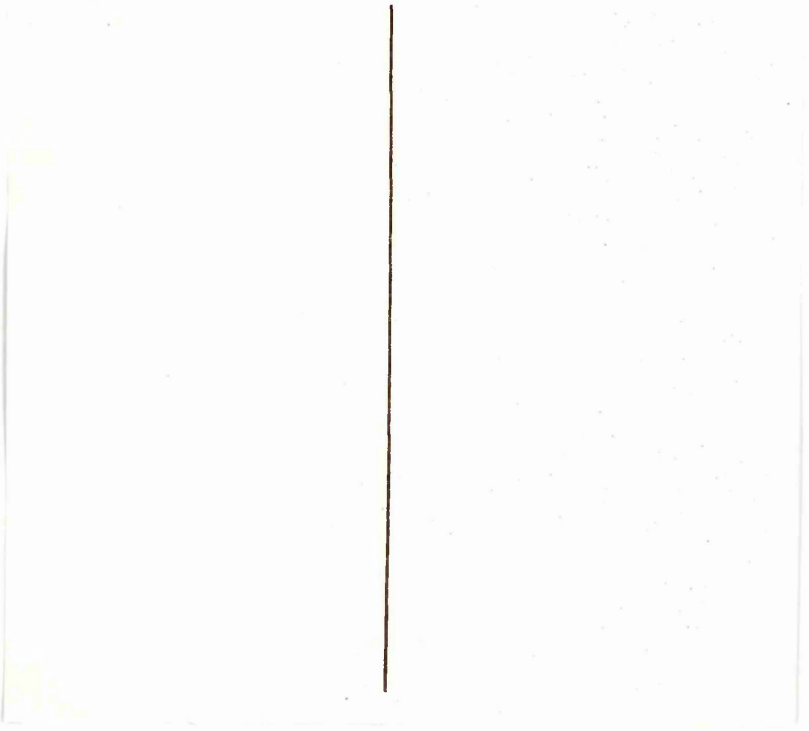

DESIGNING FOR CULTURAL MIGRATION:
Methods for Designers Confronted With Social Change

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Abstract

The effect of the cultural and social changes that accompany consumers' relationship with goods presents designers with a challenge. Although current design-related research often centres on the non-physical aspects of products, such as aesthetics, emotions and pleasurability, these factors may work in a particular way in markets in the developing world where rapid cultural and social changes are taking place. Current approaches to culturally oriented product design can be improved and assisted by acknowledging this. This thesis describes a "practice-led" approach to research which is mirrored by the research-led methodology for practice proposed in the conclusions. The focus of the investigation is on household products to assist food preparation related to a specific ethnic group in Malaysia, whose members are involved in migration from a traditional rural life to an urban industrial setting. The research analyses the cultural factors affecting the design of these products in Malaysia with the aim of influencing the practise of designers who develop products in changing or fluid cultural circumstances. The main contribution of the research is a 'designing for cultural migration' methodology, which helps designers to identify cultural elements in product interactions during users' cultural migration experience and develop greater sensitivity to these elements where they can be observed. The work has also developed some more general cultural insights which may be of value to other research.

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CHAPTER 1

1.0 RESEARCH OVERVIEW

(JUSTIFYING THE NEED OF THE STUDY)

This chapter will present the rationale for this research. It will explain why it is being conducted and why it is important to a designer who is interested in understanding the needs of people experiencing cultural change. The chapter begins with a brief introduction of my background as a designer and how this experience has formed my research interest in product and cultural influences and has helped to develop my area of investigation. The problem statement identifies key areas of the research: cultural factors, product transformation, adaptation processes and designer role in responding to cultural change. In the initial stage, the research was more focused on cultural elements influencing product design but as the research progresses; I developed a further understanding of this subject from observing practical and cultural adaptations to products that have arisen from social change. This then has formed my idea of cultural migration, which is explained in the later section of this chapter in order to give readers a general idea about the study in the context of this research.

The aim of this chapter is to provide clear research aims, to define the research question and also to identify the possible contribution of the study. As a developing country, Malaysia provides numerous examples of cultural migration and the thesis examines how a research led design process can respond to the particular needs arising from change in such countries.

1.1 My previous experience and reflections to this PhD work

In the course of more than 8 years experience as a designer and design teacher in a developing country (Malaysia), I[1] have observed many product transformations. In my work, I developed many products aimed at both satisfying local needs and competing with imported international mainstream products. On the basis of that experience I began to recognise that cultural factors have a strong influence on users' practices and beliefs and play a big part in user and product interaction.

Based on my professional experience, it seemed that most design projects in Malaysia have developed from data provided by other disciplines (such as marketing, engineering, ergonomics, health and safety, etc.). I made a working assumption that users' culturally determined needs are important and might be understood in many different ways. I also assumed that designers might offer knowledge and insights that would be complementary to the disciplines mentioned above. However, as my investigation progressed, I have discovered that migration, whether it is geographical or purely social, has a very stimulating influence on the way people configure and use various products.

In this PhD investigation, therefore, I have sought to understand product changes from the social context of 'migration users'[2], relating product evolution to their cultural practices and beliefs. The choice of focussing only on kitchen products rather than other household products/furniture is because kitchen tools reflect much

[1] My voice will also be heard as the author, researcher or designer in this thesis, depending on the context of this research

[2] 'Migration users' (my term) refers to users who have been affected by socio-economic changes that led them to move from traditional rural to industrial urban settings and being exposed to product transformation experiences.

to food preparation processes. The choice is relevant as food, buildings, houses, fashions and art represent explicit elements of culture which can be observed in reality (Trompenaars 1999, p.21). I hope to influence designers' practices in changing cultural circumstances and explore how designers can use their professional skills to understand users' culturally determined needs.

1.2 Problems Statement (User-Product-Interactions)

Product developers are coming to understand how the interaction between users, products and environment, can play an essential role in the product development process (Green and Klien 1999:92; Taylor et al. 1999:217, Von Hippel 2002:821). These authors indicate that a successful product or system requires a high level of interaction between designers and users. In many cases, however, designers are still predicting the users interactions with products based on their previous knowledge and experience. Popovic (1999:26) argues that in most product development processes, designers still find it difficult to predict theories concerning users' needs with respect to the products they use. Thus, according to Jones (1992:216) designers should take part and engage more in the social life of the users by experiencing users' lifestyles.

Norman (1988:85) points out that there are numbers of cases of products that were produced without proper research into users needs and limitations which have led to problems involving users' interactions with products. In general, research reveals that non-physical merits of product-user experiences such as aesthetics, emotion, pleasurability, product 'soul' and cultural factors tend to be neglected, overlooked, misjudged or entirety ignored in the pursuit of factors such as physical

styling, functionality, usability and ergonomics. In most cases, the manufacturers tend to make the least amount of change possible to make an existing product acceptable to the target culture (Lawson et. al 2003:9). Röse et al. (2001) and Rodriguez et al. (2006) claim that many non-physical aspects of designing a product have been overlooked in product development processes.

Users' culturally determined needs may be particularly unpredictable in a changing society. Additionally, as pointed out by Roberts (2002) and Squires (2002:105), it is always a challenge for designers to know who their users (or stakeholders) are. 'Global' thinking may overlook the diversity between people in different communities (Kim et al 2006). According to Leinbach (2002:3), design should no longer be seen as a styling shape or just an art object but products should be designed and produced with appropriate features including cultural aspects which could provide a more competitive edge in the market. Rodriguez et al. (2006) have suggested that in creating products for current emerging markets, designers should become involved in a deep understanding of the needs and context of the people within it.

This investigation aims to produce a guideline model for designers in response to the needs of people experiencing cultural migration. The work will contribute to a methodology for designer that helps to identify cultural elements in those user-product interactions within their cultural migration experience. The research proposes a framework for examining users' culturally determined needs and understanding product evolution in users' migration experience. This is followed by a later stage of design work to inform the designer's interactions with stakeholders aimed at improving their understanding of cultural migration in their design context.

1.3 My Perspective (on culturally localised products)

Based on my experience as a product designer in Malaysia and being a user in my own cultural domain, I observed frequently that cultural factors affect product. This insight has led to my interest in culturally localised products. I considered the possibility that, as an alternative to developing completely new products, traditional artefacts might be improved and made relevant to today's lifestyle by good design practice. The original intention of the research was thus to investigate the kinds of knowledge that might support this process.

Many culturally localised products have been transformed into a different practical form in response to the social and environment changes in user's lives. In Malaysia, culturally localised products are still in great demand and some can still be found in an unchanged condition as users still have a strong attachment to them, although they are experiencing a different lifestyle through social migration. Illustrations below show images that indicate those ideas of unchanged values when a product takes on a new practical form responding to social and/or geographical migration.

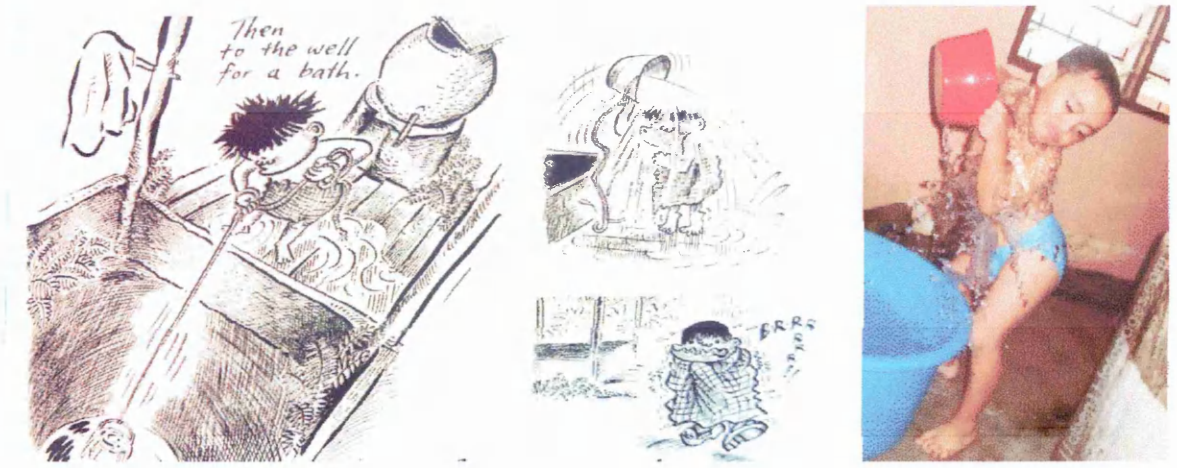


Figure 1 - Images of Traditional Practices and Unchanged Values : (Malaysia Context : moving from traditional rural to industrial urban areas) Left - Satirical illustrations by Lat (1993), Right photograph from anonymous source.

Based on these early observations, I recognised that products could transform and/or migrate into a different practical form in response to the social changes and environment of the users through numerous, confusing and unpredictable routes. These can be observed in individual cases but are difficult to measure as a "snapshot" across communities where individuals are found at all stages of this migration. However, this observation has supported my early research hypothesis.

In most cases observed in my professional practice, I found that users are experiencing social and cultural changes in adopting a modern urban lifestyle, whilst at the same time, still trying to adapt elements of traditional products and practices where appropriate to their new urban settings. Through my initial background research with geographical migrants in the UK, I began to recognise that more than just cultural elements influenced product interaction with users. In the hybrid lifestyles of migrants there are also other aspects and possibilities of interaction in terms of

ergonomics, usability, safety, hygiene, and practicality, which can be potential areas for designers to engage with as can be seen in (fig. 2) below

a. using traditional mortar and pestle (granite) in urban kitchen environment required more than cultural practices understanding (Source: Field work in Malaysia)

b. The convergence of having the needs of using traditional tools into limited kitchen space in urban environment led to adaptations and cultural conflicts. (Source: Field work in Malaysia)

c. Cultural practices such as in the tradition of eating by using hands in urban settings has not changed among the Malay despite their cultural migration experience. (Source: photograph from anonymous source)

d. traditional tools such as hand washing pot assisting cultural practices in eating by hand cultural practices in urban settings is also transmitted through users' cultural migration. (Source: photograph from anonymous source)

Figure 2- The needs of having traditional tools to assist cultural practices in current situation

In these early observations I encountered users who retained a strong traditional cultural connection with the tools or products they employed. They have long experiences of living and learning with such products: most of these urban dwellers have grown up in villages prior to establishing a life for themselves in the city. However, the new environment engenders adaptation of these traditional products and services. Fernandes (1995:88), who conducts research into localisation and globalisation of products, states that 'values' are basic assumptions which have been developed over a long period of time and are very slow to change.

Although some of these products might be transformed into new practical forms to deal with new environments or the availability of new materials, the application of these products remains broadly the same. In relation to this, my early observations indicated that product use, choices, adaptations and users' cultural mentalities arise from their cultural experience which predisposes them to particular practices regardless of the external environment, even if that requires adaptation of new materials and products as indicated in Fig 1 and 2 above.

In this situation, I believe that designers are required to offer more than just an improved version or a new product, but rather an appropriate design and social engagement system in which design and designer can both play a role in the social investigation that informs designing.

Röse et al. (2001:18) have suggested that designers should adopt a 'user requirements' approach to cultural understanding, by organising the existing cultural data into two categories such as cultural mentalities and cultural environment which are reflected on one another. She defines cultural mentalities as being cultural facets evident in that cultural group, thought or behaviour, while the cultural environments

are elements around those cultural facets that determined the design (please refer to figure 3).

According to Hofstede (1994:9), cultural mentalities form the deepest layer of culture (refer to the concept of culture which will be explained in details in section 2.1 in my next chapter). These have been built up over generations and reinforced by learning experience throughout their lives. While cultural environments are largely built by their surroundings, including the environment and society around them: family, friends, society and nations.

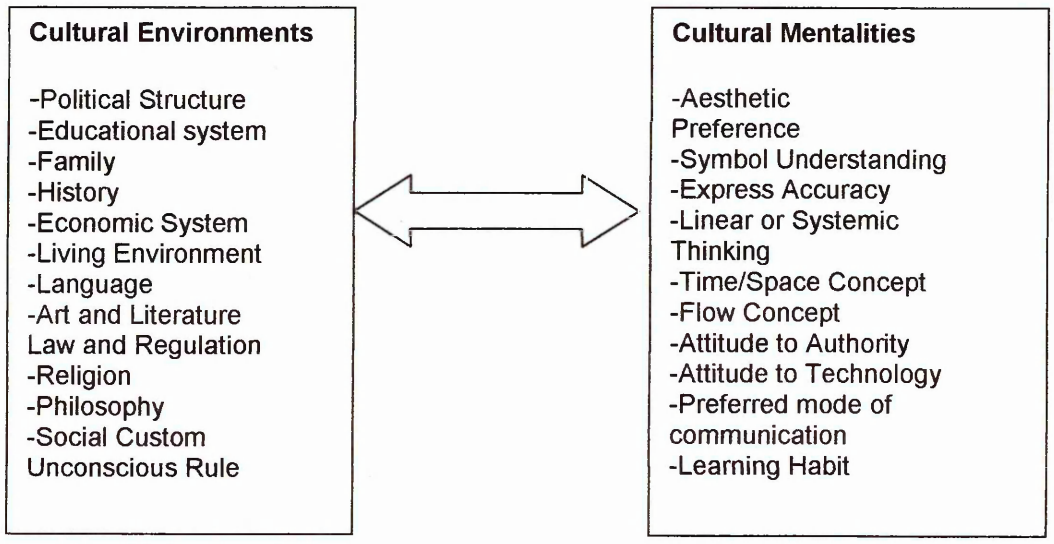


Figure 3 - An approach combination of culture variables and meta-models of cultures for product development - Röse et. al (2001:18).

I propose that this research into product migration in relation to social change could assist designers to understand how to respond to fluid cultural circumstances. Designers should engage with the real social situation and should be more sensitive to the changes or improvements needed to bring them in line with users' current practices in their new environment; they should not just simply offer users a simple continuity of similar traditional forms of design which might not be relevant to their

culturally-changed circumstances. Whiteley (1993:3) points that designers can no longer take shelter from their own actions and continually repackage the same old type of consumer goods when research into user-needs is becoming increasingly dominant in the design research arena

1.4 Challenges for the Designer

In this section, I will explain the agents which might transform products and services in a given cultural context, focussing on the issues of demographic patterns, economic shift and globalisation impact driven by local government planning. In relation, I will also discuss the status of culturally localised products in their local environment and the patterns of adaptation of product and practice that I have observed.

1.4.1 Economic and Demographic Shift

The original motivation for this research was to seek ways for designers and producers in Malaysia, as an emerging industrial nation, to provide appropriate products for local consumers rather than simply responding to global norms. However it was soon recognised that the central factor was not so much the particular conditions in Malaysia, rather that the population was experiencing rapid changes. It was seen that similar economic and demographic shifts were happening in many parts of the world and the research moved on to consider the role of designers in this context.

Sennet (1978:129) points out that a variety of complex factors including economics and demographics have led to big changes of lifestyle in the twentieth century. In a previous study, Schutte and Ciarlante (1998) also revealed that rapid

economic growth especially in Asia, over the past few years has led to significant changes in values and social structures. Similarly, Deasy et al. (2001), Mueller (2004) Coyles and Gokey (2005:101), claim that apart from market data, demographic patterns data could be used by manufacturers to distinguish the changes that are difficult to address such as the needs of the users. Further, AlShebli and Karahalious (no date) claim that population and cultural stereotypes have influenced change in product use.

In addition to these demographic changes, the local government's socio-economic planning has also contributed to influence current products and services (Huat 2000:13-17, Fan 2000:83). Previous studies have revealed that in many Asian developing countries, there has been remarkable change in products and services influenced by social development factors such as economic growth and changing in government policies (eg. Nagata 1979, Kahn and Wah 1992, Parnwell and Bryant, Crouch 1996, Kaur 1998, Dick and Rimmer 1998, Harper 1999, Hassan 2004)

This economic shift has also established the movement of population from traditional rural to industrial urban areas as reported in Malaysia Internal Migration statistics (Department of Statistics Malaysia 2006). In relation to that, Talib (2000a:36) points out that the growth in economic and social development in Malaysia for more than two decades has also led to a transformation in the social class structure. Furthermore, he stressed that a new social class group of users has emerged, which are more focused on settling in the urban area which is then known as "the new middle class" (Taib 1996:40). In relation, Radam et al. (2006) in their work revealed that the household structure has also changed simultaneously within these social

class groups due to the increase in their level of development and economic prosperity.

As socio-economic progress and demographic patterns change, culturally localised products should also be improved to be more coherent with users' current practices, social status and new life settings. Figure 4 below shows a series of examples of a class of product that was observed in the pilot study of this research

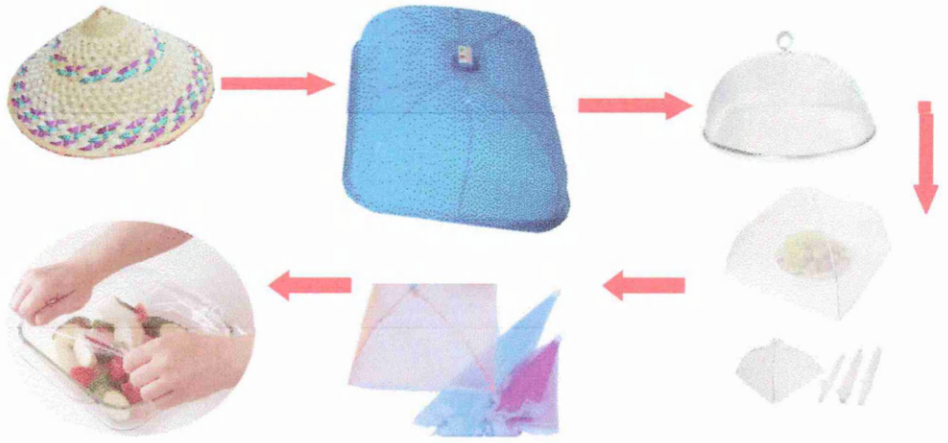


Figure 4 - Product transformation lead to convergence of cultural practises, example of food cover (Photograph from anonymous source). Note : It has been observed from the initial work in the UK, participants (the Malaysians) tend to use whatever is available, including cling film to replace those traditional food covers during their cultural migration period.

In this early observation, I have predicted that users influenced by this socio-economic and demographic change could have different practical needs in comparing products to those they normally used before. Users' perception, appreciation and use of products could be changing as their social status and environment has been transformed. Andreasen (1984:785) points out that in this situation, users are presented with an opportunity to think about improving their lives. He also claims that

as households move into a new community or social class, users might have new ways and demands to balance with their new environment.

Designers and product planners could be more sensitive and should begin to understand the patterns in users' values on the products they employed with social and geographic changes they have experienced. In product design development studies, Von Hippel (2002:826) suggested that how well the products work can be investigated through the understanding and observing of other interested people including users, suppliers or people who were involved in the maintenance of the products, which he classified as a potential 'lead users'.

He also suggested that the understanding of users can be explored through providing some users with innovation toolkits in which users would experience designing the products, in terms of solving problems as in trial and error design work and testing the product themselves as to which way they desired the product to function and to be. In most design processes, however, designers still depend on other data sources to predict users' interactions with products, such as marketing reports, consumer research, engineering testing, consumptions studies and ergonomics reports to understand and to predict users' changing needs and demands (Holt 1989:164, Bloch 1995:16). In relation to this, Krippendorff (2006:19) argues that data from these sources often provide uncertain value for designers. However, he claims that most manufacturers still rely on such data to reduce their risk of producing goods which subsequently fail in the market. Thus to assist these gaps in knowledge among product designers, future design planners and manufacturing teams, this research aims to influence the practice of designers who develop products in the

context of changing social phenomena or fluid cultural circumstances by exploring users cultural practices and beliefs with products they used in their social and geographic migrations.

1.4.2 The 'Open Market' Impact

The other main agent that influences these social changes and product uses is the concept of an open market such as globalization, which allows product and services to travel and be exchanged across different cultures (Senge 1994, Cheen 2001, Kaur 2001, Unesco 2004). The entrance of 'globalised products'[3] into the local market especially in Malaysia, indirectly has led users to learn and experience new product use and changes in value appreciation, which have led users towards more adaptation processes. However, in many cases, these globalisation factors have increased variety in users' buying options, demands and needs and have introduced new domestic practices.

Globalization is an important trend for industry (Pfeil 2006, AlShebli and Karahalious, no date) and has an influence on the acceptance of products by users from different cultures and backgrounds. In current situations, new products will probably meet with more than one user group with different cultural backgrounds making the problem for the designer more complex (Rose et al 2001:17). Leiss et al (2005:371) argue that industrial mergers in the 80s led to simplification of the variety of products available.

[3] In this study, 'globalised products' refers to modern household products that have been established and mostly accepted around global markets. For example, food blenders, coffee makers, microwaves, ovens, electric cookers, kettles, etc

However, Barber and Badre (1998) claim that global products will still remain localized due to the interactivity and contents that must reflect a cultural sensitivity and understanding of the target audience, and stressed that these global products are culturally dimensional and must be capable of rapid change. This will reflect back to the idea of having products with global features but localised in their applications (as discussed by Miller 1998, Powell 2001 and Corse 2006 below).

It is obvious that the concept of 'open market' had an impact on changing the products and services offered and affected the social system and users' perceptions. What is important is to consider however, is not what and where they are found physically but what they mean to the people in each culture (Trompenaars 1998:3), as these will affect the product success and level of users' acceptance. For example, eating in McDonalds or dining in Kentucky Fried Chicken is a show of status in most South East Asian countries whereas it is just a fast meal in UK, America or even Japan. In certain cases, a practical modern product such as a food blender does not necessarily satisfy users from different cultures in accomplishing their everyday tasks.

From my preliminary research work, users experiencing changes in life often try to remain with their traditional kitchen tools despite the introduction of modern products from this globalisation and open market trend. However, in certain circumstances, such modern products could also be transformed into localised products if they want to succeed in the local market (see Fig 5). There is a possibility that certain 'global products' could be transferred and converge to become a localised adapted product as time progressed. (See Fig 6)

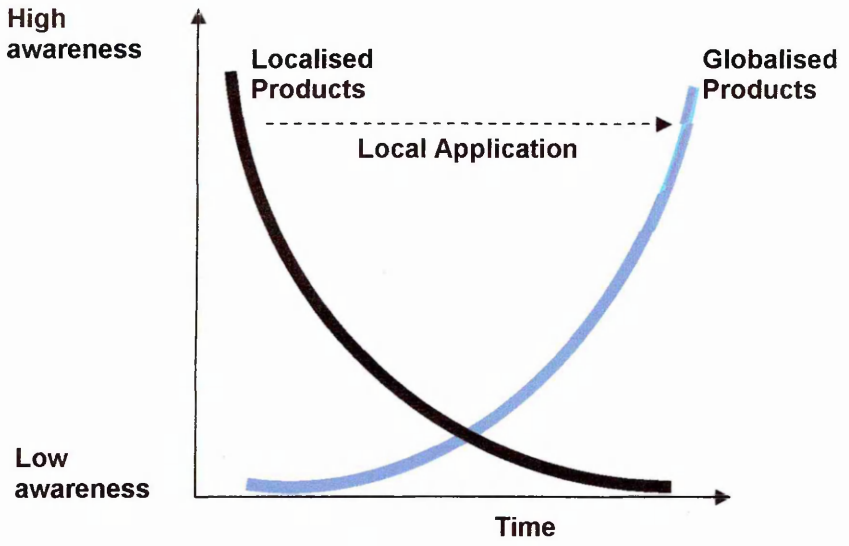


Figure 5 – Local users' awareness of 'Globalised' and 'Localised' products: From Global to Local applications.

Figure 6 – Global brand transformed to be compatible with local market demand (photograph from anonymous source)

This hypothesis is supported by Corse (2006) when he argues that there are very few global products indeed in currently emerging markets. He claims that all product development needs to be local as in his example, Coca Cola's marketing

strategy has utilised more than 80 formula variations to secure its market around the world. Corse (2006) also suggested keys to engage with customers in countries with newly emerging markets such as Malaysia. He stated that these include developing qualitative indicators that can be quantified such as cultural fit, buying habit, use model, and cost. He further stressed that although it is not necessarily precise, it should however, assist designers and serve as a foundation for future quantitative research.

I assumed that some culturally localised products will also need to be improved (or innovatively redesigned by the end user) to be compatible with their new environmental settings, as users tend to carry with them elements from their traditional cultures when they move between places and spaces. Culture can be transmitted including its patterns of implicit and explicit behaviour (Kluckhohn and Kelly 1945:78, Schein 1988:18).

In order to balance the effect of these social economic plans, globalisation and urban development activities, Malaysia has put effort into design and development programmes through its design organisation. Malaysia Design Council recently determined some projects with the aims of improving product design understanding among local designers and manufacturers in many of their programmes and workshops as in 'Accessory Design Innovation workshop MARA SMe Entrepreneurs 2007', 'Asia Design Network 2007', 'Design makes the difference' workshop 2007 (Malaysia Design Council 2006, 2007). However, the gap in their understanding of users' culturally determined needs and of improving cultural products to be compatible with fluid social change and lifestyle diversity has not been fully investigated in a local design context.

In becoming a successful and developed nation, mature in culture and heritages, Malaysian ex Prime Minister, Dr. Mohamad M. in Sixth Malaysia Plan (Malaysia Government Press 1991) stressed that Malaysia should not be developed only in the economic sense, it must be a nation that is fully developed along all the dimensions: economically, politically, socially, spiritually, psychologically and culturally.

As the country approached becoming a fully developed country (Malaysia National Vision of 2020 (Malaysia Government Press 2001; Malaysia Government Press 2006), some questions arose from operating this research :

How far could a culturally localised product which is internationally competitive compare with those global market products produced from developed countries originally designed for a different culture and being adapted (and innovatively being redesigned by users?) and how long can it establish itself as compatible and adaptable with users in a culturally changing situation?

Can these designs and products meet with current users' needs and aspirations? If so, can they be improved?

The main issue here is what effort has been successfully made by the local designers, design authorities and manufacturers to improve design as a successful product strategy to challenge these social migration circumstances?

These questions have influenced the formulating of my conceptual idea for developing a research question for this investigation. I have started to consider and (re) think what designers can do to challenge these phenomena and how designers could react to it.

1.4.3 Culturally localised Products in the current situation

Culturally localised products have been established in local commercial markets, however, due to social and demographic change, some of these culturally localised products could have migrated to a new form to reflect a new situation. In this research, design can follow this process or, as envisaged in this study, may take an active role in enabling it. In some cases, these culturally localised products have also been shown to be travelling across cultures in enormous ways to fulfil the needs of the different cultural groups without any major changes in design neither its physical form nor the material.

The initial findings from the pilot work have demonstrated that culturally localised products could be shared and used by users from different ethnic backgrounds (please refer to section on sampling in chapter 3) but with a different application as different ethnic groups might use similar tools for different purposes and reasons. (For example: The Malaysian Chinese used steamer cookers for producing different types of food compared to the Malay or the Indians, although the original traditional bamboo steamer cookers is believed to be only used by the Chinese). These products have repositioned themselves within the other subcultures moving from being a culturally localised product to becoming a more universal product. Below are some examples of this adaptation principle at work.

A traditional Malay banana stick pie
produced with Chinese Bamboo steamer
(Photograph from anonymous source)

Figure 7 – Traditional Chinese bamboo steamers produced variety of food products established in different Culture(s).

Another example also can be seen in the growth of the stir-fry pan in the UK, now used for many kinds of cooking, including Chinese style stir-fry methods adapted to local tastes. Powell (2001a) points that some products have the qualities of being universal but others could vary from situation to situation. He points to an example of a light switch being recognised as a global product but turning into a local product in its application. This idea has also been supported by the work of Daniel Miller (1998:172) into expertise in material culture in his specific study of a 'Coca Cola' drink being considered as a local product in Trinidad.

Many universally designed products were established from developed nations cultures but were only introduced into developing countries such as Malaysia in the late 70s. (National Panasonic Malaysia Report 2006). These modern products are normally derived from developed countries where they have been developed for a different target market group but introduced to challenge users' adaptation processes (For example: potato cutter, apple peeler, orange squeezer, microwave and toaster).

In summary, modern products could influence users' cultural practices in the future in emerging economies like Malaysia. It is normal that users living in urban areas have a tendency to adapt modern products into their current environment. In relation to that, Trompenaars (1996:2) has claimed that if something works in one

culture, there is a good chance that it might work in another. He also stressed that phenomena such as authority, bureaucracy, creativity, good fellowship and accountability are experienced in different ways. However, many products and services are becoming common in the world market. In most cases, these modern products (especially toasters, food blenders, chopping boards, etc) can be easily adapted, and can be found in most houses in the urban areas. Nevertheless, they still do not cater fully for users with their culturally determined needs and are not compatible in a culture migration situation. In this case, not all modern and universal products can be useful and practical to assist users living in different cultures.

The product manufacturers and designers have to understand certain elements of culture and how products respond and are being used in local contexts if they want to gain a better understanding and meet with their product goals. Similarly, Röse and Zuhlke (2001) state that it is essential that the understanding of corresponding cultures and identifying their differences are taken into account to develop localised products for different cultural groups' needs. They also claim that developers need to evaluate their knowledge in the area of cultural oriented design in order to produce successful products, which integrate the cultural specifics of the product user.

Sun (2002) argues that localization is more than adjustment of existing information products and should not be understood only at a surface level. She suggested that it should be part of the invention process in the beginning of the product planning process to accommodate a wide range of spectators. The same issues have also been addressed by Fernandes (1995:2), when he stressed that 'Cultural Localisations' are a process of producing designs that are appropriate for

specific target cultures, values, tastes and history and these understandings have been demonstrated through his design work for improving global interface design.

In summary, along with other cultural factors that should be considered in the whole product development stage, users' cultural needs (in this case an ongoing cultural migration) can be understood in many ways including examining products that have evolved and understanding their cultural values that are carried, in accordance with users' practices and beliefs. Miller (1998:170) states that any manufacturer or designer that needs to produce a product locally for a local market needs to understand its cultural, legal, religious and marketing reasoning. Any product that wishes to be considered a 'global product' should work better and serve the users' cultural task by accompanying their inner cultural needs.

It is becoming increasingly difficult to ignore the changes in users' lifestyles, tastes, demands and cultural values with the products they employ in their daily lives. As culture is understood to be a 'way of life' and is integrated with products that people use, the study of these products' transformation and understanding their experience can be useful for designers in attempting to understand and respond to this situation.

1.5 My early hypothesis

All these factors and conditions have built my early research hypothesis for this study:

- Products could migrate into different practical forms in numerous ways to assist new lifestyles and social changes. These can be very confused, unpredictable and are very difficult to measure. In many developing countries, this research assumes that these changes could be predicted through the demographic patterns and by understanding the implications from the local government social economic planning programs.
- Values and norms have strong implications in influencing the product use and choice users make. Certain elements from traditional culturally localised products are still greatly in demand due to the slow change in users' values and norms. This research assumed that cultural values and norms are strongly bonded with products people choose and preferred to use.
- Products transformations are strongly affected by the users' physical environment. In many cases, demographic patterns and social economic migration has influenced the choice of new products; new demands will always appear as people move into different places.
- Users' preferences, use and choice of products are much influenced by their cultural mentalities and cultural environment from which derived their thinking and ideas about product use and appreciation.

As my research progressed, I discovered further understandings about this subject and developed a concept of cultural migration in response to the complex idea of product transformation and its confusing changing routes. I began to recognise that

products could transform and/or migrate into a different practical form in response to the social changes and environment of the users through numerous, confusing and unpredictable changing routes.

These can be observed in individual cases but are difficult to measure as a "snapshot" across communities where individuals are found at all stages of this migration. However, this has built my early research hypothesis and developed my ideas on the concept of 'cultural migration' (as observed in this Malaysian environment context).

1.6 The concept of Migration (in this research context)

In general, "Migration" has been defined as the movement of humans from one district to another, sometimes over long distances or in large groups. However, in a previous study, Papastergiadis (2000:53) revealed that in any current definition of the migrant, an account of the complex array including sexual, political, economic and cultural forms must also be considered. Similarly, Gordon (1964) as cited in Bloch (2002:22), also revealed that in the process of migration, one will experience different stages in the assimilation process which involves cultural, structural, marital, identification and attitudinal acceptance.

In this research context, migration not only focuses on the people (which will be known later as users (in other chapters) or sampling (in chapter 3) in this research context) that migrate between geographical areas but also when they moved between time and space, which involved moving between social classes and the changing of products they might adapt and adopt within their migration experience.

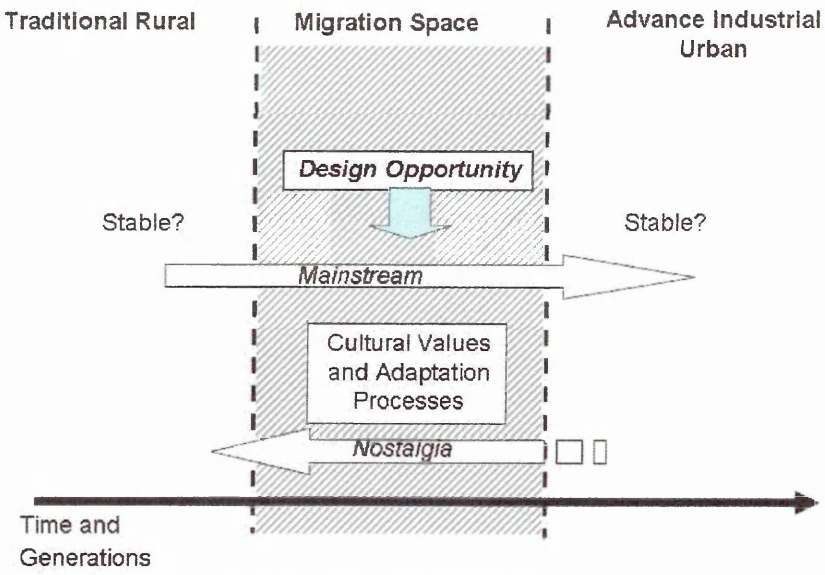


Figure 8 - Schematic model of "Migration" (in this research context)

Moving from traditional rural to advanced industrial urban (sometimes in reverse; eg. Middle class "downsizers"), users will be introduced to the interplay of conflicts between cultural values and the processes of adaptation. In this situation, we might not know the appropriate products which occupy the migration space (Figure 8) but a combination of speculative designing together with social inquiry input (Bowen (2007, 2009:134) uses a similar approach) could be a useful tool to understand those unpredictable areas of products and social migration.

In this situation, there is a clear space and opportunity gap for designers and for experiments designed to provoke insights and develop questions and possibilities, as in this case investigating cultural needs through designing as explained in Chapter 3 (methodology). In early investigation, this research has found that, the migration of cultural practices can also lead to a migration of design, as illustrated by previous example above (figure 1, 2, 4) and pilot work (3.4.3).

1.7 Research Questions

As it appears that products are migrating and transforming in response to social migration, some questions arose from this preliminary work:

- How is user/product interaction affected by these cultural changes?
- How can this understanding assist future design work for specific cultures undergoing social change?

These tentative questions informed my main question for this research:

- How can designers respond appropriately to the needs of users experiencing cultural migration?

Thus, to bridge this gap in knowledge among product designers, future design planners and manufacturing teams, this research aims to influence the practice of designers who develop products in changing social circumstances. The research has explored users' cultural practices and beliefs in the light of the products and practices they employ. The intention has been to explore how such understanding might assist designers in their work.

Those research questions derived from my contextual review of users' product interaction plus other initial works, are addressed in my pre-PhD observations and pilot research, both explained in Chapter 3.

In general, my aims have developed from 'to understand how the product design process can respond to users' culturally determined needs' into 'seeking knowledge on developing an appropriate design strategy in developing culturally localised products and to influence the practice of designers who develop products in changing social phenomena or fluid cultural circumstances'. (3.2.1)

1.8 Contribution to Knowledge

From these aims and objectives, I was also able to construct my anticipated contribution to knowledge.

In this chapter so far, I have discussed the impact of the global market on local products. The discussions have demonstrated how these influences have contributed to the adaptations and migrations of domestic products, which can be unpredictable and confusing, and this has provided a challenge and research opportunity for designers who are interested to work in this area of social phenomena.

This research will demonstrate a method relevant to understanding cultural factors that influence culturally-localised design. The design process then will use this method in the production of concept designs and identifying user needs. In consequence, this design work will demonstrate and allow evaluation of the applicability of this method. In my next chapter (Chapter 2), I will explain my contextual review and in detail show how these reviews including potential methods and techniques have formed the bases of my research planning and methodology and which will be further explained in Chapter 3.

CHAPTER 2

2.0 LITERATURE REVIEW

This section of the literature review is comprised of three (3) main components. In the first section (section 2.1), I will explain theoretically the concept of culture, an issue which needs to be addressed in order to develop understanding of product interactions in their migration experience. I will also give detailed explanations developed by anthropologists and sociologists to understand and to define culture. In relation to this, in the second section (section 2.2), I will discuss Malaysia and its culture, which is the focus of the present study. Here, I will briefly describe the Malaysia context, principally its geography, people, culture, economic and demographic patterns. In this way, I hope to familiarise the reader with the subject under investigation, and to clarify the background of the samples used and their cultural roots. These will be further highlighted in Chapter 3, which concerns methodology. In my final section (section 2.3 and 2.4), I will explain the cultural factors at work in design and discuss design research. This section will also explain my ideas about integrating design and social research.

Furthermore, this section will also explain and discuss the issue of incorporating design in research, the influence of social science research techniques and the efficiency, compatibility and adaptability of the practice- based researcher. In relation to this, I will discuss and give examples of work that has explicitly incorporated cultural factors as an element of design strategy and reflect on whether these have influenced the methodology used for this study in an appropriate way. It will also explain in detail techniques that have been used by design researchers in

similar areas of investigation and highlight those elements that have the potential to influence my research planning and framework in a useful and appropriate way. These issues will be discussed in greater depth in the following chapter (Methodology).

2.1 The concept of 'culture'

In this section, I will describe both the concept of culture and the ways in which cultural factors have been measured. Furthermore, the significance of cultural factors in the design development process will be discussed. These understandings have informed both the social science framework used in this research, and the design methodology which emerges from it.

While this section reviews material concerned with cultural studies, the present research has not attempted to adopt a cultural research methodology. As such, the main focus of this research is on design practice and the process of product migration to a new practical form with the aim of developing a methodology that designers might adopt in response to the needs of people experiencing cultural migration.

The term 'culture' is widely used in this thesis and I have developed some specific concepts concerning 'cultural migration'. Here I shall attempt to give a brief outline of 'culture' as seen by some eminent scholars from the fields of anthropology and sociology.

These ideas helped me to understand both the complex patterns and factors underlying 'culture' that influence product evolution and how culture influences people in their interactions with everyday products. 'Culture' is a complex notion with a variety of definitions reflecting different theories of human activity; as such, the word

'culture' has been applied to almost every aspect of life. Although some ideas related to cultural studies have a very long history, formal cultural studies evolved during the second half of the 20th Century and went through a number of distinct periods. In fig.9 below, I summarise the main contributions to these developments.

