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Assessment of the Co-creative Design Process

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Abstract: Co-creation in Design is a multi-disciplinary process where co-designers are not only trained professionals from different disciplines, but also members from the community with whom the co-design project is focused, e.g. local government officers and other interested parties such as financiers, local businesses, NGOs working in the area etc. Handling such multi-disciplinary, multi-personality and multi-cultural situations requires personal and professional development through reflective practice to understand one's own experience. This technique has been traditionally called 'the act of becoming aware' (Schön, 1983) As the importance of co-design is increasing, the interactions generated during the co-design process are being considered important and such interactions need to be considered in the assessment criteria. Experts in psychology, systems thinking, western and eastern medicine and design education were invited to share knowledge during workshops and a consequent review of inter-disciplinary literature resulted in a list of 'inner values', where the anticipation was that, when these inner values exist in a co-design team, they can lead to harmonious working and co-owned decisions during the co-design process (Vyas et al., 2012) The inner values were then clearly defined using the inter-disciplinary literature and literature from positive psychology was used to convert the conceptual inner values into a practical research framework. This paper describes the application of the framework for research to generate empirical evidence that justifies the role and utility of the 'inner values' in the co-design process.

Keywords: Co-design, Qualitative research, Inner values, Professional development

1. Introduction

Co-creation in Design, also called as co-design, is a multi-disciplinary process. The most widely accepted definition of co-design comes from European Design Leadership Board (2012) who define co-design as "A community centred methodology that designers use to



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enable people who will be served by a design outcome to participate in designing solutions to their problems." It is increasingly being used because co-design gives importance to understanding the users' mind-set and it involves users and stakeholders in the design of solutions using participatory approaches. Co-design gives equal importance to the designer, user, and stakeholders, making the process increasingly inclusive and multi-disciplinary with no formal structure. Therefore, such scenarios are complex and no two co-design projects can have an identical process. Social science and Design research have studied co-design projects in a variety of contexts for more than four decades. Citizen engagement, social innovation initiatives, crowd sourcing activities and group/team work are a few examples of such studies. In these, the stakeholders are not always trained professionals from different disciplines, but can be members of the community, local government authorities/officials or other interested parties such as financiers, local businesses, Non Governmental Organisations (NGOs) etc. In co-design projects, the designer facilitates the dialogue for solutions to emerge (Vyas and Young, 2011) However, such multi-disciplinary, multi-personality and multi-cultural situations require special skills that develop through experience and reflection in action. Reflection helps designers to understand their experiences and through 'the act of becoming aware', develop their personal professional capabilities (Schön, 1983) Such reflection and professional development aids the co-designers to understand and manoeuvre situations where internal politics and power relations can make interactions stressful. The learning mechanisms employed are driven by interactions, either with other people or with the surroundings (Platts, 2013) However, to achieve competence and excellence, one needs to have the capacity to learn not only by acquiring knowledge and skills but also by building the right attitude. For example, when interacting with rock, the attitude of a sculptor is different to a layman. Attitudes arise out of core inner values, which denote the worth of things, concepts and people in the mind (Thompson, 2013, p. 34) The collective minds of people lead to terms such as family values and the values of society. These internalised systems determine the actions that make up the behaviour of a person (Perloff, 2010, p.92-101) Building appropriate inner values is therefore, the creation for change in future action strategies as explained in the next section (Argyris and Schön, 1987).

2. The importance of inner values

Argyris and Schön (1974) made a distinction between the two contrasting theories of action. The distinction is between those theories that are implicit in what people do as professionals, and those theories that people use to describe their actions to others. The *theories-in-use* are tacit structures governing the decisions, behaviour and actions of the professionals. The theory used to convey what a professional would like others to think they do has been called *espoused theory* (pg. 93). The gulf between espoused theory and theory-in-use always exists and is not a bad thing. However, if the gulf gets too wide then there is clearly a difficulty in understanding one's own actions properly, but if the two remain connected then the gap creates opportunities for growth through reflection. To bridge this

gap, there are two learning strategies suggested by Argyris and Schön (1987). When organizations, groups of professionals or a person focuses on improvement of action strategies alone, it is called *single-loop learning*. When the focus is on the improvement of the governing variables (inner values) and the action strategies, then it is called *double-loop learning*. It is noted that every professional or group of professionals have both single and double-loop learning and the aim is to have more double-loop learning for a more holistic learning experience. However, this is not explicitly possible because there is no well defined set of inner values. The inner values are culturally and subjectively relative. Thus, even when two people say they value freedom, each has a different conception of what freedom means and each would use their idiosyncratic concepts to act differently. Values are often intuitive and tacit. There are no objective grounds to define, let alone quantify inner values. They often conflict with each other in specific contexts, such that individuals must juggle and prioritize values, often in an ad-hoc and logically inconsistent way (Sensen, 2011) Thus, an individual is rarely aware of all of the values he/she might believe to be good or bad, and thus, many individuals are not able to fully articulate or rationalize their values.

