly relative to institutional care. Hence he advocates an Universal design which can work with the relevant value system. He proposes interventions such as changing societal attitudes, educating for the future, positive thinking, welfare networking and so on.

The idea of value laden universal design is also reflected in two of the seven principles of universal design: 'simple / intuitive' and 'perceptible information' (Story, 2001, p.10.7-10.8) Both these principles refer to environmental legibility in diverse settings that accommodate wide range of literacy and language skills.

1.2.5 Critical Theory as a Third Way in the Subject-Object Debate

On one hand critical theory considers that the subjective ideas are important. On the other hand it assumes an objective world in which there is unequal control of resources and the power in which subjective opinions are based. This paradox is aptly demonstrated in the many examples of universal design in the dichotomy between universality and subjective needs.

Lawton (2002) has argued to bridge this gap by catering to several individual issues such as self-actualisation, systematic consideration of each need for every prospective user, systematic assessment of individuals on the characteristics of representation members of each group, assessment of environment in terms of affordances and a participatory design process. As needs and competencies are assessed environmental design affordances are matched to the personal characteristics. Hence the individual and subjective attributes are considered important to what is ultimately defined universal.

1.3. Universal Design as a Critical Theory in its Knowledge Generation

1.3.1 Critical Theory as a Provision of Resources

According to Newman (1997), critical theory seeks to provide people with a resource that will help them understand and change their world. Once people discover the resources they can use them to alter social relations, and to improve how things are done. Hence, a critical theory grows and interacts with the world it seeks to explain. Such knowledge generation is also seen in universal design.

Story *et al.* (2001) has used several versions (almost four versions in a period between 1994-1997) to formulate the seven principles of universal design. In her paper she charts out how these seven principles evolved from its fuzzy beginnings and how different studies suggested new changes in the principles. Hence, the seven principles of universal design emerged from a variety of sources which were made available to the society.

Subsequently, the principles themselves became a resource for others to make use of. For example, Manley (2001) uses the seven principles to create an accessible public realm in England where she argues for an universal approach to street design. She argues for street spaces which provide freedom to walk without interruption in city streets. Similarly Calkin *et al.* (2001) use Universal design

principles for a comparative study with the design guidelines of Dementia care nursing home. Hence knowledge generation occurs through the resources being made public and constantly deliberated.

1.3.2 Replication of Facts in Critical Theory

Unlike positive science where facts are neutral and agreeable, according to critical theory facts are set within the framework of values. Researchers in different countries consider universal design principles as a loose body of concepts which could be reinterpreted to their own settings. Hence the replication of facts has to adhere to the respective value systems.

For example, in Japan Universal design has to include factors to tackle earthquake disasters (Takahashi, 2002). In Israel there exists a great sensitivity to provide universal design to injured soldiers (Ramot, 2002).

In Switzerland, universal design has inspired a new place types such as care apartment complex in Switzerland (Hurlimann, 2002). Care apartments were created so that it fosters more social relationship than the convention hotel-like care of the nursing homes. The care apartments are integrated into regular housing without standing out or causing social stigma. Hence the replication of facts in universal design is not deterministic or based merely on facts but takes the prevailing social attitudes into consideration.

1.3.3 Knowledge Accumulation

In critical theory knowledge is accumulated by the consequence of action. Universal design also strives to accumulate knowledge through design action. In the environmental behaviour research it is generally believed that environment causes people to behave in a certain way. Calkins *et al.*, (2001), for example, assumes that specific interventions in the environment of Dementia patients cause improvement in their stress levels.

Among the several interventions mentioned, one of them amounts to reducing negative stimulation. Negative stimulation is done by reducing scale of the environment, controlling ambient conditions such as auditory and visual backgrounds, limiting unnecessary choices and providing a place for retreat. Hence by catering to specific interventions in the environment, it is assumed that relevant changes occur in behaviour.

Similarly, Lawton uses several environmental indicator examples to demonstrate how certain environmental affordances can be accomplished by intervention. For example to fulfil an affordance called preference he uses an environmental indicator such as toilets near activity spaces.

The core of Lawton's model is, therefore, a set of human needs, and a parallel set of affordances, that can be fulfilled through relevant environmental interventions. Hence the knowledge accumulation in universal design comes from interventions and the consequences.

1.3.4 Testability and Modification and Change in Critical Theory

A researcher tests critical theory by describing accurately the conditions that are generated by underlying structures and then by applying that knowledge to change social relation. Hence critical theory informs practical action or suggests what to do, but the theory is also modified on the basis of its use. The testability and modification in universal design has been proposed by the Post Occupancy evaluation (POE) (Preiser, 2001). According to Preiser universal design performance can be measured by defining the degree of fit between people and their environment, testing the human activity support systems, measuring the adverse effects of products and understanding how designs cater to multiple uses. Hence, the performance is based on the seven universal design principles laid down by Story (2001). Changes for increased performance are then prescribed based on the outcomes. Hence knowledge grows by an ongoing process of eroding ignorances and enlarging insights through action.

1.4. Prologue

Much of the information on Universal design is fragmented and hence its' theory has not been adequately developed. However, as demonstrated in this study, Universal design can be seen in the paradigm of critical theory in terms of conceptualisation and knowledge generation. In application, perhaps, it is closer to a normative paradigm. Some have called critical theory follow an universal pragmatic logic as against universal reductionist logic of positive science (Habermas, 1972) i.e. an universality that takes into account pragmatic conflicts of society and not an universality that is devoid of everyday life of people. While Universal design does not fit neatly into such the mainstream critical thought (such as Marxism and feminism), it consists many facets of a critical theory that may perhaps indicate that it operates as an universal pragmatic system.

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