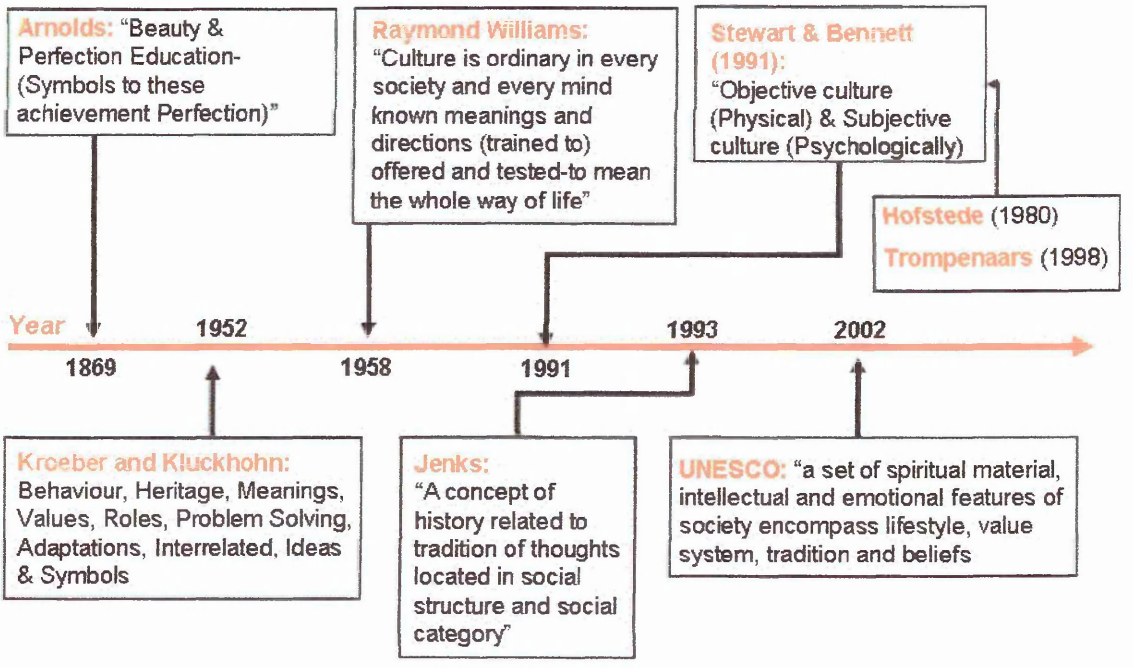


Figure 9– Definitions of 'Culture' by different scholars

Williams (1967:295) described culture as reactions to the changing conditions of life that take the form of thoughts and feelings. He further stressed that culture:

"....is a record of our reactions, in thought and feeling, to the change condition of our common life.....and as general reaction to a general and major change in the conditions of our common life. Its basic element is its effort at total qualitative assessment..." (Williams, 1967)

Other scholars have also classified culture into different clusters of meanings and interpretations. For example, to Hofstede (1994:15) and Jenks (1993:96-115) culture is a concept of stratifications that can be seen as a compilation of ideas developed by a group or community and which differentiates people from one another. It is also a concept that helps to classify people into different classes and which can be used to inform an understanding of social life in its entirety.

Furthermore, Jenks (1993:8) goes on to stress that culture manifests itself in the form of artefacts, customs, or symbolic representations and conventions that both appear to be applicable to and have been generated by a group that 'inhabits' a given culture.

In contrast, according to Kluckhohn and Kelly (1945:78), Kroeber and Kluckhohn (1952) and Schein (1988:13) culture is a transmitted concept that can be seen as a symbol of achievements or a way of representing heroes. As such, they conclude with an account of culture which suggests a product of actions which constitute the elements of further actions, including patterns of explicit and implicit behaviour which can be seen as having been transformed into symbolic embodiments, such as artefacts (which may also be seen as symbolizing achievement).

In relation to this achievement, Arnold (1969:34) has stressed that culture represents the pursuit of a kind of perfection, which can only be achieved by means of some form of education; it is a matter of *becoming* rather than *having*.

On the other hand, Lederach (1995:9) and Damen (1987:367) agree that culture is the shared behaviour of a community which can be observed in the set of communicative elements created by a set of people for the purposes of interacting

with each other and perceiving, interpreting, expressing and responding to the social realities around them.

Likewise, Banks and McGee (1989) have contended that culture does not merely refer to objects such as artefacts, tools and other tangible cultural elements, but also how these are communicated, interpreted, used and perceived by members of a group.

As such, they have stated that it is the values, symbols, interpretations and perspectives that differentiate one individual from another and argue that it is not only exclusively concerned with the material aspects and manifestations of human social life and activity. Indeed, they go on to point out that people living in the same culture usually interpret the meaning of symbols, artefacts and behaviours in similar ways.

In summary, examination of the literature related to cultural studies in the fields of anthropology and sociology (especially Arnolds (1869), Kroeber and Kluckhohn (1952), Williams (1967), Hofstede (1984), Hall (1989), Steward and Bennett (1991) cited in Galdo and Neilsen (1996), Jenks (1993), Hoft (1996), Trompenaars (1998), and Unesco (2002)) reveals that the meaning of the concept of culture is neither static nor fixed and further definitions of culture, derived from the works of authors in various different fields, will be presented in the course of this research. However, at this stage it is necessary to identify a concept of culture that is most relevant to the aims of the present research and able to provide insights and understandings which can then be used to illustrate the concept of culture in relation to the subjects and phenomena being studied. In particular, the discussion of culture in this research restricted to notions of culture that promote an understanding of cultural factors related to users' relationships with products.

In order to summarize these concepts and definitions, it is possible to classify culture into different groups of meanings and interpretations (*see Table 1.0*) as follows: as a concept of stratifications developed by a particular group through its artefacts, customs and symbols (Hofstede 1984:51, Jenks 1993:96-115); as transmitted elements, including patterns of implicit and explicit behaviour (Kluckhohn and Kelly 1945, Kroeber and Kluckhohn 1952, Schein 1988); and, finally, as a set of communications in human activity (Damen 1987:367, Banks and McGee 1989 and Lederach 1995:9)

	Culture Concept	Scholars
1.	Transmitted Objects/Symbols	Arnolds (1869) Kluckhohn C., Kelly W.H. (1945), Kroeber A.L., Kluckhohn C. (1952), Schein E.H. (1985) Jenks (1993)
2.	Communications	Lederach J.P. (1995) Damen L. (1987) Banks J.A., McGee C.A. (1989)
3.	Differentiations/ Stratifications	Jenks (1993) Hofstede G.(1984) Hofstede G and Hofstede G.J. (2005)

Table 1 - The concept of 'Culture'

In general, most scholars from the fields of anthropology and sociology have defined culture as a set of values and symbols, either in its material or non-material form shared by members of community and has been transmitted through generations within that particular group of community.

Despite all these various definitions and theories, the most frequently cited definition of culture in studies exploring cultural dimensions is that given by Hofstede

(1994), and Hofstede and Hofstede (2005). They claim that culture is the process of learning, and experience that people undergo throughout their lives.

It is this 'mental programming' which helps people to classify the main expressions of culture, such as values, rituals, heroes, and symbols, and to distinguish symbols that correspond to the deepest layers of culture, such as basic assumptions that reflect an underlying principle shared by the group, from those that represent more superficial values.

Since these basic assumptions have been developed in the course of interaction with environment, as well as by learning and experience, this research assumes that these factors are likely to influence the values and norms of users that are reflected in the use and choice of products. Thus, it is assumed that culture plays a major role in users' perceptions, attitudes, preferences and values with respect to certain aspects of product design. Therefore, when assessing changes in culture, lifestyle and environment, it is important to consider how users have influenced and adapted the products they use.

Clearly, there are more definitions of culture than are possible to present in this research. For this reason, this research has chosen to focus on a concept of culture that is relatively simple and seems more obviously relevant to the present research domain. In other words, this research is not concerned with debates about the definition of culture as such, but rather with seeking an understanding of the concept of culture which can most appropriately assist the progress of present and future research projects. The view taken in the present research is that "culture" can be differentiated by examining its various components and understanding its layers of culture.

In conclusion, because culture is intimately connected to human tasks, practices and beliefs, it clearly has an influence on the products people use. Therefore, understanding culture and its main components must play a major part in understanding how people interact, appreciate and use products. Indeed, as Plowman (2003:30) points out, the process of designing products, both material (eg. bicycles, buildings, foods, clothing etc.) and virtual (eg. Network computing environment, etc.), has generated many studies concerned with how people consume and integrate designed artefacts into their everyday lives.

Therefore, a clear understanding of the cultural factors involved in the design development process is essential to developing an understanding of those non-physical factors mentioned in cultural studies, which in turn can act as useful indicators for developing a deeper understanding of the cultural factors that affect product use and user behaviour.

The acknowledgement of the important role played by culture and its various components could provide new challenges for designers who are interested in developing and improving products in changing cultural circumstances.

2.2 Malaysian Context:

This section will explain briefly about Malaysia and its relation to the samples' background. It will include a discussion of the samples' culture(s), practices and beliefs and the significance of these for this study.

Malaysia was selected as the site for this study, not least because the author was born and lived there for more than 36 years and has been practising as a designer for more than 10 years, involved in design education industry and therefore is familiar with the country's history, geography and social profile. Amongst other reasons Malaysia was selected as the area of study because:

1) Based on author experience as a designer and stakeholder, it is felt that Malaysia is a significant typical example of a developing country, where the population is experiencing rapid cultural change. This can be observed through the author's experience and from some of his preliminary work on images on transformation of products and Malaysian lifestyle in urban and rural areas (see figure 4, page 12)

2) No research studies in the design field have yet been carried out on Malaysian urban dwellers experiencing cultural migration in the context of government rapid development planning and the cultural conflict that engenders. This situation implies that a design approach informed by social research could be productive; however, there is no evidence of such approaches having been taken by designers in Malaysia at present. Therefore, this research explores the potential of such approaches. This problem of cultural change seems to require a social research process within the design process. The output from this research can be explored in future design

research projects to extend the methodology that has been developed through this study, indirectly improving local household products to comply with the users' culturally determined needs.

2.2.1 Site of the Study: Malaysia (South East Asia)

Figure 10 – Site of the Study- Peninsula Malaysia shares its border with Thailand in the north and Singapore in the south while East Malaysia (made up from north part of Borneo island) is being separated by South China Sea. (Map taken from www.solarnavigator.net/geography/malaysia.htm, 2009)

2.2.2 Geographical

Malaysia is a South East Asian country located between Singapore in the south and Thailand in the north. It is a federation of 13 states, formed in 1963. The country is divided into two geographical regions separated by the South China Sea.

- The Malay Peninsula shares a north border with Thailand and connected by Johor-Singapore Causeway and the Malaysia-Singapore Second Link to the south with Singapore. It comprises 9 sultanate states, 2 governor states and 2 federal territories. Peninsular Malaysia covers up to 131 573 square kilometres (sq km) (Andaya 2001:1).
- East Malaysia (separated by the South China Sea) occupies the northern part on the island of Borneo, bordering Indonesia and surrounding the Sultanate of Brunei. It also contains 1 federal territory island which covers roughly 198 000 sq km. (Andaya 2001:1)

2.2.3 The People

Malaysia is populated by many ethnic groups, with the politically dominant Malays making up the majority. The Malays are reckoned to have originated somewhere in the Yunan area of the southern China mainland and their southward migration probably occurred between 2,500 B.C. and 1,500 B.C (Winstedt 1962:14) Today, by constitutional definition, all Malays in Malaysia are Muslim (Federal Constitution of Malaysia, Article 160)[4]. Almost 25% of the population are of Chinese ancestry and have traditionally been involved in trade and business. Meanwhile Indians comprise

[4] Constitution of Malaysia : http://confinder.richmond.edu/admin/docs/malaysia.pdf

about 10% of the population, including Hindus, Muslims Hindus, Sikhs, Christians, and Buddhists. Thus, the diverse composition of Malaysia's population remains one of its most distinguishing features.

The Malays form the dominant ethnic group and in 1991 comprised 58.3 percent of the peninsular Malaysian population (Andaya 2001:3). According to the World fact book website 2009[5] , the Malaysian population stood at 25,715,819 in July 2009 (estimation). Similarly, the Malaysian Department of Statistics officially reported that the population of Malaysia had reached 27.73 million by the 5th September of 2008.

Although Malaysia is populated by different ethnicities and cultural groups, the only serious conflicts between ethnic groups took place on the 13th May 1969. This was largely due to conflicts arising from socio-economic imbalances, although in retrospect it may have been stimulated by both government and opposition parties. The racial riot involved the area around Kuala Lumpur (the capital city), with the rest of the country remaining at peace. This incident led the government to implement the New Economic Policy which was mainly aimed at addressing racial and economic inequality.

2.2.4 Economy

The Malaysian Peninsula has been known since ancient times. For example, the Straits of Malacca are indicated on an early map drawn up by the geographer Ptolemy

[5] https://www.cia.gov/library/publications/the-world-factbook/print/my.html

as "Sinus Sabaricus" (Wheatley 1955:64). Furthermore, the territory has long benefitted from the central position it occupies in the maritime trade routes between the Far East (China) and Middle East. Thus, the Malaysian archipelago has for hundreds of years been part of a complex trading network, since its annual monsoon wind system covered the entire South East Asian region and extended from Africa to China (Andaya 2001:11). By the 15th century, the Peninsula of Malaysia had been a centre of trade for centuries and continuous economic growth and expansion took place between the 17th and the mid 20th century following the discovery of tin in several Malay states and the introduction of rubber and palm oil trees.

It was during this colonial period that the British introduced foreign labourers (i.e. Chinese and Indians) into the country to work in mines and plantations (Andaya 2001:15) As independence approached, the government saw the necessity to implement long term economic planning, beginning with the first 5 year plans drawn up in 1955. These plans were subsequently renamed 'Malaysia Plans' when Malaysia was established. The first of these new plans was launched in 1965.

The economic objectives of Malaysia Plans 1 and 2 were to achieve economic growth and eliminate economic disparities between ethnic groups (Andaya 2001:51). Because of Malaysia Plans 1 and 2, economic growth became profoundly dependent on agricultural and mining activities, with the result that Malaysia remains one of the world's top producers of rubber and palm oil. However, since Plans 3 (Malaysia Government Press 1976) and 4 (Malaysia Government Press 1981), the Malaysian economy has shifted its focus to manufacturing and tourism as its major sources of income. This has contributed to increased migration from rural to industrial urban areas where job opportunities are considered favourable.

Most of the Malaysia Plans[6] especially Plan 5 which specifies the promotion of education as a vehicle for furthering the integration of all Malaysians, have tended to increase the number of internal migrants. Ongoing plans for improving the education system together with the implementation of the New Economic Plan (NEP), have contributed to the creation of a new middle class in urban areas. According to a survey entitled 'The Internal Migration Report' (Department of Statistics, Malaysia, 2006), education was one of the major factors behind internal migration trends and patterns between 1995 and 2000. Because people tend to migrate for the purposes of further education to urban areas, they are fairly likely to remain in those areas because of enhanced job opportunities.

Although there were no distinct differentials according to marital status between migrants and non-migrants, migrants did tend to be much more educated in terms of the highest educational certificate obtained (Department of Statistic Malaysia 2006:37). Malaysia experienced significant economic growth under the premiership of Tun Dr. Mahathir Mohamed during which time the physical landscape of Malaysia changed with the emergence of numerous mega-projects.

2.2.5 Culture

Malaysia is a developing multicultural country. Different cultures have been meeting and mixing in Malaysia since the very beginning of its history. The migration of people from the South of China and from the west (India and the Arab countries) had been taking place long before the colonial period since the Malay Peninsula and, indeed,

[6] Malaysia Plan 5, 6, 7, 8, 9 (Malaysia Government Press, 1986,1991,2001)

Southeast Asia had been a centre of trade for centuries (Spencer 1971:266). More than 1500 years ago a Malay kingdom in the Bujang Valley opened its door to traders from China and India and, with the arrival of gold and silks, the influence of Buddhism and Hinduism was also introduced into Malay culture.

Although the dates of the first Indian voyages across the Bay of Bengal are unknown, archaeological studies have indicated that trading contacts between Indian and South East Asia had begun as early as 200 BC (Andaya 2001:15). By the 14th century, Arab traders arrived in Malacca and brought with them the principles and practices of Islam (Andaya 2001:11).

As far as communication is concerned, the native people of the Malay Peninsula accepted the influence of Hinduism and Buddhism and, therefore, adopted the use of Sanskrit as their daily language until they were eventually converted to Islam. However, in current food preparation practice, most of their kitchen tools have been influenced by different cultures, including a number of Indian and Chinese traditions and customs that are consistent with their Islamic religious beliefs.

In Malaysia, most technological development, mass education and modernisation has been adapted so that it is compatible with Islamic beliefs (Schutte 1998:22). As a result, a fluid hybrid culture has developed among Malaysian, especially urban dwellers (E10, Fieldwork 2008:3). As an example, although the Malay's main religion is Islam, their culture has been strongly influenced by Hinduism, which formed the main platform of practices and beliefs among the Malay, long before they were exposed to Islamic doctrine.

The emergence of this hybrid Hindu culture can best be observed by examining their cultural events and social ceremonies. For example, the practice of

eating directly from the hand (i.e. without knives, forks, chopsticks etc), the implements and utensils used to prepare foods and the choice of ingredients, have all been derived from Hindu cultural inheritances as much as Islamic ones. In relation to this, Pfeil (2006) highlighted that religion and beliefs are key cultural factors that need to be taken into consideration when designing for specifically targeted audiences.

To sum up, the exact origin of products and practices is not the issue being discussed in this investigation. Nonetheless, the influence of Hindu and Buddhist practices can be observed in the use of tools and implements (such as granite mortar and pestle), as well as in the selection of ingredients. By contrast, hand washing pots are derived from Islamic influence originating in the Arab and Middle Eastern world.

Although Malaysia's cultural mix is derived from many different cultures, the main features that contribute to this hybrid culture come from the ancient Malay culture and the cultures of Malaysia's two most prominent trading partners throughout history - the Chinese, and the Indians. The influence of these cultures can still be seen in many cultural events and practices, for example the choice of foods and the implements used in the home kitchen.

2.2.6 Migration – Social and Demographic Shift

Migration could be seen as the main factor influencing the demographic patterns in a given geographical area. In the 1980s, Malaysia underwent a shift from an economy based on agriculture to one largely based on manufacturing industry. This process has seen both industrialization and the construction of modern infrastructure in urban areas.

As a result living standards have improved thus contributing to increased levels of migration. The idea that migration is influenced by economic development is suggested in a study by Bloch (2002:22), which looks at the context of European economies during the 1900s.

Further studies by other researchers have also identified demographic and economic changes as important influences on lifestyle and products (eg. Sennet 1978, Schutte 1998, Deasy et al. 2001, Margus 2002:89, Coyles and Gokey 2005, AlShebli and Karahalious, no date).

The United Nations currently estimates that the world's population will increase to 9 billion shortly after 2050 (Linton 2005). It is also predicted that half the world's population will be living in urban areas by 2007. The report adds that in less developed regions, the number of urban residents will equal the number of rural residents by 2017.

In relation to the context of this research, Malaysia, as a developing country is no exception to this pattern. Therefore, this process of economic transition has led to the emergence of a population, which is based in industrial urban areas rather than traditional rural ones (Talib 2000:36). Early migration was mainly driven by Malaysian socio-economic Planning (Malaysia Plan 2), which was aimed at balancing economic growth and distribution (Malaysia Government Press 1971)

Increasing migration from rural to urban areas has also been influenced by government socio-economic planning[7] aimed at restructuring society through education and training Programmes (Malaysia Plan 4) and improving general quality

[7] Sources from Malaysian Economic and Social Plan Development 1965, 1971, 1976, 1981, 1986, 1991, 1996, 2001 and 2006

of life (Malaysia Plans 7, 8 and 9). The migration results from this government planning can still be observed in the Internal Migration Report for the year 2000 (Malaysian Department of Statistics 2006).

This rapid growth of urban populations not only requires economic and social adjustment, but also changes in the way products and services fit with users' lifestyle and cultural needs. Schutte (1998:14) has revealed that the rapid economic growth of Asia's economies over the past few years has led to significantly altered values and social structures. These changes have altered existing products and services in line with the changes in the culture and lifestyle of different social groups. For example, my early observational work revealed that users' perception, appreciation and use of products could be changing in line with the changes that have been experienced in social and economic life (Appendices G) Thus, in the context of social change, users presented with an opportunity to rethink and reorganise their lives (Andreasen 1984:785).

2.3 Cultural Factors in Design

This section will explain and describe the importance of cultural factors as key elements in the formation of a design strategy within product development processes, as demonstrated by other design practitioners and will present a strategic discussion of the user-product-culture relationship. It will also give a detailed explanation of the frameworks employed by designers when developing culturally specific design methods which could influence my own understanding for this research work.

The first section will discuss the cultural factors at work in the design process, outline their importance and give examples from previous studies and reasons why

these have not been successfully adopted in the design development process. The second section will focus on those factors concerned with adapting culture in the design process that have been neglected. The section will conclude with an explanation of how this review has influenced my overall methodological approach to this research.

2.3.1 Cultural Factors as elements in Design Strategy

Outstanding design can come about via many sources of inspiration, ideas and experiences, involving a wide range of specialists from different fields of expertise (Wasson 2002:72).

Nevertheless, many of the factors that have influenced the designs developed by manufacturers have been overlooked. For example, how products become accepted by users is an issue which tends to receive much less emphasis than technological changes and material-oriented product development.

Therefore, the contribution made by cultural factors in the marketing of a successful product has largely been neglected. It seems to be a forgotten element of the product development process. However, a number of scholars and design thinkers have emphasised the importance of integrating the culture of users into product development. Thus, over the course of recent years, increased interest has been shown in understanding users' cultural needs as an important aspect of the design process (for example, Fernandes 1995; Plocher and Honold 2000; Khodadadeh 2008, Diaz 2009).

Bloch (1995:22), in his consumer response studies, argues that preferences for product form are much driven by cultural factors, and claims that nearly all Japanese auto manufacturers are setting up their studios in the United States with the aim of ensuring the commercial success of their products by paying more attention to understanding Americans' culturally determined needs and demands. Powell (2001a), studying design competitiveness in global markets states that a region's culture and quality of life are significant elements in the product development process despite moves towards global communications, economy and awareness. He stresses that designers should demonstrate more responsibility for the impact of their designs, not just by meeting the customer's need, but also by preserving cultural variety and values.

According to Portigal (1997), a successful product should be seen not just as a technical solution but also as a package of cultural solutions. Its success is also due to a successful understanding of the values, institutional arrangements and economic notions of the culture the product is targeted at.

Portigal (1997) also claims that a product's function, ergonomics, and cognitive aspects should be understood by designers, and argues that the key ingredient in developing a successful product is a degree of 'cultural fit'. Further, he suggests that discovery activities that combine users' stories could lead to the production of symbolic models that enable new design ideas. His approach is to categorize cultural meanings to help understand users and their particular cultural contexts.

In the relationship between users and products and services, Trompenaars (1996:16) reveals that culture supplies the social context in which technology operates and states that it should not be regarded as a minor element in any business

management relationship. Thus, both the product and users' cultural relationships play an important role in user research and in the design development process.

Sherry (2002) has classified the fields of ecology, ergonomics and aesthetics as the building blocks of "design ethnography", and claims that understanding and knowing 'what consumers are' is an important focus of corporate interest.

Cowan (1976:1) and Cox et al. (1991) believe that the evolution of products in the past has shown the influence of changes in users' cultural practices and beliefs, and concludes that new products will always generate new cultural phenomena from a social context.

These views demonstrate that the relationship between users, culture and product changes display a tight bond and are closely related to one another. Hall claims:

> *"...the relationship between man and the cultural dimension is one which both man and his environment participate in moulding each other. Man is now in the position of creating the total world in which he lives ... this is a frightening thought in view of how very little is known about man.." (Hall1969; cited in Reese 2002:17).*

Squires (2002) claims that research into the creative process should determine the design implication of real cultural phenomena. She also stresses that researchers should be able to identify most applicable combinations of concepts, research design, information sources and appropriate methods (2002:103) and proposes a sample of data collection instruments such as 'Customer Research Toolbox' (2002:105).

As information technology and the internet becomes increasingly indispensable in our everyday lives, the importance of understanding users' cultures in design development has also been highlighted in new fields, such as Human Computer Interactions (HCI). Lawson et al. (2003) have developed a framework to help local designers understand the users' culture and have concluded that there is still a lack of

guidance for interface designers that would enable them to apply cultural localisation in software development. Joyner and TerKeurst (2003) in their early research findings claim that games targeted at different cultures are used differently to support personal and social needs and motivations in different cultures and environments.

DeAngeli et al. (2003) reveal that in a particular region, different cultural values and dimensions have a significant effect on the acceptance of products that were initially developed in different cultures. Furthermore, many studies in the field of cultural diversity and design in ergonomics, show how culture can be used as an effective design tool when it comes to designing a product with local cultural needs in mind.

Al Shebli and Karahalious (no date) have listed some of the most prominent cultural constraints to help increase understanding of cultural issues, which include population or cultural stereotypes and anthropometrics. They also recommend that empirical analysis of the users' requirements should be considered, including user preferences for specific tasks, and products in each culture.

In addition, they stress that hidden cultural constraints, such as attitudes, behaviours, problem-solving strategies, thinking patterns (as in the cultural mentalities model developed by Röse et al. (2001) explained in her framework on planning and designing for specific cultures through international and local design approaches) and so on, should not be neglected.

In summary, my work explores the development of successful designs for culturally localised products at the meeting point of local and global culture. from this review it is essential to consider the frameworks and the methods employed by these designers and researchers to understand the cultural factors at work in this context.

Despite the volume of research described above, there are several factors that have led to the neglect of cultural factors in both overall product development and the individual design stages which need to be addressed in this research.

My examination of literature related to industrial design and cultural theory has highlighted several reasons for the lack of attention paid to culture in the product design process. Razzaghi and Ramirez (2005) have suggested five main causes for the reluctance to incorporate cultural factors in the product development process which includes:

1) Cost factors

Research has indicated the effect of the increased burden on the R&D budget for developing products that are culturally oriented or customized for a specific group or region. Extra costs occur when companies invest in trying to understand users' needs for example using domestic experts to understand local trends and examine local social changes (Coyles & Gokey 2005:101). Holt (1989:163) observed that design work is normally produced at the lowest possible cost and such cost-constraints have always challenged designers.

In addition, Corse (2006) has suggested that establishing partnerships with local companies could be the best solution. However, Corse also claims that doing research in other countries is five times as expensive as operating it in the country of origin as it involves the researcher with adaptations, adjustments and learning new skills.

2) Manufacturers' knowledge gap

Manufacturers and their designers are not very familiar with theories concerned with the production of specific culture-oriented designs and so are not able to distinguish

between culturally global and culturally localised design (Röse and Zuhlke 2001:14). Products that have been produced have often been misinterpreted and misused by the targeted users and so are unable to compete in a global market. This is demonstrated in my own data from the pilot study (3.5.3.6), which showed M3, an Egyptian man, trying to operate a blender to assist in the process of preparing his traditional food ingredients. He explained that 'global' products were often less useful and practical than the traditional implements used in Egyptian cooking. Many local products, eg produced in Malaysia for the Malaysian market, do not match users' current cultural lifestyles. Again, this view is supported by reference to the pilot study findings where M4 compares the quality and cost of local and global manufactured products through her experience as the end user.

3) The lack of industrial designers' knowledge in cultural design integration

This lack of cultural design integration could be influenced by the designer's own background and level of education (Reese 2002:17, Razzaghi & Ramirez 2005). Many of the designers that have been trained in developing countries tend to imitate design products from developed nations, whose practicality in the local context has not been tested. The results of design are also influenced by differences in designers' cultural and educational backgrounds. Eastern and Western design graduates do not have the same strengths and skills, and so address these cultural factors differently (Curedale 2003).

4) Technology based Investment

The manufacturers of established brand and technology based designs tend to place more emphasis on technological aspects rather than addressing cultural fitness in their product development process (Holt 1989:163). Therefore, company plans and

marketing strategies tend to focus more on a product's technological basis and cultural fit factors have been neglected as a result of this bias. However, as Rust (2006) points out, this situation is not easy to remedy because of its high investment and labour costs encourage organisations to retain their existing technology and make change difficult to implement. Consequently, there is little incentive to alter designs to fit the cultural needs of minority users.

5) The globalisation of products and services

The concept of a world-wide market has inspired the development of various universal, globalized products from different parts of the world (as discussed in 1.4.2). As such, there is a strong likelihood that culturally localised products will face strong competition and it is possible that this situation could provide a challenge to meet with the needs of local users.

Furthermore, common standards for these universal globalized products would also act to reduce the cost of design and production (Powell 2001a). Such pressures encourage manufacturers to develop standard and uniform products for the global market (1.4.2).

However, despite these negative influences, there are good reasons for designers to pay attention to cultural factors as outlined above (2.3.1). Lawson (1997) has stressed that contemporary design itself should be changing rapidly (1997:114).

In summary, I propose that any new designs should support the everyday environment and should refer to existing designs that are familiar to users. This would help to motivate designers to develop culturally localised designs that allow products to be manufactured and be relevant to users' current lifestyle. In my next section 2.4, Design in Research, I will explain the techniques and methods that designers adapted

in doing research specifically in this similar context of study and how these frameworks have influenced my planning and developed my methodology for this investigation.

2.4 Practice-Led Inquiry in this project

Whereas the previous sections focussed on a definition of the concept of culture, my research subjects and my site of study, this section concentrates on some important aspects of methodology in this research, which has been influenced by recent development in 'practice-led' research in design. This section of the review sets the scene for section 3.5.4 of my Chapter 3 (Design as a Research Tool).

Generally speaking, the methods for integrating design into the research process have generated a great deal of debate in the academic community and among design thinkers. For example, Glanville (1999) has described some of the possibilities, Burdick (2003:82) has given some practical examples in action and Sanders (2006) has demonstrated how a 'participatory design' approach can work in practice.

In a recent study, Marchand and Walker (2009:300) argued that much of the terminology involved in bridging the gap between research and design practice (for example, "practice led research", "practice based research" and "research informed practice") has not been clearly defined and is therefore confusing. As such, they have suggested that these terminologies could be grouped under the heading 'research involving practice'. However, this section does not attempt to discuss the terminology or debates about the degree to which design is involved in research or to evaluate the validity of designing as a research method. Instead it aims to give readers an 'open

view' in order to gain an understanding of the various creative techniques for applying design in research, especially in investigating social phenomena.

In this section, I will clarify the individual elements derived from my contextual review which were used or adapted in the research methodology for this thesis. By doing this, I will also emphasize the role played by design in this research and the contribution it has made to knowledge. In particular, it will be shown how a "twin track" approach, using social research practices alongside the development of exploratory concept designs, was developed as a conceptual method for incorporating design into research. I believe this approach is both relevant and easily adapted by the designer.

In order to give further clarification, examples of relevant design research approaches and the methods used will be given. Particular attention will be paid to approaches used in social research projects that have incorporated design elements. Furthermore, I will try to describe the role of creativity in design research including techniques and methods which have been applied by designers in similar research areas and how they are applicable in this kind of investigation.

I will include a discussion of ethnography in design research and the influence of practice-led approach on the construction of my methods, which will be further explained and demonstrated in Chapter 3 (Methodology).

2.4.1 Influence of practice led design research on this project.

In recent years, 'practice-led' design researchers have developed techniques that have enabled them to gain insights and develop holistic thinking about products, services, environments and systems. This includes exploring both new possibilities (eg. Bowen 2009) and the constraints of a given situation (eg. Rodriguez et al. 2006).

Design researchers such as Squires (2002:105) and Rodriguez et al (2006) have demonstrated 'user innovation toolkits' Hippel (2002:821) that operate by incorporating the development of sketches and prototypes to provide users with freedom of experience in sharing their thoughts and aspirations, a strategy which could be useful in informing the design development stage. Rust (2004) explained that designers have the ability to imagine new circumstances and could creatively 'design' a practical environment for people to experience a 'new world'.

Building on this insight, he claims that design work could be used as a practical instrument that is able to contribute to actual research enquiries. In relation to this, Simon Bowen's "Critical Design" practice (Bowen 2007, 2009:176) has demonstrated how imaginary and creative design work can reflect everyday problems and generate a great deal of debate and reflection from participants via the use of conceptual design work and prototypes.

These and other methods and techniques used by design researchers have challenged and developed my own views and assumptions about design and research. This has been an important influence on the methodology for this research, especially when dealing with unfamiliar design situations, as in this case - users experiencing cultural migration.

2.4.2 Ethnography in Designing and Design Research

In most discussion of design research or research for design practice, the term "ethnography" is used quite freely. While my approach is not strictly ethnographic it is influenced by the methods of ethnography which are very relevant to cultural research.

Historically, the first work that incorporated ethnography in the design process was done in the 1980s at Xerox research labs (Blomberg et al. 2003). As Plowman (2003:30) explains, the appropriateness of the introduction of ethnographic methods and theories adapted from the social sciences into the field of HCI was questioned. However, despite the absence of a theoretical background comparable with that which had been applied by the ethnographers in the context of their own researches, ethnographic research tools had already been applied in the field of design research (Plowman 2003:37).

Furthermore, Plowman (2003:38) also suggested that there should be a logical point of departure between social scientists and designers when it comes to engaging in such collaborative works so as to develop more critical approaches to the practice of design research.

In relation to this, Shove et al. (2005) stated that design and practice has often been influenced by concepts borrowed from the social sciences. She argued that most techniques used in user-centred design frequently include aspects of anthropological method and she explains that there have been important examples of exchange between the two.

She cites Margolin who claimed:

"..we have no theory of social actions that incorporates a relation to products, neither do we have many studies of how people acquire and organise the aggregates of products with which they live their lives.." (Margolin 2002:52)

She went on to stress that the challenge is to relate this rich "ridge" of conceptual resources to design research (Shove et al. 2005)

Today, the development of Design Research together with social investigation influenced by ethnography techniques has led to the generation of a number of

human-design research streams such as Human Centred Design (eg. Norman 1998, 2002), Participatory Design (Sanders 2006), Contextual Design (Beyer and Holtzblatt 1997), etc.

The philosophies and trends concerned with the use of design within social investigation have also been tested in practical situations and have been demonstrated by number of design researchers. For example, Squires (2002:105) in her "Customer Toolkits" uses drawings to assist her discovery research platform data collection; Von Hippel (2002) in his "Users' Innovations Toolkits" seeks an understanding of how users experience products, an approach which has demonstrated its usefulness at the design development and product development stages; Rodriguez et al. (2006) in their "Design Tool box" have sought to assist designers to understand the stakeholders of emerging economies; and Bowen's (2007, 2009:187) "Critical Design" prototypes have demonstrated the ability of imaginary designs to trigger user reflections on everyday problems.

Arguably, these approaches and techniques can offer research insights different from those provided by natural and social scientists (Rust et al. 1999). Moreover, the techniques and methods applied in research have enabled the practitioners/designers to retain their currency of knowledge, skill and experience in their engagement with productive and creative work (ibid).

2.4.3 Designing for Culture

With respect to understanding a specific culture, this research has discovered that most of the empirical work, particularly in cultural studies has been much influenced by cultural dimension models and ethnographic field work techniques (for example,

Hoft 1996, Hofstede 1984, Trompenaars 1998). These methods of assessing culture have also been adopted in marketing research to understand consumers in different cultures (Yeniyurt & Townsend 2003, Mattila & Patterson 2004, Coyles & Gokey 2005), and in most cross-culture design researches (Young 1992, DeAngeli 2003, Corse 2006). In consequence, as a result of its ability to offer detailed understandings of particular cultures, the influence of associated ethnographic methodologies has expanded to influence the design research aimed at developing culturally specific product designs.

Relevant examples include Portigal (1997) who adapted practical, rapid ethnographic approaches to identifying cultural factors in different national communities. Sherry (2002) in her design ethnography block of ecology, ergonomics and aesthetics, Wasson (2002:73) in his team based work developing "E Lab" to facilitate collaborations between ethnographers and industrial designers, which can then be offered as a 'narrative' concerning the interactions between users and products in the real world and Gillham (2005) through his designing for culture ethnographic diary studies. These techniques require designers to adapt elements from ethnographic studies which often have little meaning for designers (Walls 2002:125).

In the same vein, ethnographers also face their own set of challenges in contributing their work to the design process (Plowman 2003:35). Furthermore, Rodriguez et al. (2006) claim that cultural models which derive from ethnography studies developed by anthropologists are often inappropriate and cannot be applied in the design domain. This research found that these and other researchers have influenced the methods of this current project but none have concerned themselves

with the issue of migrating communities, tending to treat the stakeholders as culturally static.

2.4.4 Conclusion - Using Design in this Research

This review has exposed me to concepts of the use of designing in research which have stimulated my project and its methods. Similar approaches have become a central part of other design research practice at Sheffield Hallam University (eg. Whiteley et al. 2001, Wood 2003, Bowen 2009).

I discovered that practice led inquiry has been useful for a number of designer/researchers. Mark Evans (2009:157) has examined PhD works that include design practice and suggested that such approaches are more natural and therefore potentially more productive for researchers that have been trained in design. He also concluded that designing need not only be a means of data collection but can also advance the research in other ways. This seems to reflect aspects of my research where the designing work provides a channel for the researcher to embody their tacit observations of stakeholders into new artefacts. These are brought back into the stakeholder activities to help participants reframe their understanding of the research issues in the light of new possibilities (4.2).

From this review I have concluded that design activities in my research can be organised systematically and can be integrated with social enquiry to form an overall methodology for this kind of investigation.

However, such an approach challenges the traditional role of the designer. Ireland (2003:22) has concluded that in order to pay attention to people, cultures and belief systems, designers require patience and an open attitude. Therefore, they

require skills and perspectives that are not traditionally taught in design school or can be learnt by just doing design. Furthermore, he also stressed that identifying, observing, and interpreting human behaviours and attitudes toward design is a discipline in and of itself and it is not easy to "wing it" (Ireland 2003:22).

The available literature relating specifically to design research and cultural research is, however, limited in both breadth and depth when it comes to investigating fluid cultural circumstances, consisting mostly of capturing users' own creative thinking (eg. Squires 2002, Von Hippel 2002), and designers adapting ethnographic approaches to professional design aims (eg. Portigal 1997, Rodriguez et al. 2006). Although there are other approaches to design process, involving users influence on how a design takes shape, such as the 'User Centred Design' (UCD) approach (initiated by Donald Norman in 1980s), I believe that the 'Practice-led design approach' is a unique research approach. With this approach, a designer has the opportunity to integrate their own creativity, thinking and designing skills into the research, not only to include the aspect of user's participation itself (Wood 2003, Bowen 2007, 2008). My 'Practice-led design research approach' comprises both users' involvement especially in providing 'space' for their imagination and ideas in predicting possibilities and expectations, together with creative designing activities in providing rigorous data and deeper understanding about the research context which is also indirectly assisting future design direction.

Having reflected on this review of methods, my intention has been to carry out an empirical research study, to investigate how designers can respond to users' needs in cultural migration, combining direct engagement with stakeholders and creative design thinking. This puts the designer/researcher in a central position as

participant observer, required to understand and manage their methodology, while engaging in very "hands-on" activity.

My aim therefore is to produce a methodology and thesis with practical implications for designers engaging in NPD in the context of cultural migration. In my next chapter, I will explain and demonstrate my methods in action, I will also discuss how it has been developed to form the methodology for this research.

Chapter 3

3.0 Methodology

The background and overview studies provided in Chapters 1 and 2 have shown that it is both imperative to understand how users interact with products in the context of their ongoing cultural migration experiences and to develop a method that can be easily adapted by designers in response to these situations. There are many different techniques of 'practice led inquiry' in research that are potentially useful and relevant to designers (as discussed in 2.4) and there is also the interesting issue of developing research methods to initiate the collection of qualitative data which can be creatively explored and created by the designer (Ireland 2003, Evans 2009). Furthermore, no evidence has been found in design-related studies that Malaysian urban dwellers experiencing cultural migration have been investigated; it is this fact which has prompted me to undertake this research (2.2.1). In a context of rapid development and increasing population movement from traditional rural to industrial urban areas, this is essentially the situation in Malaysia (Department of statistic Malaysia 2006).

This chapter contains a strategic discussion concerning how the research methodology for the present study has been developed in the search for appropriate design and research techniques that are able to incorporate elements of culture that designers need to pay attention to and to engage with, especially in this particular research context. Throughout this chapter, some discussion of strategies and processes are disclosed and it will demonstrate in depth a selection of research methods for data collection activities and the techniques required to analyse them.

3.1 Developing the research approach

This study began with an attempt to define the issues concerning local products that seem to be strongly influenced by traditional cultures. This has led to the identification of a number of household products that need to be paid greater attention by local manufacturers and designers. However, as this research has progressed, it became clear that there was a wider picture of 'culture' that required further exploration, In addition, it was equally clear that there were product transformation agendas that needed to be explicitly acknowledged by designers. As such, this research initiated a concept of 'cultural migration' that is essential if the issue of current users' culturally determined needs (as observed in the early investigation phase) is to be successfully addressed. From here, the research moved on to an attempt to understand the experience of people undergoing cultural migration and became more focused on the development of methods that might enable designers to respond and contribute to the needs of people experiencing cultural migration.

3.1.1 Development of Aims and Objectives

Over the course of a year, my research aims and objectives developed into investigations that were significantly more advanced than initially anticipated. Thus, the progressive work on contextual studies and the application of methods involving appropriate techniques during the pilot study began to expand the scope of my research aims from a broad perspective concerned with understanding users to a more practical study. In the early stages of this research, my objectives were more focused on understanding users' cultural needs by exploring their interactions and responses to products. However, as the research progressed into its second year, its

focus started to narrow and become increasingly concerned with attempting to understand users' practises and beliefs by examining product evolution in relation to cultural practises and beliefs. This approach is illustrated in the Table below.