The inner values that are important for co-design can aid the designer to become aware. Such awareness can help designers and design teams function smoothly for successful co-creation of design solutions (Vyas and Sice, 2012) Inner values, according to Schwartz (2006), are the intrinsic worth that a person assigns to thoughts or ideas and creates outcome because “*when values are activated, they become infused with feelings.*” Thus according to Schwartz inner values are beliefs linked inextricably to effect on emotions. Consequently, inner values motivate actions because according to Schwartz (ibid), they determine desirable goals. However, inner values are not bound to certain feelings and a few actions alone and as Schwartz explains, they transcend specific actions and situations. Thus, inner values are not present because of emotions or situations, but are inside a person all the time and demonstrate themselves in any and even all types of contexts for different situations. The trade-offs among relevant, competing values are what guides attitudes and behaviours (Schwartz, ibid) Some inner values recognised from a literature review for relationship development during co-design are explained below.

3. Inner values for successful co-design

Co-design has been considered the application of co-creation through and for design where co-creation is “an eclectic process of facilitating collaborative creation of shared knowledge and co-operating to generate outcomes that are built by co-owned decisions”. (Vyas, et.al. 2011) Thus, successful co-design requires co-operation and collaborative working. It should be noted that these two factors are used to map literature below and every inner value recognised is highlighted by using **bold** font style.

3.1 Co-operation

Co-operation is the key factor in co-design. From an evolutionary point of view, Nowak (2013) explained that, in the real world, interactions happen iteratively between people and the inner values for the next interaction are determined by the perception of interactions in the past. This calculation is subconscious but inevitable (Nowak and Highfield, 2011) The inner values still remain in the person and the person's perception of an interaction being positive or negative is key to the occurrence or lack of a particular inner value in future interactions. Nowak (2011) explains that for any co-operation, the key inner values needed are: Hopefulness for Co-operation, Generosity of spirit and Forgiveness for defection¹. Thus, the inner values defined by Nowak from an evolutionary point of view are considered crucial for co-design to be successful by building relations for harmonious interactions.

Hopefulness is “the intention that the first move of both the parties will be towards co-operation” (Nowak, 2011,pg. 272) Nowak argues that to start the cycle of interactions between two entities (people or another species, depending on the context), both parties involved in a situation with a potential for interaction; need to show the inner value of Hopefulness for co-operation.

Generosity of spirit is “the ability to accept a smaller share of the benefits of co-operation” (Nowak, 2011, p. 208) Nowak argues that the inner value of Generosity of spirit is required for Co-operation to accept a smaller share of the benefits generated from a co-operation. Putting the competition aside is important and Peterson and Seligman (2004) explain that the inner value of Generosity of spirit determines the presence of humanity (p.50) and relies on doing more than what is only fair (p.37) Showing Generosity even when an equitable exchange would suffice shows “kindness, even if it cannot be returned and understanding, even when punishment is due” (p.326)

Forgiveness is “the ability to reciprocate defection with co-operation in the next interaction, with a certain probability” (Nowak, 2011, pg. 223) Nowak (2011) argues that the consequence of defection (non-cooperation) in a tit-for-tat strategy is too harsh and in terms of altruism or selflessness is too low or even non-existent. He suggests that for the two parties (people or species) to co-operate during consecutive interactions, the inner value of Forgiveness is required, where the chances of co-operation in the next interaction increase or decrease with a probability in response to the past (or the last) experience. Thus, the inner value of Forgiveness grows stronger with experiences that are perceived positive and weakens if the experiences are perceived as negative. Peterson and Seligman (2004, p. 449) mention the Hindu philosophy of repentance with regards to forgiveness and highlight that both are important precursors to the complete restoration of a relationship.