	1st year	2nd year	Development
Aims	To understand how the product design process can *respond to users' culturally* determined needs.	Seeking knowledge on developing an *appropriate design* strategy in developing culturally localised products, to influence the practise of designers who develop products in changing social phenomena or fluid cultural circumstances.	The emphasis has changed from *understanding* the context of study on how design process can respond to users cultural needs into a practical form of developing an appropriate design strategy in a realistic study area of investigation.
Objectives	To examine examples of products, design strategies and consumers responses that reflects users culturally determined needs and use these cases to develop a 'map' of a research problem. To review User-Centre Product Design Processes relevant to culturally determined needs. To observe users culturally determined needs and behaviour within a specific community and to identify and evaluate relevant design concepts. To develop and evaluate a methodology, based on this experience, for culturally sensitive design	To review and identify the issues and problems of interactions between products, users and culture. To analyse and understand the importance of cultural factors in design To identify and analyse existing products that evolved with factors that transform the products in relation to users practises and beliefs To suggest a design understanding social inquiry model for a specific culture.	The objectives have been narrowed and focussed on the techniques to understand the studied subject.

Table 2 – The development of the research aims and objectives

The intention of this research is to develop, demonstrate and evaluate an approach to designing that utilizes social research in conjunction with the development of exploratory concept designs as a tool for understanding user needs and aspirations in a migratory context. (2.4)

3.2 Qualitative Research

In order to develop my social inquiry techniques, I reviewed the literature of qualitative research (eg. Flick 1998, Marshall and Rossman 1999, Creswell 2003, Bryman 2004) including the justifications and practicalities of methods in both the qualitative and quantitative research domains. I also reviewed the key issues and ethics of methods used for conducting interviews, observations and focus groups (eg. McCracken 1988, Denscombe 2003, Ritchie and Lewis 2003).

This research does not attempt to adopt purely social research methods but rather focuses more on developing a method which is able to integrate designing and research, thereby furnishing designers with the potential to use social engagement as a means of understanding users in their own cultural contexts. However, techniques and methods used by social research have also indirectly influenced the development of the methodology of this research, especially those applied in my social inquiry work (eg. Interviews and workshops)

Bryman (2004:266) has stated that methods of social research are closely tied to different visions of how social reality should be studied and understood. In this research context, qualitative techniques are the most appropriate techniques for collecting, analysing and reporting data. As Meriam (1998) noted, qualitative research

is appropriate for research which involves focusing on phenomenology and symbolic interaction; meanwhile quantitative research is usually associated with positivism.

Denscombe (2003:97) proposed that, in direct contrast to positivism, phenomenology is an approach that emphasizes "subjectivity rather than objectivity; description rather than analysis; interpretation rather than measurement and agency rather than structure". He stressed that phenomenology focuses on how life is experienced. Flick (1998:2) suggested that qualitative research refers to the meanings, concepts, characteristics, definitions, symbols, metaphors, and description of things while quantitative research deals with measurements of things that are quantifiable.

McCracken (1988:16) claimed that, in qualitative research, there is a greater focus on patterns of interrelationship between many categories rather than the identification of a relationship between a limited set, as is the case in a quantitative approach. In relation to this, Bryman (2004:65) stressed that a quantitative research approach is associated most notably with social survey research, based on methods such as questionnaires and checklists, which have been shown to relate poorly to people's actual behaviour.

He concluded that qualitative and quantitative researchers are typically interested in both what people might do and think, but they go about the investigation of these areas in different ways. In this research, qualitative methods are used to gain an in-depth understanding of issues and problems identified. Qualitative research is particularly appropriate to the study of social relations (Ritchie and Lewis 2003:3, Bryman 2004:266),

For the current project, qualitative techniques such as open ended interviews, in depth interviews and direct observation seem to be relevant. These techniques also allow researchers to discuss emerging data in detail with research subjects (Marshall & Rossman 1999:60, Flick 1998:77) to elicit descriptive accounts of the situations (Denscombe 2003:267). This research works with qualitative data to uncover and understand the cultural elements that frame human actions and beliefs and thus give direction to the conceptual design work which in turn feeds back into the dialogue with research subjects.

This research has developed a strategy and adopts these techniques to elicit data:

i. Reflections and design speculations based on the researcher's own cultural experience.

ii. Review of literature relevant to cultural factors and design

iii. Pilot research: *Home Interviews/observations* to identify relevant concepts, identify fruitful methods and refine research questions

iv. Designing : *Conceptual Designs* in parallel with:

v. Main study : *Expert Interviews , Home Interviews/observations and Design Workshops*

vi. Analysis: *Coding for cultural factors evidence in practices observed and values evident in the interviews.*

3.3 Framework

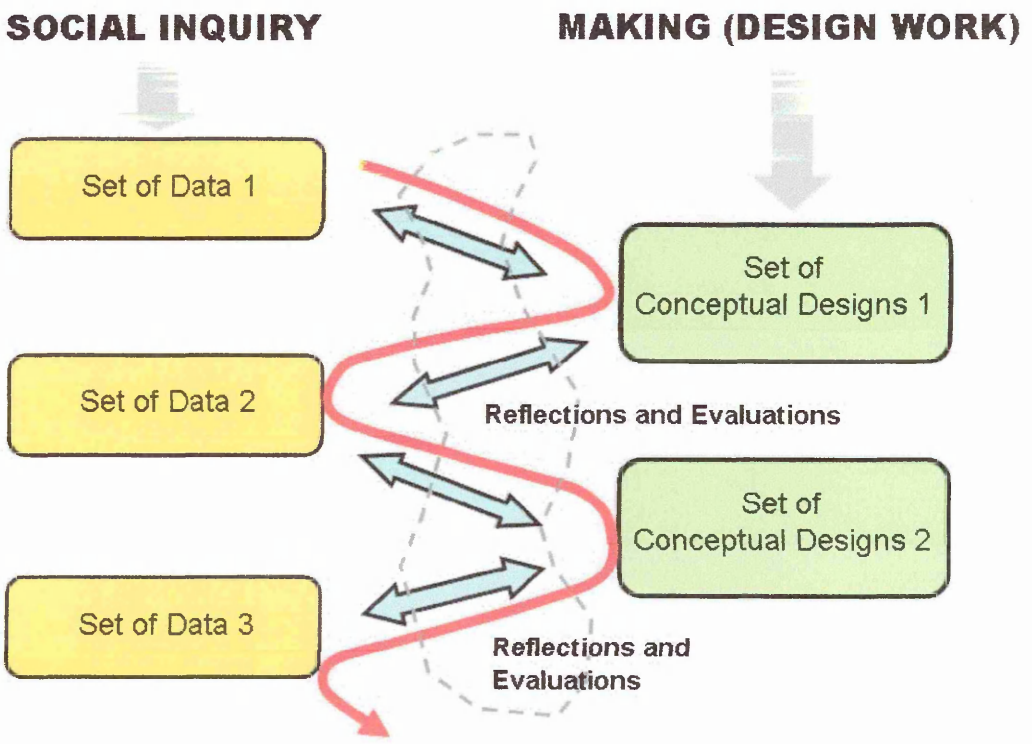


Figure 11 – My Research Design Scheme

The pilot research used interviews and observations to explore the experience of a variety of migrants in the UK. In the main fieldwork I introduced elements from the "practice-led" design research approach to provide an arena for investigating how individuals and groups respond to the concepts of migrating product designs and explore techniques that designers might use to work in this area.

The design work was a continuous process taking place alongside the interviews and responding to insights emerging from them. In turn, the set of conceptual designs developed were used as provocative objects (Bowen 2009:135) bridging cultural practices to products as the programme of interviews and group work

(design workshop and discussions) proceeds. This conceptual design work has maintained its character as a continuous process alongside the interview/workshop programme and has responded to insights emerging from it.

In turn, the concept designs emerging from this process became increasingly instrumental in this research as the programme of interviews and group work proceeded. This design work showed how cultural practices might inform new concepts and proved to be a useful stimulus when exploring migration and changing design situations.

The use of two processes, designing and interviews or workshops, provides a form of triangulation. The design output identifies possibilities which may be validated or refined by the interviews. The interviews in turn suggest possibilities which can be crystallised through designing.

As mentioned below, each stage demonstrates the subject to be investigated and analyzed, including the 'flows' and relationships within each stage. The stages of the development strategy of this research are as follows:

a. **Researcher's Reflections**

   Identify issues and problems in design for local culture based on professional and personal experience of research as a "cultural migrant" in Malaysia

b. **Review**:

   Review literatures on the concept of culture from an anthropological perspective, methods used to measure culture, cultural factors in design strategies, design techniques and methods used by anthropology to engage

with culture and techniques and those applied by designers in design research to engage with users.

c. **Pilot research:**

Explore problem space and develop methods. Identify issues and problems in cultural migration situations including product transformation and users interactions and experiences with products in their social and cultural changes. This early work has also led to the justification of the research questions and the formation of the main aims and objectives of this research in addition to incorporating design knowledge and thinking as a contribution to knowledge.

d. **Designing**:

Produce and develop conceptual designs to deploy in interviews/workshops

e. **Main study**:

Main field work: designing and data collection in Malaysia

f. **Results and analysis** (Chapter 4)

g. **Findings and conclusion** (Chapter 5 and 6)

All these stages will be further explained and demonstrated in detail in this chapter (3.4).

3.4 Techniques of Data Collection

As the research development strategy for this study has been discussed above, I explored some appropriate data collection techniques for eliciting data to pursue this research. At the same time the use of qualitative research was able to employ multiple techniques for eliciting data, such as triangulation research methods, interviews, workshops and designing.

In this case, using multiple techniques for gaining information can be effective and could enhance the substantive picture of the reality on the situation observed. This is supported by Merriam (1998) who suggested that triangulation in research is appropriate to probe in depth the institutional development process and is able to strengthen reliability and internal validity. The use of multiple methods for gaining data and information was also suggested by Webb et al. (1966) cited in Bryman (2004:275) when they stressed that applying more than one concept leads to greater confidence in the findings. In the present research context, the hybrid ties of social inquiry work informing conceptual designs to stimulate discussions could assist and support the design output and its production process. (3.3). In relation to this, Hakim (2000:172) claimed that using multiple methods could provide a ready context for combining different types of study, in order to capitalise upon the particular strengths each offers.

In order to achieve the research aims and objectives, specific data collection activities have been planned and strategized. Data collection involved various techniques including methods adopted from the social sciences (adapted into social inquiry activities) and designing (3.5.4) to achieve the research aims and objectives.

The main techniques for social inquiry were driven from the interviews and observation methods. Techniques such as open ended interviews and observation have been employed for collecting primary data in the social inquiry work. As far as this research is concerned, no specific instrument is needed for the users to respond to the interviews in the form of questionnaires or checklists. However, the use of a conceptual design as the main research tool with assisted equipment such as a digital voice recorder and a digital camera are essential to help capture all the relevant data

for this investigation. Table below indicates various techniques and methods chosen and strategized to accomplish my research objectives. The techniques and methods included are from my early research work up to my main fieldwork

	To review and identify problems interactions between products, users and culture	To understand factors that influence products to transform	To analyse and understand the importance of culture factors in design	To identify and analyse existing products that evolved with factors that transform the products	To develop a Social Inquiry model for designers to engage with users
Design experience	X	X		X	
Culture analysis		X		X	X
Internet Images Search	X		X	X	
Government Documents search		X		X	
Literature Review	X	X	X	X	X
Direct Observations	X	X	X	X	X
Open ended Interviews	X	X	X	X	X
Observational Interviews	X	X	X	X	X
Design process	X	X	X	X	X

Table 3 - Data collections techniques to achieve the aims and objectives of this research

3.5 The stages of the Development of Methodology

In my previous experience, since I had been trained as a product designer and was mostly involved in local design projects, my practice tended to focus on developing local products that were internationally competitive vis-à-vis those produced in developed countries.

3.5.1 My early observation

In most of these design projects, the designer is required to produce something that is compatible with the current user's cultural environment. In most cases, local sophisticated modern products have been produced without detailed regard for the culturally determined needs of users, because competing as modern and sophisticated global products is regarded as more important than catering for the needs of local users. During that experience, I was more focused on developing products to the needs of people living in urban areas without taking into full consideration their migration experiences, a factor which challenges designers to understand and respond to these circumstances (1.4). During that early stage, this research began to identify a gap in the established body of knowledge and moved on to consider the role of the designer (1.6).

As my observations proceeded and the research progressed, I started to understand more about 'culture' and developed my own theory of 'cultural migration' and product transformation (2.1). In addition, I also began to acknowledge the movement in demographics and products that challenged users in their adaptation processes when they moved geographically and socially (i.e. from traditional and rural areas to industrial and urban ones). Thus, it seems to be the case that, in most cases, culturally localised products, which users have carried with them through their migration experience, have not been improved in ways that make them compatible with users' current practices and lifestyles (1.3).

During this initial stage of my PhD study, I began to develop my own framework and identified areas of contextual review that needed to be explored and

studied (Chapter 2). In this section, I will describe my contextual reviews and its relevance to this area of investigation.

3.5.2 Review of Literature

The literature review in this research has been undertaken as it is useful to be conscious of the full range of relevant literature. Marshall and Rossman (1999:43) has stated that a literature review can be used to avoid the risk of "reinventing the wheel".

According to Marshall and Green (2004:49), the literature forms an important chapter in a thesis which is useful to provide justification and background to the research undertaken. In carrying out any research, there are good reasons for focussing and spending time and effort on the literature review, including acknowledging and understanding what others have already written, allowing the researcher to build on the platform of existing knowledge, to identify other people's work in the area, to increase the researcher's breadth of knowledge of their subject, and to assist in identifying opposing views Jones (1992:202).

Stebbins (2001:42) has declared that a literature review is wholly justified as background for empirical examinations of particular areas of research so that the proposed body of work will appropriately add to the existing body of research. In this study, I examined documentary evidence such as articles in journals, books, seminar papers, newspapers, and government documents, such as national plans, economic planning, population reports, internal migration reports, and articles from internet which are relevant to the research. Hence, the literature review is one of the important techniques of eliciting data which requires identification of existing concepts, issues

and problems, future trends and perspectives. Literature review in this research is centred on several main topics as follows:

- What is culture and what are its main components that inform user interactions with products?
- Background to Malaysia: geography, people, economics and culture
- Product transformation and cultural change in migration contexts
- Design strategy, design research and design methods in research, including a practice -led approach to user research and designing for culture
- Methodology from social sciences/social research;

In the context of this study, my contextual review can be categorised into different bodies of knowledge as listed in Table 4 below.

	Sources Background	Number of sources
1.	Culture Context (including cultural studies, cross culture, material culture, etc.)	31
2.	Design (including design strategy, design methods, practice led approaches, human factor, culture factors in design development strategy, product interactions, etc.)	101
3.	Malaysian Context (as site of main study including culture, heritage, social trends, government documents on economic planning and demographic and Internal Migration Reports	83
4.	Methodology (reviews on social sciences methods, including approach and techniques developed by anthropology; ethnographic, etc.)	47
5	Other Related Field (including human development, marketing, issue from globalisation, localisation, etc.)	14

Table 4 – Review Themes

My contextual review regarding cultural studies and their main components (including models of culture, elements of ethnography, etc.) was intended to enhance my understanding of the concept of culture, which, in turn, was able provide greater

understanding of user interactions with products and those elements of culture that derive from it.

As the concept of pleasurability is attached to culture, Norman (2002:85) has suggested that 4 constraints act as the sources of the behaviour of users. These constraints are cultural, natural, physical and social and are relatively integrated and have played an acknowledged and conscious role in my early investigations. In addition to this, Röse et al (2001) have suggested that identifications and understandings of the cultural requirements of users based on the analysis results of the target culture can also be a useful tool for creating a basic research platform for localised design investigation.

In order to develop a research process, I reviewed the literature of qualitative research (eg Flick 1999, Marshall and Rossman 1999, Creswell 2003, Bryman 2004) including the justifications and practicalities of conducting methods both in the qualitative and quantitative research domain. In detail, I also reviewed key issues, methods used and ethics in conducting interviews, observations and focus groups (eg. McCracken 1988; Denscombe 2003; Ritchie and Lewis 2003).

I have also reviewed methods and techniques applied in design research (as discussed in section 2.4) including its main component, a practice-led design research approach (eg. from the work of Burdick 2003, Ireland 2003, Whiteley et. al 2001, Rust 2006, Bowen 2009, etc.). This has enabled me to systematically organise my conceptual framework of undertaking social research whilst incorporating designing as its main component (3.3). The review of literature was continually updated to integrate any relevant literature that emerged during the course of this research.

3.5.3 Pilot Work

The previous section (3.1) has introduced the techniques and in general described the framework of this research. It has explained the research plan, research strategy and data collection techniques in details.

In relation, this section will discuss my chosen techniques and demonstrate its applicability while testing it through my pilot study, whilst analysing briefly the results that follow and present justifications for their interconnectedness to inform further development of my methods. The pilot study for this research was performed in the UK between the months of March and May 2007. The pilot study was conducted in order to gain a basic understanding of users and product interactions in migration settings.

3.5.3.1 Aims and Objectives

The applications of the existing conventional techniques from social science domain such as semi structured, in depth interviews, and direct observations, have been employed in this early investigation only to provide an understanding of the cultural influences on migrating individuals while undertaking food preparation tasks; they do not constitute the main methods for this research. The goal of this social inquiry is to uncover and understand the cultural elements that frame human actions and beliefs in order to provide direction for the development of concept design work in the later stages of the research.

Aims of the pilot Study:

1. To explore the cultural elements that influence participants' engagement with products.

2. To provide direction for the concept design stage, so as to push forward the development of the methodology for this research.

The choice of having the participants interviewed in their home kitchens was due to the intention of accessing realistic environments and gaining rigorous data from holistic settings, particularly with regards to emphasis on 'practical' rather than 'abstract' knowledge (Denscombe 2003:163).

3.5.3.2 Participants

Convenience snowball sampling was adopted due to the time limitations of this study. have selected 5 subjects from different nationalities and ages who were in England for study and other reasons and had a variety of experiences in cookery and using different utensils in different social and geographical migration contexts. The reason for having a small sample for my pilot study is because this exercise was designed to gain understandings of cultural elements used to provide directions for concept designs in the later stages. The small size research is relevant and in keeping with the nature of the qualitative data, especially to gain in-depth understanding of the interviews conducted (Denscombe 2003, p. 24), as well as managing appropriate interview time and cost during this pilot project (Bryman 2004, p.97). However, participants did not share the same backgrounds and experiences, although most of them represented the Malay ethnicity. Due to limitations of time, snowball sampling techniques was adopted in order to select participants, who came from a range of occupations and different social backgrounds with regards to their experience of social migration.

No.	*Code*	*Age range*	*Nationality*	*Migration experience*	*Working Experience*
1.	M1	40-45	Malaysia	Social and geographical migration	Administrator
2.	M2	35-40	Malaysia	Social and geographical migration	Car Salesman and retired part time chef
3.	M3	35-40	Egypt	Social and Geographical migration	Engineer
4.	M4	Above 60	Malaysia	Geographical migration	Housewife
5.	M5	Above 60	British	Social migration	Retired UK professional chef

Table 5- Participants' background (Pilot Study)

3.5.3.3 Interview Guide

An interview guide listed some of the main questions, together with the flow of the tasks performed in the interviews, which form a briefing prompt. I described the focus of the research, and explained to participants that the interview would explore their thoughts and ideas about product changes in the context of their migration experiences, and how this related to their current practices and beliefs. They were given an assurance of confidentiality and of their right to withdraw at any time. They were also asked to consent to the audio/visual taping of the interview, performance of tasks, products etc. (Consent form -Appendixes A)

Theme/ Task flow	Initial interview questions to triggers further questions
Introduce focus (Developing rapport and relationship)	0. What is your favourite dish? 1. How often do you cook at home? 2. What are your favourite cooking tools?
Pre-preparation	3. Where do you normally buy your ingredients? 4. What is your criteria in selecting the ingredients? 5. What is your favourite shop?

Preparations	6. What is your favourite kitchen tools? Why? 7. What difference does it make with other tools?
Operation (Cooking Process)	8. Is this the best environment for Cooking this? 9. What needs to be changed? Why? or Why Not?
Post-Operation	10. Is this a proper way to display the food? Why? Or why not? 11. What can be improved?

Table 6 – Questions related to themes and tasks (Pilot Study)

3.5.3.4 Direct Observation

Observation activities were focussed on the task that was performed involving product functions and usability issues. In qualitative research inquiries, the researcher should enter the setting with broad areas of interest (Marshall and Rossman 1999:107). In this situation, my observation was more focussed on exploring the area of users' interactions with products and the influences exercised by cultural elements. These activities were recorded with a digital camera according to a hierarchy format concerning the overall cooking task and processes involved (as illustrated in Table 6). The visual records were only made in order to focus on the task performed, products used and environment; they did not attempt to identify participants in person. Initial analysis was conducted as part of the transcription process. The images were only captured in order to support textual explanations of the interviews and to discover any unspoken evidence (only applies for this pilot study and for home interviews in the main fieldwork)

3.5.3.5 Data Analysis

Interview texts involved with Malaysian participants were first translated into English. These translated data were then transcribed in order to provide a foundation for inductive data analysis. Using a manual qualitative analysis process, the raw data in a form of text interview has been transferred and linked into different categorizations, themes and codings.

In the beginning, a transcription was analysed and a set of discrete, first level abstractions identified. Each of these abstractions was given a concept name or coding group (for example, *cultural values, preferences, geographical and economy factors*, etc.) Subsequent abstractions referred back to these original concepts, and were constantly compared with them. New concepts or themes could be added, and the originals were refined or renamed as the analysis proceeded.

The concepts were then revised to form higher order concepts, which were then grouped into major themes. For example, the concept that was associated with *cost and quality*, related to the higher order concept or coding of *preferences*, which in turn was grouped with other concepts to comprise the theme *cultural values*. A process of refinement and revision led the identification of the final set of themes

3.5.3.6 Initial findings (from Pilot Study)

These results from the pilot study also demonstrate the tendency to influence and provide direction for concept design work in the later stage of this research (3.5.4).

1) Participants' spoken wishes to adapt any appropriate tool, contradicted by a practical demonstration of the inclination to use the traditional methods where possible.

Most participants express a feeling of willingness with regard to adapting themselves to the use of modern products. However, from the observations and interview sessions it can be seen that the choices made by Malaysians participants M1, M2, M4 and Egyptian man, M3, especially regarding ingredients and certain tools still reflect elements from their traditional lifestyles and backgrounds. Studies done by Russo and Boor (1993) and Zahedi (2001) as cited in Rodriguez et al. (2006), verified that users showed resistance to and rejection of products with Western metaphors in favour of products localised according to their own culture. In this situation, participants still show their strong connections with their cultural artefacts, especially those they brought with them during their migration experience.

2) Participants adapting tools reflects their educational background and previous working experience. There are four categories of use:

i) Adapting specific tool for specific task.

Retired British chef, M5 and part time Malaysian chef, M2 had a strong tendency to use specific tools for a specific task due to their experience in the food service and catering industry. Knowledge and experience strongly influence their choice and use of tools.

ii) Adapting specific tools to perform multi task operations

They have tendency to "universalise" products by adapting a single modern product to a range of traditional uses. (M1 used tongs for different cooking purposes and M1 and M2 were comfortable using only one knife for multiple purposes). In modern and industrial urban settings, each product was designed specifically to perform specific functions. These could reflect

the patterns of how people do their jobs in different cultures and environments; for example, in Malaysia, a clerical job requires the employee to do more

than one job while in most developed countries, such as in the UK, the job specifications are more precise. In this case, M1 and M2 used to work as a clerk and administrative staff in their country of origin.

iii) Adaptation of modern European domestic products to assist with the preparation of traditional foodstuffs. This can be seen in M3's inventive ideas and practices in an attempt to localise a modern food blender. In this situation, the technical background, learning and experience drive the practices and beliefs. M3 used to work as an engineer and is currently a postgraduate engineering student at Sheffield Hallam University.

iv) Use of whatever is available to the users without regard to what is innovative or adventurous. In the early stage of social and/or geographical migrations, users managed to use only whatever happened to be available. This experience has been expressed by most of the participants as in many cases, participants tended to bring with them any traditional tools and/or ingredients that they thought would be useful and valuable to them.

3) Some merging of food cultures, which is represented by participants adopting some of the products and practices of the new environment, also introducing elements of their traditional practices into the wider picture.

For example M5's choices of international cuisines, and M4's views about global/regional foods becoming local foods and traditional foods and tools that

travelled across culture(s). Whiteley (1993:25) shows that local traditions are slowly being replaced by global conditions and the emergence of culture and the introduction of new global elements in every culture is an increasingly frequent occurrence.

The changes in patterns of ingredients (particularly in packaging such as pre-packed and pre-washed food) have also had a significant influence on changing the tools adopted by the users.

4) Participants' shift from religious/moral perspectives in traditional culture to a language of practicality and science in the industrial setting compatible with the findings of research that investigates the role of religion in culture (eg. Nagata 1980).

Whilst M4 has clear reasons about why particular practices have been influenced by her religious beliefs, M2 (from the same ethnic group and belief system) demonstrates similar practices without really knowing the reason why, and, in general, he relates it to his own ideas of modern hygiene and healthy living. Nagata (1980) argues that religious ideology affects social change and how people react to objects. In relation, Webber (1958) as cited in Leiss (2005:39) claims that religious ideas from a traditional culture do not disappear, but rather are reworked in a new industrial setting. Pfeil (2006) claims religion as one of the main cultural factors in designing for specific target audiences. Again this view is supported by data from the pilot study: Beliefs in values and objects transmitted from the previous generation as the best way to do things (or even to solve problems) has been demonstrated by M1, M2, and M3 through their transferred objects and tools.

5) Participants' willingness to adapt is inconsistent.

Users that are travelling or migrating socially or geographically will somehow find ways to adapt to their new environment. Andreasen (1984:784) claims that users that are not experiencing a stable lifestyle pattern will be vulnerable and more open to change. Examples of this behaviour are M1's use of her traditional mortar and pestle, M4 having travelled with her traditional mortar and pestle and the family's rice cooker and M2's desire to receive ingredients and tools from friends. This indicated strong connections to adaptation processes and the intention of users to carry with them elements from their original culture.

6) Tension between collectivism in traditional cultures and individualism in industrial societies, shown in the language used, matching evidence found in comparative studies of national cultures.

The tendency to use 'we' in preference to 'I' in the interviews with M1,M2 and M4, reflect the level of individualistic/ collectivistic orientation with respect to their social or ethnic groups. Hofstede (1994:50) claims that in value dimension models, individualism and collectivism define the extent to which individualistic or collectivist cultures expect individuals to care for themselves. In this context, Hofstede (1994), Matilla & Patterson (2004:197) has classified the South East Nations of Thailand and Malaysia as typically collectivist in their orientation and are, typically, shown to share certain important norms and values. By referring to Hofstede's (1984:53) dimension research concerning individualism and collectivism, Malaysia and Thailand have index scores of 20 and 26 respectively, which places these societies at the extreme end of the collectivist scale.

In summary, during this pilot study in the UK, I also identified certain kitchen products which had the potential to be developed as speculative conceptual "migrating designs". These existing products carried strong cultural values and their existing forms already reflected some adaptation through migration. Speculative conceptual designs developed from existing forms, enabling experienced observers to generate ideas concerning new forms and to reveal cultural reflections concerning the products that were relevant with their current practices. Please note that although there might be other products which carried similar strong cultural connections to users, the products identified in this pilot work were shown to be significant and relevant enough to be tested and developed in the main field work

3.5.3.7 Limitation of Pilot Study (Implication for future Studies/Main field work)

1) The choice of participants for this pilot work and the environment to which they responded is inconsistent and less realistic with respect to the studied subject area. Only the three most relevant participants (i.e. representative of the ethnic groups to be explored during the main fieldwork) were included in this pilot study; none are actual settler-residents in their cultural domain. This is significantly reflected in similarities and uniform patterns in their lifestyle and product use.

2) Lack of local literature concerning studied objects (functions and problem use): Most of the information on existing products (3.5.4.4) which can inform its relation to practises and beliefs cannot be obtained outside the UK (especially given that online literature searches or image searches are very limited). Future interviews involved with experts and detailed observations on product use such as in home interviews

environment would give greater descriptive illustrations on bridging existing products to local practices and beliefs.

3) Communications and users' education and background experience constitute the most significant aspects of participant feedback.

The good level of communication with the participants is shown in their willingness to interact in their own language and their ability to explain, which reflects their level of education and background experience. Shaun, retired chef, (M5) was considered a useful participant for this research due to the nature of his job and long career experience. A pre-interview survey of the participants' profiles could help identify active participants for this research

3.5.3.8 Summary of Methods in Pilot Study

This initial section on methods has only discussed the methods that exist and could be useful for social inquiries activities; it has not focussed on a discussion of the methods that this research will employ. Each of these pieces of work (social inquiry findings and early conceptual design work), including the future main study is partly developed in order to help this research to explore and appropriate methods for this study; it will not be one of the main methods of this research used to address the subject to be studied.

The main methodology for this research could be influenced by the 'practice led' approach (2.4), which will be demonstrated in the next stage concerned with the development of conceptual designs. Ongoing social inquiry work took place throughout the design activities, thus generating more comprehensible variables to assist the further development of data in this research; this was generalised in terms

of the whole research process itself in order to form the final product of this research, the new methodology.

3.5.3.9 Pilot Study Conclusion

In conclusion, through the pilot study, I have identified potential products which can be developed as speculative conceptual designs based on my initial social inquiry work. This pilot work has also shown how this research began to develop a method for engaging with an audience especially during the early social inquiry work and further explorations will present more details of analysis of data. Subsequently, it will show how this process of speculative designing was developed and how it connected and can be applicable in the main field work.

These early design works have also demonstrated that the author/designer/ is already immersed in some aspects of the culture under examination which allows the author/designers/myself to identify emerging problems or needs that can be met by a new design.

This research is developing a method that allows designers to recognise and work with problems that emerge from outside their normal experience as designers. This design work (figure 14 and figure 15) can be used to test the basic assumptions (or opportunities) but not the main methods (1.6).

The main fieldwork has demonstrated further exploration on users' feedbacks and experimental designs have contributed to the generation of in-depth understandings of users' current practices and beliefs in relation to product transformations in current contexts (3.5.5). Overall, after the completion of this pilot work, the planned development of this research was envisaged to include larger-scale

and more focused studies of particular domestic practices in specific migrant communities within Malaysia and analysis of some speculative concept design work that tests how this social research can inform relevant creative thinking

3.5.4 Design as a research tool (Making):

Before going into further detail about methods and techniques used in the social inquiry carried out in the main field work, this section will describe the design work, its rationale and explain in detail the role and development of the conceptual design work since this has been one of the main research tools.

This research is an exploration of potential new practices for designers and other researchers. A practice-led approach was adopted allowing exploration and development of a design method in this context (as discussed in section 2.4). In this work, I am not attempting to develop a final design or an end-product that is able to solve the problems of users experiencing cultural migration but rather proposing knowledge that can be used by designers: a certain way of designing and researching is demonstrated, which can be adapted and acknowledged by designers when responding to a given kind of design situation.

To support the field work, new conceptual designs were produced to assist research subjects to explore possibilities. In this context, qualitative data is derived from participants' reflections on the conceptual designs shown to them. This fed into further evolution of these conceptual designs and those in turn fed back into interviews and workshops as an iterative process throughout the research.

3.5.4.1 Conceptual Designs in Action

The design process began in the early stage of research during the pilot study, when I was investigating the changing of products in the kitchen as users travelled geographically or moved between social contexts.

The design process began with sketches of ideas which also included the integration of key concepts gained from interviews during the pilot work. From this experience, I have also begun to identify products which might be (re)developed as conceptual designs to assist the process of social inquiry work. Although there might be some other products that could have the same ability to migrate and evolve, the particular selections made seem to be significant in the accommodation of cultural practices and beliefs of this group of migrating community /stakeholders (2.2.3).

These concepts, which have been developed from existing forms (3.5.4.4), have also become the main platform for design evolution during the main fieldwork of this research. These conceptual designs function as "probes" within design activity and as tools for exploring problems in changing design situations and migration contexts. In relation to this, Grocott (2003:87) has determined that the speculative stream could provide imaginary resources to advance the creative process within the research. Grocott also stressed that this technique could provide users with a free environment and afford researching designers a thoughtful space in which to further the development of imaginative design work.

In this situation, design work is able to provide useful instruments to engage users, objects and designers in the same investigation (eg. Squires 2002, Rust 2004, Sanders 2006, Bowen 2009). As these methodologies are developed by designers for

designers, the nature of incorporating creative practice into research (as discussed by Evans (2009:157) in 2.4) seems to be significant and relevant for this research situation.

3.5.4.2 Conceptual Designs' Aims and Objectives

These conceptual designs have been developed alongside the social inquiry work. The social inquiry data informed these designs, which, in return, provided a research tool to generate ideas, opinions and arguments about cultural practices and beliefs in their (participants) migration experiences and adaptation processes.

Aims:

i) to provide a research instrument to support social inquiry work.

ii) to explore how such designs might evolve in practice through a research-led design process.

In this research, design work is neither focussed on generating a final design and replacing the end product nor on delivering a ready-made problem solver that is able to remedy the deficiencies of existing forms/products. These conceptual design works have, instead, been developed as research instruments to understand the possibilities of users' culturally determined needs seen through the filter of their migration experiences and the adaptation processes they have adopted.

Hence, these conceptual design works have also challenged users' ideas of living in a contemporary modern lifestyle practising traditional values.

3.5.4.3 Procedures (to introduce conceptual designs)

The conceptual designs were produced in a printed handout format (Figure 14 below) which was then distributed to each participant. At these early social inquiry sessions, I

had to briefly introduce my investigation topic before explaining basic information about the conceptual designs. This was done to show its (the conceptual design's) relations and connections to the participants and their existing cultural localised products.

These have been formed so as to bridge their imaginary thoughts about these conceptual designs and their relation to the 'real world'. This involved explaining how the conceptual designs or product might function, technically and ergonomically, and how it might be used in a real situation (if such existed) to the participants and interviewees.

This also assisted the generation of some imagination or clues on how this product (conceptual design) might work for the participants. In consequence, this 'ice breaking' session assisted in building up a wider discussion on product use (physically and emotionally) and how it related to local practices, beliefs and social contexts of the current migration environment.

3.5.4.4 Existing Forms (its relation to Conceptual Designs developed in this research)

The design process began during the pilot study period, when the researcher was investigating how products in the kitchen changed as users travelled geographically or moved between social classes.

During the pilot study in the UK, the researcher identified certain kitchen products which had the potential to be developed as "migrating designs". These products carried strong cultural values and their existing forms already reflected some adaptation through migration. Although there are many other products that carry strong cultural elements, the selection of these two existing forms seemed significant

to develop as my conceptual designs to support my main fieldwork. The reasons are because these two existing products can be regarded as the most dominant culturally localised products for the Malay and (as observed in my preliminary work including Pilot Work) to be among the products people most likely to be retained during migration. In a previous study, new concept designs were fashioned from existing forms, enabling an experienced observer (in this case, the designer/ researcher) to build new forms and ideas into their understanding (Swann 2002), as providing reflections input on the products and social practises (Bowen 2008).

1) Design A – Hand Wash Pot (traditional and current)

Figure 12 – The traditional Hand Washing Pot-The existing form has been developed into a 2D plain sketches illustration format, being presented to the participants in the main fieldwork.

The Hand washing Pot has been a dominant product in the past among the Malays and can still be found in most modern urban houses and restaurants. Early observational work and a pilot study found that this product is essential as most Malays still use their hands to eat (although they also have spoons and forks in their dining area). The cultural practice of eating by using hands among the Malays today seems to be difficult to change and this has led to the continued establishment of this product even in the current cultural migration environment.

This practice of eating by hand is a belief inherited by Malay hybrid cultures, as it is similar to those from Hinduism and Islamic practices (2.2.5). Although the environment and lifestyle has changed (especially the design of kitchen and dining areas in modern houses) in the current environment, this product can still be found in most Malay cultural events and ceremonies.

2) Design B -Traditional mortar and pestle.

Figure 13 – The Traditional Mortar and Pestle- The existing form has been developed into 2D plain sketches illustration format, being presented to the participants in the main fieldwork.

This is the second product that embodied strong cultural connections to the Malay. The product has remained unchanged despite a lengthy cultural migration period and environmental change. However, ,the product has been adjusted innovatively during its use by the end users to fit into the modern urban lifestyle with the intention of being compatible with their traditional needs. It has been adjusted to fit into a more sophisticated setting by adding shock-absorbing materials under the pestle during its use and being positioned on the kitchen floor to avoid damage to kitchen surfaces.

The origin of this product is unknown but it is believed to have been developed from a regional culture (South Asia) and then migrated with human activities geographically in the past. The granite material used is believed to be influenced by the geographical factors in the early settlements as most Malays or other ethnics used to live near to the sea and river banks (E07, 29.04.2008 and E09, 04.05.2008).

Some overlapping and similarities of cultural practices and traditional lifestyles among the South East Asians have resulted in this product being dominant and remaining until today in its original form and material (the same product can be found in other countries with similar regional cultures, such as Thailand, Indonesia, Philippines, Vietnam and Singapore).

3.5.4.5 Development of Design Presentation Formats

The early design features and concept has been developed with the aims of initiating participant's responses to provoke possibilities in their migration experience. These conceptual designs are not intended to be presented as final designs or as problem solving products to current cultural practices as in this research situation. The design ideas were developed using CAD (Computer Aided Design) such as 3D studio Max and Photoshop design software to illustrate the final idea (fig. 15). It has then been presented to the participants during the early phase of my main fieldwork.

In the early workshops it became apparent that a photo-real image inhibits participants to discuss product features rather than wider issues. The design presentation was then transformed from photo real format (figure 15) into plain 2D sketches (figure 14) and as it developed, from A1 into A2 and from B1 into B2 during the main fieldwork, as illustrated below. This issue is discussed in more detail in 5.2.1.1.

Design A1 Design A2 Design B1 Design B2

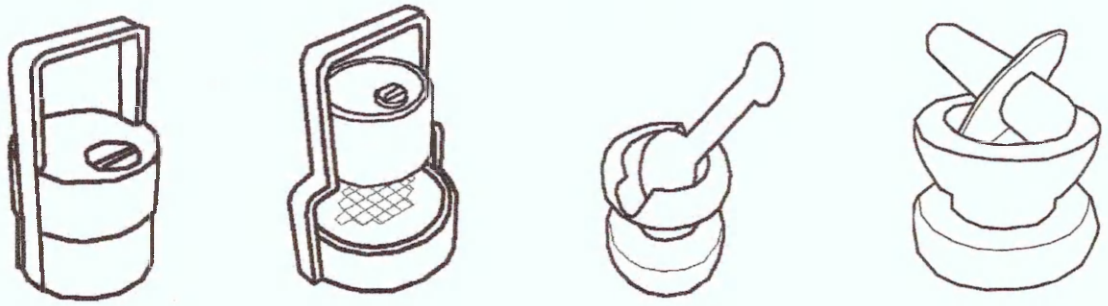
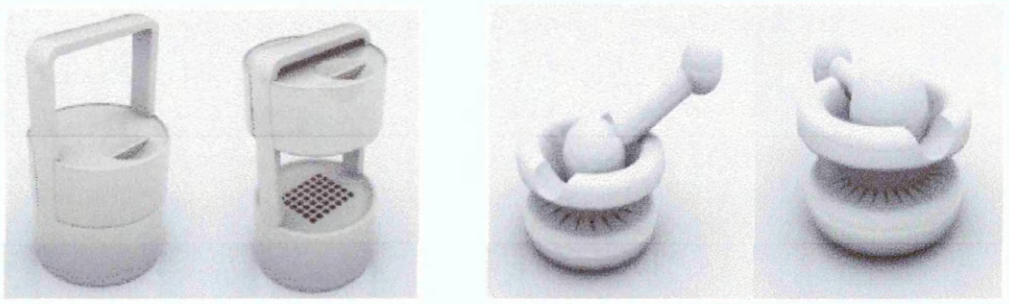


Figure 14 – Plain outline of Designs as in 2D illustration format used in the main field work (Conceptual Hand Washing Pot coded as A1; A2 and Mortar and Pestle as B1, B2)



Design A1 **Design B1**

Figure 15– Earlier presentation format of Hand Washing Pot and Mortar and Pestle (Photo Real 3D)

3.5.5 Main Field work

In this section, I will explain about the main fieldwork that I conducted between the months of March – June 2008 in Malaysia. Here, I will describe briefly the case studies that I have conducted in Malaysia through my social inquiry work which will be explained in detail in each different section; Expert Interviews, Home Interviews and Design Workshops.

In each section, I will illustrate and explain its main objective, rationale in selecting the participants including methods and procedures undertaken. In detail, I will demonstrate my experience of conducting such cases and using techniques and

approaches that I developed whilst expanding my knowledge about users and tools they adapted and adopted in their 'real world' cultural migration situation. This section will also explain about designing and the role of my conceptual design work to be used as a tool to assist this research so as to provide an arena for participants to interact with and to emphasize their ideas about culture and products.