¹ Defection is an act of non-co-operation by opposite person

3.2 Collaboration

Collaborative working is another crucial aspect in a successful co-design. Osborn (1963) propagated brainstorming as the process for collaborative working. He advocated that the most important thing that distinguishes brainstorming from other types of group activities was the absence of criticism and negative feedback. Nemeth (2012) conducted research and proved that Osborn's approach may be counter-productive and even ineffective. He showed that debate and criticism do not inhibit ideas but, rather, stimulate them relative to every other condition. Both Osborne and Nemeth put forth very important points. The desire for harmony during decision-making should not override a realistic appraisal of alternatives. Group members should try to minimize conflict and reach a consensual decision but this should not be at the expense of the critical evaluation of alternative ideas or viewpoints. If the group agrees on a solution as it fits everyone's ego, the solution they come up with could be inappropriate if applied without challenge. This has also been discussed by Prahalad and Ramaswamy (2004, p. 12) Thus Osborn can be said to give importance to the inner value of being Non-judgmental and crucial to welcome different opinions. Osborn does not criticise having debates over creative differences, but can be said to urge for the inner value of Patience so that every opinion can be presented. Nemeth can also be said to urge the inner value of Patience for collegial debate but also the inner value of Acceptance for exchange of critical evaluations.

The judgment of others creates a distorted account of events. Biestek (1953) explained **being non-judgemental** does not mean being devoid of feelings and emotions and definitely does not mean being indifferent to ethics, morals and values. It is actually, the exact opposite. The inner value of being non-judgemental limits personal bias so that a genuine account of reality can be understood. Though pure objective reporting is not the goal, being non-judgemental provides an unbiased report of events that includes emotions and feelings as a part of it. The ability to be non-judgemental is thus multi-dimensional (Williams and Kabat-Zinn, 2013). Whilst having opinions is an integral part of the design process, opinions are rooted in reason and instincts are rooted in experience and therefore open to change as the context changes. However, judgments, by definition, are final and often rooted in emotions and experiences from the past that are not let go.

Grossman (2011) describes that, **Patience** as an inner value means "not interrupting or reacting before letting the occurring event unfold completely." The inner value of Patience is described as a conscious effort through an event and not as a state of mind. Ancient Hindu wisdom explains that Patience is not simply waiting (Sanskrit: pratiksha) or endurance (Sanskrit: sahasheelta) It is not inactivity. Patience is a conscious choice of actively seeking balance in one's own choices, thoughts and so on (Swami, 2000)

Acceptance has been defined as "experiencing events fully and without defence, as they are" (Hayes, 1994, p. 30) It is usually observed after an event has occurred. Acceptance as an inner value is important to overcome turbulence in the mind and the suffering that follows due to the unexpected event.

Beginner's mind is required so that team members keep an open mind and learn something new from each other, yet do not remain unknown to one another. From an enactive cognitive science perspective, Varela (1993) explains this stage as 'Unlearning'. Beginner's mind comes from Zen meditation as having an undisturbed, open experience of things as they are and freedom from preconceptions when approaching anything (Suzuki, 2010) In psychology, Buddhist meditation techniques have been studied and findings mention that a Beginner's mind is to have a clean slate, experiencing everything as if for the first time (Greenberg, 2012; Kabat-Zinn, 2013)

These inner values are not exhaustive or mutually exclusive. There is no known relationship or hierarchy between the inner values. The demonstration of the inner value or the lack of an inner value in a situation depends completely on an individual's choice, which can be conscious or sub-conscious. Inner values often conflict with each other in specific contexts, such that individuals must juggle and prioritize values, often in an ad-hoc and logically inconsistent way (Sensen, 2011) Thus, an individual is rarely aware of all of the values he/she might believe to be good or bad, and thus, many individuals are not able to fully articulate or rationalize their values. Therefore, Schön (1983) highlights the importance of reflective practice aiding the practice-based professional learning that arises from and leads to enhanced understanding of one's own professional experiences. Reflection is the act of looking at one's actions and reactions, thoughts and emotions and understanding the nature of experience as opposed to a mere recollection of events. Thus, reflection adds to the knowledge of a person. So the reflective practitioner is becoming aware of what is inside (emotions, experiences) and what is outside (actions and responses) and also what knowledge lies in the interaction of the inside and the outside with the inner values building the necessary attitude. However, the list derived above needed to be verified by using data from co-design projects to build case studies that could establish the importance of inner values during the co-design process.