The data collection timeline below showing the social inquiry work (including Expert Interviews as coded with 'E', Home Interviews as coded with 'HE' and Design Workshops as coded with 'DW') informed the design development process in the main fieldwork. In return, the design work formed a continuous tool to feed my interviews and Workshops and help progress the whole research (3.3)

Months	Expert Interview (E)	Home Interview (HE)	Design Workshops (DW)	Design work
March	E01 E02 E03 E04	HE01 HE02 HE03	DW 01	Design A1 and B1
April	E05 E06 E07 E08	HE04 HE05 HE06 HE07 HE08 HE09 HE10	DW02 DW03	
May	E09			Design A2 and B2
June	E10		DW04	

Table 7– Time Line Data Collection (March to June 2008)

For this study, interviews were conducted over a period of 3.5 months, from March to June 2008 in the areas of Kuala Lumpur and Penang in Malaysia.

3.5.5.1 Participants

The selection of respondents must be made carefully. McCracken (1988:17) has stressed on the idea of having "less" as "more". Here, she stressed that it is more important to work longer with greater care with few people rather than superficially with many of them. In qualitative research, a limited number of respondents should be recruited for research purposes so as to gain in depth understanding of the subject. It is essential, as McCracken (1988) further stressed that the target of qualitative interviews is not to discover how many, and what kind of people but rather to gain access to how one culture construes the world.

This research has not focused on a specific ethnic group. It has discovered relevant examples of cultural migration across the whole ethnic mix. The subjects of the research were chosen from people from several different ethnic backgrounds but whose families have been in Malaysia for several generations. This research has chosen to treat these subjects as a single group (the Malay group), even though most of the subjects have strong influences from Malay hybrid culture (2.2.5).

In a previous study, Andaya (2001:48) has also revealed that, although the situation of the Chinese and the Indian communities in Malaysia differ in scale and complexity from earlier migrant groups, the present Malaysian government believes that they can be integrated into the 'Malay' society. An Internal Migration Report (Department of Statistic Malaysia 2006:31) indicated that the Malays group had the highest migration rate among inter state migrations (6.3 percent), followed by Indians (4.7 percent) and Chinese (3.7 percent).

3.5.5.2 Open ended Interview

Squires (2002:105) argued that the use of methods such as open-ended interviews, participant contextual observation (either in its active or passive form) and by the use of drawings (sketches) can be useful to explore unpredicted areas of data and can assist in identifying unarticulated needs, gaps and adaptations.

The interview is the most common data collection technique and a major source in eliciting data in qualitative research (Ritchie & Lewis 2003:138). McCracken (1988:9) pointed out that interviews can be simply defined as a conversation with a purpose, in which an individual is involved as a person-to-person encounter in which one person obtains information from one another. In this research context, it is essential to elicit information and to give explanations of things that occur because 'we cannot observe behaviour, feelings, or how people interpret the world around (and to investigate) past events that are impossible to replicate' (Merriam, 1998:72). In fact, she also claimed that the interview is the best technique to be used when conducting intensive case studies of a few selected individuals, and it can be seen that this technique obtains more and richer data than other techniques.

In relation to this, Denscombe (2003:163) claimed that the interview is more than just a conversation. He claimed that interviews involved a set of assumptions and understanding about the situation which are not commonly associated with a casual conversation. Also, interviews can also give valuable insights into people's opinions, aspirations, experiences, attitudes and feelings (Ritchie & Lewis 2003:144). The interview is the main technique used to elicit data in my social inquiry activities for this research.

These interview sessions encouraged the experts and home interview groups to respond and to reveal the issues and problems in their use of existing products within their migration experience.

Participants' knowledge and experience from these early interviews sessions have mainly contributed to the development of speculative conceptual design works in this research. Whilst analysed critically in terms of participants' feedbacks, suggestions, opinions, and comments on how to improve cultural localised products to be compatible with current migration situations, these interviews techniques have also been examined for improvement. Putting these together with conceptual design development and its format of presentation, it has been possible to be relevant and practical and thus to elicit rich data in future work.

My interviews are divided into 2 main categories:

i) Expert Interview

ii) Home Interview

Although most questions involved in Design Workshops are also open ended interviews, however, the dialogues and discussion have been further developed relying on other participants' ideas, feedback and their reflections on the conceptual design shown to them during the workshops. Each of the 'Home' and 'Expert' interviews took about 1 to 2 hours to complete. 'Home' interviews and the 'Expert' interviews occurred concurrently as data from these interviews were not analysed separately as most of the quotations from the different interview groups appeared to be in the same groups of coding or themes during the analytical process.

3.5.5.3 Expert Interviews

The expert interviews were conducted from 11th March to 23rd of June 2008 (Table 8). Interviews with expert respondents were organised after the research had completed its final stage of 'pilot work'. The appointments with the experts were arranged two weeks prior by telephone, email, formal letter and some developed by the 'snowball' concept. Most of the interview sessions were conducted in respondents' offices or in certain cases were conducted in a place of their choosing, for example in the office lobby or rest areas. Some of the interviews were conducted in the Malay language, however, in most cases; these interviews were conducted either fully in English or in a mixture of English and Malay languages (as there is a tendency for them to use English as a medium of daily communication although there is a mix of the use of the Malay and English languages among the professionals in Malaysia). All the interviews were recorded digitally with permission of the respondents.

The aim of interviewing the experts was to gain their ideas rather than their personal reactions to the subject. The rationale is not just to introduce and to develop networking with them for future research work, but more to facilitate this research to elicit different aspirations and perspectives from groups of experienced authorities who can speak (knowing what to say) and provide valuable intellectual critiques of the issues of product transformation, social change and cultural migration in the current situation.

3.5.5.3.1 Profiling the Participants

Expert interviews involved specific individuals selected from local government institutions and non-government organisations in Malaysia, who have the ability, knowledge and experience and could provide views on product transformation and its relation to social changes in the studied environment. It is a combination of approaching local organisations (eg. Malaysia Design Council, Malaysia Consumer Association, Malay Civilization Institute, Chef Training Institute, etc.) and recommendations from academic and professional colleagues and some people encountered by chance.

The identified 10 participants were informed and booked for interviews before the main data collection work commenced. The researcher managed to make contacts with 10 individuals through emails, formal letters and phone calls before the month of February 2008. Most participants chosen are from design, consumer studies and anthropology backgrounds and aged between 35 – 65 years old. The reason is because this research believed that the experts within that age group must have experienced a social change and product transformation period.

The rationale for choosing expert participants was based on:

i) Their knowledge and their expertise being related to the subject of this investigation (cultural localised products, local culture and current lifestyle)

ii) Knowledge of products (especially kitchen tools)

iii) Practical experience

iv) Their viability and openness to contribute to this research and agreement that their views (comments and criticisms) are to be recorded (see appendix A- concern form)

v) Their viability in time and location meeting with duration of this fieldwork.

vi) Interview sessions being able to be carried out safely.

Table below illustrate Expert Interviews' sampling profile including their expertise categories/areas:

Interviewees Code	*Age*	*Occupations*	*Organisation*	*Expertise Areas*
E01	36	Senior Design Executive	Malaysia Design Council	Designer/ End Users Expert
E02	35	Celebrity Chef, Author and Ethnic food specialist	Ntv7 and Chef Training Institute	End Users/Kitchen Tools Expert
E03	65	Director	Consumer Association	End Users Expert
E04	51	Dean	Faculty of Design, USM	Designer
E05	45	Cross Culture Artist	Australian Artist	Designer/ End Users/Cultural Expert
E06	46	Historian and Anthropologists	University Science Malaysia and Museum	Anthropologist
E07	45	Director	Northern Museum	Anthropologist
E08	50	Director	National Craft Institute/ Local products	Designer
E09	46	Director	Museum Curator	Designer
E10	61	Director	Malay Civilization Institute	Anthropologist

Table 8 – Participants' Profile (Expert Interview)

The main reasons that there are more experts chosen from a design and anthropology background compared to those from consumer/end users is because in

the Home interviews sessions, this research has been more focused on the end users/ consumers themselves. This expert interview was developed on the basis of capturing different perspectives and ideas on cultural migration that involved product transformations from people who have more authority and ability to explain, to describe the situation and are able to provide some theoretical and intellectual point of views which could not be gained through my two other practical works (the home interviews and design workshops).

3.5.5.3.2 The Procedures

The interview began with the researcher explaining the area of investigation and showing example images of products that transformed responding to environmental and social change. (Images shown are power point slides from researcher's laptop).

Rather than asking direct questions, the researcher showed the participants visual examples that illustrated aspects of the research and this led, with no further prompts, into discussions that revealed their (Expert Interview participants) experience, beliefs and interest. It was not necessary to ask any direct questions to start the process and questions arose naturally in the discussions.

Images from slides were included to provide participants with an idea of the topic of investigation. These images helped lead the interview into wider discussion about local practices, products and social/environmental changes in current situations. This led onto the central part of the interview session.

In the final section of the interview, the researcher showed and explained illustrations of conceptual designs, which had been developed from previous

interviews and workshops. The intention was to gain further opinions and ideas on the subject of investigation. This final section led to providing further critical discussion on product enhancement to assist with current culture changes and environment.

Figure 16- Example of satirical illustrations and images used in Expert Interviews

3.5.5.3.3 Development of Questions

The interviews were all open ended interviews and developed based on respondents' feedback and interests. Each interview lasted up to one and half hours.

Questions developed for the interview were basically derived from their responses and expressions about the subject of investigation. Open ended questions for interview work can be categorised into different sections and stages.

	Sections	Example of Questions to guide further interest.
1.	Warm Up questions	How long you have been working in this organisation? What did you have for lunch today? Any thing special? Do any special tools in the kitchen interest you?
2.	Product Transformation	What are the differences between traditional tools and modern tools? Is it still relevant to have those at home? Do you still have those tools at your home? Why or why not?
3.	Social Change	What can you say about the current trend of buying ready cooked food? How has this been like in the last few years? Why do these cultural practices still remain in society? Or why does they change?
4.	Future/ prediction (showing conceptual design work)	Can this tool be replaced? Why and why not? *What can you say about this speculative conceptual design?* (Based from their responses) Why or Why Not? Any special reasons?

Table 9 – Interview Guides and Development of Question in Expert Interviews

The equipment used in these expert interviews were an MP3 digital voice recorder to record the interviews, a laptop to show some images from slides and a print handout of conceptual design illustrations.

3.5.5.4 Home Interviews (HE)

The practical work of this research also included ground work (home interviews) to understand migrating individuals and groups engaging with household products during food preparation tasks. In this investigation, methods were primarily developed from social research techniques such as open ended interviews and direct observations.

In the home interviews, the research looked at a number of practical cases of how individuals, who find themselves in migration environments, use and adapt household products to support both traditional and developing expectations. The aims of these home interviews were to explore the ways in which people adapted their

practices to new surroundings, and how that influenced the products they used. The 'real world' setting, such as in a practical food preparation task, was adopted in order to facilitate the interpretation of participants' understanding and to observe practical product used in a holistic situation.

The interviews were conducted in the Malay language as many of the participants did not have any formal education in English (4.3.2). However, all text of the interviews has then been translated into English for the purpose of coding and to be understood by an international reader (4.3.2). In relation to this, Jones & Marsden (2006:155) stated that for all the effort in the field studies which involved user explorations need to be made palatable not just to inform the design stages but also must be written in a form and language that can be understand for all other audiences.

3.5.5.4.1 Profiling the Samplings of Interviews

The early intended respondents were contacted before the field work commenced through personal contacts. Later, 'snowball' sampling was adopted and contacts were established and expanded through suggestions made either by professional colleagues, expertise from the expert interviews, officials from local organisations or local contacts (5.2.2.4)

My decisions about which people to approach (although based on recommendations) were also influenced by my own judgements about how friendly or supportive they were towards this work. Their suitability was identified through my first contact (by phone calls) or meeting face to face with the participants.

A snowball sampling method was adopted for this investigation. I began by asking a number of friends and local people to assist me with the recruitment of the subjects. I gave a brief account of the research; the descriptions of the kind of subjects I was seeking and explained what would be investigated and recorded during the home interviews. The individuals were then contacted through phone calls and I paid them a first visit before the decision was made about choosing the appropriate subjects. I found that all the subjects chosen were identified as accessible, cooperative and valuable for this investigation after the first meeting.

Most of the participants were groups of people who lived in the rural area using traditional tools and those who migrated to urban areas experiencing cultural change and adapting to a new environment. The subjects for home interview can be divided into 2 main categories:

i) Expert cooks – individuals engaged in preparing traditional foods using traditional methods to fulfil the demands of 'modern'[8] lifestyle

ii) Ordinary subjects – individuals who moved from rural to urban dwellings

The rationale for choosing participants was based on:

i) Their ability to use kitchen tools as well as modern kitchen appliances

ii) Knowledge of products (kitchen tools)

iii) Practical experience

iv) Their viability and openness to contributing to this research and agreement that their property (kitchen) could be recorded (see Appendix A - concern form)

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[8] I use the term 'modern' in a particular way to refer to what is normally perceived or expected from a contemporarily western globalised lifestyle.

v) Interview sessions could be carried out safely.

Table below illustrates in detail the breakdown from those 2 main categories.

Code	Age	Gender	Description	Education Level	Category
HE01	65	M	He has experience of using both, traditional tools and modern appliances in his working environment. He indicated that his traditional food preparation method has not been much affected despite the changes in the social setting and environment although he is actually struggling to adapt modern equipment.	Malay Medium (Primary School)	Expert Cooks
HE02	35	M	Has a small scale traditional food production house inherited from his family. He shared his view on the changes and challenges of using modern tools to comply with traditional methods of producing and processing specific ethnic cookies.	Medium (Secondary School)	Urban Dwellers/Expert Cooks
HE03	24	M	He is using completely modern machines to assist with his traditional food processes where he demonstrated his innovative design to assist his cultural practices, as well as to reveal the wider picture of ergonomics and safety.	English Medium University Graduate	Urban Dwellers/Expert Cooks
HE04	55	F	Processing traditional foodstuff in the rural areas using both traditional and modern tools to fulfil the needs of those living in the urban environment.	Malay Medium (Primary School)	Expert Cooks
HE05	24	M	Freshly graduated, living in a shared flat. He has demonstrated his own cooking ability while adapting to the new space and environment.	English Medium (Diploma Holder)	Urban Dwellers

HE06	48	F	A Malaysian Chinese married to a Malay man and has strong passion over Malay's traditional kitchen products. She has massive collections of traditional kitchen tools which are used in different ways in her heritage type colonial house kitchen.	English Medium (Graduate)	Urban Dwellers
HE07	55	M	An Australian man married to a Malaysian lady living in a colonial type shop house for nearly 17 years and well versed in local culture(s) and custom. Expressing his own ways of adapting local tools and able to distinguish some local cooking tools that can be improved and developed.	English Medium (Graduate)	Urban Dwellers
HE08	70	M	Experience of living in a remote area, enables him to describe in details exotic traditional food including its processes. He shared his views on food pattern changes through cultural migration (time), especially on traditional food ingredients and their relation to the regional culture(s) and religion influences.	Malay Medium (Primary School)	Urban Dwellers
HE09	49	F	Local cross culture chef married to a Swiss man, and owning a western restaurant. Exterior design of her restaurant shows strong western influence but most tools found in the kitchen are mainly influenced by culture(s) from this region.	English Medium (Diploma Holder)	Urban Dwellers/ Expert Cooks
HE10	54	F	Traditional food trainer. Innovatively trying to adapt new/global ingredients to be compatible with traditional foodstuff processes.	Malay Medium (Secondary School)	Expert Cooks

Table 10 – Participants' Profile (Home Interviews)

3.5.5.4.2 Procedures

The researcher greets the participant in the early stage of the interview. In this introductory and ice breaking session, the conversation was driven more towards current social issues and the participant's environment. This then led to conversation and inquiry about the participant's background and experience so as to familiarise the interviewer and interviewee with one another and to create a warm, comfortable and friendly environment. This early session was done in order to build rapport between the two parties. By doing this, the researcher will have a better understanding about participants' background, environment and culture(s). At this stage, the researcher briefly explained about the research aims and how these might be achieved through the interviews.

Although the main agenda and proceedings for discussion were fully controlled by the researcher, the development of interviews also established tacit connections into and agreement with the notion of being interviewed. Denscombe (2003:164) stated that the degree of control exercised by the researcher will vary depending on the style of interviewing although it is dedicated to investigating a given topic. At this point, I had already identified certain techniques for managing the interviews and to build rapport through my experience of living with that particular culture. However, at that stage, I still did not have any idea about the participant's engagement with tools in this context of study. The dialogues focused more on attracting the participant's interest to be with the interviews and to develop her/his interest about the topic of investigation.

In most of the sessions, the participants were already engaged in the early stages of their food preparation processes before the interview had even started. They were undergoing these interviews while their hands were busy at work in their own kitchens. This practical routine kept the participants active using their kitchen tools and indirectly allowed them to freely express their ideas on any issue regarding product use. These cultural practices could not be done in a conventional face to face interview as this technique would require them to imagine and to remember their actual practices and the products they might have employed or adapted.

By conducting these interviews while participants were engaging in their practical tasks, I also managed to observe some issues regarding product use (including ergonomics, safety, cultural behaviour, hygiene, etc.), which could be recorded. These interview sessions also enabled me to integrate and to capture my observational data and by having images, helped to assist me to illustrate my findings rather than just having the spoken facts. At the end of the session, the interview was focussing more on finding out about participants' points of view on how to improve current products by presenting to them the conceptual designs. Each interview lasted over an hour and would only finish when the cooking processes had been completed.

3.5.5.4.3 Development of Questions

The questions were open ended and naturally expanded into a wider scope of discussion about the subject as the interview progressed. Questions guidelines were developed and improved compared to those used in the Pilot study work which created boundaries and helped to control the dialogues to be within the research.

Theme/ Task flow	Initials interview questions to triggers further questions
Introduce focus (Developing rapport and relationship)	1. How often do you cook at home? 2. Is there any special event for preparing these foods?
Preparations	3. Are these tools still the best tools to use (traditional tools)? Why are you not using other tools (modern tools)? 4. Why are you using these tools instead? 5. Is this a common tool used in current everyday practice? Why and why not?
Operations (Cooking process)	6. Does it make a difference to cook in this current environment? 7. What has changed? Why? 8. What needs to be changed and why?
Post operation (Display work)	9. Why you think that tools you use are more useful and more convenient? 10. What can be improved? Why? 11. What if we have these products in real life (conceptual *designs*)? Can these designs/products be acceptable by the end users? Why and why not?

Table 11- Interview Guides and Development of Questions (Home Interviews)

These questions *are only used as an interview guide to* stimulate further possible questions and are not standardised in all interviews. The main aims here were to interact with participants while trying to observe their cultural practices and to capture any possibilities on tools they have employed.

3.5.5.4.4 Direct Observation

Direct observation techniques have also been used in my social inquiry activities during the Home Interview sessions. These techniques are essential to capture any actions or physical movement by participants in their food preparation processes and to identify any innovative products that emerge from their practices which have not been expressed verbally by them. In conducting my social inquiry activities, direct observation can be useful to identify any areas that are not covered by spoken facts from the participants.

Kamariah (2003) has stated that direct observation is one of the techniques that is often interwoven with the interviews. Merriam (1998:96) argues that direct observation in research is to 'provide some knowledge of the context or to provide specific incidents, behaviours, and so on that can be used as reference points for subsequent interviews'. In addition, she agreed that direct observation could shed light on some information that the researcher was not aware of during the interviews and this could lead to the discovery of new issues, which could be further investigated. In her words, Merriam (1998:96) clarified that 'direct observation is the best technique to use when an activity, event, or situation can be observed first hand, when a fresh perspective is desired, or when participants are not able or willing to discuss the topic under study'.

According to Taylor-Powell and Steele (1996), direct observation is a technique to elicit data that provides the opportunity to document behaviour, physical aspects and activities without having to depend upon people's ability to respond to questions. Hence 'seeing' and 'listening' are keys elements in direct observation. Furthermore, they also demonstrated that direct observation is appropriate to be used when the researcher is trying to understand the ongoing process, event, behaviour or an unfolding situation. In this case, it can be appropriate to observe participants' tasks during home interviews.

In this research, direct observation techniques have been focussed to understand participants' behaviour and actions whilst interacting with their tools and to distinguish any particular innovative products that emerged from their practices. These can be observed throughout the food preparation process while the interview is taking place. In relation to this, Taylor-Powell and Steele (1996) emphasized that

direct observation should be used to obtain information on various behaviours and the process of the event. As suggested by Denscombe (2003), observation offers more than what people say they do or what they say they think as it draws on direct evidence of the eye to witness events first hand (2003:192).

Here, direct observation could be very useful when details of an activities process need to be accessed and when interview techniques are unlikely to draw out the required information accurately due to the respondents either not knowing or being unwilling to say during the interview session. The aim of direct observations during the home interview is to distinguish their particular behaviour, innovative ideas, reactions and use of tools during their food preparation processes (5.1.1.1).

3.5.5.5 Design Workshops

Design Workshops were conducted at 4 different locations in Malaysia between the months of March and May 2008. These workshops involved 24 participants in total, ranging from between 18 and 30 years old. Participants selected have an experience of living in different environments and encountering the use of several pieces of kitchen equipment, ranging from traditional tools to modern appliances.

The aims of these workshops are to gain any possibilities on cultural practices and beliefs as well as to determine design features for further design development in order to understand users culturally determined needs in relation to product transformation during the migration experience. These Design Workshops used conceptual designs and some designing work that emerged from it to develop further discussion and to predict any possibilities regarding this topic of investigation.

3.5.5.5.1 Connecting with the participants

Participants were identified before the fieldwork began, through their local learning and training institutions (design faculty, chef training institute and local community college). The identification of the institutions was through recommendations by academic and professional colleagues in Malaysia before the field work began. The author built connections with the institutions before the fieldwork commenced through emails, formal letters and several phone calls.

Participants' names and contacts were based on criteria provided by the researcher through their alumni and colleges (Appendix B). The appropriate candidates were shortlisted by their former lecturers and trainers. Their lecturers and trainers would have a good understanding of students they have worked with over time. The researcher explained and provided brief details about the investigation and activities for the workshop during the first meeting with the officials from each of the institutions before the actual workshop took place.

The researcher predicted that it would be more convenient to build up connections and contacts with participants through their former or current learning institutions, as to bring together any working professionals at any one time might not be easy and is sometimes difficult to organise during this fieldwork period. The methodology and criteria for selecting participants was also developed based on the researcher's pilot work experience. (3.5.3.7)

Criteria allocated for selecting samplings were based on:

1) their life experience of moving to a different environment (travelling geographically or moving between social classes to enhance their quality of life through education or career development)

2) their knowledge and experience of using kitchen tools.

3) Good communication skills, friendliness and confidence to speak out.

Locations selected were the cities of Penang and Kuala Lumpur as these are the two most dominant industrial cities in Malaysia (presenting the north and central part of Malaysia) where internal migration operated actively. (Department of Statistic Malaysia 2006:9)

3.5.5.5.2 Profiling the Samplings of Observations

The four groups were drawn from three different backgrounds. Basically they were people who were either learning or in the early part of their career in skilled or professional occupations.

Most of the participants were those who moved from their village (rural areas) into the city to gain better education training and for career opportunities. This research predicted that this age group of participants (between 18 to 25 years old) would be the most suitable for sampling as they were mobile and likely to be involved in and accepting of change. Beckett (2002:36) indicated that the ages of 18 and 21 are a turning point in human life. These are the life stages when an individual must struggle and confront themselves in order to make successful adaptations to new demands (Beckett, 2002:36). This specific age group (especially for the workshops), had been chosen due to their open-mindedness and flexibility to accept changes in life compared to the other age groups. The selection of this age group of samplings is

significant as they are also a dominant population group that live or have moved from traditional rural into industrial urban areas for some specific life improvement reasons in the studied location (Department of Statistic Malaysia 2008).

The researcher's experience suggested that using people from creative professions would be a quick way of identifying such a group. The author believed that he might use product designers as being very close to the subject matter, multi-media designers and a trainee chef group who were actually very knowledgeable about the subject and might be quite conservative. Bowen (2008) demonstrated that using people who have an open imaginative approach to life is likely to generate more progressive and more forward looking ideas, whereas people who do not have that are more likely to stay within safe territory. In this research, the researcher is looking to move people beyond the compass as in this case, the designers are expected to use their imaginations and to innovate in their work and people who have an advanced level of design education are quickly identified as potential sampling.

Rationales for having different group for this workshop are:

i) 3D Designers (for Design Workshop 01 and 02): as the only group that actually understand and are used to working with this material.

ii) Chefs group (Design Workshop 03) are not by nature expected to be imaginative but they have a good technical knowledge and also can be considered as expert users of the context.

iii) Multi media designers (for Design Workshop 04) are good and considered as expert users as they are already engaged with cultural changes and social life experience. Although they are imaginative group of users but not necessarily engaged with the specific product.

Table 12 below illustrate participants groups accordingly to their categories and background.

Date	Design Workshops	Background	Location	Participants (as coded)	Current Occupation	Note
28.3.08	DW1	Product Design	Penang, Malaysia	W01 W02 W03 W04 W05 W06	3D Product Designer	Young Professional
03.4.08	DW2	Product Design	Kuala Lumpur, Malaysia	W07 W08 W09 W10 W11 W12	Design student	International Student (representing this culture group)
30.4.08	DW3	Chef	Penang, Malaysia	W13 W14 W15 W16 W17 W18	Chef Training	Final Semester Student
03.6.08	DW4	Multimedia Design	Penang, Malaysia	W19 W20 W21 W22 W23 W24	Multi Media Design student	Final Semester Student

Table 12- Participants' Profile (Design Workshops)

*(*Please note that Penang and Kuala Lumpur are two most dominant industrial urban cities in Malaysia (Malaysia Internal Migration Report 2006) and all selected participants are experiencing cultural migration during the operation of these Design Workshops)*

3.5.5.5.3 Procedures

The Design Workshops have been developed based on multiple stages which involved group discussion and the use of design works. Beginning with a warm up session, the first stage focused on sharing ideas on their migration experience, product use and current environment situations. The 2nd stage was progressed based on participants' expectations and imaginations about specific products (in this case, kitchen tools). While the last stage (stage 3) involved speculative conceptual designs to provoke ideas and identify possibilities that could be integrated from their

experience (gained from stage 01) needs, expectations and imaginations (gained from stage 02).

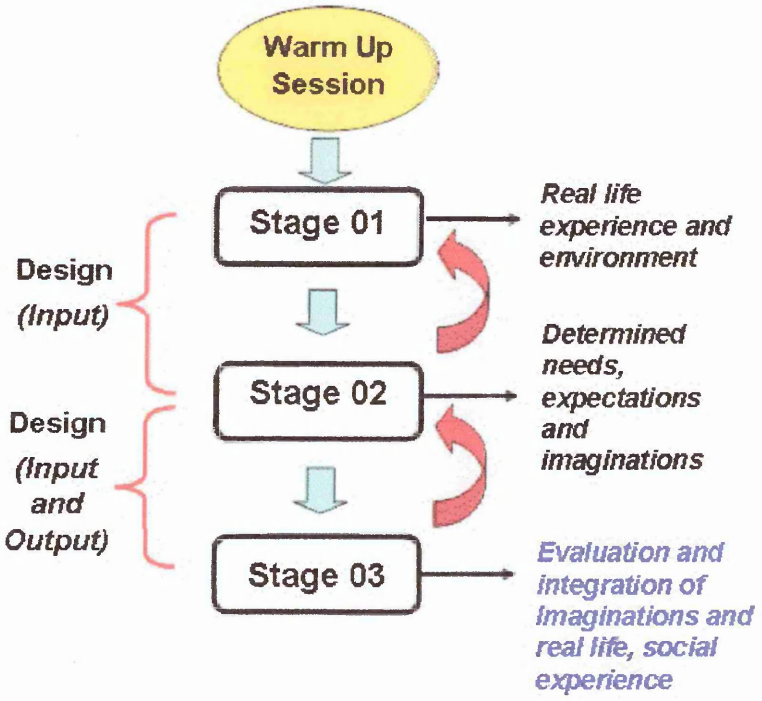

Figure 17 – Process involved in Design Workshops

3.5.5.5.3.1 Ice breaking session

In the warm up session, the author gave a brief introduction about the research project and explained activities planned for the workshop and showed willingness to answer any questions before the actual workshop began. Participants were asked to complete a form about their backgrounds and migration experiences (refer to appendix- section on forms). In this way basic information about them was obtained, including places they had lived, their education and their social background. The form was collected and the author referred to the form while asking participants about the information that was on the form.

The researcher then asked open questions based on information provided from the participant's form aimed at stimulating the discussion. It also provided a starting point for expanding into further dialogues in the later session. Filling in the form was simply a preparation session for the actual warm up session. The information from the form provided the researcher with an opportunity to open up the discussion when they were more relaxed and interacting with each other. This early session also provided an occasion for everybody in the group to get to know each other better. The participants were also more relaxed, volunteered information in the discussion and interacted with each other, and developed rapport among themselves.

This warm up session gave the researcher a basic understanding of participants' backgrounds and experience, including the kitchen products they might have employed and their lifestyle. The session lasted approximately 15 minutes and stimulated verbal interaction and allowed a comfortable atmosphere to be established among the participants, including the researcher.

3.5.5.5.3.2 Stage 01 (Real Life experience and current environment)

Following directly from the warm up session, the participants were given a sheet of paper which had two columns to list their favourite and most disliked kitchen tools. Participants were free to write, draw or comment on each of the tools they had listed. This exercise led to a discussion about kitchen tools found in their current environment and helped to illustrate their social lifestyle and experience. Thus, participants were able to express their personal insights into traditional and modern tools according to their own perspectives and how they related to their current social life and environment.

This stage also extended the dialogue and discussions into some historical perspectives and life experiences within that same culture although each participant had a different migration experience. These activities somehow built up a sense that similarities and shared values existed among the participants, especially when they started to discuss issues regarding product use and cultural practices and values. This session helped the researcher to get to know more about them as end users, including their preferences and experience with tools.

3.5.5.5.3.3 Stage 02. (Design activities – development of expectations and imaginations)

In this stage, participants had more freedom to express their own ideas and expectations to improve current products in the migration situation. The researcher explained that this stage would involve two contiguous processes.

In the first part, they would be required to develop their own ideas and, in the second, to argue and to share it with others in the form of discussions. For a start, participants were requested to express their ideas (through sketches or outline drawing) on improving existing kitchen utensils based on their personal needs.

They could either create their own concept design completely on a blank sheet of paper given to them or work on the existing designs (existing products A and B, refer to illustration below), which was given to them in the form of an outline drawing (side elevation view).

Sketches in the form of outline drawings of two existing kitchen products (the hand washing pot and traditional mortar and pestle) were provided to assist them with this process. For those who were not trained in design, this outline drawing was used for guidance (if it was still difficult for them, then they were encouraged just to write

any words to express their ideas which could then be elaborated during the discussion period).

Later, as the discussion naturally progressed, the topic of discussing existing products and user expectations was raised. This covered both expectations and imaginative ideas and how they could be related to the current social and migration environment. Illustrated below is example of an outline drawing (side elevation view) of two existing products given to assist participants (especially those from non-design backgrounds) in this session

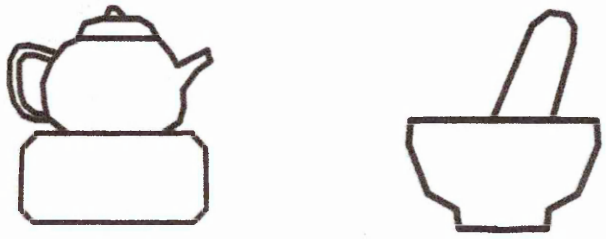

Figure 18- Outline illustrations of Design A and B used in Stage 2 of Design Workshop.

Illustrations below are some example of expectations and ideas expressed on a blank sheet of paper by participants coded W09 and W19 during the Design Workshops

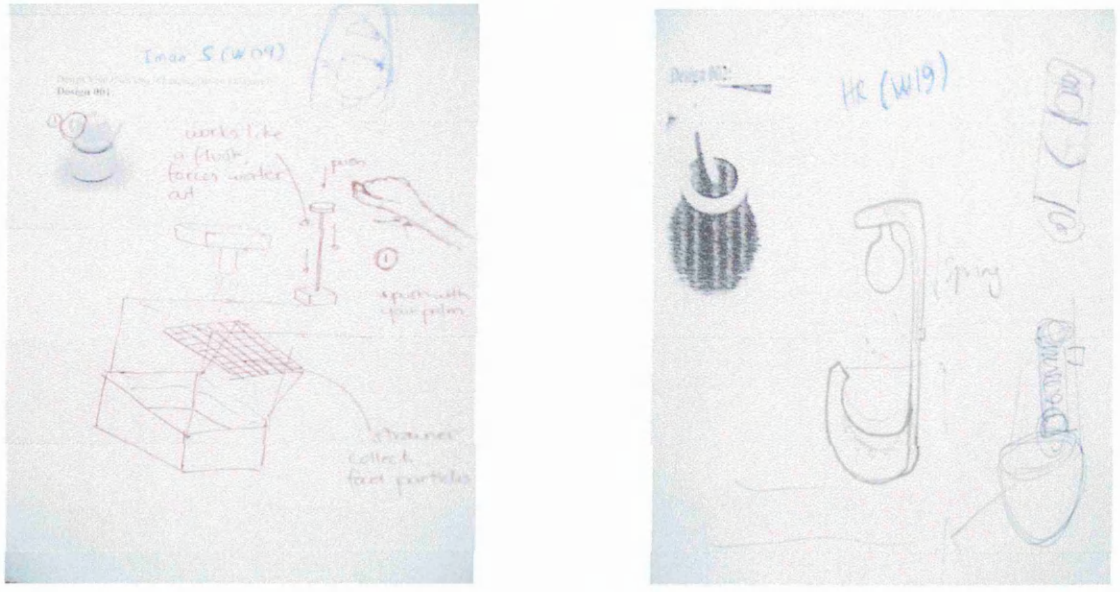

Figure 19 -Designs produced by participants in Design Workshops

3.5.5.5.3.4 Stage 03. (Design Evaluation and integration of ideas)

The researcher demonstrated images or illustrations of conceptual products to the participants (fig. 14) and briefly explained their function and use. At this stage, these conceptual designs should have been able to provoke insights and develop possibilities involving culture and particular products. The participants were requested to provide comments and to share their ideas about the products and their suitability.

This session provided an opportunity for participants to share their views on my conceptual products and their relation to their own expectations (key points as identified and discussed during stage 2: design activities) and their real life experience (key points as identified and discussed during stage 1 activities: life experience and product use)

This led to further discussions on design work and its relationship to cultural practices, environment, practicality and beliefs. Consequently, this discussion summarised the discussions from the previous stages (stage 1 and stage 2 of this Design Workshops) and challenged the development of relevant design thinking which then led to further improvements of the conceptual design/products. Thus, further conceptual design developments and improvement could become more relevant to current social contexts and stakeholders' expectations. This session demonstrated not just the effectiveness of using design works and design activities to communicate and share ideas but also to bridge any possibilities that may arise between product function and use with users' cultural practices and beliefs.

3.6 Analysis Planning

The objective of the initial data analysis in this research was to gain insights, inspirations, questions and opportunities for developing concept designs in the later stage, rather than just gaining direct knowledge about social life (4.1). Data from the interviews and workshops helped to justify and to validate the conceptual design work. This research project also makes use of some of the qualitative analysis techniques (4.3). Social data from the interviews and workshops will form a basic element to evaluate the proposed concept designs and assist to develop further social inquiry data.

3.7 Conclusion

This section has demonstrated and discussed activities and methods from my interviews, workshops and explained the design roles and functions of the main fieldwork. In detail, this chapter has explained and described the materials and tools, including procedures undertaken during the data collection stage, used in this research. Data from this process will be analysed and further explained in the next chapter (Chapter 4) which will explain in detail the various analytical processes used in this research. Finally, findings and conclusion for further research will be made (Chapter 5).

CHAPTER 4

4.0 Analysis

In this chapter, I will describe the analysis that was employed for my qualitative ethnographic data to create a description of the cultural factors in a design scenario and I will explain how the experience of ethnographic research informed the design processes during and following that research.

In essence, I will explain the consequences of carrying out design activities in the context of this social investigation (as discussed in Chapter 3). In particular, this section will explain how social inquiry and making (designing) processes can be integrated to assist each other.

The analysis will reveal narratives from users' cultural practices and beliefs and about the world of user-product-interactions in relation to users' cultural practices. This includes physical and emotional factors and the symbolic meanings they would bring to them. Significantly, I will explain how the development of conceptual designs for this research can be both a research tool and a design approach for 'culturally localised products'. In relation to this, Wasson (2002:80) suggested that developing a comprehensive, coherent and pragmatic framework can be an iterative process and can be repeated over and over again during the data analysis process. The research has implications for both the specific design project and more general development as designers.

The early objective of data analysis in this research was to gain insights, inspirations, questions and opportunities for developing speculative conceptual designs and to understand how design can be incorporated to be an effective component of this research, rather than just to gain direct knowledge about social life. However, selective results regarding users' practices and beliefs from this analysis of social inquiry can also be useful in forming a fundamental cultural understanding about the users. These could assist the designer in becoming more responsive to local cultural needs and current environment settings.

4.1 Managing the data

The data collected comes in various formats, types and forms so it has been necessary to develop a system of organising and managing it to support the analysis..

4.1.1 The Material arising from the Research

Qualitative analysis is founded on methods related to direct interpretation and categorical aggregation (Stake 1995:78). Most researchers using qualitative data start by producing descriptive accounts (Denscombe 2003:268, Bryman 2004:267). In my research, apart from the conversations which were recorded and transcribed, photographs were used to capture examples of products and practices and these then informed my field notes (eg. Appendix F) where I reflected on the observations I had made to form some tentative conclusions about the practices observed.

The open-ended interviews with different categories of people were recorded, the audio recordings being transcribed and then translated into English as described below (4.3.1), these transcriptions (eg. Appendix E) forming by far the largest source of data. During the research I produced new designs as an aid to the process and

some design ideas in sketch form were also produced by participants (figure 21 in Chapter 3). Apart from the photographs mentioned above, other images were captured and used including practices and products observed in the preliminary research (figure 2 in Chapter 1), images from the design work conducted in the research and some satirical illustrations of everyday practices in Malaysia (figure 1 in Chapter 1).

4.1.1.1 Interview transcriptions

Miles and Huberman (1994:69) suggested that each piece of raw data material should be identified with a unique serial number or code for reference purposes, which enables the data to be identified in its exact location significantly and provides a convenient navigation system for the researcher throughout the analysis stages.

A common reference coding system was created for all types of data. Thus each transcription was coded with a serial number according to type of interview. For example in the first Expert Interview was numbered (E01); the third home interview was (HE03); and the fourth person from the first design workshop was coded (WP04 (Design Workshop 01), etc.

4.1.1.2 Images

Images (raw data) were captured in the observational sessions, especially during the home interviews, using a digital camera. These images were given filenames including the reference codes used for transcriptions and organised into different folders. Thus the first image from a home interview with participant no. 3 has the filename HE03 (a) and is located in folder HE03.

4.1.1.3 Design work

Design data in this research can be divided into 2 categories:

i) Design work produced by participants

ii) Design work produced by the author/designer.

Design work produced by participants was only used to assist them to express their thoughts and help to visualise their ideas about the subject of discussion. Their designs were not utilised to influence my conceptual designs for this research but rather to provide a visual tool supporting their verbal explanation (3.5.5.5.3.3).

Each of these pieces of design were organised and reproduced in a standard digital format and printed on an A4-sized piece of paper, which was then coded and named accordingly. This coding has assisted me to refer back to the designs where necessary during the analysis process. From this data collection experience, I managed to initiate 31 sketches of ideas from 21 participants during the Design Workshops.

	References Coding (begins with/coded as)	Time	Event
1.	PR	2005-2006	Pre- Research Period
2.	PW	March-May 2007	Pilot Study
3.	E	March-June 2008	Main Fieldwork (Expert Interview)
4.	HE	March-June 2008	Main Fieldwork (Home Interview)
5.	W	March-June 2008	Main Fieldwork (Interview and Designing)
6.	SW	March-June 2008	Main Fieldwork (Sketches Work from participants)

7.	SA and SB	March-June 2008	Main Fieldwork (My Sketches Work)
8.	PMDW	March-June	Main Fieldwork (Outline Drawing from existing form)
9.	D (DA and DB)	March-June 2008	Main Fieldwork (Final Design Work)

Table 13 – References Coded accordingly to time and events

4.2 Generating Concepts (themes, keywords and design concepts)

A purpose of my first analysis of the pilot research was to identify themes, such as *traditional values* or *localisation* to inform the next stage of inquiry, particularly by informing conceptual designs used to stimulate the next round of discussions with users. This process of developing conceptual designs started during my early observational work as indicated in the timeline (figure 20) below.

In later stages of the research (4.3) I became more focused on identifying key words, based on more rigorous analysis of the content of interviews and workshops. This activity supported a second round of design concepts which informed further workshop and interviews, as well as providing some starting points for the analysis of data from the main stage of the research.

4.2.1 'Processing' stakeholders' engagement

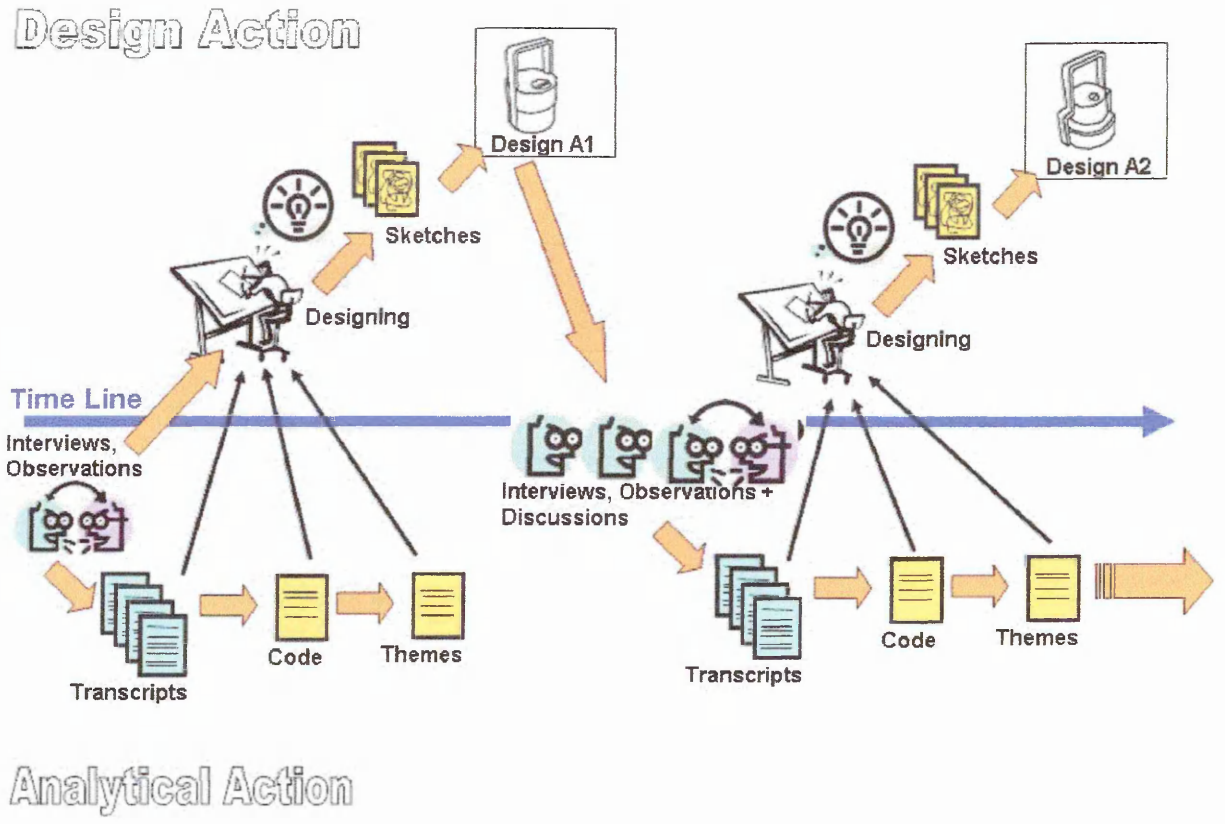

Figure 20– Timeline – Designing and Analytical Action processes

The pilot interviews and observations with migrants in the UK resulted in transcripts of conversations and photographs of products and practices observed, and some issues, such as user innovations, being identified during the interviews. A simple coding approach was used to list issues that appeared in the transcripts and some themes were identified (3.5.3.5) that characterised the different practices and products observed. This was supported by discussions with peers and supervisors in which I used the images (fig 21 below) and anecdotes from the study to promote some debate about what was revealed. Some of the themes that appeared from this initial work have formed the central part of my research (eg. *Adaptations,* where different products, practices and materials may be used to adapt to local conditions;

Local Values coming from the migrant's past experience, and *User Innovation,* where products, practices or environments might be transformed to create a novel re-interpretation, an extreme form of adaptation. (I used 'Innovation' as key or themes to represent this idea of 'User Innovation' as short hand in my data analysis process) Using a European cooker, Malaysians use aluminium foil as a disposable layer to avoid oil splashing on walls. (Fig. 21) Malaysians migrating into different environments still used lots of stir fry in their food preparation processes.

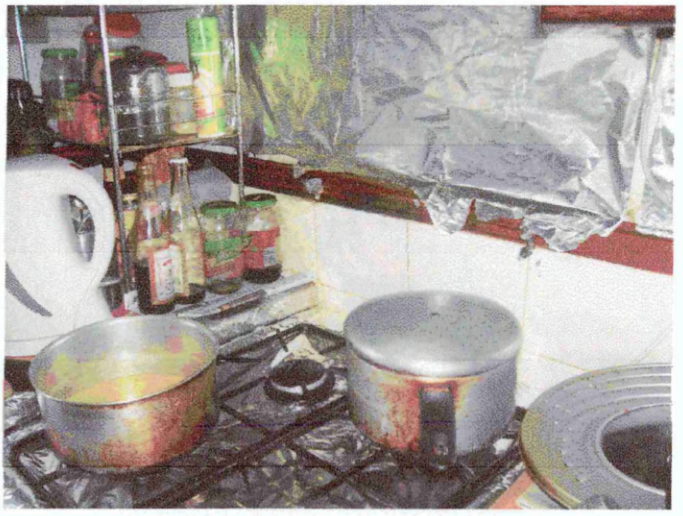

Figure 21 – Kitchen Wall and Stove Oil Cover

Malaysians eat with their hands. Figure 22 shows an innovative conversion of cheap kitchen taps in a rented house to become a mixer. Migrating into a different climate environment, this innovation provides similar water temperature for them to wash their hands in order to retain their cultural practices.

Figure 22 – Hand Wash Water Mixer

This reflective process fed tacitly into my designing activities as well as informing explicit analysis. Bowen (2009:171) through his "Critical artefact Methodology" used Polanyi's (1966) concepts of how tacit knowledge is gained and used through "indwelling" to explain how a designer can tacitly 'process' observations from stakeholder group discussions into conceptual designs. Bowen used drawings and models of these concept designs in an iterative process of engaging with stakeholders to understand and respond to their unspoken needs and aspirations. His design concepts were both an expression of what he observed in the group discussions, and provocative aids to further rounds of group discussion. His work was concerned with identifying radical new concepts that employed novel technologies, in contrast my research is more concerned with refining and developing existing practices and products.

For that reason I have adopted a similar approach, but with less emphasis on the provocative nature of the designs produced and also bringing in some formal analysis of observations, interviews and discussions. This analysis had two functions.

To assist in the development of theory from the research, and to provide an opportunity for me as a designer to reflect more deeply on my engagement with stakeholders - directly informing the design work in an extended form of Bowen's processing. Below is an example of my initial design work processing my encounters with stakeholders with the emerging keywords of '*Handles*' and '*Ergonomics*'.

My conceptual designs have been developed in the form of line drawings that convey a clear idea of 'form and function' but are not 'realistic', so recognised as a concept or proposal (3.5.4.5).

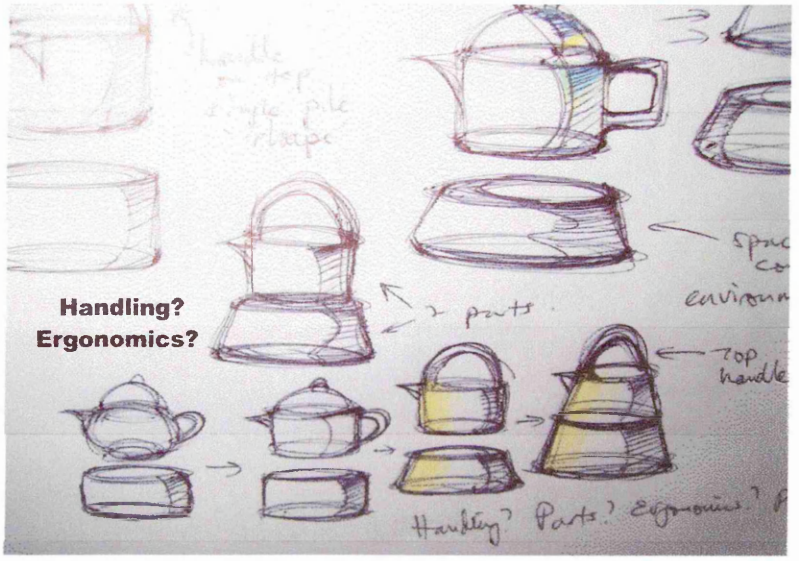

Figure 23 – Sketches and emerging keywords of Handles and Ergonomics

These actions of designing and analysis in parallel became a pattern for the methods of the main research.

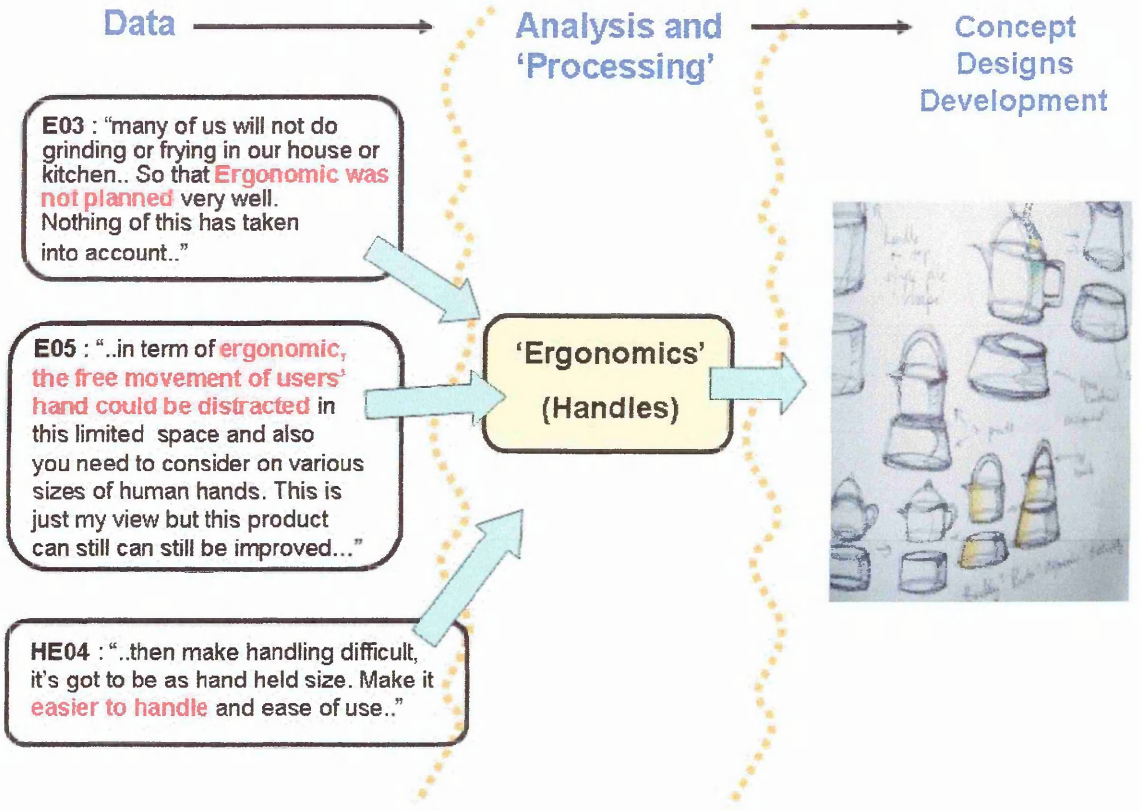

Figure 24 – Data from transcripts has been integrated to assist Designer processing his engagement with Stakeholders to produce concept designs.

4.3 Analyzing Social Data

Moving on to the analysis of the main study, this section will explain and demonstrate how data generated by interactions between conceptual designs and stakeholders were analysed. That process identified factors present in the social migration practices and product adaptations observed (5.1).

4.3.1 Producing Transcripts

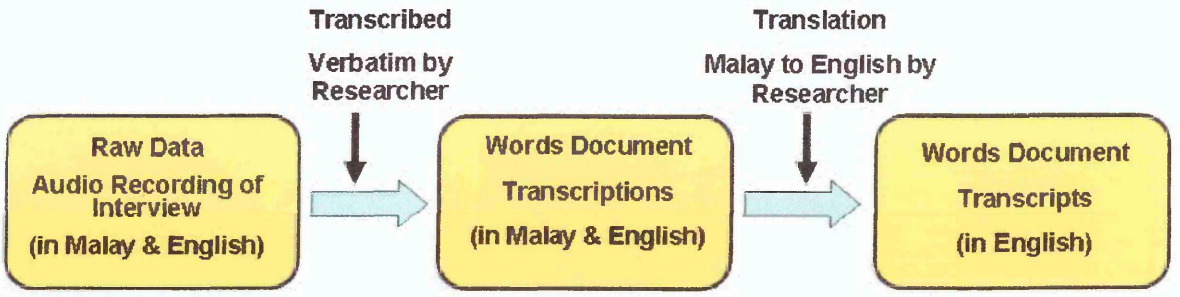

Figure 25 – Preparing the data for analysis (Transcribing and Translation Processes)

This process was done thoroughly to retain the full content of the interviews allowing close examination for clues to meaning in phrasing and expression, as Stroh stressed that direct transcripts provide researcher with a useful analysis tool (1996:53). For example, spontaneous laughter was noted when some concepts were shown to the subjects (eg. Appendix E).

4.3.2 Translation Process (moderated by Researcher)

Although some of the expert interviews were done in English, most of the home interviews and workshops were carried out in the Malay language.

The translation was conducted by the researcher as the interview data did not contain any complex words or use any specific technical terminology. Also I was able to ensure that the translated data did not lose its relation to its original source and I was able to return to the original text to check or clarify meaning during the analysis.

Expert Interviews were mainly conducted in English which appeared to reinforce the detachment of the experts consulted. The use of Malaysian 'everyday' language in the home Interviews (HE) and Design Workshops, seems to have been more effective and relevant in discovering cultural issues and participants' unspoken

wishes. Malay was also used to encourage freedom in conversations and to allow use of natural expressions from the participants during the interviews. To reduce the subjectivity and bias, each translated transcript had been carefully reviewed and read repeatedly. These have developed my familiarity with the themes in avoiding bias as my coding process progressed.

4.3.3 Coding Process

Operating a coding system in qualitative data analysis especially in using CAQDAS (Computer Assisted Qualitative Data Analysis Software) such as Nvivo8 will lead the analysis process towards a detailed description and content statement of the text from the stakeholders. Coding is the starting point in most qualitative data analysis processes. In several cases, researchers use the term "indexing" instead of "Coding" although these approaches of analysis have similar principles (Bryman 2004:408). DeBurca and McLoughlin (1996:7) suggested that initial coding was undertaken by examining the transcripts with the aims of identifying underlying processes.

Each transcript in turn was coded to identify where particular issues appeared in the text and the coding data sorted to identify significant issues as a way of focusing the analysis. Care was taken to ensure that emerging codes were developed, alongside the issues from the pilot study, to fit the data, rather than the data being forced to fit into a particular scheme.

Each new transcript challenged the coding, bringing in some new issues which created new codes and altered the emphasis when sorted, providing a progressive process of focusing codes and the categories (issues) they represent. Parlett and

Hamilton (1976:148) suggested that the coding process could assist the field of inquiry to be narrow, to focus on issues relevant to the research.

Coding is considered as one of the most essential processes in reviewing transcripts and/or field notes and giving names to section parts that seem to be of potential theoretical significance and/or that appear to be particularly salient within the social worlds of those being studied (Bryman 2004:402). Lofland & Lofland (1995) as cited in Bryman (2004:408) proposed coding questions' such as: 'What does the item of data represent?', or 'What is this item of data about? or 'What general category is this item of data an instance? '

Denscombe (2003:271) termed the initial stages of coding as "open coding" which assisted the researcher to discover, name and categorise phenomena; which also enabled the researcher to develop categories according to their properties and dimensions. Although the way in which the coding process was done varied with different practitioners, the basic aim is to generate codes that remain directly relevant to the original data. (Bryman 2004:402).

Codes can indicate categories and sub-categories. For example, E01, E02 and HE02 revealed a similar issue of "Practices". This category can then be grouped with other sub-categories (for example "Traditional", "Transmitted", "Symbols", etc.). Subsequent abstractions were referred back to these original concepts, and were constantly compared with them. New concepts/codes were added as the analysis progressed and were broken down into sub categories, while the original categories were refined or renamed as the analysis proceeded.

From this process it is possible to generate concepts and theories that are grounded in the data and relevant to the experience and perceptions of the stakeholders in the research.

4.3.4 Developing categories and themes

Using this approach to coding, supported by Nvivo[9] Computer Aided Qualitative Data Analysis Software (CAQDAS), the categories and overarching themes were progressively identified and applied to the transcripts.

As a first step, one transcription was analysed and a set of discrete, first abstractions or nodes identified (Denscombe 2003:272). Each of these abstractions was then given a coding name (as discussed above) which reflected a strong bond with the spoken ideas or words or gestures from the interview text. Nvivo8 presents these themes as tree nodes (where there is a hierarchical parent/child structure) or free nodes, allowing the researcher to develop tree and other connections between nodes.

[9] Qualitative Data Analysis software assisted in creating an index for the interview, in order to categorize, theme, code and links the interviews data with ongoing process involving continual reflection and emerging of new data (Bazeley, Richards 2005:6)

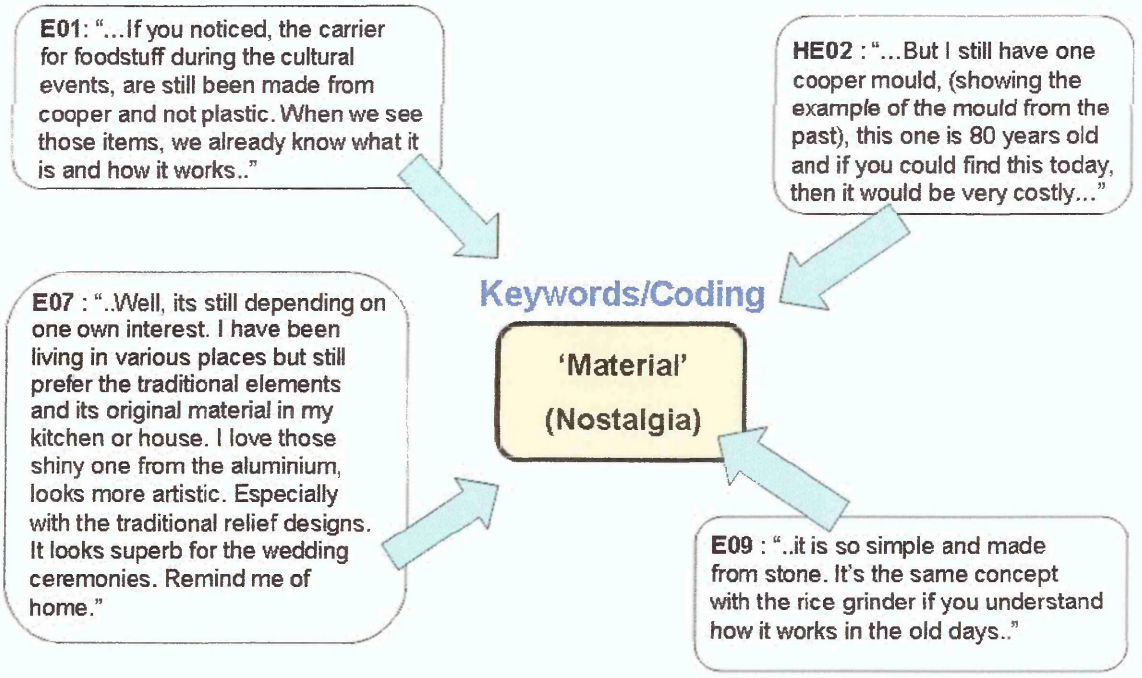

Figure 26 – The relationship between quotes from the interviews and their coding

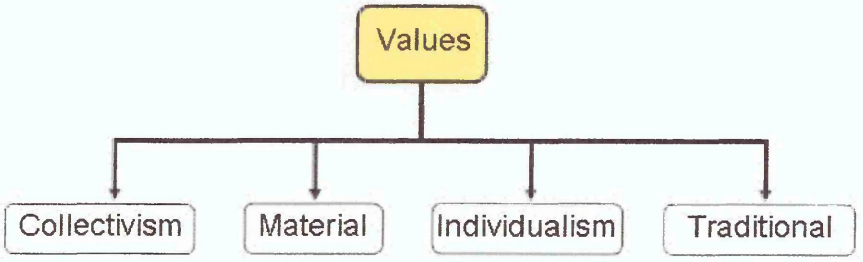

Figure 27 – Illustration of a simple tree from the research

Each tree becomes a category, which may also include some related free nodes. Categories are then grouped into a higher order of themes (core categories) by identifying the relations between them. Bryman (2004:402) suggested that this can

be completed by linking codes to contexts, to consequences, to patterns of interaction, and to causes.

The notion of forming a 'core' category simultaneously validates the relationship between categories and highlights those categories needing more attention (Bryman 2004:423). This is when all the storylines from the data can be framed into a single account.

Denscombe (2003:272) stressed that this process of refinement and revision leads to the identification of the final set of themes, and generalizations that explain the themes and their relationships in the data and compares these with existing theories.

During this process of analysis (in making connections between themes to be grouped into a higher order of themes), the author had to identify what these codes had in common, so that they could be combined into a higher order and become more abstract codes (Miles and Huberman 1994:71). For example, themes such 'Collectivism' can be grouped with other themes to help explain the higher level concept of "Cultural Values". This developed the specific discussions that created the social findings of the research (5.1).

4.3.5 Using Nvivo8

Nvivo8 assisted in making data manageable and accessible during the analysis. In qualitative research, it is difficult and time consuming to conduct complex searches of the data without having appropriate analysis software.

As described above, nodes, categories and themes emerged from the analysis with Nvivo8. Most qualitative researchers agree that transparency of process is essential

(Bringer et al. 2004:247). Nvivo8 provided a highly transparent view of the data and what the researcher has done with it, tracking the processes involved in the whole research journey (Johnston 2006). Although the use of CAQDAS varies according to the research methodology, in most projects observed by Bringer et al (2004:249) CAQDAS allowed a systematic explanation of the process.

This need for transparency makes it imperative that researchers explain their use of CAQDAS and show that it was being used according to the chosen methodology (Bringer et al 2004, Bringer et al. 2006).

Although the software is vital to the analysis, the researcher must interpret, conceptualise, document decisions, examine the relationship between themes and link it to develop their theory. In this situation, the researcher had to be conscious that the computer could only assist in these tasks, it cannot analyse the qualitative data automatically (Bringer et al. 2004:249).

Bringer (2004:250) argues that the choices available in Nvivo8 return the power of analysis back to the researcher who must choose wisely amongst a set of tools and is by no means required to use them all. In this research Nvivo8 helped the author to manage the data by showing its internal relationships, sources and references and generating a ranking for each category and theme using the scores and relationships identified by the author.

Bringer (2004:249) also stressed that the main advantage of CAQDAS over manual methods is the ability to organise data and its analysis efficiently, especially when tracking the data back to its original documents, which can be done automatically. However, the technology does not decrease the amount of time needed to read, conceptualise and analyse data. In this situation, Weitzman (2000)

suggested that the researcher had to be prepared for, and avoid where possible, the potential for becoming distanced from the data.

In relation to this, the author has undertaken manual data analysis during the pilot work, which allowed him to understand the concepts of processing qualitative data. Nvivo8 only assisted him to be more systematic, efficient and appropriately organised.

In using Nvivo8, transcripts were transferred into Nvivo internal folders and categorized as "Source". In this research, I have 24 internal sources in total to represent my 20 interview sessions and 4 Design Workshop sessions. (The total number of participants is 44 people and not 24 as there are 6 participants in each of my Design Workshops). I then, created nodes to represent different ideas from each transcript.

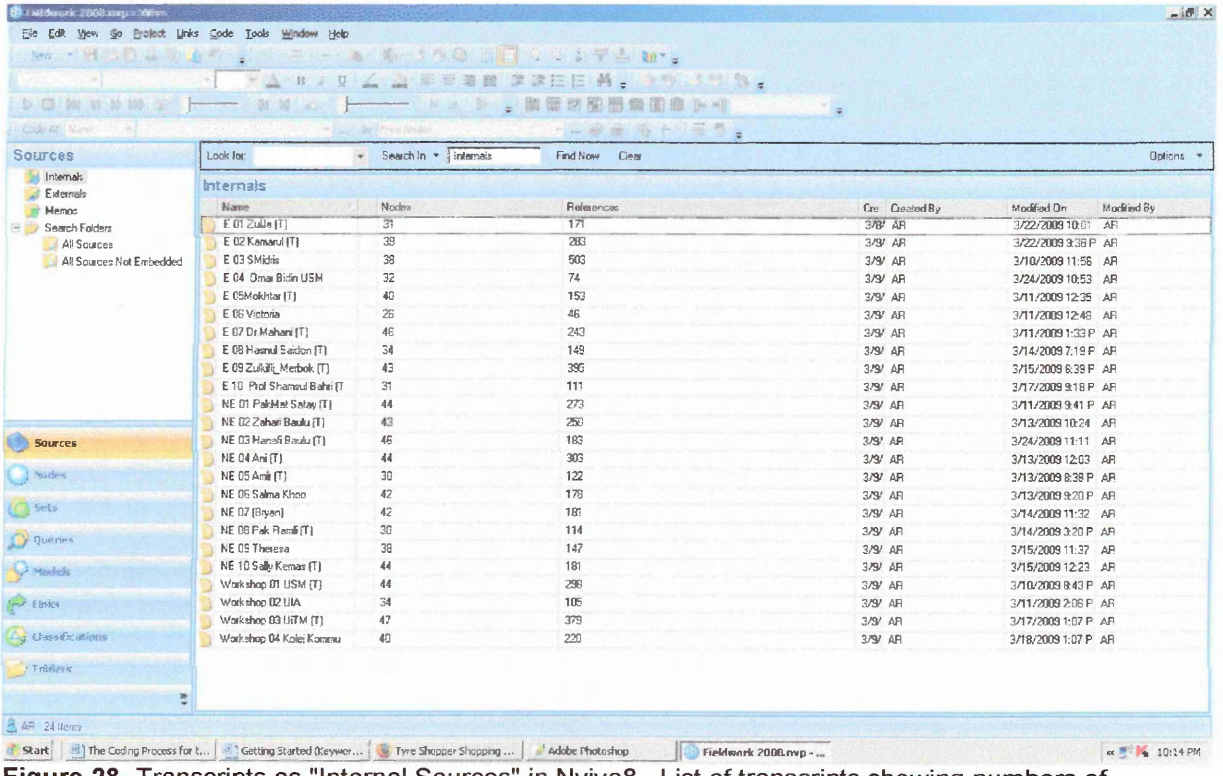

Figure 28- Transcripts as "Internal Sources" in Nvivo8 - List of transcripts showing numbers of references to nodes.

In the beginning, I created free nodes. It was not clear how nodes might be related or could be connected to each other. As the coding process progressed (4.3.3), several of these free nodes were converted into tree nodes as patterns were recognised.

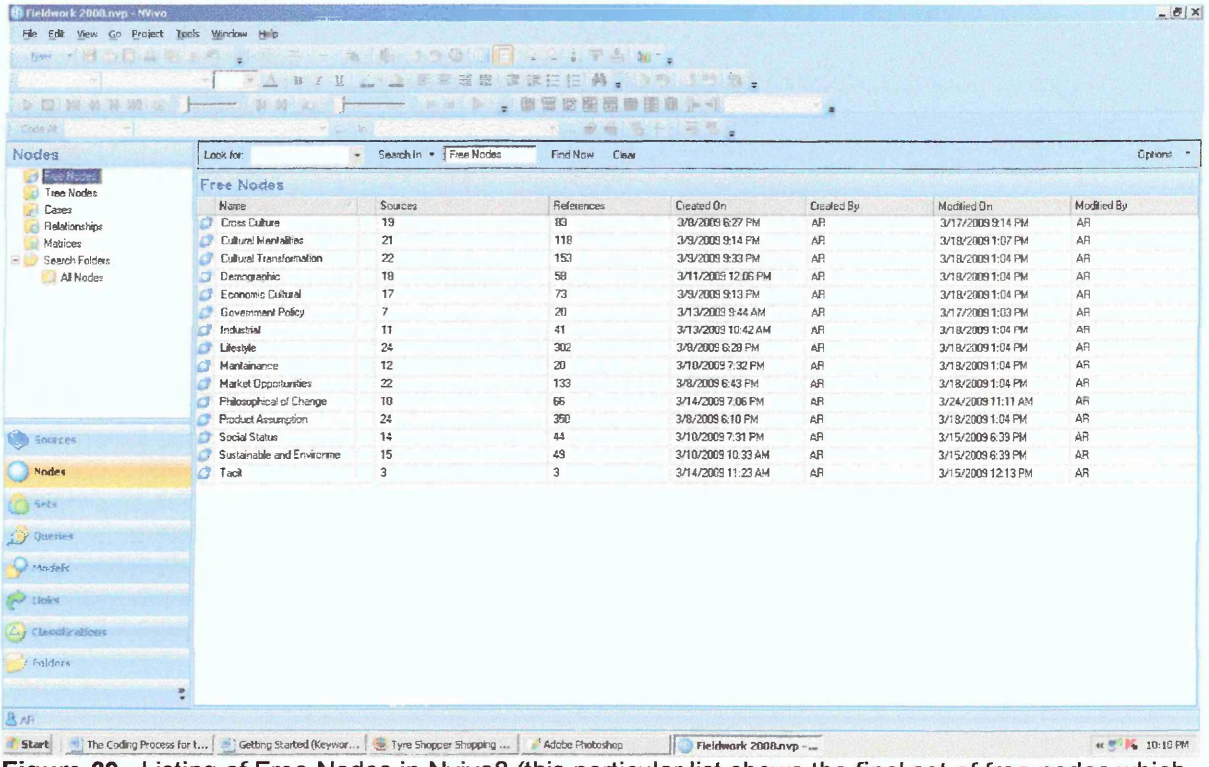

Figure 29– Listing of Free Nodes in Nvivo8 (this particular list shows the final set of free nodes which were not converted to trees).

In this first round of analysis, the remaining free nodes appeared to stand alone, unlike the groups of tree nodes which clearly represented a category. However, where a free node had a high score, (it appeared frequently in the transcripts) it provided a useful category in its own right.

Once all the transcripts had been analysed in this way, a second review was made. Having a clearer mental picture of the emerging nodes and categories, I re-read the transcripts line by line to check the coding and identify further examples of nodes, as suggested by the inductive analysis method (Bryman 2004:400). Each

transcript (10-15 pages double-spaced) took an average of 80 minutes to code in the first review, taking approx one month altogether. Less time was needed for the second round.

This process identified 39 tree nodes and 14 free nodes which were then grouped into different categories accordingly and formed higher level of concepts. Six top categories which have the highest score in references (Table 17), then become the main themes to describe in details about my social findings as discussed in the next chapter (5.1).

Below are two of the examples of tree nodes in the category of 'Values' (Table 14) and Preferences (Table 15), and list of final free nodes (Table 16) of which two scored highly enough to become categories in their own right.

Tree nodes in the Category: "Values"			
	Nodes	Sources	References
1.	Practices	24	256
2.	Traditional	20	198
3.	Collectivism	23	188
4.	Localisation	21	184
5.	Social	23	131
6.	Material	21	125
7.	Religious and Beliefs	20	115
8.	Symbols	20	96
9.	Family Values	20	95
10.	Transmitted	12	67
11.	Globalisation	19	63
12.	Communication Tools	13	33
13.	Individualism	11	31

Table 14 – Example of trees in category of "Values" with its sources and references score.

	Tree Nodes in the Category: 'Preferences'	Sources	References
1.	Practical	22	186
2.	Material	19	104
3.	Ergonomic	16	83
4.	Function	14	76
5.	Emotional	19	74
6.	Size, Weight, Volume	19	74
7.	Taste	17	68
8.	Hygiene and Safety	17	66
9.	Innovation	14	58
10.	Familiar (ordinary)	11	30
11.	Maintenance	8	23
12.	Quality of Life	7	20
13.	Aesthetic	5	10

Table 15 – Example of trees in category of "Preferences" with its sources and references score

Free Nodes remaining after analysis			
	Themes (Nodes)	Sources	References
1.	Product Expectations	24	350
2.	Lifestyle	24	302
3.	Cultural Transformation	22	153
4.	Market Opportunities	22	133
5.	Cultural Mentalities	21	118
6.	Cross Culture	19	83
7.	Economic Cultural	17	73
8.	Philosophical of Social Change	10	66
9.	Demographic	18	58
10.	Sustainable and Environment	15	49
11.	Social Status	14	44
12.	Industrial	11	41
13.	Government Policy	7	20
14.	Maintenance	12	20

Table 16 – Free Nodes remaining after analysis

Below is an example of 4 main categories developed from tree nodes (Figure 28) and list of 6 final categories (Table 17).

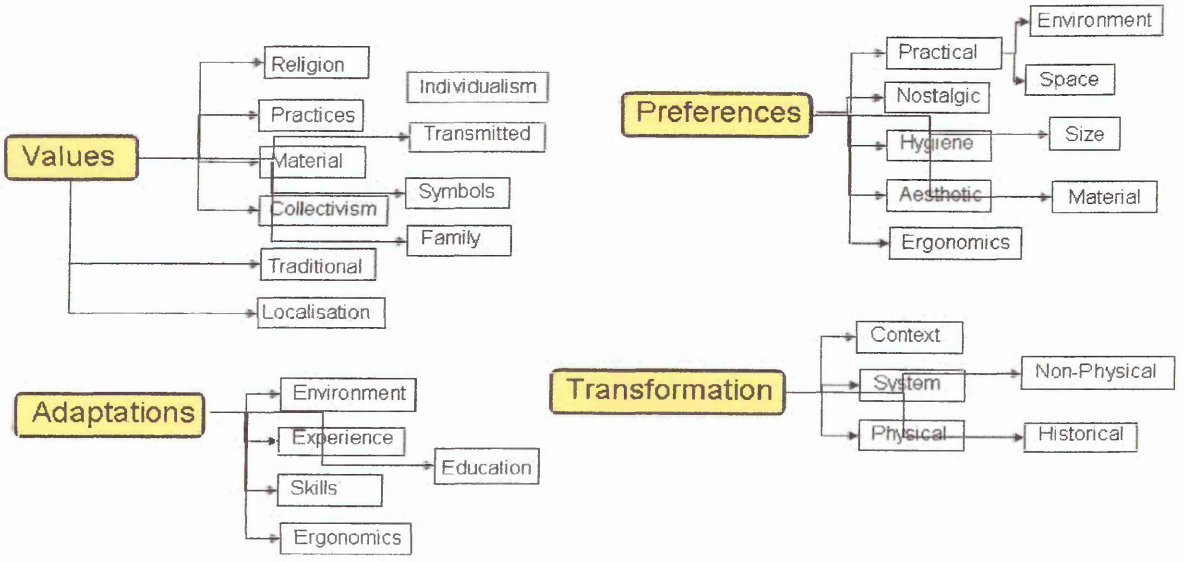

Figure 30– Example of 4 main categories developed from tree nodes

	Themes	Sources	References
1.	Values (Tree)	247	1582
2.	Preferences (Tree)	219	988
3.	Product Transformation (Tree)	104	503
4.	Adaptations (Tree)	73	377
5.	Product Expectation (Free Nodes)	24	350
6.	Lifestyle (Free Nodes)	24	302

Table 17 – Listing of 6 categories chosen for their high Sources and References scores.

4.4 Conclusion

This coding process has enabled me as designer/researcher to identify themes from qualitative data, exposing me to the methods of qualitative data analysis employed by social scientists. It was time-consuming compared to the work of processing the designer's direct experience of stakeholders into new design thinking (4.2).
As a designer, this provides me with a way to validate my design thinking and the concepts from the data analysis can be used as a framework to review design ideas and directions (represented by the concept designs discussed in Chapter 3).

In particular, this analysis has developed my theory about design and migration whilst also pointing me to practical methods which can be useful for designers. It has given me a method of understanding users' culturally determined needs.

The main aim of this research was to inform design practice. Referring to research into how to design effective information for people using medicines, Van Der Waarde (2005) explained that descriptions from interviewees might not be able to provide definite solutions, however they are certainly capable of pointing to issues in an existing or proposed situation. Thus descriptions of social migration, practices and

product adaptations (5.1) from this analysis, identify cultural factors relevant to future products and provide a point of departure for future designer/researchers.

However, in short-term commercial design projects, similar analysis can still be conducted by the designer/researcher through 'quick and dirty' tactics to enable them to identify cultural factors as demonstrated in my pilot work (Chapter 3). Van Der Waarde (2005) has commented that, while it is not possible to carry out substantial research in a commercial environment, from his professional experience it is possible to carry out small scale studies to inform the design process and over time these might provide new knowledge if a number of such studies can be analysed[10].

In my next chapter (chapter 5), I will explain and discuss the cultural factors identified in this analysis and the potential for further exploration by designers who encounter users experiencing cultural migration.

[10] personal correspondence with Prof C. Rust, 27/07/2006

Chapter 5

5.0 Findings and Conclusion

The previous chapter explained the analysis process. In this chapter, I will discuss the results and findings from that analysis, and explain the cultural factors that have emerged from it. I will also describe factors that influence users' product interactions during their cultural migration experience. These findings then become part of the design guidance, which will be explained in the final section of this chapter.

This chapter has two main parts. Section 5.1 will discuss cultural factors and their consequences and how this has emerged from the analytical methods. Section 5.2, which addresses my research objectives more directly, will discuss the methodological findings from the fieldwork and the social engagement and design techniques that have been developed.

This chapter will also (re) evaluate the role of designing in research. This is essential as the contribution of this work is to propose research methods that can be adopted and understood by the designer. In chapter 6 I go on to introduce a 'Methodology', based on this project, which will allow designers to engage in 'Practice-led Research' that addresses cultural migration issues.

In this chapter, I will also emphasize the notion that the designer needs to understand both cultural factors and design strategy and so justify the idea that these two bodies of knowledge need to be studied thoroughly, before designers can actually develop any integration plan for this kind of investigation.

In 5.2, I will summarise these findings and propose some guidance for designer/researchers in conducting similar work. Significantly, these findings have

contributed to establishing my conclusion about this research and framing my future research work, which will be explained in Chapter 6.

5.1 Findings from Social Data (Cultural Factors)

This research is based on a combination of social inquiry and design practice, as discussed in Chapter 3. In this section, I will describe cultural factors observed in the results of my analysis (Chapter 4). I will explain my social data in detail and illustrate its connections with these cultural factors.

As the main aim of this study is to develop a method for designers, and not to undertake cultural studies, this chapter will emphasise the methodological findings (5.2).

My interviewees had some forthright comments on the pros and cons of products and design related to their cultural practices and beliefs including some ideas on how to improve them. Their feedback indicated both physical and non physical aspects of cultural factors in product development which can be useful for designers who are interested to develop new products to assist users in cultural migration situations. Below are the main results related to cultural factors as discussed and highlighted by the participants.

5.1.1 Cultural Values

Any group, community or culture shares certain 'values'. These may be artefacts, conditions or characteristics that are central to their way of life (as discussed in section 2.1). In relation to this, Hofstede (1994:9), Hoft (1996) and Trompenaars (1998:22) have described 'values' as an implicit element of culture influencing people's selection and use of explicit objects and influencing their actions. In relation

to this, 'Values' also represent society beliefs including their basic assumptions which have been developed over a long period of time and are very slow to change (Fernandes, 1995:88).

My analysis identified that cultural values formed one of the major themes or topics that have been discussed and argued about by the participants in sharing their cultural migration experiences (4.3.5). These findings on 'values' can be best observed through people's cultural practices, especially in their interaction with the products.

5.1.1.1 Practices and Product Ideas

Cultural practices became one of the main components in the 'values' category that have been identified through the analysis process (4.3). From my fieldwork, I have identified elements of unchanged cultural practice in users' interactions with tools during cultural migration. I observed that participants often carry with them certain tools or products to assist them with their unchanged practices, whilst they also innovated hybrid practices using products from their new environment to assist them in their cultural migration period.

By identifying these unchanged practices and product ideas developed by the users to sustain their traditional practices, this research has indicated ways for designers to respond to cultural migration.

There are certain elements of cultural practices which remained unchanged regardless of cultural migration. Participants used innovative thinking to help them achieve this.

For example participant E01 explained that products could travel through time and could undergo minor alterations. However, he revealed that the habits of his community remained unchanged, by giving this example:

"*...in practice, I have noticed that there has been some revolution on this product (hand washing pot) but not a major improvement however I agreed that these products also travel through time with our other cultural practices, as here to support the actions of eating by using hands. ..*" (E01, Expert Interview, 11.03.2008)

Similarly, E03 also explained the same issue, by giving a detailed example of cultural practices and habits of eating by using hands as in their natural environmental settings:

"....That habit also involved sitting on the ground to be more comfortable while eating with hands. That habit also involved sitting on the ground to be more comfortable and relax especially when you are in a 'sarung' (traditional long cloth. In those old days, men didn't wear pants at home)..." (E03, Expert Interview, 27.03.2008).