For this purpose the list of inner values has been used to build an analytical framework for communication analysis. Guidance to evaluate the existence or lack of an inner value and assessment of phrases has been borrowed from Peterson and Seligman's (2004) book: *Character Strengths and inner values: A handbook and classification*. These have been developed from key literature in Psychology such as the Diagnostic and Statistical Manual (DSM) (American Psychiatric Association, in: Peterson and Seligman, 2004) and International Statistical Classification of diseases and related health problems (ICD) (World Health Organization, in: Peterson and Seligman, 2004) and their collateral classification and strategies of assessment for each of the inner values (IVs) The crucial difference between these entries and the approach for this research is the focus on the betterment of the co-creation process rather than simple detection of inner values. However, to be able to study the change in the inner values of the co-creating team, the values must be thoroughly defined and identifiable. Without proper definition, subjective interpretation affects observations (Mills, 1980) Well defined inner values need to be identifiable so that rational study can be conducted. Figure 1 shows the analytical framework produced by this research

study, where a binary system is used to identify if a certain inner value exists or is lacking in a particular situation.

Name of Inner Value	Definition of Inner Value	How to recognize if the 'Inner Value' exists in transcripts?	How to recognize if a 'lack of the Inner Value' exists in transcripts?
Hopefulness for co-operation	Hopefulness for co-operation is the intention that the first moves from both parties will be towards co-operation (Nowak and Highfield, 2011).	The participants say keywords/phrases that would indicate the intention to co-operate with at least one stakeholder, team member or the client as their first move. E.g. collaborate, co-operate, equal opportunity, include (others) in the process (project activity) etc.	The participants say keywords that would indicate a lack of intention to co-create with a stakeholder, a team member or a client e.g. (input from a stakeholder) did not matter to us/me, no need (for input from a stakeholder), they (stakeholder's/team members) ignored input (from other stakeholder/team members) etc.
Generosity	Generosity is the ability to accept a smaller share of benefit that arises from co-operation (Nowak and Highfield, 2011).	The participant's language would indicate an intention to make a compromise for the greater good e.g. I/we decided to get on with it (the task at hand) or accepted it (team decision) so as to save time etc	The participant's language would show an intention of not accepting a lesser share, or not compromising. E.g. I like it (task) this way but they (team/stakeholder) wouldn't listen so we kept pushing until they did. For similar reasons if a participant chooses to be silent, or withdraw participation then these are also examples of a lack of Generosity of spirit.
Forgiveness	Forgiveness is the ability to reciprocate defection with co-operation in the subsequent interaction (Nowak and Highfield, 2011).	The participant's language would show an intention not to assign blame for an event that occurred during the project. e.g.: "it happens", "no one's fault" etc., to show a forgiving attitude.	The participant's language would show an intention of assigning blame for an event during the project to a person or people. e.g.: Repetition of negative language to describe the same incidence shows a non-forgiving attitude. Reflections by participants on the outcomes of an incident have negative language, e.g.: "it was crap" or if the participant blames someone for an outcome by saying "it was avoidable" also indicates a lack of forgiveness.
Patience	Patience as an inner value is not to interrupt or react before letting an occurring event unfold completely (Grossman, 2011).	The participant's language would show an intention not to interrupt or react before letting the event unfold completely. E.g. We/I kept: on trying to understand. We continued to make contact etc.	The participant's language would show an intention of interruption or reacting before letting the event unfold completely. E.g. it (an event) was happening and I couldn't take it anymore, It felt like ages, I couldn't be bothered after a while, it takes too long etc.
Acceptance	Acceptance is experiencing events fully and without defence, as they are (Hayes, 1994, p. 30).	The participant's language would show an intention of experiencing the event without defence. E.g., it happened but none could have done otherwise etc.	The participant's language would show an intention of experiencing the event with defences. E.g. It (event/action/reaction) shouldn't have happened this way etc. Wishing and hoping things were different or happened differently is an example of lack of Acceptance.
Non-judgmental	Being Non-judgmental is the action of describing the facts objectively, and not thinking about 'good' or 'bad', 'fair' or 'unfair'. Judgments encapsulate feelings about the situation, are irrational and cannot be explained. (Dreyfus, 2011, pg.53).	By definition chosen for this research Non-judgmental behaviour can be observed when participant is describing the facts, and not thinking about 'good' or 'bad', 'fair' or 'unfair'. E.g. participant mentions an incidence with certain difficulties as just fact.	The participant would show the intention of categorizing a person/people in a certain way. E.g. I think, everyone is this (certain) way, they (stakeholder/team member/client) are like that (certain way) etc. Thus, generalizations by participants can be the first clue to recognising Judgemental behaviour.
Beginner's mind	Beginner's mind is relinquishing control over a particular thought or idea or preconception (Deraz, Varela and Vermersch, 2000)	The participant would show the intention of relinquishing control over a thought or idea e.g. I thought that but it wasn't that way (positive remark)	The participant would show the intention of not relinquishing control over a thought or idea e.g. That's what people are used to, that's how they (stakeholder/team member/client) are etc.

Figure 1: The analytical model of inner values for successful co-design

4. The data collection and analysis process

The participants for data collection were co-designers trained in the co-design process for one year through taught courses and through practical projects. They needed to be new to co-design with not more than two years of professional experience so that effect of ‘the act of becoming aware’ on their behaviour could be studied while they worked as teams on their respective projects for eight weeks. The projects were selected using pre-defined criteria created using the definition of social innovation- namely, the intention, methods and outcomes focused on social change of a definable set of people. The projects were assigned to the participants to mimic real world opportunism. Data was collected using reflective post project semi-structured interviews with 12 participants working in three teams. Two teams (referred to in the study as team A and B) were working on the Akzonobel project sponsored by Dulux to co-design social engagement events and youth engagement activities respectively with the Ashington community, which is considered as being underprivileged for at least three generations. The third team (team C) worked on a project sponsored by the Traffic Penalty Tribunal for England and Wales and the project aimed to improve the perception of the public towards parking using design. The collected data was transcribed, made anonymous using coding and confidentiality was strictly maintained throughout the analysis. However, before applying the framework defined in table1 as a part of data analysis strategy, it is important to understand it’s necessity.

The lack of empiricism in social research highlighted by Bourdieu (1975), Thiollent (1980) and Löwy (1985) and the criticism of the culture of observations and self reporting techniques led to the need to produce objective proof and replicable results in social science research. Similarly, the effort to understand people and the decisions they make, with the help of positive psychology, can focus on both strengths and weaknesses as authentic and as amenable to scientific understanding of such moral values (Peterson and Seligman, 2004)

Mason (2006, p.54) categorizes these into three key approaches known as literal, interpretive, and reflexive. The literal approach to the analysis of qualitative data is *“the process that focuses on the exact use of a particular language or grammatical structure.”* This approach is utilized while using coding with rigid sets of rules for analysing qualitative data. The interpretive approach is concerned with *“making sense of research participants’ accounts, so that the researcher is attempting to interpret their meaning.”* The reflexive approach attempts to focus attention on the researcher’s insights about the data creation and analysis process. Mason (2006) suggests that, in practice, many researchers would use a combination of the above approaches. However, this research uses an interpretive approach for qualitative analysis because the researcher was interested in understanding the inner values from an objective third person perspective. Qualitative data collected from semi-structured interviews is transcribed from audio recordings. The transcripts are redacted to ensure anonymity and remove confidential information. The aim of data analysis is to use the processed transcripts, which hold the relevant data and make observations on the co-design process with regard to different themes of investigation and to create findings that

can be analysed further to compare the co-design process of the different teams. To achieve this goal, the following steps from Creswell (2013), were adopted for analysis.

Step 1: Recognizing emergent themes and organizing data accordingly

This step has been correctly explained by Marshall and Rossman (1995, p. 114) “Identifying salient themes, recurring ideas or language, and patterns of belief that link people and settings together, is the most intellectually challenging phase of the analysis and one that can integrate the entire endeavour”. To assist in this endeavour, a list of pre-recognised themes selected for the qualitative data collection was derived from the literature review and converted into questions for a semi-structured interview. Collected data was made anonymous in keeping with ethical research practices and organized by selecting quotes from the transcripts of the participant interviews. A quote is a manageable section of the transcript, which may be as small as a sentence or could be a whole paragraph. A quote has the potential to provide the necessary information regarding inner values and has the context of its meaning in the transcript. It is supported by the time stamp from the audio it has been derived from and a quote number has been assigned to indicate its placement in the transcript.

In the transcript, a quote starts when the participant starts speaking on one of the themes and ends when the participant changes the theme or stops speaking. When a quote is on a theme that was not previously determined, then the new theme is noted. If a theme is recurring in all the other interviews, then it means that the participants consider the theme as important. Therefore, the theme should be used to compare the co-design process as applied by the participants. Similarly, if more than half of the participants (6 participants for this research) do not reflect on one of the pre-determined themes, then it means that most of the participants do not consider the theme as an important aspect of their co-design process. By the end of this process, the list of themes is updated by adding any emergent themes and by removing any themes not considered important. All the quotes appearing on a theme are brought together to analyse the views of a participant on that theme. Bigger quotes may be divided into smaller quotes so that they are easy to manage and analyse.