This aspect of unchanged values and cultural practices of eating by using hands has also been stressed by W20, W21 and W23. They also stressed that the ideas of users still remained with these practices despite having specific modern tools (such as spoons and forks):

"*...They just can't get rid of these traditional elements. They still eat with a hand at home, that's for sure although having spoon and forks placed in their kitchen..*" (W23, Design Workshop 4, 03.06.2008)

"*...I noticed people used spoon and forks while enjoying western food but not the traditional dishes. They still used hands. Then they need those products (pointing at hand washing pot)..*" (W21, Design Workshop 4, 03.06.2008)

"*...Maybe it's the mentalities of the users and the environment that are not ready for the changes and improvement. We live in the city but still carry cultural elements from our ancestors and traditional society..*" (W20, Design Workshop 4, 03.06.2008)

"....squatting or sitting down to prepare ingredients, especially to process the coconut milk. It doesn't matter if you are using modern machine or the traditional one, you still be sitting down (W21, p.2, Design Workshop 4, 03.06.2008)

In sustaining cultural practices and retaining traditional values, E03 believes that cultural practices can still be beneficial to users and he stressed that these

practices should not be discarded by designers who wish to improve traditional products and tools. In his examples, he pointed to a specific case, where traditional products still seemed relevant and practical to retain the positive values among society members.

"*...There are many things that are still beneficial to us including traditional tools and practices...(for example traditional medicines, family having dinner together; family values). The modern things could be good but most of them are bad, some traditional products could be the best, so they shouldn't be completely discarded..*" (E03, Expert Interview, 27.03.2008)

Similarly, E05 from the Expert Interview also supported the idea of retaining cultural practices whilst improving current products and tools that people might adapt during their cultural migration period, despite being occupied with other modern tools and products to support human activities within current lifestyles.

"*...I think the main consideration here is to maintain the culture, at this moment we are being exposed to a culture that is replacing practices with automation. We are moving towards becoming automatic in almost everything..*" (E05, Expert Interview, 13.04.2008)

In improving products to comply with cultural practices, however, E10 agrees that in most situations, users still find it difficult to adapt new products or change their cultural practices.

"*...yes. Of course. Because they haven't changed in the way...because we don't have a special school to teach you how change your cultural habits..*" (E10, Expert Interview, 23.06.2008)

In addition, he (E10) suggested that the designer needs to be more sensitive to recognized elements for product improvement and should be focused more on being 'user oriented' instead of 'designer oriented' by giving an example from current social trends, renovation to support with adaptations:

"*Yes...definitely you see, it's 'users oriented' rather than 'designer oriented'. So whatever design, they modified and adapt again. That's why, the first thing the Malay and most Malaysian do is to have a house and pay hundreds of dollars to redesign the house especially kitchen..*" (E10, Expert Interview, 23.06.2008)

On the same issue, E02 proposed that cultural practices should be studied thoroughly by the designer or any other expert to enhance local products. The need for this is reinforced by Ramayah and Piaralal (2003), who explain that, in this culture, users would not speak for themselves.

"...In most cases, problems regarding these traditional products are still disguised. Users have not realized the main difficulties and always take things for granted. It's just like having the product to be like what it is due to its cultural values and not caring much about its improvement. They might feel like there is more to be done on the major things like kitchen environments. People in our culture always give less priority to the development of everyday products. They always use whatever is available and let the designers or social scientists think about it. Maybe we should consider the studies in other countries that carry the same values, like eating, using hands...." (E02, Expert Interview, 19.03.2008)

This points to one of the main conclusions of this research, that designers would benefit from observing innovative product adaptations which have been developed by end users to make their cultural practices compatible with modern tools and products. Examples of this can be seen in both the pilot study (3.5.3.6) and observations from the main study developed below. Similar conclusions are indicated by Eric Von Hippel's (2002) work also discussed below.

From the home interviews below it will be seen that consumers are not keen 'to speak' about the products which they have innovated and transformed, but rather show how the product support their existing values and practices. I will argue that this tacit process of innovation and domestic practice is a valuable resource for designers wishing to understand users' needs.

This knowledge about users can be observed through their domestic practices and their emerging behaviour as 'designers' of their own products. Their product ideas demonstrate the practices and values that they need to sustain whilst pointing to their expectations of current products.

In relation to this, Von Hippel (1986) has explained that it is crucial to identify strong needs from users during any new product development process and he proposed a framework to identify a source for concepts about novel products, which he coined 'lead users'. In this concept, he stressed that some users are highly motivated to fill the needs that they have experienced and process their own interest into innovation, and he suggested that these are particularly valuable users to inform the product development process.

I will now go on to explain about these products ideas which developed from my Home Interview sessions during the main field work. The example of products that emerged from their adaptations are discussed below:

Example 1 - cookie moulds used by small-scale commercial producer.

In Fig 29, HE03 is using a pair of engineering pliers to overcome difficulties in handling small hot moulds in very hot commercial ovens. This kind of commercial production is a new practice to suit urban lifestyles; previously these products would have been made at home for home consumption. To meet the continuing cultural demand for this traditional product new equipment designs are needed suited to the new setting. At present the modern commercial oven is unsatisfactory and incompatible with the small traditional utensils and many movements in and out of the oven necessary for this product. The design solution may lie in the oven or the utensils or a combination of both.

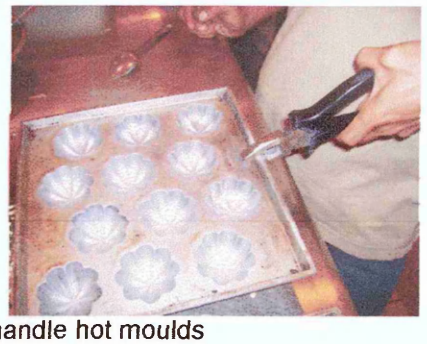

Figure 31- HE03 using pliers to handle hot moulds

"*...It used lots of energy and after few rounds of baking; I started to feel pain on my muscle. Another thing is those moulds do not have handles. There's not even an edge on the mould which can be use to assist its removal from the baking oven. It's funny but that's the truth as you can see it here...*" (HE03, Home Interview, 31.03.2008)

Example 2 - Double Boiler Wok

Fig 30 shows an adaptation produced to allow traditional methods on a modern domestic cooker. The method adapts available utensils to provide the double boiler that is an intrinsic part of traditional cooking stoves. This approach is similar to western double boilers but the local traditional practice is not to have a variety of special purpose utensils, instead they adapt basic equipment to many needs.

Figure 32- A 'Double Boiler Wok' developed to work on modern stoves innovated by HE10, Home Interview, 28.04.2008

Similarly, another example of a user's innovative ideas to support their cultural values has also been explained by E02, E03, W05, W06, W14 and W18 below, in the way they use and innovated the traditional mortar and pestle. Here the user is adapting the traditional use of this product into their urban environment. Users often add

supportive material to avoid damaging their kitchen's top or floor in a modern house or apartments.

Figure 33- 'Domestic Practices and Unchanged Cultural Values": Adding shock absorbing materials

"...I normally used this mortar and pestle at its strongest structure on my kitchen top including using cloths as to support it from the bottom..." (E02, Expert Interview, 19.03.2008)

"....I will have 2 or 3 cloths to support the bottom part (underneath) while using this as I need to reduce noise..." (E03, Expert Interview, 27.03.2008)

"....applying cloths as support).... yes, it is a common practice, to eliminate the sound.." (W14, p.5, Design Workshop 3, 30.04.2008)

In responding to similar issues, participants also shared their imaginative views and developed their expectations and other possibilities on this product:

"...same like the others. It's heavy as most of us preferred to do our work in as short a time as possible and in a convenient environment. Also it would not suit our home environment in the city. Most of us live in a flat or a shared house..." (W05, Design Workshop 1, 14.03.2008)

"....Maybe the bottom part can be designed to have a larger dimension so as to stabilize the product and also act as a supportive element..." (W06 Design Workshop 1, 14.03.2008)

"...at home. (applying cloths as support).... yes, it is a common practice, to eliminate the sound.." (W14, Design Workshop 3, 30.04.2008)

These are just some examples but there are also other innovative product ideas developed by participants found in this research fieldwork to support their domestic practices and to fulfil their culturally determined needs. (eg. participant HE04 has developed a traditional wooden cookie mould despite using a modern plastic mould

easily available in the market, HE02 in his 'Single tray modified oven', and a practical 'Food Storage' innovated by HE05, etc).

A similar case of developing product ideas with current products has also been discussed by W11 and W18 in developing their migratory design ideas during the Design Workshop sessions, especially pointing at the practical use of the traditional mortar and pestle in an urban environment. These and other innovative ideas for improving local traditional products to come into line with cultural changes was also illustrated by other participants during the Design Workshop sessions

"...the problem with this is that this washing pot (DA Design) always comes in 2 parts. In local practices, they always lose the top cover. So what users did was to tie the cover top with a string to the pot. The modification was made by experienced users to solve the problem of losing the top covers, especially among caterers..." (W11, Design Workshop 2, 14.03.2008)

"...users these days in the city mostly have their own kitchen cabinets and some spent a fortune on them. They would normally use this mortar and pestle (DB Design) on their kitchen floor to avoid damaging their expensive kitchen tops but with some alterations to its use, like adding in extra support on the bottom edge..." (W18, Design Workshop 2, 14.03.2008)

These examples illustrate that users often found their own ways to adjust products to be compatible with their cultural practices, using whatever material or tools were available. The modern products they employed during cultural migration were not specifically designed or produced to assist their cultural practices. This observation is supported by the examples seen in the pilot study in the UK (3.5.3.6) and in the analysis in chapter 4 of the above interviews and workshops which showed a significant number of occurrences of "Practices" in the nodes score used to identify such examples (4.3.5).

In most of these cases, the products used are designed to reflect the values and expectations of another culture (eg. kitchen furniture, microwaves, slow cookers, blenders, apple or potato peelers, etc. as discussed in Chapter 1).

As discussed in section 2.3, Razzaghi and Ramirez (2005) explained that the economics of manufacturing and marketing make it difficult to develop products for a specific culture. This was supported by E02, E07, HE02, HE09 and W6:

"*....there is an economic factor. We have various knives in the market but they (the Malays) will still go for common products.., that's an economic factor. Our local Mydin supermarket is a good example. Everybody here knew about its low quality products but they are making money, people are still buying their products...*" (E02, Expert Interview, 19.03.2008)

"*...may be because of the cost factors. Anything could be manufactured and produced easily, which would be a benefit to the business. Anything that can sell very fast, they will make it...*" (E07, Expert Interview, 29.04.2008)

"...."maybe the manufacturer is trying to use the same mould. This can cut the cost of the production and they (the manufacturers) only improved its material and colour." (W6, p.9, Design Workshop 1, 14.03.2008)

HE02 also have discussed about the cost factors by giving his comparative views based from his own (family) experience:

"*...my mother-in-law has started this work with an early investment as low as RM12. She used lots of natural sources including coconut shells, especially for baking activities. That was 20 to 30 years ago...*" (HE02, Home Interview, 31.03.2008)

This example identified that other factors including users' choice and difficulties finding appropriate products and tools have led them to adapt and to innovate existing products to assist them in their cultural migration environment and situation (5.1.1.1).

For example, from the Home interviews, HE02, HE03, HE04 and HE10 has explained that most of the products found in the current market had not been designed and produced to be compatible with their needs, practices and cultural migration situations. In relation to this, Lawson (1997:85) argues that most of design today is commissioned by clients who are not themselves the users. He also adds that the traditional image of a designer establishing a one-to-one relationship with a client/user is grossly misleading.

This section has explained participants' strong connections with their domestic practices and cultural values by giving several examples from their feedback and products that have been observed which can be valuable to inform designers about the practical and cultural needs of users experiencing cultural migration. Furthermore, they illustrate the limitations of today's manufacturers and designers in regard to cultural factors in product development, as discussed earlier in section 2.3.

5.1.1.2 Transmission Values: From Traditional to Hybrid

Culture is believed to represent symbols and actions that can be transmitted through groups or society members or generations (as explained by Kluckhohn & Kelly (1945:78), Kroeber & Kluckhohn (1952), and Schein (1988:8) in Chapter 2, section 2.1.1). This concept of cultural transmission is being represented as 'Traditional' nodes which formed the second highest score of nodes in the 'Values' category from my analysis (4.3.5). Results from this analysis have not just led me to recognize the transmitted elements of culture such as traditional values that influence user-product-interaction during their cultural migration, but also to understand the concept of emerging and hybridizations of cultures that arise from the experience of cultural migration (details of this 'hybrid culture' have been discussed in Chapter 2 (2.2)). Some of the inherited traditional elements of culture can be observed in this research. This was discussed and debated by participants E04, E05, W14, W20, W21. E04, for example, explained how inherited culture is able to influence explicit actions by giving an example from his students' work:

"...for example I noticed (through my teaching experience) students from the East coast of Malaysia (mostly from rural areas) have difficulty in changing their design thinking and their interest when producing designs. They tend to show a strong influence to design something that reflects the environment or something that is natural.." (E04, Expert Interview, 31.03.2008)

Similarly, W14 also argued that culture is a transmitted element which can be transformed between members of society group.

"..we use it in that manner as being trained and learned from our mother at home. (applying clothes as support).... yes, it is a common practice, to eliminate the sound.." (W14, p.5, Design Workshop 3, 30.04.2008)

On the same issue, E05 pointed out that traditional practices are also elements of culture that people carry into different environments. He exemplified how in most situations, people still carry these into their new modern environment, by giving this example:

"...It is some kind of culture and habit that people carry with them through generations. In a hotel for example, we have a bath tub, but there are no water pipes, and sometimes we have to request this small pot from the hotel.." (E05, Expert Interview, 13.04. 2008)

In relation to this, E09 stressed that these traditional values are difficult to change and have already become part of our social system:

"...I have no problem with this design (pointing to my Design Concepts) as it might work in an urban environment and in a village, I prefer to stick to the existing one. It's quite difficult to change our cultural preferences....., I would prefer the existing one as I think that our people (especially from the village) might not be ready to accept the new product for these practices as they are already used to the old system and product...." (E09, Expert Interview, 04.05.2008)

Similarly, W20 and W21 also argued that despite using modern facilities, the traditional values still remained to influence products that people used and appreciated.

"...I noticed people used spoon and forks while enjoying western food but not the traditional dishes. They still used their hands. Then they need those products (pointing at hand washing pot).." (W21, Design Workshop 4, 03.06.2008)

"...the users and the environment that are not ready for the changes and improvement. We live in the city but still carry cultural elements from our ancestors and traditional society.." (W20, Design Workshop 4, 03.06.2008)

In discussing how traditional values influence product use during cultural migration, E07 and HE04 also explained how local values are influenced by other (regional) cultures. In this example, E07 discussed a particular product (the Hand Washing Pot):

"....it (the hand washing pot) could have originated from a place called Kotsia, in Thailand. I suspect it is from there as these products are common products in the North-East of Malaysia, especially at the border towns near Thailand. Even the design of the reliefs on the pot reflect Thai culture(s).." (E07, Expert Interview, 29.04.2008)

With respect to a similar issue, HE04 talked about the wood carving skills that he inherited from ancestors who had migrated from another cultural region:

"...the design of this weapon originated from an ethnic group in Indonesia called 'Banjar'. My grandfather used to have one exactly like this but this one was produced by me. I just copied it and tried to produce it in the same shape and size..." (HE04, Expert Interview, 31.03.2008)

In discussing the transmitted elements of culture and their influence on products, E05 and E09 also argued that products that users carried with them during the period of their migration could still retain emotional functions and satisfy needs. In this instance, it was shown that it might prompt nostalgic feelings and memories of life in general and family life in the areas they had migrated from:

"....It's like a nostalgia for them, to remember their family, culture and their home environment. That's why in some cases, people would bring their traditional products with them when they moved places (for example, when travel to live abroad)..." (E05, Expert Interview, 13.04.2008)

"...Copper material to me represents a symbolic value to the community, its more about personal values and nostalgia. It reminds them of cultural events and so on..." (E09, Expert Interview, 04.05. 2008)

"...this product does not function anymore. It has only been appreciated as a nostalgic product for certain people. It's just that...,.. People try to remember the past through images and products. It's a nostalgic item..." (E09, Expert Interview, 04.05.2008).

Apart from identifying the transmitted elements of culture, (which includes its originality and similarities in values it carries to users) these examples also introduced me to the elements of emerging 'cultures' which have been observed during their cultural migration. The examples of cultural hybridization (discussed by E04, HE04, E10) could be useful in enabling designers to evaluate the integration of practical products' features with cultural characteristics in circumstances of ongoing culture change. In relation to this, E04 also discussed the emerging of various regional culture(s) influences found on products in this current cultural migration environment.

"....In the so-called "urban culture", there has been a mixture of elements from culture(s) that have been brought and merged from traditional and modern design- for example adapting or exploiting a "Bali" furniture concept into modern house design. This also has influenced much of modern design kitchen. There has been a strong element from western kitchen design to mix and match with traditional practices and beliefs. You can still find tools from Malay traditional or Islamic decorative things on the walls or cabinets. Purity with natural material such as in Bali furniture that is concerned with its originality aspects..." (E04, Expert Interview, 31.04. 2008)

HE04 also explained the emerging cultures by giving an example from her own experience involved with community services by pointing out changes and identifying how traditional events have become blended with the contemporary context:

"...the good thing living in this village is that there are always people volunteering to help. It's a concept of "gotong royong". It's a community cultural value that still remains here but things has changed these days. For example, we don't see many young guys volunteer to help during the weddings. That's why now the concept of "gotong royong[11]" doesn't really work during weddings. Most people would hire a caterer..." (HE04, Expert Interview, 31.04. 2008)

Moreover, E10 argued, giving example of products and services in this emerging cultures, that there is a need to accommodate the needs of specific users.

"...That's true. I change this attitude when I go to western countries that I find when there is no toilet paper, I mean you have to use toilet paper. That's a basic thing. So now, that's why

[11] *'Gotong Royong' is a Malay term for community activity inherited through generations especially for those living in traditional rural settings. This is a concept concerned with helping each other and involves highly developed collective community values. However, in the current situation, this cultural practice has faded away as people are moving towards 'individual' lifestyles, especially in the urban areas.*

in Malaysia, they use the "beady" concept or its combination into a toilet concept. And not all toilets in the country have the same also, and even with that invention of that water tube/hose for cleaning in the toilet. I still feel even in this country, as you rarely say we haven't accommodated for the differences..." (E10, Expert Interview, 23.06.2008)

In relation to this emerging culture(s) including its hybridizations and mixed values which were discussed and debated by E04, E10, the merging of traditional and urban culture(s) has also contributed to the development of a new middle class in society, which is known as the 'new Malay'. These people make up the main samples for this research. This 'New Malay' social group emerged from the urbanization processes resulting from the Malaysian Economic Plan, which has been analysed by Taib (1996) and Talib (a) (2000), and was discussed in Chapter 1 (1.4.1). According to, Whiteley (1993:15), in an advanced consumer society, this rapid growth of a middle class also contributes towards the expansion of the middle income market for homes, cars, appliances and services.

In addition, E10 remarked on the emerging culture and stressed that there is no clear solution that allows locals to adapt to prevailing environmental settings in an appropriate way, especially when one product has been influenced by various external cultural elements:

"....*But in our society, the evolution is not clear because urbanisation has brought intervention by western culture, or even Chinese culture. Like in the current situation, the people feel boxed by the house's design.. so we should consider what should be in these hot boxes rather than what new design should be so that we can use the air as non air condition.. There is a lot of expenditure in the mosque nowadays to have air conditioning and electricity. Why? Because we have 'Arabian' concept. That is also a problem. Our mixed values. Hybridizations...*" (E10, Expert Interview, 23.06.2008)

Although there are also some ideas about the way in which traditional tools have been modernized in such a way as to become compatible with the cultural changes highlighted by HE07, HE09, W18 and discussed by E10, E08 has argued from a

different perspective, that the merging and hybridization of cultures could also lead to the users becoming more localised in their own values and roots (1.4.2 and 1.4.3).

HE07, HE09 and W18 have suggested modernising products whilst still appreciating traditional cultural values. This issue also been discussed by many other participants from my workshop sessions as developing their expectations and explaining their needs.

HE07 talked about having a modern house which incorporated traditional designs:

"*...we wanted it back to the original and to try to make it in a heritage style with modern facilities. We combined them all. The roof down there has the original tiles*..." (HE07, Home Interview, 21.04.2008)

Meanwhile, HE09 discussed retaining traditional tools with additional modern features to assist future generations, explaining her ideas:

"*....And we still have families that still use traditional methods unless if they are modernized. Maybe the new generation would want to use modern appliances...., there is one noodle shop still using this but attached to electricity. Because they say the rice flour that they grind becomes very fine..*" (HE09, Home Interview, 25.04.2008)

W3 suggested some alterations to traditional tools in order to make them compatible with current circumstances:

"...Maybe this product (referring to DB design) could only have add-on accessories without losing its original shape and material to be more compatible with the modern lifestyle and environment." (W6, p.9, Design Workshop 1, Source: 14.04.2008)

In relation to this, E10 argued that reinterpreting traditional values in light of modern lifestyles also involved considerable cost factors:

"... from these modern situation where you fix and adapt again with the environment. It is very important as in this Post modern, fragmentations and hybridizations is integrated. Its also cost related. To reinvent the past is expensive..." (E10, Expert Interview, 23.06.2008)

"...well that means they want to reinvent such cultural nostalgia. And in order to do that, they must have money. They cannot do it in cheap ways. Some of them created that cultural nostalgia while they are already at the top level by creating a Malay garden but most of them seem like they have a Balinese influence to me..." (E10, Expert Interview, 23.06.2008)

These examples of traditional values and the emergence of regional culture(s) have also had an influence on cultural adaptation routes as discussed below. E08 and E09 made the following observations concerning the influence of local roots and traditional values during this period of cultural emergence.

"...You can see that now we are being exposed to various specific ethnic groups : the Malay Jawanese, the Bugis, the Banjars, etc.If there is more response to globalization, there will also be more localization. This how I see it..." (E08, Expert Interview, 29.04.2008)

"....But come to think of it, the more globalised it becomes, the more localized it will turn to be. Nowadays, people go crazy over 'Bali' (Indonesian) design..." (E09, Expert Interview, 04.05.2008)

W22 also explained the patterns of adaptations discussed in Sections 5.1.3 (as discussed by W22, W24, W19, W21, W23). Findings related to these transmitted values not only explain about the traditional elements of culture that users carried with them during cultural migration, but also touch on issues related to product improvement and adaptation aimed at developing products compatible with these elements of cultural hybridization (2.2.5, E10, p.2).

5.1.1.3 Collectivism and Individualism

Hofstede (1994) has argued that culture can be measured and grouped into 5 different sets of 'dimensions'. In a study on national work related to culture, he suggested a framework for assessing culture which included observing the degree of Individualist and Collectivist values and argued that in a highly collectivist culture, people are defined or act as members of a group while in an individualist culture, people tend to develop and display their individual personalities and to choose their own affiliations. My analysis has identified that these elements of 'Collectivism' formed one of the highest score of nodes in my 'Values' category (4.3.5)

Whilst this section illustrates and explain results from that analysis, it also emphasizes that the values of collectivism and individualism among the participants can be further explored and explained not just in the way they represent themselves during the interviews (as explained below) but also in tools they employed during their cultural migration. One of the main ways in which people represent themselves (participants) as a 'collectivist' group, can be observed in the language they use.

They tend to prefer to use 'we' instead of 'I' when they speak about their own ideas and giving their opinions. These can be seen in examples given by most of the participants. Below are just a few of the examples:

"...now, we have lots of instant ingredients that represent ingredients for traditional foodstuffs. You can never see a traditional coconut milk processor in your house nowadays...., When we see those items, we already know what its functions and when it will be used. It reflects back to the culture. Something that people are used to.." (E01, Expert Interview, 11.03.2008)

"...We (The Malays) do have specific tools. But in many cases, they can't do multiple tasks. One piece of equipment is used to produce one product in most cases. Like the mould for traditional cookies not being able to work to produce other foodstuffs..." (E02, Expert Interview, 02.03.2008).

"....like we normally used these personal items to support our food processing at home..that's why if you noticed, there are lots of small ceramic pots in the kitchen in the past...it's pre nature.." (E09, Expert Interview, 04.05.2008)

This tendency to prefer the use of 'we' over 'I' observed in the fieldwork interviews reflects a collectivist orientation. Hofstede (1994:50), in his value dimension model, claimed that individualism and collectivism can be defined according to the extent to which individualistic or collectivist cultures expect individuals to care for themselves. Furthermore, Hofstede (1984) was cited in Schutte and Ciarlante (1998) who placed the Malaysian community at the extreme end of the collectivism scale.

In accordance with Hofstede's cultural dimension results, this section illustrates relevant examples of 'collectivist' values which can be observed from my social

engagement activities. In this research situation, 'collectivist' and 'individualist' values are also reflected in the use of tools in different environments and contexts.

Participants explained that collectivist values still influence the tools they use in rural areas, especially during cultural events. Nevertheless, in industrial urban settings, tools are becoming increasingly individual items. In most of the cultural activities described by the participants, the user is engaged with the community and tools become one of major supports for 'collectivist' values. In this situation, certain tools have their own ability to create the environment, physically or emotionally and, thus, are able to bring people together as a social group. Such tools were described and discussed by E01, E02, E03, E06 and W18.

"...In a village for example, you can hear the spanking sounds due to the use of granite mortar and pestle and it produces a harmonious sound for your neighbourhood but it's the other way around if you live in the city, like in apartments or flat houses. It creates some sort of communications tool,..... Its creates community values and brings people together.." (E01, Expert Interview, 11.03.2008)

"...when I first arrived here, I was quite shocked. When attending a wedding ceremony, during the food preparation, the community around here will congregate and help each other, some even brought their own special tools.." (E02, Expert Interview, 19.03.2008)

"...I am sure you noticed your parents, when your mom pours water for your Dad (from a hand washing pot) . Not for any other reasons that men are dominant, but just it's a human value..." (E03, Expert Interview, 27.03.2008)

"...in cultural events like in a wedding ceremony, some people would bring their own tools to help in food processing ceremonies..(for example cutting the meat, slicing the meat..,etc.). they even refuse knives provided by the host.. (W18, p.4, Design Workshop 3, 30.04.2008)

E06 also explained that tools influenced collectivist values. While working in Indonesia, she had observed a different group of users that had experienced a similar cultural migration experience. From this example, it can be understood that tools developed in other regional cultures are also able to bear similar values and functions:

"...so I can do all that much more quickly than when they were working and they were its more like, you know when women are cooking, they are chatting, and they are doing it together..and I have seen them in Bali in Indonesia too when women cook you know its this and chatting and its not like lets cut the onions now, just like in here it's the same..." (E06, Expert Interview, 21.04.2008)

In urban environments, however, the choice of kitchen utensils tends to reflect individualistic cultural values and lifestyles. According to Berg-Weitzel (2001:171), by referring to Hofstede's (1994) cultural dimension model, the term 'individualist' refers to a society in which the mutual ties between individuals are loose and everyone has the responsibility to look after themselves.

These can be identified in the examples given by E01, E02, HE03, and W05 in which they discuss current urban lifestyles and demands.

"...People communicate differently in the city. In most situations, you don't even know your next door neighbour..., it still depends on the individual. I am sure that people with high status, would live their lives in modern ways, even if they decided to live in a village again. Like in some cases, a pensioner would go back to live in a big house in the village after their retirement.." (E01, Expert Interview, 11.03.2008)

"...It would definitely taste better and bring out the flavour and smells but for commercial production, I would prefer to use the modern appliances for some specific purposes..." (HE03, Home Interview, 31.03.2008)

"I have experienced life in the city is more individualistic and people are trying to avoid using kitchen tools that could interrupt their neighbours' privacy.." (W05, p.9, Design Workshop 1, 14.03.2008)

In relation to this, E02 also explained his personal views regarding these individualist values and their relation to products.

"...When their lifestyle is simple, they will become more of a group, more but as an individual when life becomes complex due to certain factors and constraints. Your buying option has also become more of an individual decision..." (E02, Expert Interview, 19.03.2008)

In the current situation of 'individualistic' urban lifestyles, products that carry strong 'collectivist' values might be transformed into those with different functions and uses, as has been explained by E02, E05, E08, E10, HE06, HE09, etc.

Products carry different values according to the environment in which they are being used. In this research situation, it is still complicated to justify the specific values products might bring to the users during their cultural migration. However, by understanding these 'individualist' and 'collectivist' values, designers could be able to generate some insights about users and develop ideas on products they might adapt in their current environments.

5.1.2 User Preferences

User preference is also another important element in identifying culturally determined needs. There are several factors from user preferences that designers need to pay attention to in addressing and understanding their culturally determined needs. Based on my qualitative analysis, nodes coded as 'Practical' (use of the product), 'Material' and 'Ergonomics' are the three highest score of nodes which occupy the category of 'User Preferences' (4.3.5). As these nodes ranked highly in my 'User Preferences' category, the examples below will be discussed in detail to explain about their (participants) preferences during cultural migration.

5.1.2.1 Practical

The examples below illustrate that factors such as 'practical use of the product' are crucial in cultural migration and designers need to pay attention to it. Most of the participants agreed that products manufactured should be practical, easy to use, and able to assist them with their cultural practices, although it was also accepted that products vary in their practicality according to environment and market segment.

E03, HE05, HE06, HE07 and E07 explained that the practical use of tools or products depends greatly on the environmental setting and space available during the cultural migration.

"...First of all is the design of the kitchen. Like in my case I cannot do any deep frying because of the design of my kitchen. I am living in a flat house you see. These days, when a developer is designing a modern kitchen.. the users will always need to do kitchen extension or renovation...many of us will not do grinding or frying in our house,.....It will get smoky easily. So that ergonomic was not planned very well. Nothing of this has been taken into account..." (E03, Expert Interview, 27.03.2008)

"...but I don't like that traditional food cover (made from coconut leaves) because of its bulky looks and its weight. If it is positioned on the dining table, it will take up the whole space of the table. Furthermore, it is difficult to store when not in use. In modern houses, we seldom put nails in our wall to hang kitchen products up.." (E07, Expert Interview, 29.04.2008)

"...some were there and some were created by us. We really need a practical way of positioning our tools, as its all limited here. We might have a better space if we have time to get organized..." (HE05, Home Interview, 06.04.2008)

Similarly, HE06 and W22 also stressed space concern as a factor that influences the practicality of products in the current environment:

"...this thing is blocking a way for the practices, another thing is its still narrow when you pour it...you have to be very careful not to spill the water...(referring to DA1 design concept)"(HE06, Home Interview, 21.04.2008)

"...what happens is that they are using modern kitchen cabinets. They insist that they use this product on the floor to avoid damage to their kitchen tops instead. There must be someway that we can design a kitchen cabinet, with a chopping area, but now a part for traditional mortar and pestle..." (HE06, Home Interview, 21.04.2008)

"....Put it this way, when I designed my kitchen, I designed it for practicality. Because it is a narrow path. We don't cook all our meals here. We eat outside a lot. We need a practical kitchen in an area that will be suitable for us. We try not to make cupboards. We have cupboards there only because it is under that sink,. Mainly drawers. These drawers are accessible to get into..." (HE07, Home Interview, 21.04.2008)

"...I still have one of those 'open access/space' kitchen floors in my grandmother's house. It's being used to throw waste, such as rice so that it can be used to feed chickens under the house. I think it's practical for a traditional house..." (W22, Design Workshop 4, 03.06.2008)

However, in responding to this issue, E02 explained that the practicality of one product could also vary especially when it is being used in a different environment:

"....when I was living abroad, I didn't really like to cook, personally . Like in Australia, they used electric stoves with flat tops. I prefer to use a gas stove such as those we have here in Malaysia. Sometimes when it comes to a certain stages in cooking, its still being impractical, like to toast a curry powder requires time and heat..." (E02, Expert Interview, 19.03.2008)

Being an environmentalist, E03 argued about the choice of the material and practicality of modern tools to accommodate healthy lifestyles and to retain positive values from the traditional culture:

"...People who enjoy food traditionally are very different. They use various types of energy sources. For instance, charcoal, firewood and all these sort of things. The heat is so constant and develops the food naturally. Now you have these gas stoves, pressure cookers, etc. These all are idealised but not good for food practice. Convenience ideas but it is a fast food. I believe in slow food.." (E03, Expert Interview, 27.03.2008)

In relation to this, however, E09 argued that the practicality of the tools also depends on the availability of the material in the current market:

"...its not just that, its practicality, cast iron is more practical to produce through mass production..,....and I do not want to cook rice by using charcoal stove. Or going through difficulties finding firewood just to boil the water..." (E09, Expert Interview, 04.05.2008)

Some participants (W01, W02) also discussed the size of the products and how this affected convenience, practicality, in the light of intended use and function:

"....I think that the amount of water content in the pot is not enough. On the other hand, if it is too big, then it would not be practical, due to the water content, to be mobile as it should be (referring to Design DA)" (W01, Design Workshop 1, 14.03.2008)

"...The major problem I think is when people move it from one place to another. The design seems not to be practical to be a mobile product. Its not easy to handle it, especially when there is water inside the container..." (W02, Design Workshop 1, 14.03.2008)

In addition, W04 and E10 emphasized that practicality and the degree of comfort experienced by people also depends on its current market segment:

"....nobody cares to improve this kind of product. People in the city use different tools and are being exposed to adapt with their new environment but in the village, it's the other way around. It's not easy for them (people in the rural) to accept new things. (B0 and other existing cultural tools.." (W04, Design Workshop 1, 14.03.2008)

"...we don't design according to what we need or what is comfortable to us. In Japanese culture, they design and also make those things, you see all the products are Japanese products and therefore, they have market for it, what we don't have is the market because the

market is segmented.." (E10, Expert Interview, 23.06.2008)

5.1.2.2 Material

This section showed that the selection of material does not only depend on the durability and reliability it can provide to the users, but is also part of a bigger picture concerning cultural values and their relationship with the user's environment. My analysis in chapter 4 (4.3.3) revealed that participants did not just discuss the physical properties of materials; they were also concerned with non-physical values that they embody. In the following example E01 discusses the material in terms of its physical strength and talks about its practicality during the cultural migration period:

'....It still depends on the market segment. If you intend to sell that product in a village, I don't think it will work. Granite mortar and pestle is a long lasting product, easy to maintain, with strong material, and difficult to break even if you drop it..." (E01, Expert Interview, 11.03.2008)

However, by focussing more on its non-physical aspects, E01 shows that in certain cultural situations, material used for the product has the ability to reflect lifestyle and prestige. In this situation, different materials used for similar products can be used to represent social status:

"..if it's in formal ceremonies, for example a prestigious wedding, our cultural emotion would preferred the one made of aluminium. It would reflect its environment as everything (almost all the products at the wedding) is in sparkling mode. The one that is made from plastic which looks cheaper, is normally used in a wedding in the village. Although it appears in almost the same shape (the washing pot), it does have its own categories of users and reflects on different social class members.." (E01, Expert Interview, 11.03.2008)

In certain cases, the material used had already become part of the culture itself and reflected something that members of group were already used to. This has been discussed by Banks, McGee (1989) and Jenks (1993) and was dealt with in section 2.1.

These authors claim that those who share a related culture usually perceive the meaning of symbols, artefacts and behaviours in similar ways. In relation to this, Molotch (2005:99) stated that social groups from different communities would share the same ideas on what the product should be for. He explained that many products that belong to a specific culture or group of communities are in a decreasing stage of use, as the group of communities migrates into a different environment and culture. In this example, E01 and W16 discuss material that emerged into one culture and became an iconic material recognized by members of that particular culture.

"...If you noticed, the carrier for foodstuff during the cultural events, are still made from copper and not plastic. When we see those items, we already know what its functions are and when it will be used. It reflects back to the culture. Something that people are already used to..." (E01, Expert Interview, 11.03.2008)

"...In our culture(s), people will always use plastic made products to support food presentation especially in this case, a washing hands product. (A1) It will always be plastic as the material and manufacturing process is obvious.." (W16, Design Workshop 3, 30.04.2008)

E04, meanwhile, explains that certain materials have the ability to reflect values owned by a specific cultural group:

"....For example an Indian dish is synonymous with stainless steel or aluminium plates, Chinese with their bamboo and wooden chopsticks, and Malay with banana leaves, hand wash pot, etc.." (E04, Expert Interview, 31.03.2008)

As E03 points out, one might not recognize or understand the use of the material if it had not been developed in one's own culture:

"...I had accidents in the long bath. I fell. Some time I still have to be the "orang kampong" (traditional naive villager)..How modern I am, I didn't know that the rubber mat should be in the long bath...,I didn't know that the rubber mat should be in the bathroom. I wouldn't know that mat should be inside the bathroom...,They put the mat outside the toilets. I also fell in my own toilet because I also put down nice tiles and they caused me to fall.." (E03, Expert Interview, 27.03.2008)

However, from a different perspective, participants also suggested how materials could be made safer and more reliable regardless of specific cultural meaning:

"...why don't they use the regular granite (for DB design)?.. I mean a shape of a kind like that... so they can do this.. a normal one...its just simple, its like a simple bowl made from stone but rounder and wider so you can crush it around like this...(she draws some shape of a bowl to explain her ideas).." (W10, Design Workshop 2, 03.04.2008)

"...or it could be made from stiff rubberized material and not too soft to avoid being too bouncy...(for DB1 design) " (W17, Design Workshop 3, 30.04.2008)

"...this top cover is designed mainly to reduce sounds and avoid splashes of Ingredients; anti sound and anti spill (refer to SW24(b)). The bottom part is rubberized to support and react as a cover..." (W24, Design Workshop 4, 03.06.2008)

This examples explained that a cultural product is to be developed in a way that makes it compatible with a cultural migration context, the material should be integrated with 'Values' since these cultural values still have a strong influence on users (Section 5.1.1 - Cultural Values). Kramer et al. (2000) have argued that designers are always trying to find uses for the tools and deploying the coolest new features and forgetting that their key focus should be on providing value to the end users. This section explained that material and cultural values need to be integrated during the design process because, in most situations, material selections for products still exhibit strong cultural bonds between values and users.

5.1.2.3 Ergonomics Considerations

The importance of incorporating 'Ergonomics' in product design development has been identified and established in many design studies (for example Kanis (1998), Etchell (1999), Jordan (1999), Groenesteijn et al. (2006), Rodriguez et al. (2006), etc) My analysis in Chapter 4 (4.3.5) illustrated that ergonomic factors formed one way in which participants directly expressed the comfort, appropriateness, safety and practicality of the use of a product.

This section demonstrated that participants have the ability to describe the ergonomic factors that accommodate their environmental settings. However, in close discussions focusing on specific design concepts, (especially during Workshops) participants showed more ability to comment in detail on ergonomic issues as illustrated below, This can be extremely valuable for designers when it comes to improving the current design of existing products.

In this example, participants discussed more about space and environmental design where the products are being used, especially during this cultural migration period.

".....This product (traditional mortar and pestle) is normally used in a village house which has a spacious environment. Houses in the city of course, have different space constraints. In a village, we normally live in a large compound and houses are not too close to each other but still we can hear our neighbours' voices if they shout. However, in the city, people live in a compact houses, flats and apartments..." (E01, Expert Interview, 11.03.2008)

Furthermore, E03 and E07 also talked about ergonomics and products in detail, especially regarding their use in different environments (on example given is accommodations type and its environment). They stressed that products should be designed ergonomically so that they are congruent with changes in the prevailing environment:

"....As in my house the height of the kitchen cabinet, is not to my size. How much effort is needed to bend and to stand while cooking! Some people sit and cook. (He is illustrating in action how difficult it has been to cook in his own kitchen, more from the perspective of measurement and height of the cabinets..") (E03, Expert Interview, 27.03.2008)

"...Furthermore, it is difficult to store when not being used. In modern houses, we seldom put nails in our walls to hang kitchen products. And it also not hygienic and difficult to clean..." (E07, Expert Interview, 29.04.2008)

"*...Because it is a narrow path. We don't cook all our meals here. We eat outside a lot. We need a practical kitchen in an area that will be suitable for us. We try not to make cupboards. We have cupboards there only because it is under that sink,. Mainly drawers. These drawers are accessible to get into..*" (E07, Expert Interview, 29.04.2008)

However, E02 argued that several products are still able to work in different environments, although they produce different results. In addition, HE09 and HE10 pointed out that changes in material could enable products to be ergonomically usable in their new environment:

"....when I was living abroad, I didn't really like to cook, personally. Like in Australia, they used electric stoves and flat tops. I prefer to use a gas stove as we have here in Malaysia. When it comes to certain stages in cooking; it's impractical, like to toast a curry powder requires time and heat. Furthermore, in terms of the final product, cooking in foreign environment would produce a slightly different taste even using the same ingredients.." (E02, Expert Interview, 19.03.2008)

"....this is the curry pot they used, and its copper. (pointing at the old pot) But because you need to clean it and polish it, they don't want to and they shift to aluminum. I have plenty of these in my house..." (HE09, Home Interview, 25.04.2008)

"....some cakes or cookie moulds are not suitable for our ingredients, like this one, in plastic. Its quite difficult to release it from its mould after cooking. It gets stuck and damages the cookies. The best one is made from wood but nowadays, you can't find those in the market.." (HE10, Home Interview, 28.10.2008)

Several participants provided more direct input about product use and its context, rather than discussing ergonomic problems in detail, which are more related to their social experience and their environment. This can be observed in the views expressed by E05, W03, W01, W02, W18, W17 and W20 when discussing issues concerning my design concepts. Below are some suggestions made by the participants, which could be useful for designers when it comes to improving specific 'migrating' products in a cultural migration context:

"....From my point of view, (referring to DA1 design) in term of ergonomics, the free movement of users' hands could be restricted in this limited space and also you need to consider the various sizes of human hands. This is just my view but this product can still be improved. But with the existing one, I feel like more freedom to wash my hand as we just need to lift it up and it's all done..." (E05, Expert Interview, 13.04.2008)

"..it's not being impractical (referring to DB design). It will always spill and bounce out the ingredients every time I use it. It's not easy to handle although it is not in long use..." (W03, Design Workshop 1, 14.03.2008)

".....There's also no handle for the bottom part (referring to DA design). The surface lips of the bottom part are almost the same size as its container. So to handle this part when mobile is not easy..., The major problem I think is when people are moving it from one place to another. The design seems not to be practical to be a mobile product. It's not easy to handle it, especially when there is water inside the container..." (W02, Design Workshop 1, 14.03.2008)

"....In terms of storage, I think design DA1 and DA2 are more practical than DA and DB designs. It can be easily organized without losing any small parts because it has a design compacted into one whole component..., however maybe the handle (A2) can be flipped in different directions during filling with clean water or parts can be rotated 360 when they are not locked, to make for easy maintenance.." (W20, Design Workshop 4, 03.06.2008)

5.1.3 Product Transformation Patterns

Product transformation is one of the elements that emerged when participants discussed their ideas concerning the adaptation of new practical forms to make them compatible with their cultural migration environments. In my analysis, 'Product Transformation' factors can be divided into several different sub categories, the highest ranking of which are 'historical', 'social system' and 'different context of use'. This occurs when participants are discussing factors which influence the product to migrate/change (4.3.5). In this research context, the emergence of global markets and the acceptance of 'modern' products have also dominated, replacing most of the traditional tools in the current cultural migration environments (1.4.2).