Step 2: Data matrix:

The observations from the data are noted in the form of a data matrix to segregate the quotes that support and refute an effective co-design process as applied by the teams based on the specific theme for which a data matrix is drawn (See section 5.3.2 for data matrix for each theme).

Step 3: Making an Observation:

A quote could have more than one idea, thought, concept or reflection expressed by the participant. This step recognises these reflections on different themes of the co-design process, to understand what argument the participant is making during the reflection and

what inner values can be observed based on the way the participant articulates the reflection. There are two sub-steps for achieving this.

Step 3.1: Looking for Words and phrases of interest

O’Conner and Gibson (2003) explain that, “Sometimes we can learn about a person’s perceptions, attitudes, and feelings about something simply by noticing the words, sentences and phrases used to express them.” Thus, the way in which a participant reveals thoughts, biases, feelings and concerns around themes of investigation is recognised using phrases within Quotes. Similarly, any expression used frequently by interviewees and which sounds different to what it means, is noted. During the analysis of qualitative data, these are selected from quotes and italicised. This step is important because these phrases mark the start of making observations.

Step 3.2: Finding meaning in language

During this step, an appropriate argument is determined from the quotes. The argument is used to build the case for the team’s co-design process being effective or not being effective with regard to the theme of investigation. Further, inner values are recognised to be existing or lacking in the quote, based on the criteria set out in the analytical framework created from the review of the literature (See section 2.6.5), which is shown in table 2.1. The evidence from the quotes in the form of statements or phrases has been noted to provide the rationale for making an observation regarding inner values.

5 Conclusions

The resulting framework was applied to analyse transcripts of reflective interviews of 12 co-designers who applied the co-design process for social innovation. The participants were divided into two teams. These two teams worked on an community enterprise project to bring social innovation into the Ashington town centre community. Their tasks were similar but not same. They worked for eight weeks on the project as a part of the Multi-disciplinary Innovation (MDI) course, a MSc degree from Northumbria University. While working on the projects, one of the teams was subjected to Awareness-based Meditative Technique (AbMT) intervention while the other was not. The researcher wanted to study the effect of AbMT intervention on the co-design process by understanding the existence or lack of the inner values recognised as important for co-design. There were five key aspects to the case study projects, the involvement of the multi-disciplinary design team, the input from sponsors, the engagement with the community and stakeholders working in and for the community, utilising existing knowledge and creating new knowledge and the element of leadership within and outside the team. The teams were neither provided with a hierarchy within the multi-disciplinary team, nor were they instructed to give importance to the community, their stakeholders or sponsors. The teams showed the importance of the inner values during

different aspects of the co-design project even though the application of co-design project was widely different for both teams.

1. The team A, showed the inner values of Generosity of spirit and Patience during co-design process. This helped the team recognise the need for action instead of prolonged discussion and to calmly apply an action-reflection cycle during the decision making process. Team B on the other hand lacked the inner values of Generosity of spirit and Patience and had lengthy unproductive discussions which adversely affected relationships between team members.
2. Team A showed the inner value of Hopefulness for co-operation and Beginner's mind, which helped build Acceptance towards different view-points raised by other team members, users and stakeholders from the community. Team B also showed Hopefulness on many occasions which helped to build Acceptance but on certain occasions a lack of Hopefulness for co-operation led to a lack of Acceptance of other's views and Acceptance towards the situation as a whole.
3. Being Non-judgemental about negative response from the community helped in building inner values such as Patience and Forgiveness for both teams and helped them in building relationships with local community members and stakeholders in government, schools and businesses. Being Non-judgemental was also crucial for the internal working of the team to sort out issues arising due to multi-disciplinary work. With Team B, the internal working of the team suffered when team members became judgemental and could not forgive each other.
4. As leadership was not officially assigned there was a lack of hierarchy within the design teams. All the multi-disciplinary design team members had to share leadership. Generosity of spirit was important to take up responsibility of leading the design team when it was necessary as well as to let go the leadership role and to follow a leader within the design team.
5. Hopefulness for co-operation led team A to overly indulge with the community of users and temporarily lose focus on the financial viability of solutions being developed until the sponsors brought this to the team's attention.

It was concluded that the inner values highlighted by literature played an important part in building relationships and for cordial working, not only within the team, but also while working with the community of users and stakeholders. There may be other inner values that could be essential but the ones listed above form list of key inner values observed to occur in this study.

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