This section has looked at examples of factors discussed by participants in product transformation patterns which were concerned with both physical and non physical aspects. In this situation, people who enjoy higher economic status always have the need to appreciate their past; resulting in strong emotional, aesthetic and nostalgic bonds with the products they want to carry with them during their cultural migration.

In order to accommodate users' cultural practices and beliefs during their migration experience, products can be transformed in terms of their physical size and shape. This section explained that the transformation of products into new practical forms is much more affected by the social system rather than the environmental factors that accommodate the products.

The changes in both the environmental and social systems have transformed the way people perceived products and services. E02 gives the way chefs used to work in the present environment compared to the past as an example:

"...This is when the career of a chef shifted. In the past, maybe 5 – 8 years ago, chefs only work behind the scene and nobody knows or cares to know how they (chefs) look. But slowly, gradually the trend has changed and now chefs play a major role to promote the food. We call that "display cooking" (E02, Expert Interview, 19.03.2008)

"...and its not that new. In display cooking, customers want to know and observe the process of the cooking. They want to be confident in what they eat. Like in Malaysia, we have this house grill in the beginning but now we have numerous names adopting this open plan cooking concept..." (E02, Expert Interview, 19.03.2008)

Similarly, E03 cited changes in meeting and social places in order to highlight how the social system has changed:

"...Now people go to Starbucks, fast food restaurants to meet people. But in villages, they just meet up after prayer time (in the religion houses). The whole cultural things have been whipped off. It is so exhausting these days. It is difficult to meet people, you need to find spot places and make appointments, just to have a chat.." (E03, Expert Interview, 27.03.2008)

These and other social changes have not just made local products turn to 'global' but have also created uniformity patterns in the products and tools. This issue is discussed by E02, E03, E04:

"...Yes, those doughnuts are not any different from our traditional pancakes. If you notice, they coat the doughnut with ice cream, sugar, etc. then they created a variation such as chocolate, vanilla, apple, etc. what difference does it have from our pancakes? (E02, Expert Interview, 19.03.2008)

"...Uniform. Uniformity. You are no different than other races. Look at you, wearing the same kind of pants or shirts like anyone else...,... To change furniture almost every year. The very basic thing (including the way you dress or eat) is simplicity. You should govern the whole thing. See, you are no different than the Nigerian, Chinese. You all watch the same films, listen to same pop music, eat the same fast food, etc." (E03, Expert Interview, 27.03.2008)

In this situation, E04 stressed that this convergence made the products become more simple and minimalist. Products are becoming ready to use, more simple and compact. Some examples of these were explained by E01, E03 and HE02 by giving the example of the current changes in food packaging.

"...For example now, we have lots of instant ingredients that replace ingredients for traditional foodstuff. You can never seen a traditional coconut milk processor in your house nowadays. You might only see it in a certain shops, like in a small town..." (E01, Expert Interview, 11.03. 2008)

"...house they normally had "Apam" (traditional food for breakfast) Nowadays they buy the santan (instant coconut milk used as ingredients)." (E03, Expert Interview, 27.03.2008)

"...you can see the famous instant noodle "Maggie" has transformed and evolved in its packaging. From just a plastic wrap into most practical noodle cup, which can be enjoyed anywhere, and suits today's lifestyle. Users can even have it in a gas station. It has expanded its market..." (HE02, Home Interview, 31.03.2008)

Despite these social changes and lifestyle complexities, several products have retained their original shape, form and function due to strong connections to cultural practices and beliefs.

"....we still need granite because of our practice (referring to DB1 design). Because of the way we use it, we do spanking. And they want ingredients to be in a rough textures but with material such as wood for this mortar, it might looks like something else when its done.." (E07, Expert Interview, 29.04.2008)

"...They still do those things as our choice of foods are difficult to change. We only accept the changes on the material as in packaging but the dish still remained the same.." (E09, Expert Interview, 04.05.2008)

"...You will lose all the heat. The heat will come over your body. This is what, like here, that's why we have our burners all down below (not above the top). The modern appliances are actually not made to cater for things such as a wok and Asian food is mostly cooked in woks.." (HE07, Home Interview, 21.04.2008)

By referring to design concepts, participants also gave their opinions and thoughts about how to sustain the physical forms of products to be relevant to cultural practices and needs:

"...I think its existing shape (referring to DA1 design) is fine as we can easily recognize it as a hand washing pot. It has been around for a long time (the same design) and become part of our culture and lifestyle..." (W06, Design Workshop 1, 14.03.2008)

In detail, HE02 and W13 claimed that uniformity in tools does not satisfy local needs due to differences in certain cultural aspects and environment where the culture(s) is being adapted. Here, they explained their own food processing experiences:

"...We used manual techniques. But recently I have seen a machine that adapts the concept of washing machine to break and mix the eggs. When it's done, the eggs are readily removed from their shells. But I noticed that the shells need to be washed before placing them into the machine as some shells are dirty and not hygienic after being collected from the farm..." (HE02, Home Interview, 31.03.2008)

"....its got short ears (parts on both sides) which I think should be designed longer and should assist in protecting from heat from the cooking.(referring to global stock pot design).." (W13, Design Workshop 3, 30.04.2008)

In the current cultural migration situation, W18 explained about local needs and their desire to change the physical form of the tools to become compatible with their cultural needs and their environmental settings:

".....users these days in the city mostly have their own kitchen cabinets and some have spent a fortune on them. They would normally use this mortar and pestle on their kitchen floor to avoid damaging their expensive kitchen tops but with some alterations to its use, like adding in extra support on the bottom edge..." (W18, Design Workshop 3, 30.04.2008)

In relation to this, E08 stressed that in a situation of adapting to the emergence of culture, the efforts and anxiety resulting in turning back to local roots could become more complex and extreme. He points to the transformation of local products to return to cultural roots and originality.

"....It is happening now. It will eventually change two things at once. Nothing can happen in one direction. Any philosophy would say the same. It will always localise again somehow. There will always be a counter force to anything moving in one direction.." (E08, Expert Interview, 29.04.2008)

These examples identified how this physical change to products is essential as social systems and lifestyle diversity can be unpredictable as human wishes change over time. In relation to this, Robert (2002) claims that human desires always change and so do people's options. He explained that this is where design and innovation can take place in a context of social change. Furthermore, he also stressed that social concern drives design practice and personal expressions on the products that people use.

This section explains that products transforming their physical form depend on the social system in which the product is being operated. In this situation, participants argued that product transformation could be influenced by changes in social activities and current values that occupied those current social systems. This was discussed by E04 in predicting product transformation patterns:

"....The design proposal, semantically sometimes could not be appropriate at that particular period of time, as some products could look new and alien, not looking like an everyday product. However, people could change over several years. Certain things take hundreds of years to change as in "Psychographic" (Qualitative) or in "Demographic" (Quantitative)..." (E04, Expert Interview, 31.03.2008)

In a similar view, E08 argued that the social system has to be flexible if the product is to change and become congruent with the current situation:

"....If it's linear, there are going to be problems as you will get stuck. It should be more like a web. Its not about the form, it's about how information can change the form. Actually the things that are transferred are the information, and not necessarily the form. Say like if we design anything that doesn't change, then it will be static. You have to induce change in whatever system, where that system is amenable to change..." (E08, Expert Interview, 29.04.2008)

In giving examples of their predictions, HE01, HE04, and HE10 discussed changes in the social system, especially situations in which collectivist values are shifting towards individualistic ones and users have moved and adopted industrial urban lifestyles:

"...we can still do all this work but need more people to assist us. At that time, we expect more people from this village could join us. And it's normal for us to have at least 15 to 20 persons at that time..., most people that join us do so on a temporary basis and are from this village...,So it's more like a cultural event at that time of year. Having them here, chatting and gossiping while doing their work. Its common here.., however, there were more people in the past but now it's a bit difficult. That's why I have to send these to their houses and then collect them again when it's done. Only the senior citizens are left in the village. Most of the youngsters have already left the village and migrated to the cities to work in the factories " (HE01, Home Interview, 17.03.2008)

"...the good thing living in this village is that there are always people volunteering to help. It's a concept of "gotong royong". It's a community cultural value that still remains here but things have changed these days. For example, we don't see many young guys volunteer to help during the weddings. That's why now the concept of "gotong royong" doesn't really work during weddings. Most people would hire a caterer..." (HE04, Home Interview, 05.04.2008)

"...In the old days, people do this only for their own family but now, as times change, people employ the food industry to serve the needs of cultural events. It had not been commercialized before..." (HE04, Home Interview, 05.04.2008)

"....most traditional tools do not have the same speed as the modern appliances have. In cultural events, it requires a number of volunteers to assist with the processes. It's the community involvement that makes a success of the process. Furthermore, its not suitable to produce with the use of machines.." (HE10, Home Interview, 28.04.2008)

Additionally, HE10 also gave her view in predicting changes in lifestyle and the social system. This provided some ideas for designers in developing future products for particular users in cultural migration situations:

"....when I was young, in the 70s, many people would want to join this kind of activity as in those days, most women were housewives. They normally stayed at home and looked after children. But as time progressed, women gained opportunities to improve themselves especially in educational achievement. So now, you can see most professionals are women. Maybe in the future, we could see men joining these classes as men could be working from home or becoming house husbands. We could see that there are already more female than male students in our higher learning institutions..." (HE10, Home Interview, 28.04.2008)

5.1.4 Conclusion on Findings from Social Data

It can be seen from the discussion above that cultural migration has a number of features that are relevant to product designers and an understanding of these might be helpful to designers and manufacturers.

- People will adapt generic or host culture products to support their existing cultural practices.
- Generally 'modern' products appear to reflect individualism but it can be seen that people in migration will still set value on collective culture.
- Traditional cultural practices are gradually merging into hybrid practices
- Factors such as practicality, ergonomics and perception of materials may be quite different among migrating groups compared to 'modern'[12] expectations.
- The changes in the social system and environment influence how people perceive products.

Considering the value of this knowledge for designers, the practical design work in this project, as well as aiding the development of the research, has demonstrated and evaluated a process for designers to respond to the needs of migrating groups.

- Designers can use observation of hybrid practices and products to understand cultural needs and identify design directions
- Designers and manufacturers tend to see consumers and individuals but they may gain important insights by attending to collective factors.
- Designers should pay special attention to hybrid cultural practices and how users perceive practical uses of products, ergonomics and of materials as this may be quite different from 'modern' expectations

[12] I use the term 'modern' in a particular way to refer to what is normally perceived or expected from a contemporarily western globalised lifestyle.

- Designers should also be alert to the changes in the environmental and social systems which transform the way people perceive products and services.

The discussions and descriptions of these cultural factors could help future design development processes to take users experiencing cultural migration into account. These include factors that have been discussed above; cultural practices and product ideas (5.1.1.1), transmission of values between traditional culture and hybridization of culture (5.1.1.2), elements of collectivism and individualism that informed product use and values (5.1.1.3), user preferences (5.1.2) and product transformation patterns influenced by changes in the social system (5.1.3).

In summary, this section explained about knowledge and practical methods (5.2) that enable the designer to understand the cultural factors that influence users' product interactions during cultural migration. In addition, these social findings are aimed at providing valuable data for designers to cater for and understand the needs of people experiencing cultural migration.

5.2 Methodological Findings from the Fieldwork

Having explained above my social data and discussed cultural factors that emerged from it, I will now discuss methodological findings from the fieldwork as it is crucial to (re) evaluate the methods developed and tested in the main fieldwork. A contribution of this PhD work is to propose a methodology that can be easily adapted and understood by the designer. This section will explain and discuss the limitations of the methods that have been developed and will propose indications and research guidelines for designers.

5.2.1 Using design practice in the research

In this research, I produced conceptual designs in the form of visualisations to assist me and my research subjects in exploring possibilities in user-product-interaction during cultural migration. Part of the research was to explore different ways of using these design visualisations with stakeholders. The presentation format, the concepts selected, and the physical settings for the interactions with stakeholders, all affect the productivity of interviews and discussion sessions. Below I have discussed some of the productive approaches identified in the research which influence stakeholders' engagement:

5.2.1.1 Presentation formats influence on participants' engagement

During my field work, I presented my design works to participants in different situations to stimulate discussion. The early design presentations were in printed handout form and in 2 dimensional visualisation formats. Having these 2D illustrations for my interviews and workshops had its own disadvantages and limitations. For example when showing 2D illustrations to the participants, the actual use and practical problems of the designed product could not be tested to evaluate the real practice and actual environment where the product should be operating. In this situation, participants had to imagine how the products might work based on the visualisations shown to them.

For example, in Design Workshop 1, visualisations were presented in a photo-real 3D format. In this format, the conceptual design appeared like a finished material artefact. In responding to this type of illustration format, participants from the workshops developed some expectations about this design and questioned me more

about its physical aspect rather than its non physical aspect. (eg. how the product works, size, shape and material of the product) Consequently, most of the discussions focused more on its material and shape of the existing design rather than on developing other non physical aspects of possibilities.

It is evident from my first design workshop that this visualisation format had limitations and focused only on certain areas of discussion. This example of feedback from Design Workshop 1 shows how discussion was limited to the physical aspect of the product:

"...the use of different material to reduce the weight. The compilation of wood and granite. As granite affects the feel and taste of the ingredients. The outer layer will be made from wood. And the use of grip for the handle made from rubber material" (W02, p.8, Design Workshop 1, 14.03.2008)

"....maybe the manufacturer is trying to use the same mould. This can cut the costs of production and they (the manufacturers) only improved its material and colour." (W06, p.9, Design workshop 1, 14.03.2008)

"...it is small in size and I am not too worried about its weight. The major problem I think is when people are moving it from one place to another. The design seems not to be practical to be a mobile product. Its not easy to handle it, especially when there is water inside the container." (W02, p.10, Design Workshop 1, 14.03.2008)

To provoke participants to focus on social or cultural aspects of the design an alternative approach was used. The main features of these improved design presentation formats are explained in section 3.5.4.5. The alternative approach of changing its presentation format from photo real into 2D illustrations has triggered participants engagement not only to discuss the physical aspects of the products but also to other non physical aspects such as its practicality and function (W18); familiar cultural type (W19) or even about people's perceptions and cultural bonds (W23).

"...In normal use as in home, people doesn't really mind to use this traditional mortar and pestle as only cooks in a small quantity but in a place like hotels or restaurants, it could be different as they have to consider other factors as time, cost and quantity..." (W18, Design Workshop 3, 30.04.2008)

"...Personally, I think this conceptual design (A2) could be recognised easily as it still reflects to some products that we already immerse with. For example, this design drew some similarities with our traditional mobile food pot. So I don't think that this shape is totally alien to this culture(s)..." (W19, Design Workshop 4, 03.06.2008)

"...To a certain extent, I think sometimes it is a big challenge to change people perceptions and practices on certain products, especially when the products has already established itself as one mandatory product in cultural events or ceremonies. Its been there for ages and used by different generations. It is already embodied in that culture and practices..." (W23, Design Workshop 4, 03.06.2008)

5.2.1.2 Selecting familiar cultural types (eg. kitchen tools) triggers active participation

Having conceptual designs (as discussed in 3.4.4.5.) developed from existing familiar cultural products, encouraged active participation in stakeholder sessions. Using these familiar forms did not just assist in developing my future design ideas, it also mobilised the implicit elements of culture through participants' using the product as a starting point for speculation about improvements and discussion of related practices and beliefs. This indicates that products that already have strong connections with users will be more productive than novel futuristic products, which might cause the discussions to digress into other non related areas.

In relation to this, Von Hippel (1986) described how user insights into new product needs are influenced by their 'real world' experience. In developing novel product concepts, users often faced conflict with their own familiarity with existing products. He argued that selecting users to provide data for consumer and industrial analyses often has limitations when assessing unfamiliar products (new concepts). In line with Von Hippel's observations, I found that having familiar objects initiated active participation and engagement with the discussions.

This effect of familiarity can be observed in views and feedbacks from experts (E01, E07) who confirmed that these are familiar objects, and Malaysian students (W06, W17, W18, W19) who were quick to recognise the references in the products and their capacity to engage. This research has identified that participants from this workshop are also a group of consumers who are experiencing cultural migration and engage with these particular products (3.5.5.5.2).

"...If you noticed, the carrier for foodstuffs during the cultural events, is still made from copper and not plastic. When we see those items, we already know what its functions are and when it will be used. It reflects back to the culture. Something that people are used to..." (E01, Expert Interview, 11.03. 2008)

"...This traditional mortar and pestle are almost in every house in Malaysia. It a common product and everyone is keeping it in their house..." (E07, Expert Interview, 29.04.2008)

"...I think its existing shape is fine as we can easily recognize it as a hand washing pot. Its has been around for a long time (the same design) and become part of our culture and lifestyle..." (W06, Design Workshop 1, 14.03.2008)

"...I can see that it has influences from our ordinary products, the layers pot. So it might help audiences to identify its use and functions..." (W18, Design Workshop 3, Source: 30.04.2008)

"...We have already recognized that tea pot shape is a hand washing pot since we were still a kid and also this layers pot as food container. Easy to recognized..." (W17, Design Workshop 3, 30.04.2008)

"...Personally, I think this conceptual design could be recognised easily as it reflects some products that we are already immersed with. For example, this design drew some similarities with our traditional mobile food pot. So I don't think that this shape is totally alien to this culture(s). It might be to do with the way it functions but not its shape and design. It could accelerate the adaptation process if it is being produced in the same colour and material with those existing one..." (W19, p.9, Design Workshop 4, 03.06.2008)

Nevertheless, this 'familiar' product has not just provoked them to share their ideas but rather has developed similarities among them on products that they have shared and appreciated. This can be observed in participants' opinions about the product (i.e. W01, W03 and W06 in workshop 01).

".... we use to have this same hand washing pot at home...but I think that the amount of water content in the pot here is....."
(W01, Design workshop 01, 14.03.2008)

"...Yes, I also used to have this product at home. It is similar but .why does it have still to be like a ..." (W06, Design workshop 01, 14.03.2008)

".....Maybe this existing design of what we all are already familiar with seems like a practical design, to me....." (W03, Design workshop 01, 14.03.2008)

Anthropologists, Hoskins (1998) and Dant (1999) have explained that objects created and used by humans help to define them as part of a larger society. Thus, by means of these shared similarities and beliefs, a society is able to create distinctive ideas about a shared material world composed of symbols and artefacts. Such items could then become familiar iconic objects transmitted over time through generations.

Moreover, by having familiar products that are recognized by stakeholders, as the participants comments above illustrate, I do not need to explain the objects in detail and, from the experience of the workshops, this appears to accelerate the process of bridging connections between me (the designer/researcher), the object, and the research subject. In the workshops, the observer's field notes (Appendix I) show that introducing these novel but familiar objects stimulated more active participation which could provide useful data (such as the interview transcripts referred to in 5.1), developing various discussion topics on issues related to adaptations, ergonomics, cultural values, etc.

At this stage of the research, I realised that it was necessary for the designer/researcher to immerse himself into some part of this culture to develop their connections with the subjects and learn about the objects people employed in the context of the areas to be studied. This includes the environmental settings (5.2.2.1) and the audience's culture (5.2.2.5). A similar issue was also stressed by Röse and Zuhlke (2001) as discussed in Chapter 1.

This was supported by having these familiar products developed into conceptual designs also placed the designer/researcher and participants into one space of investigation and developed an effective communications link with the participations. As Lowgren and Stolterman (1999) explained, in most cases, design methods can be seen as systematic methods to be carried out in a social context and they stressed that design can serve as a common ground for more successful communication between the stakeholders and the design process. .

5.2.1.3 Some products are more susceptible to change/migration

By experimenting with these 2 conceptual designs (3.5.4.1; figure 14) with participants, I also identified differences between these two cultural products, in terms of their flexibility to be transformed into new practical forms during cultural migration. These two products have their own transformation routes due to their different uses and values.

In analysing the interview and workshop data (4.3), I discovered that the context of use is particularly associated with the transformation of products. This in turn led to my identifying the new design concepts described in Chapter 3 (3.5.4.1). I propose that designers would benefit from understanding this effect and having strategies to engage with relevant contexts of use in social migration to inform their designing.

Participants expressed the idea that design A1 and design B1 (3.5.4.1) each embodied different functions and values. E01, E02, E09 and W20 stressed that the A1 (Hand washing Pot) was more liable to be transformed compared to B1 (traditional mortar and pestle) due to its different context of use and values it carried for the

users. For example, participants E01 and E09 discussed the idea that design B1 is less flexible compared to design A1. In detail, E01 explained that design B1 required special skills and experience to operate it, contrasting with design A1 as discussed below:

"....and sometimes, they even lose their traditional elements but combining modern materials like marbles or advance composites for example. .....They wanted to sustain the traditional values but lost it in between the processes. But I do agree that certain traditional products still remain in the modern kitchen, especially those granite mortar and pestles.." (E09, Expert Interview, 04.05.2008)

"....I think it would be slightly different as I am looking at these products as having different categories of use. You can improve or replace the hand washing pot but not the granite mortar and pestle. I don't think Malay people will accept the changes on the mortar and pestle. It has been there as a traditional tool, for longer than I can imagine. It also is involved with cooking skills and the way we prepare food. Therefore, I feel that it is difficult to replace or improve it as most of the skilled cooks or chefs are from senior generations. Its not easy to change the way they do things..." (E01, Expert Interview, 11.03.2008)

In addition, E01 stressed that design A1 is more flexible to change compared to design B1 for several reasons. These include its nature of use and its revolutionary history. He expressed the following observations:

"....As for the washing pot, it does not involve food preparation processes. It is just a pot or more like a display product. Its more on the issue of usability and ergonomics. Practicality. I noticed that there has been some revolution on this product but not a major improvement but I agree that these products also travel through time with our cultural practices, as here to support the actions of eating by hand..." (E01, Expert Interview, 11.03.2008)

Evidence from the analysis also indicated that participants provided more comments and feedback concerned with design A1, compared with design B1. As stated below, they are more concerned with product improvements for design A1 as opposed to design B1. In comparing these two designs, W05 also stressed that:

"....these traditional tools are still in great demand in food preparation as they contribute to the emotional feelings about the food that is being processed. It has its own values and life. But for me, in regard to this product (DB), it is not so much to comment on its functions, but people argue more about its traditional values and its symbolic role in society. I believe the challenge is different from the hand washing pot....." (W05, p.9, Design Workshop 1, 14.03. 2008)

Participants also pointed to other products that have a similar potential to provoke engagement. W02 made a comment which illustrates this in Design Workshop 1:

"....there could be others, for example the rice grinder, coconut machines, but not as strong as this two that you shown us. These two products still exist and can be easily found even in modern houses..." (W02, Design Workshop 1, 14.03.2008)

5.2.2 Interaction between designers and stakeholders

While the products of design practice played a productive role in interaction with stakeholders, the designer's approach to that interaction was also important to its success.

5.2.2.1 Cultural constraints in engaging with participants

To connect with the participants, some cultural constraints need to be considered. I discovered that each of the interpersonal activities in the research required a different approach. For example, expert interviewees could be contacted formally and directly (3.5.5.3.2) because they shared the researcher's professional understanding and recognise the value of the research, whether they were cultural authorities (E01, E06, E07), an expert chef (E02) or a policy expert (E03). Thus, an expert interview does not require any special care in preparation or incentive for participation.

However, the situation was different when it came to conducting Home Interviews (HE). There was no formal source that could lead the researcher to suitable people, most of the participants in HE interviews were found by snowball recruiting starting with chance connections, eg one of the expert participants volunteered the information that he had a relative who knew several traditional cooks. This required the researcher to have some knowledge of local settings, for example

some participants were found by asking diners at traditional food stalls for recommendations to traditional cooks in the area.

While the experts tended to speak English as well as their traditional language, and be comfortable with direct questions, the Home Interviews depended on the researcher's understanding of local language and culture (1.1) and will need to conduct the interview in a relevant language and translate it to the language of the research (English) (4.3.2).

Thus, it might be necessary for other future researchers to undergo preliminary training in order to become familiar with local culture, even within their own region. this indicates that an understanding of ethnographic approaches will help designers to access these participants in their natural settings since such approaches can help to reveal the cultural context of end users (2.4.1.1). As indicated in Chapter 1, Röse and Zuhlke (2001) describe an approach to designing manufacturing machines to be made in Germany and used in China whereby local needs are understood through 'ethnographic' studies by the designers. It may also be relevant to recruit local people as co-researchers to help overcome the obstacle of working in an unfamiliar country or language (Corse 2006).

5.2.2.2 'Ice breaking' and 'friendly Introduction' to promote active participation.

From fieldwork experience, I discovered that some social interactions required more than research description and self introduction to inspire active participation. In the case of Design Workshops, I had to develop my own skills to inspire participation and develop participants' interest in activities for this research. As design formed the central part of Design Workshop sessions, participants' first reactions to

communication revealed a rather passive response and less interest in extending their dialogue and developing their ideas about the research subject (Appendix H.3 – Workshop 1). To overcome this, I created some activities based on shared topics of interest to engage and facilitate their communication with me (3.5.5.5.3.1).

This introductory phase was essential to building rapport and enabling the development of further dialogues. From this experience, I recognized that participants' responses were heavily influenced by their social background and the education system they had experienced (Appendix H.2 –HE01 field note). In section 2.1, I have discussed the fact that culture is a process of mental programming that people undergo throughout their lives (Hofstede 1994:4) and these experiences have informed their behaviour and thinking in response to this situation. In relation to this, Musa (2003) has shown that the education system in Malaysia is still bound by many cultural constraints. For example, asking too many questions and arguing with a professor or a teacher sometimes can be interpreted as showing a lack of respect for elders (Musa 2003:87). Musa (2003) further stressed that:

".....this is common in Asia, a reflection of the culture of reverence towards elders generally. Reverence and respect yes; blind obedience and uncritically accepting what is being uttered, no!" (Musa 2003:87)

The education structure in Malaysia has been more focused on an 'exam oriented system' and required teachers to complete their syllabus by the end of year (Tan 1991). This has led students only to develop their critical thinking and ideas when they reach diploma level or at the beginning of their studies in the universities.

However, inspiring a responsive participation in this early stage of social engagement can be achieved by explaining more about the design experience and sharing my own life experience in order to establish a common interest with the

participants (3.5.5.5.3.1). While doing this, I had to recall my own experience of being a student and explain my experiences in similar situations to enable them to become more responsive in sharing their current experiences of products and changing environments.

By developing these similarities and sharing commonalities, knowledge barriers between the senior designer (the researcher) and the migrating participants (young professionals) were broken down as this eased the process of communicating with them. Indeed, as McCracken (1998:17) has stressed, the relationship between the researcher and the respondent has to be creatively crafted and nurtured to serve the interests of good qualitative inquiry.

5.2.2.3 Participants Recruiting Criteria

The selection of my participants developed from my previous experience of social engagement and has been based on my experience of the pilot work (3.5.3.7). In line with this, Jones and Marsden (2006:128) have stressed that the type of people chosen as participants can be also guided by the theory or framework that has been built and tested to understand users and the behaviour that developed during the initial study.

However, as a result of my experience of this fieldwork, I found that my estimation and general judgement of participants was not entirely consistent with their productivity as research subjects. In particular, I found that my general judgement about people from similar ethnic groups experiencing life outside their culture and still retaining their traditional cultural values, products and practices was not completely accurate. For example, this was revealed by my experience of selecting a group of

participants for my Design Workshop 2, which involved participants who had lived abroad as junior members of a family: they had experienced geographical migration but not necessarily social migration.

Thus they were not able to provide useful data in response to the design concepts shown to them compared to other groups. They had no ideas about the actual use of the products as they claimed they never had any experience with them. This can be observed in the feedback provided by W07, W08 and W10 below:

"....it might not crush the same way as it's the hard surface,..but I am not really sure if this is the actual problem, as not really have experience using this at home.. (W07, Design Workshop 02, 03.04.2008)

".....that is because we don't understand the exact problem with the product..." (W08, p.13, Design Workshop 2, 03.04.2008)

"....I am not so sure about it as no experience with it, but I think users can keep on using it.." (W10, Design Workshop 02, 03.04.2008)

Their feedback about the design concepts were only based on their imaginations and predictions. This included how these products might be used and the problems users might encounter.

It appears that this particular group may have moved beyond being social migrants and have left their origins behind them despite returning to Malaysia. This was explained by E01, i.e. that products remaining during the cultural migration are retained and more greatly appreciated by the first generation to experience cultural migration. In particular, he stressed that:

"...these products could still be in demand especially when the occupier is among senior citizens. Many young couples have their parents living with them in the city nowadays..." (E01, Expert Interview, 11.03. 2008)

These criteria of recruiting participants and their understanding about their own culture and products pointed me to a theory of culture that has been discussed in

section 2.1 (eg. Hofstede 1994). In relation to this, Hofstede has clearly stated that culture is not something we inherit from our ancestors or family members but is what we learn and experience in a given environment and situation.

Thus participant engagement with products cannot be seen in its entirety as a transmission process (as discussed by Kluckhohn and Kelly 1945, Kroeber and Kluckhohn 1952, Schein 1988) but rather as an process of acquisition whereby experience and knowledge accumulates over the course of a lifetime (Hofstede 1994) as discussed in section 2.1.

5.2.2.4 Understand the Participants' culture

For these interviews to take place successfully, the researcher must acquire relevant knowledge of participants and their culture/environment, besides establishing effective communication and interaction skills.

To illustrate this, I have identified during my interviews that most of my home interview participants still show strong connections with their traditional cultural values and practices (5.1.1.2). For example, most of them were shy in the beginning, especially when first asked to be interviewees or when asked if their kitchen areas can be photographed (Appendix H.2- HE field note).

"....This is improper place to shoot pictures...it's still a mess as I have just completed cooking for big event last night...may be I should have it clean in the first place.. " (HE04, Home Interview, 05.04.2008)

"...I feel shame as its not tidy up...this kitchen can be worst if not for this interview...need to clean it at once.." (HE05, Home Interview, 06.04.2008)

Most of the HE participants had no experience of formal interaction with people who are not from their own community group

"....I have never been interviewed like this before. Had visitors from local government bodies here...but that was like years ago. Well, yes have several local

visitor..." (HE01, Home Interview, 17.03.2008)

"...It's ok but never had experience like this as I only have dialogues with locals and my visitors are just people around here..." (HE02, Home Interview, 31.03.2008)

Early in the field work, I developed misconceptions about the participants and their environment. For example, I thought that my previous experience 'of living' within this Malay culture would facilitate the process of accessing and understanding the participants. However, only by experiencing the actual fieldwork, did I begin to realise the actual environment of the participants including the element of cultural constraints as discussed above (5.2.2.1) required some reflection to identify appropriate approaches (5.2.2.2.).

Santos (2003:59) has shown that, in research methodology, the researcher does not just carry misconceptions regarding language, culture and methodology but also misconceptions concerning the appropriate methodology to use when investigating a specific community or ethnic group; in this case the Malay community. Previous research (eg. Andaya 2001, Munan & Heidi 2005, Lim et al. 2005) has shown that Malays are bounded within their cultural traditional customs and beliefs and are still influenced by their "negative villagers' mentality" (Taib 1996:40). However, after more detailed explanation about this research and its benefits to them (i.e. improving local products, complies with local needs and practices), I felt that it was much easier to get closer to the participants and encourage them to take part. Because of such experiences, the researcher has begun to recognise relevant tactics and approaches that are consistent with local cultures and environments.

5.2.3 Methodological Conclusions for designers

Lowgren and Stolterman (1999:18) stressed that by exploring new methods and techniques, the researcher (designer) could extend his language and his repertoire of tools for different design situations

A central feature of this research is the use of design practice and its outcomes to provide part of the environment for engaging with stakeholders in their homes or other familiar environments. The designer also must develop good skills of interacting with and observing stakeholders. To develop appropriate skills in this approach, as well as understanding its principles, designers must experience it in action, for example through pilot studies.

This is evident above where the designer is using the research methods to understand the subjects and their culture as preparation for the main body of work. The designer/researcher will need to pay attention to certain features in developing their design work. These include developing appropriate design presentation formats (5.2.1.1), selecting familiar cultural objects (5.2.1.2), and being able to identify flexible 'migrating' products (5.2.1.3). Methods of engagement with research participants must take account of participants' background, culture and environmental settings (5.2.2.).

In this research it was observed that the designer could not predict the course of cultural migration. However, through this practice-led approach, I could identify particular elements of culture that might be useful for designers in new product development. This kind of contextualised understanding cannot be gained in studio work (Ireland (2003:22) as discussed in 2.4), it requires engagement with

stakeholders and, as Bowen (2009:137) has indicated, stakeholders cannot envisage future possibilities without a stimulus such as the introduction of novel artefacts.

This can be seen in the way that, even a local designer (in this context, myself) was not able to understand completely his own 'culture' and often misjudged users' cultural practices and beliefs (5.2.2.5). By experiencing this whole design/research process, I as designer/researcher was able to overcome this limitation.

As indicated in (4.3), the research methods for this project were very elaborate in their use of analysis methods from social science. It is not appropriate for designers to adopt such a complex and time-consuming method in everyday practice but as proposed in Chapter 4 (4.2) a quick and dirty research method that focuses on the practice-led elements of this project will allow designers to explore stakeholders culture while developing relevant designs that embody their observations, often through a tacit process rather than explicit analysis. The analysis in this research provides the validation of the "designerly" inquiry embodied in the design concepts.

Chapter 6

6.0 Conclusion

This final chapter brings together the conclusions from the research. It will also explain how this research is able to contribute to the work of designers. Finally it will suggest future research that might follow on from this thesis.

In the first chapter, I proposed that research into how local cultural factors might be embodied in product design may be of value to the profession and indicated that cultural migration could be a productive avenue as identified in my early research. I also identified the opportunity to use the ways in which people adapt products to meet changing cultural needs as a good source of data for the inquiry.

In Chapter Two, I reviewed theories of culture from a sociological perspective, ways in which culture has been addressed in design research and methods for this research including those drawing on social inquiry and practice-led methods in design. I also introduced the location for the study with a review of economic and social issues in Malaysia.

Chapter 3 described my research framework explaining both how the inquiry had been conducted and how its methods were developed, in particular the parallel use of direct engagement with stakeholders and exploratory creative practice. Chapter 4 described the analytical techniques and explained in detail how the wide variety of data was coded and themes extracted and, at a practical level, how the detail of the process was managed.

Finally Chapter 5 synthesised the social and methodological outcomes of the research. As well as producing a description of the cultural "themes" relevant to this

context it set out issues that designers should attend to in their methods, demonstrated by the way the conceptual designs emerged from and were endorsed by the user engagement, pointing to a methodology for professional practice. Finally Chapter 5 clarified the methodology that emerged from this research, including the "twin-track" approach that combines social and practice-led inquiry.

6.1 The Contribution made by this research

Contribution to professional practice

This research has introduced and evaluated practice-led methods and techniques for designers to adopt and adapt in understanding users (3.2.3), especially those who are experiencing rapid culture change in a developing country. It explains how designers may combine research with designing and how it can be conducted (as discussed in chapter 3 and Chapter 4).

To adapt the research methods here to professional practice, designers should:

- seek out ways to engage directly with a variety of stakeholders (5.2.2), including methods for recruiting appropriate participants (ideally first generation migrants who are young enough to be flexible but mature enough to retain their traditional culture (5.2.2.3)
- develop the skills of observation and conversation that will allow them to identify user innovation in practice (eg 5.2.2.1; 5.2.2.2), including developing a background knowledge of participants cultures (5.2.2.4)
- from their engagement with stakeholders, identify cultural preferences, practices and adaptations that are relevant to the designers' particular problem area. (5.1)

- In parallel, use their design skills to create concepts that respond to these observations and feed these concepts into further engagement with stakeholders (5.2.1.1; 5.2.1.2) to provoke further interaction and test the relevance of the concepts as they develop. (5.2.1.3)

As a research method, the development of this process has resulted in both methodology and cultural insight. For designers a similar process can help them to identify design concepts that reflect cultural needs which may not be revealed by other means, as indicated in the responses of participants in this research (eg in 5.1.1.3)

Contribution to research methodology

The approach taken in this research, having some similarities with previous work by Bowen (2009:45), but more focused on mainstream design needs rather than technological futures, can be briefly summarised as:

- "Twin track" research methods allow social inquiry actions to operate in parallel with the design practice (5.2.1)
- Designers apply their tacit and creative design thinking to "process" their observations of stakeholders into new concepts (4.2)
- "Open" communication of concepts (eg line drawings rather than photo-real illustration) stimulates active participation by stakeholders (5.2.1.1)
- Relevant cultural references within concept designs (eg features from traditional versions of the product) will trigger active participation (5.2.1.2)
- Induction of stakeholders (eg icebreaking sessions) is necessary for active participation (5.2.2.2)

- First generation migrants, as described above, appear to be more valuable as stakeholder subjects for this work (5.2.2.3)
- It is essential for researchers to gain some insight into the participants' culture (5.2.2.4)

Understanding of social/cultural migration

I do not claim any contribution to the field of cultural studies but this thesis may provide information or ideas of interest to researchers in other fields. This includes:

- the role of product adaptation in cultural practices (5.1.1.1)
- the evidence of hybrid lifestyles which combine traditional and global values in a fluid way through a process of cultural migration. (5.1.1.2)
- Indications that collectivism in traditional cultures influences how people perceive contemporary products (5.1.1.3)
- Indications of how cultural preferences (5.1.2) influence practical (5.1.2.1), material (5.1.2.2) and ergonomics (5.1.2.3) priorities.

Results from this work could be regarded as a 'platform' for new tools in design research; it might need adaptation for different cultures and by different users. In specific cases, however, this application might require certain adjustments or modifications (where necessary) to be more compatible with different cultures and environments.

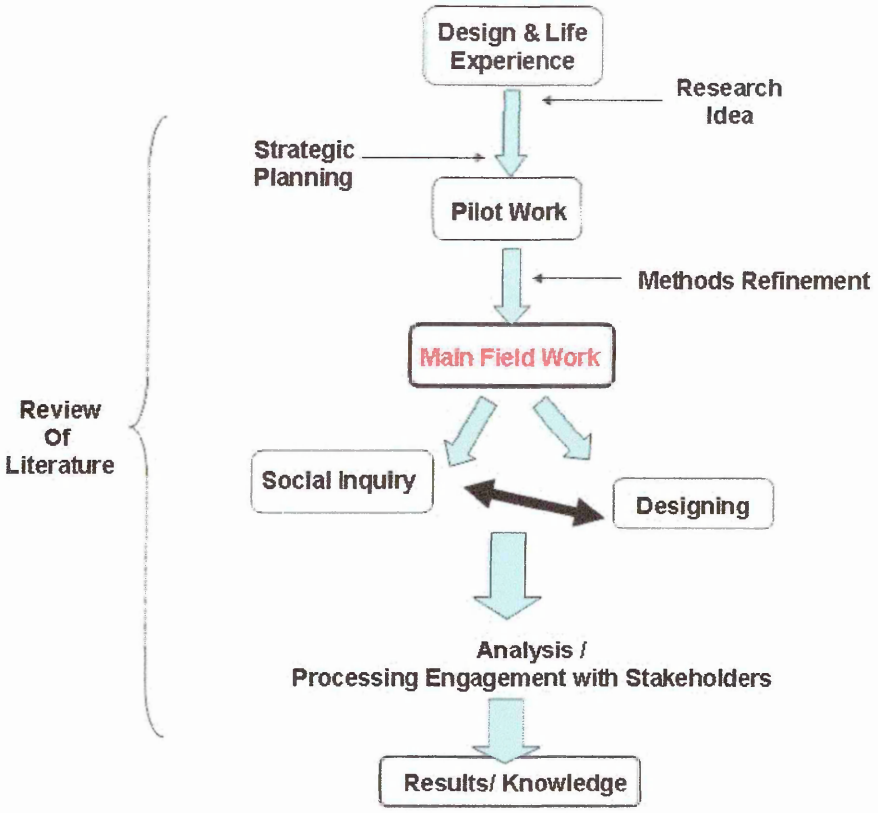

Figure 34 – Different stages in Methodology that has form the basis of the thesis

6.2 Reflection

As its main contribution to knowledge, this research has enabled me to propose a purposeful and systematic approach for designers (as discussed in 5.2.3). It is hoped that this will allow designers to adopt a research-led practice approach to designing for cultural migration.

In reality, ample space should be given to any designer / researcher to be creative in manipulating a situation in which the outcome of the research methodology may end up closer to the objective of the study (as discussed by Burdick (2003) in Section 2.4) The combination and flexibility of qualitative approach and design

methods adopted in the study has ensured a set of data that covers various crucial and noteworthy aspects of human interactions with products in their cultural migration.

This research work has demonstrated a theory of how a designer can respond to a social situation (as explained in Chapter 3). Experience from this research (as explained in this thesis) has enabled the designer to develop a unique methodology that can be relevant in similar research contexts.

Furthermore, this research experience has also convinced the designer of the personal and collective value of operating research through design. Thus, designing is not just a process aimed at developing end products and designs but also as a valid process for assisting and developing useful data that has contributed to the progress of the research (as discussed in chapter 5).

The understanding gained from this research experience, has also introduced the designer to relevant research concepts used in social research, especially the methods and analytical techniques used in qualitative research. This knowledge has been valuable in explaining in detail the data gained from design activities.

This research experience and the design work produced from this investigation has made me as a designer become more responsive to organising a systematic design research process. This required a blending of creative knowledge of design with interactive social engagement skills (Chapter 3), and the developing of appropriate analysis techniques (Chapter 4) towards producing a relevant investigative 'design research' system to enabled the designer to response to the needs of users experiencing cultural migration.

6.3 Future Research

It is recommended that future work should be carried out with the aim of making further improvements to the methods, especially to discover in detail about the designing aspects for this research including improving the visualisation formats and designing criteria (5.2.1) and to improve interaction techniques between designer and stakeholders (5.2.2).

Future work will explore the use of designing in such research and also the ways that designers may use social research methods to support their practice (5.2.1). It will look for improvements in these methods; for example, by the designer/researcher spending more time in the community to be studied (5.2.2), before the formal stages of the research, and also exploring different visualisation formats and design presentation techniques (5.2.1). This will enable them to be more relevant and appropriate to the environment of the local settings where the research is being conducted. This would involve considerations of the local culture and environmental settings of the research (5.2.2).

My plans for future research include specific, short term projects in diverse areas such as exploring users' responses to speculative designing activities (as discussed in Chapter 5, section 5.2 and in Bowen 2007, 2008), and different design presentation formats to be explored in both individual research projects and through design education projects supervised by the author.

Future work will focus on exploring the use of designing in such research, and not on the way the designer might use social research methods to support their practice. It will look for improvements in these methods, such as those to be used by

the design researcher. This will also explore potential areas of designing in research and social engagement techniques which can improve designer engagement in research.

This investigative model could also be used with more specific users, taking into account their social classes, ethnic groups, accommodation type and surroundings. This could trigger the generation of more funding from local government bodies which could benefit by providing useful guidelines or developing standards for manufacturers, design consultants and local authority who are engaged to facilitate product development and authorised to make improvements in local communities.

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Sheffield Hallam University, Psalter Lane Campus, Sheffield S11 8UZ.
Telephone 0114 225 2738 | Fax 0114 225 2603

I would like to Thank you for your interest to work with me on my Research project at Sheffield Hallam University.

There are some questions that you might have in mind to find out about me and my research.

Who Am I?

I'm a product planner and a PhD student at Sheffield Hallam University investigating how designers can have better understanding of cultural influences on the product they designed. In my research I will focus on the tools people used in cooking.

What am I doing?

I'm conducting an investigation to understand this scenario.

How are you involved?

I would like to interview you, with a small group and other people to understand your experience of using different tools or equipments in your cooking operation.

You don't need to be an expert on domestic design, just be willing to share your opinions in a friendly, informal environment.

How will the voice recordings and product Images be used?

The voice recording and images will form part of the results I will analyze in my research. They will NOT be distributed or broadcast outside the University without your permission.

Who will take part in the interviews?

They will be between two or three people in each interview including you and one interviewer (me).

How will the results be used?

This interview will help me to develop the methods for my research as well as my understanding from your experience.
The results may lead to new ideas for how product planner work and this could influence product design teaching in United Kingdom and South Asia.

What about Confidentially?

We will not use your real name and your identity or any other identifying characteristics in any published results or discussion of the pilot study.

Can I withdraw from the pilot study?

You can choose NOT to answer any question or withdraw from the research at anytime. Although I would ask that you try to give 3 days noticed if you do not wish to attend a interview.

What if I have some more questions?

Please contact me or my supervisor using the details below.

Do I need to do anything for the interview?

No

Please answer the following questions by circling your responses:

Have you read and understood the information sheet about this study?	YES	NO
Have you been able to ask questions about this study?	YES	NO
Have you received enough information about this study?	YES	NO
Do you understand that you are free to withdraw from this study?		
• At any time?	YES	NO
• Without giving a reason for your withdrawal?	YES	NO
Your responses will be anonymised before they are analysed.	YES	NO
Do you give permission for members of the research team to have access to your anonymised responses?	YES	NO
Do you agree to take part in this study?	YES	NO

Your signature will certify that you have voluntarily decided to take part in this research study having read and understood the information on the consent form. It will also certify that you have had adequate opportunity to discuss the study with an investigator and that all questions have been answered to your satisfaction.

Signature of participant: Date:

Name (block letters):

Signature of investigator: Date: 6 March 2008

Please keep your copy of the consent form and the information sheet together.

My Contacts:

Rizal Rahman
Art and Design PhD Research Student,
Sheffield Hallam University,
Psalter Lane Campus,
Psalter Lane,
Sheffield S11 8UZ,
United Kingdom.
Mobile: 07 894 99 2410 (UK); 019 431 3380 (Malaysia)
Email: rizalrahman17@gmail.com; or rizalrahman@putra.upm.edu.my

My Research Supervisor Contacts:

Professor Chris Rust
Tel: 01142252738 Fax: 01142252603
Email : c.rust@shu.ac.uk

APPENDIX B -

INVITATION LETTERS FOR INTERVIEWS AND WORKSHOPS

Rizal Rahman
PhD Research Student (2nd year)
C3Ri Design Research Centre,
Sheffield Hallam University,
S11 8UZ,
Sheffield, United Kingdom.
(+447521 318418/ **Tel : 0194313380**)

16 March 2008

To Whom It May Concern

Dear Sir/Madame

Candidates to assist my research fieldwork (Interview)

I am a Malaysian student doing PhD in the Sheffield Hallam University, United Kingdom. I am now in my 2nd year of studies and will be coming back to Malaysia for my data collection work. I would like to have you to participate in my 'Expert Interview' which will be conducted in any appropriate area near you.

This interview will be conducted either in English language or Malaysian language which ever convenience to you. You will be required to share your view about cultural migration, product transformation and kitchen tools as well as your experience. I will also ask you about your expectations on the tools people normally used in their kitchen in their cultural migration experience.

This interview will only take around 40 minutes and will involved:

1) Informal dialogues about issues mentioned above
2) Feedback and discussion on images of products/tools I which I will show to you from my slides and handouts.

Your involvement and assistance for this activities is highly appreciated.

Yours Truly,

Rizal Rahman
PhD Research Student (2nd year)
C3Ri Design Research Centre,
Sheffield Hallam University,
S11 8UZ,
Sheffield, United Kingdom.
(+447521 318418/ **Tel : 0194313380**)

16 March 2008

To Whom It May Concern

Dear Sir/Madame

Looking for candidates to assist Design Workshop

I am a Malaysian student doing PhD in the Sheffield Hallam University, United Kingdom. I am now in my 2nd year of studies and will be coming back to Malaysia for my data collection work. I would like to have students or ex students from your institutions to participate in my 'Design Workshop' which will be conducted in any appropriate area in your institution.

This workshop will be conducted in Malaysian language and will require them to share their view about their cultural migration experience as well as products they used in their kitchen. It will involved some parts of designing (or assist by design work) in sharing their experience or expectations on the tools they normally used in their kitchen.

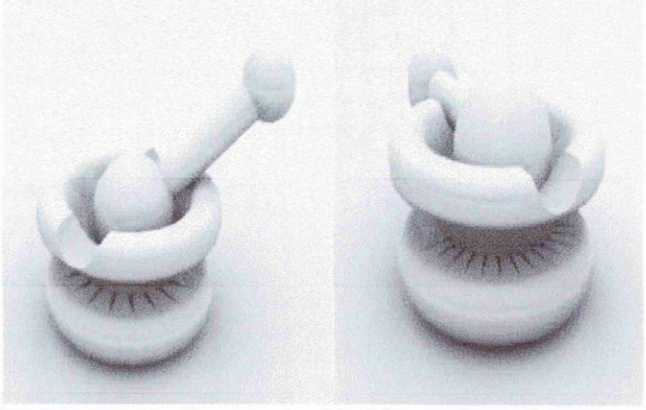
The candidate should have:

3) some knowledge about tools in the kitchen (traditional or modern tools)
4) experiencing a cultural migration – coming from traditional rural background of lifestyle to live in an industrial urban environment (i.e coming to study in your institution)

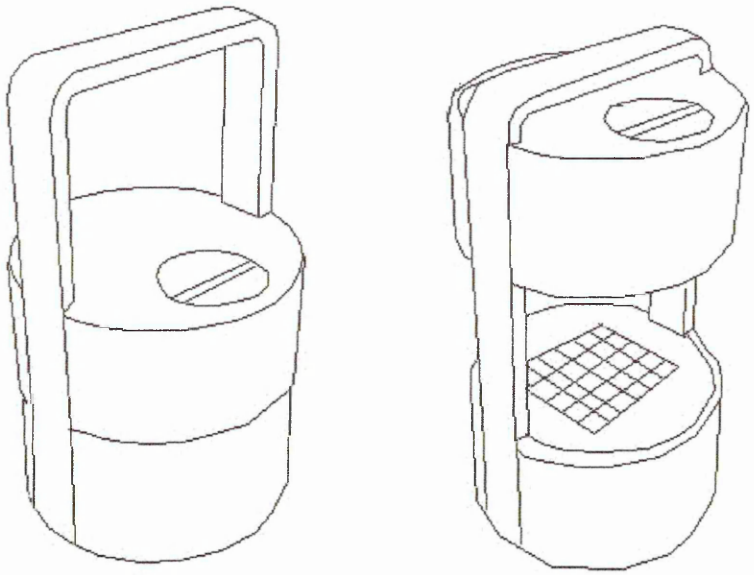
Your assistance in suggesting appropriate candidates for this workshop is highly appreciated.

Yours Truly,

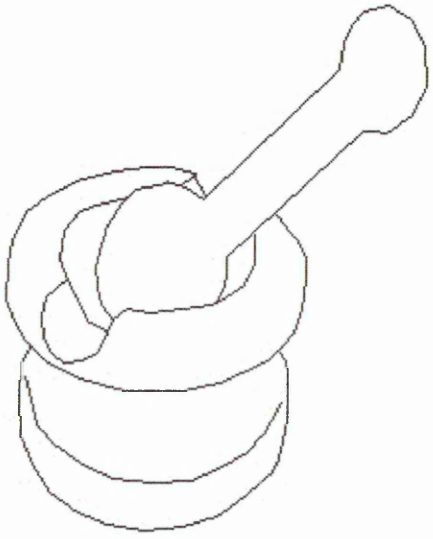
Design A1 (Photo Real – Presented in Workshop 01 and to Expert Interviews and E01)



Design A1 (Photo Real format – Presented in Workshop 01 and to Expert Interviews and E01)

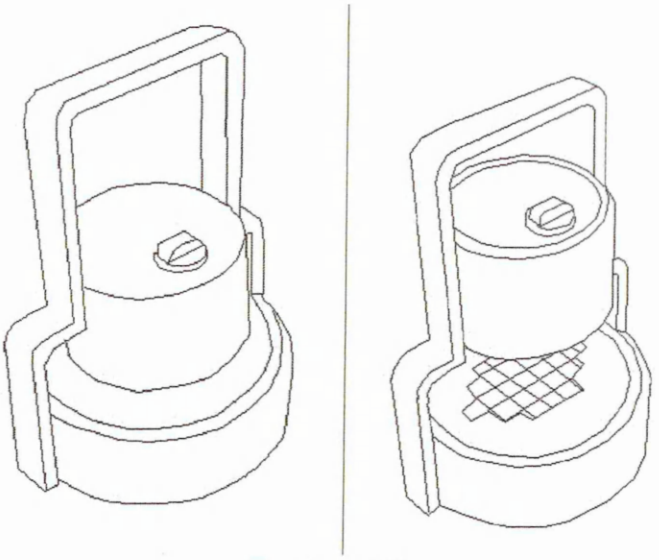


Design A1

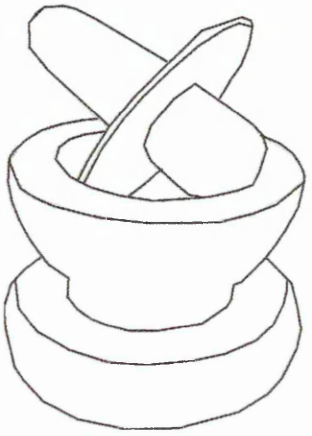


Design B1

Design A1 and B1 (Outline freeform presentation format) as were presented in Workshop 02 and Workshop 03, and also in Expert Interviews with E02, 03, E04, E05, E06, E07, E08, E09. This designs were also presented to HE01, HE02, HE03, HE04, HE05, HE06, HE07, HE08, HE09 and HE10.

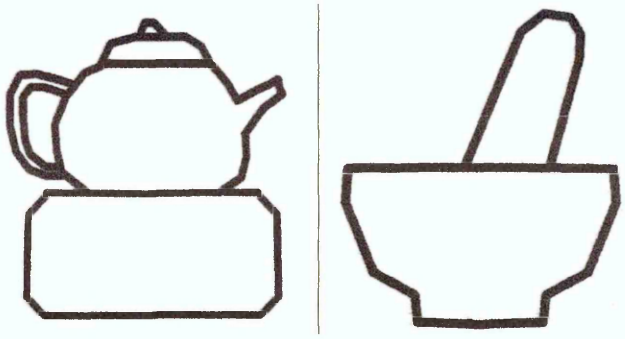


Design A2



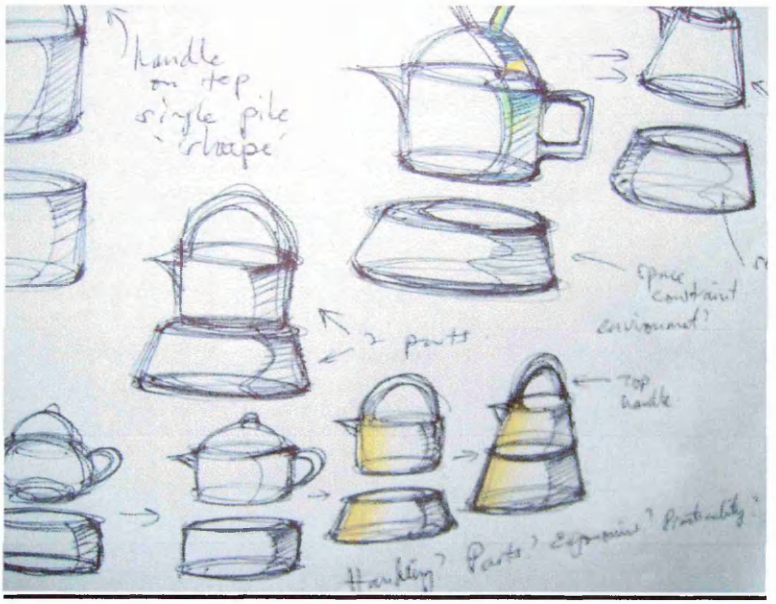
Design B2

Design A2 and B2 as were presented in Workshop 04, and also in Expert Interview with E10.

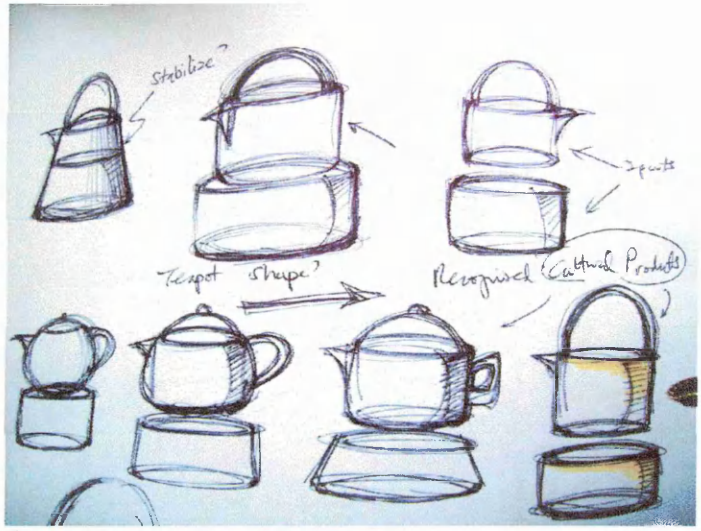


Design A **and** **Design B**

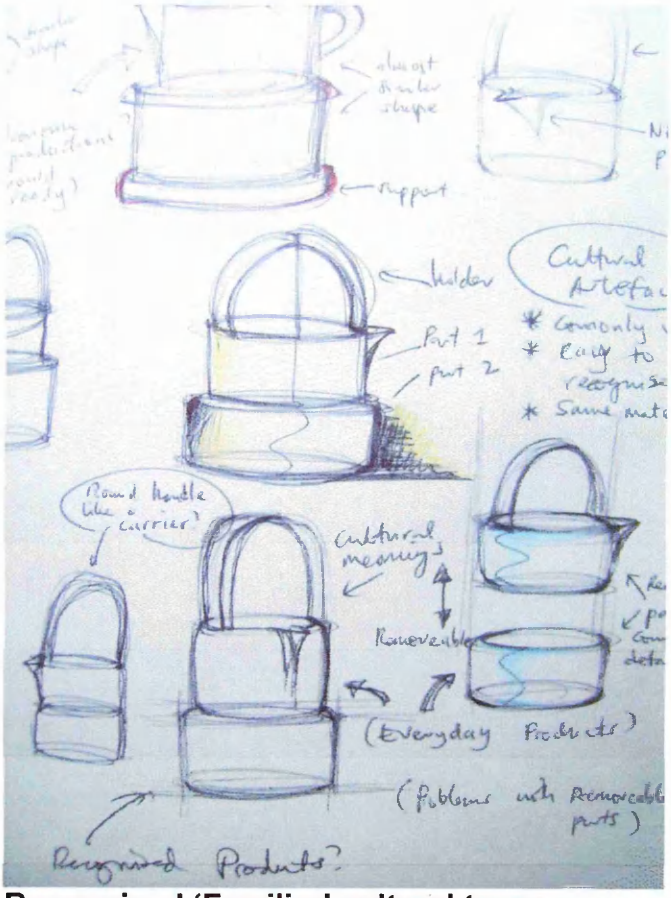
Design A and Design B as were presented to participants in the workshop to assist them in stage 02 (developing their expectations)



Ergonomics --Handles



'Familiar' cultural types



Recognised 'Familiar' cultural types

(E 01) ZulJa Malaysia Design Council

(Briefing about my research and introduce myself)

Z : It seems like we have almost all the facilities here in the city. But my mother stills wanted to go back living in a village (referring to his mother short visit at his apartment house)

R : Is it the environment or the tools or equipments in your house?

Z : She always pointed to the environment in the village she mentioned about animals in her farm but I think its just the excuses.. Sometimes when one has spend too long in a certain place, it' would be difficult to adapt new things and environment. For example, senior designers (like Tamyez or Omar/ dean from famous design school in this country). They experience design differently than us or even new generation of designers, compare to what is available in technology. There was less technology to support design processes in the past compare to what young designers have today, but somehow they still a great designers and teachers

R : don't you think that the senior generation have less tendency to adopt with technology? When they design something…or say like you travel abroad, and buy hi tech blender for your mother in the village, don't you think she will use that product?

Z : I think she will use the technology as in that new blender but not in her daily cooking processes. But of course she will appreciate that gift.

R : so she is not going to use that as other traditional tools?

Z : (laughing) These people (in the village) have different perception. She would feel more satisfied in using traditional tools (for example granite mortar and pestle, coconut grinder, etc.) to them, traditional tools would make the foodstuff taste better and healthy. Like us, as living in city life, its totally different. Life to them is simple, they go to sleep as early as 9pm but not for me.

R : don't you think if you stay long enough in the village, you might adapt the same lifestyle?

Z : Maybe but I will feel like my life is going backward. For me, its like a waste, in the city, you can do lots of things. Time is most important to me.

R : That's in the village but what if you are in advance city. Would you adapt their

lifestyle or reject it as in the village?

Z : Maybe. Like my wife used to study in Japan and we have been living there for nearly 5 years. I feel different in term of how people make used of time they have.

R : can you give example of product? Did you still try to use Malaysian traditional tools and product or do you try to adapt with the Japanese?

Z : In term of product use, I still use whatever available because of not much in choice like living here in Malaysia, and I am open to adapt any new things as with the Japanese product ,for me its OK maybe because of my age but for my parents, I would say it's a bit more difficult.

Z : the process of adaptation could be a little bit easier for me as I have been travel abroad a lot due to my job duties but for people who's isolated and stay in one place for extensive time, it could be difficult. It would be like a culture shock for them for instant. Just like Malaysian students studying abroad. They might end up adapting all the negatives culture(s) from abroad if they are not ready. But to me, its still depends on individual. The choice is really up to them to decide.

R : Now, lets talk about traditional tools that carries strong cultural elements. Don't you think that the new generation is loosing all this product?

Z : Maybe our future generation will not knows about product that we still appreciate today as they might not seen the product at all or even knowing the processes involved. (like in a case of traditional food processing) For example now, we have a lots of instant ingredients that represent ingredients for traditional foodstuff. You can never seen a traditional coconut milk processor in your house nowadays. You might only see it in a certain shops, like in a small town.

R : but there are also product that is not changing at all…

Z : That's culture. For example, a traditional mortar and pestle. Its seems like that product is too important for them. Most houses in the village have this product or even in the city. We can never accept anything else like that if are made in a different material. For instant, wood mortar and pestle. It's a No for them.

R : I have noticed that different material for that product required different use.

Z : yes, but for them its more like how they feelings about that product. They can shift to a blender but the feelings of satisfaction will not be there.

R : what if I design an improved version (new design or material)

Don't you think I can market that product?

Z : It still depends on the market segment. If you intend to sell that product in a village, I don't think it will work.
Granite mortar and pestle is long lasting product, easy to maintain, strong material, and are difficult to breaks even if you drop it.
This product are normally used in a village house which have a spacious environment. Houses in the city of course, have different space constraint. In a village, we normally live in large compound and houses are not too close to each other but still we can hear our neighbours' voices if they shout. However, in the city, people live in a compact houses, flats and apartments but these product could still be in demands especially when the occupier is among senior citizens. Many young couples have their parents living with them in the city nowadays.

R : some points there, village houses, city environment and users lifestyle.

Z : I have my mother inlaw living with me for the past 3 months but now she is back in her village. She used to wake up early as she slept early, but I cant never do that, I sleep late. So it's a different time management, I guess.

R : different patterns of lifestyle, different products maybe…

Z : culture(s) in a village is different. Sometimes you can hear people singing in the kitchen, for example young girl. That's normal thing to do. But not if you are in the flat. Some products produce different cultural meanings and response different values to the environment. In a village for example, you can hear the spanking sounds due to the use of granite mortar and pestle and it produce a harmonious sounds for your neighbourhood but it's another way around if you live in the city, like in apartments or flat houses. It creates some sort like a communications tools (the spanking sounds from the mortar and pestle) for your neighbour to inform then that you are cooking. Its generates community values and bring people together. Like in the city, it could become an irritating noise, you don't want to hear that. People communicate differently in the city. In most situations, you don't even know your next door neighbour.

R : different communicative values.

Z : That product has its own values to the people, that's why they love it and are difficult to replace it with any other modern appliances. But in the city, housewives just use whatever that could save their time. Everything are instant.(laughing)

R : How do you see the changing patterns? The life I mean…

Z : moving from rural to urban or another way around you mean. The "turnover point" will happens when you have established your career financially. This normally happen after your retirement period. You will need a place of peace and quiet. Better place and environment. Just like in a textile and fashion design trend. We will always go back to the design from the past in this design cycle. It's like going into a circle.

R : during that turnover point, as going back to live in a basic environment, don't you think they will use the traditional tools or they will bring their modern tools?

Z : still depends on the individual. I am sure that people with high level of status, would live their life in a modern ways, even if they decided to live in a village again. Like in some cases, a pensioner would go back to live in a big house in the village after their retirement..

R : would it be like going into simple life, using only the basic tools…nature?

Z : like in my uncle case. He retired as a government officer. He used to live in JB (city in south near Singapore) but now he is enjoying his life as a farmer but in a modern ways. Good quality house in a farm. He still benefits his life but in different environment.

R : I have done some initial work in the UK and find out that these adaptations pattern are different among students who realised that their living abroad is only temporarily compared to what people experience here in Malaysia.

Z : But I am sure within that experience, they still have to adapt new products in their new environment. For example, I don't think they can find a traditional food cover, like the one we used here in Malaysia.

R : yes, products changed as they moved places. They used lots of food film and its rare to see that item here in Malaysia, I mean as in everyday use.

Z : Certainly, for example when I was a boy, we used to have a wardrobe for food but we don't see that anymore today. If they still made those, I would really love to have those again in my house.

R : but it would be in different use I guess?

Z : It could work but yeaa of course in different contexts. Maybe as a decorative item as it inspired nostalgic elements in me.

Z : we lost it when the fridges have been introduced back in the 60s I guess.

Z : in a case of food cover, I am still using it as in our tradition, we have to show some respect on things we want to eat, so foods need to be covered while display.

R : what is your opinion on certain cultural products among the Malay? For example hand washing pot. Has there
been any changes? Was it designed by a designer in the past? Or do you think people just always forget about it? They find some difficulties in using the product but they just ignore it.

Z : I don't know much about it either. I only knows that this sort of products can be easily found in Thailand. I think it's just minor (not interested to know who and how to improve the existing product like this one)

R : you are saying that we just use what is available and leave the product improvement for the manufacturer to decide? What you think there is an effort to improve this sort of design?

Z : Yes, I think it still can be improved but no one cares. I agreed that this product is still dominant in our culture(s). its still being in use whether in rural area or even in the city.

R : don't you think we could loose this washing pot as in our daily practise in the future?

Z : I don't think so. As long as the Malay are still eating by hands, it will remain there as cultural product.

R : Is it the same as the granite mortar and pestle?

Z : I think it would be slightly different as I am looking at these products as in a different categories of use. You can improve or replace the hand washing pot but not with the granite mortar and pestle. I don't think Malay people will accept the changes on the mortar and pestle. It has been there as a traditional tools, more than I can imagine. It also involved with cooking skills and the way we prepare food. Therefore, I feels that it is difficult to be replace or improved as most of the skilled cook or chef are from senior generations. Its not easy to change the way they do things.

As for the washing pot, it does not involved food preparation processes. It is just a pot or more like a display product. Its more on the issue of usability and ergonomics. Practicality. I noticed that there has been some revolution on this product but not a major improvement but I agreed that these product also travel through time with our cultural practices, as here to support the actions of eating

by hands. I think it was first developed by people in Thailand as we shared similarities with them.

R : what about its material improvement (the hand washing pot)?

Z : if it's in a formal ceremonies, for example a prestigious wedding, our emotion would preferred the one made by aluminium. It would reflects to its environment as everything (almost all the product in the wedding) is in sparkling modes. The one that is made from plastic which looks chaper, are normally used in a wedding in the village. Although appear in almost same shape (the washing pot), it does have its own categories of users and reflects to a different social class members.

R : You did mentioned earlier that in some cases, users have to do the modifications on the product to be compatible with their practical needs. Don't you think the manufacturers or the designers have not done enough for the products? Can it be in much simpler form rather than the shape of a pot?

Z : These traditional products has its own influence from the culture that we live in. it does show some relation to the environment, as in this case, cultural events. So it has been designed in that material for certain reasons. If its been developed to looks like a too modern or high tech kind of product, I don't think people would want to use it to wash their hands. It has been framed in their mind that this product would do these and not that. So if its too futuristic, I don't think the people will be ready to accept it.

Z : If you noticed, the carrier for foodstuff during the cultural events, are still been made from cooper and not plastic. When we see those items, we already know what its functions and when it will be used. It reflects back to the culture. Somethings that people are used to.

APPENDIX F :

Workshop 04 - Community College

(This participatory design workshop was taken place at Community College and involved 6 students. This workshop aims to gain further understanding of product transformation in relation to social change, and what designers could contribute, in this case, future designers.) This college of community is focussing to improve knowledge and skills among student from rural area, to be competence with the industrial demands.

Date : 03/06/08. (Tuesday)
Location : Community College, Penang.

Participants :

- **(Code :** HR/ **W19)** Harris, 21, Male, from northern part of the country. Used to live in the rural area before coming to do his diploma here in this city. Experience of living with his family but now living in a share house with his course mates.

- **(Code :** RZ/**W20)** Razali, 20, male. Used to live in a big city, but then his family migrated to live in a small town. Now he is living in a share house with his friends to finish his course before return to live with his family again in the near future.

- **(Code :** L/**W21)** Leha, 21, female. Never been away from her family. But now moving to live with friends in a share flat house and travels to college by bus.

- **(Code :** ZT/**W22)** Zetty, 20, female, used to live with her family and near to her grandmother and never been away from them. But recently moved to live with her friends to get near to the college. Experiencing of living independently and learns lots of new things in life, although still miss her family very much.

  (Code : J/**W23)** Jai, male, 20, coming from rural area (expressively shown through his strong local rural dialect) but now experiencing living in the city and in a share house with friends.

- **(Code :** SY/**W24)** Syakilla, 21. female, still live with her family nearby and drive to this college daily. She is willing to join and share her views although she has not experience moving house or living in different geographical environment.

(W19/HRiss; W20/RZali; W21/L; W22/ZTetty; W23/Jai, W24/SY)

R : I am currently working on a research project to understand tools used in the kitchen by users who is not living static and moving from one place to another and also between social classes. (briefly explain about the enquiries but deliberately trying to make participant as comfort as possible and to make them feel free)
I am putting this paper (in one round table) here so that you all share your views and share ideas (listing on kitchen tools identified)

(After 15 minutes, looking at the listings (items from their favourite list of kitchen tools))
Does anybody still sit down while working in the kitchen, I mean not standing or not working near the kitchen tops. Traditionally squatting down on the floor? (referring at Harris's list on plastic bench normally used in the kitchen of traditional houses or some modern kitchen)

W19 : I do.

R : are you always like that? Sitting all the time? How do you get close to your stove?

W20 : I those old days, or even in some kitchen in the rural area, like in the village, people still squad or sitting on the floor while doing all the cuttings and preparing for ingredients. And some still used gasoline stove and it's lower down on the floor. We don't really have the kitchen cabinet in village houses.

W21 : squatting or sitting down to prepare ingredients, especially to process the coconut milk. Doesn't matter if you are using modern machine or the traditional one, you still be sitting down.

R : OK, but what you think of modern blenders?

W21 : I can't cook anything without it.

R : say like in those traditional houses, the use of wooden stove?

W21 : taste better but takes ages.

R : How about this kitchen scissors?

W21 : I prefer a knife.

W22 : I prefer a knife too as I used to follow what my granny used. I was brought up with her so what is best for her seems to be good for me.

R : why not trying to used the specific tools like this kitchen scissors?

W21 : we could but might takes a while to familiarise with it. People just do not wants to spend time to adapt new things unless there is no other choice.

W20 : yes, I think it can be a useful tool to remove fish scales. I used it before.

R : why you dislike the traditional mortar and pestle?

W21 : its annoying, I prefer a blender for a replacement.

R : ok but do you have this mortar and pestle in your current house?

W21 : Yes, hmm but only used it for making traditional dishes. Still had it although seldom use it.

R : this is interesting, why you don't like that wooden coconut scraper?

W21 : it is not comfortable and requires and use lots of energy if using it. it's just not for me.

R : but you do like that small bench (either its rattan or new improved material as made from plastic)

W21 : yes, that one is important for me. As my nature of working in the kitchen..

W22 : its best (the small bench) to be used while processing the fish, removing the scales.

W20 : But these days, people does that near their kitchen sink so need not to sitting down.

W19 : But in most cultural event, for example in the village where I came from, people would sit down in a group while processing the food for the events. That's when this kind of product really works and become essential I should say. It depends on the functions. Like in the villages, most of the kitchen are spacious and you can choose where you want to work. Some people, like my mother, likes to do the cutting near her kitchen door facing the outside space (normally facing the next door house), as she can have a chat with her neighbour while working with the ingredients. (like cutting and chopping stuff)

R : hold on, this is interesting. I need to note this.

What do you think can be best to replace the wooden coconut scraper?

W21 : we have that modern machine, electric coconut scraper.

R : at home you mean?

W22 : mostly are in shops nowadays.

W23 : I have that machine at home. We scraped our own coconut.

W21 : but most people like here buy the processed coconut milk from shops these days.

R : I am giving you example of how people renovate their kitchen from a basic design into more westernise kitchen design, especially in this modern city life. As I noticed and experienced, people will normally create two separate parts of the kitchen, as dry and wet kitchen but in real practise, they will only used the wet kitchen. In traditional design, we used to have racks or kitchen sideboards on wall, open space floor to throw away waste, the dish wardrobes, and so on. The system works very well with the lifestyle but it doesn't work like that anymore.

W22 : I still have those open space kitchen floor in my grandmother's house. It's being used to throw waste, such as rice so that it can be used to feed chickens under the house. I think it's practical for a traditional house.

W20 : Yes, I agree but these days, living in a city demands different lifestyle, space and time. Most of houses in the city do not have spacious space like those in the village and most of us do not have animals from farm. (laughing) But I believe that the design of the space and system influence to the lifestyle and needs of the users.

W23 : Like people in the rural area, do not stored foods in large quantity as we do in the city. They do not have big size fridges like people in the city. So they eat mostly food that are being preserved, for example dried prawns, salted fish, and so on. They can get fresh meat or chicken just from their backyard or farm. So the needs of the people and sources of ingredients are not the same.

W19 : another thing is in the village, we can't find any hypermarkets or shops that sells frozen foods.

W23 : Mostly are only wooden grocery shops and only sell basic items.

R : I have just read in the news that hypermarkets has influence the lifestyle of the people.

R : Looking at your list, SY, I have noticed that you like most of the modern products and rejected traditional tools. Tell me why traditional tools are not compatible with your practices? How about this, the granite roller? What you don't like it?

W24 : it takes longer time and use lots of energy. I prefer to use blender and any other food choppers.

R : OK but what about this? Scraper for coconut, ginger and pumpkins? I never seen those. Why they are unwanted items to you?

W20 : I think those items can be replace with just knife. I feel comfort of just using knife. Furthermore, those products could easily injured our hands as they are more designed for functions and not for safety.

W23 : Maybe because you seldom used them, RZ. That's why it seems like it is not safe for you.

R : this is the first time people mentioned about the use of scraper in my interview. Its quite interesting. OK, but what about this apron as your dislike products? I thought its common to have this in the kitchen, especially living in urban area.

W23 : to me, this thing is uncomfortable. When we cook, we don't wear nice clothes so for me its ok to get dirty a bit. I agreed as this thing to only be used in the restaurants or hotels' kitchen but not at home as we have kitchen towels and other dirty clothes.

W20 : It is different with me as I think apron is a practical things. It build your confident in cooking as well as keeping your shirt cleans all the times.

W24 : yes, as we don't change our clothes every time we cooks.

W21 : yes, I have those at home. I enjoy wearing them. I think it is practical.

R : OK, now we are moving into a different stage of the session. I am giving you opportunity to create your own ideas of changing existing kitchen tools. Maybe you have some ideas or improve version of the existing tools. I am giving you 2 example of kitchen our common kitchen tools and need you to developed your own ideas as improving the existing to be compatible with your own lifestyle and environment. Use your imagination as a designer as you might have different perspective..

You can create whatever you like, it can be in a form of a diagram, labelling or even a simple sketches.

(after 15 to 20 minutes, the discussion continues)

W23 : My design is something like this (refer to SW23). When we lift it up, it wont fall over. We just turn this part a bit to wash our hands. The waste will drop down and can never be seen. So it should look better using this as we cant see the dirt or any unwanted disgusting waste.

R : does it have big size of holes at the bottom part as to allow waste to drop?

W23 : the waste will be at the bottom part and could not be seen at the surface of the bottom part. That's the whole idea. Its only have one single part as a whole and much easier to carry and practical to be mobile.

R : how about the handling? Looks like its got no handle.

W23 : I only designed it as in one component. Just push and turn to use it.

R : OK, how about this? It does have the similarities with my own design (which I will show you later; B1) as users hands will be in between the two components to use it.

W20 : press here, the clean water will comes out.

R : how about mobility?

W20 : its not bulky so makes easy to carry.

R : OK, how about you W19?

W19 : I have designed 2 types as in a same shape (refer to SW19). One can be used to wash hands, while the other can be used as a kettle. We press the nut here, and the water will comes out. Its 2 in one. Multi functions.

R : the material has to be compatible with its other use as a kettle. You have given a different function to this design but remain its original shape and size.

W19 : its more like 2 in one product.

R : maybe you have been influence by its shape of a tea pot to create it as a kettle.

W19 : yes, maybe but I have also designed the handle as in shape of a hand.

R : what's it's like?

W19 : it has a holes for food waste when washing hands.

R : One think you might wants to be aware is always try to design something simple and easy to use. Try not to make it more complicated as it already is. And if it is too simple, try to make it more practical compare to the existing one, if you can.

R : ok let's see this one. How this work, W24?

W24 : main features is the handle react as a hose for clean water for washing (refer to SW24).

R : hmm…that's interesting.

W24 : the overflow waste will drop out from here.

R : This is quite interesting and work the other way around as the clean water will be at the bottom part. But then needs a different system to bring the water to the top again. Maybe a greater air pressure to enable the water to travel up to the top. But we will not touch much on the system and technical aspect in this session.

R : OK W22. This one looks more like an "Alken" products to me (Alken is a famous water filter products in Malaysia made by the Americans)

W22 : there is a water in here, all the waste will be bring down to the box (refer to SW22).

R : this have wheels? does users need to bend down to use it?

W21 : its actually on the dinning table. Its only move or push on the table (refer SW21).

W23 : Looks like it is more focusing for a cultural events and not for home use as dinning table at home are mostly in small sizes. (referring to SW21 design)

R : **ok, I am showing you my design now. I was more focusing on the handle (mobility), just like W20 design and miss some point on the usability. So now, I have improve the freedom on the movement of hands while using this products and allow space between components for hands. I have redesigned the handle indeed to make it provide more space and freedom for hands in this design.(showing design of A1 and A2)**
(participants show no comments in the beginning)

W20 : I think this is more like a different version of hand washing pot, it does not looks like a hand washing pot to me (**referring to A1**). People might not know the exact function of it at the first glance.

W23 : but if it is being position in washing pot original position, people might started to questions about the products or they might slowly learn how to use it.

W19 : to fills in water could be a bit confusing and not convenient. Doesn't it make it a bit difficult as it attached with handle?

W20 : Maybe the components can be made to rotate easily to fills in water and to remove water as well. Like the A0 design (the original pot), it is much easier to refill.

R : although the shape are different, the volume of water on top part are equivalence to accommodate the bottom part.

W20 : In term of storage, I think design A1 and A2 are more practical than the A0. It can be easily organized without losing any small parts as being design compacted into one whole components.

W20 : maybe the handle can be flip to different directions during fillings on clean water or parts can be rotate 360 when are not locked, to make easy maintenance.

W23 : I think this A2 design still serve the same purpose with the A0 as can also be used to stored foods and rice, as in its multi use function.

W20 : Maybe the bottom components can be designed a bit curve surface or provide biddings or slightly higher edge so the water going down wont split around it. In term of size, I think it can be designed slightly smaller to avoid the bulky looks. And on colour, I think that it should retain the same colour as the existing one.

W22 : yes, maybe if the colour reflected to those from existing hand washing pot then people will recognised it as having the same functions and use. It could takes a while to adapt this product but I am sure people will get use to it if it work better than the previous one. I find adaptation processes are really depending on the individuals lifestyle background. For myself, I can see some of the products in my friends house has the similarities from the one in my parents house but still struggling to adapt with it as being use in a different environment, in term of kitchen space, design, layout of furniture and so on.

W24 : elderly people might struggle with adaptation and accepting new products but I think the new generation like us, would wanted to try something new if were given chance. New products will always be first to be introduced in the urban area anyway. The market segments are different and the users mentalities are also varies in social classes.

W19 : Personally, I think this conceptual design could be recognised easily as it still reflects to some products that we already immerse with. For example, this design drew some similarities with our traditional mobile food pot. So I don't think that this shape is totally alien to this culture(s). It might do with the way it functions but not its shape and design. It could accelerate the adaptation process if it is being produced in the same colour and material with those existing one.

W23 : To a certain extend, I think sometimes it is a big challenge to change people perceptions and practices on certain products, especially when the products has already established itself as one mandatory product in a cultural events or ceremonies. Its been there for ages and used by different generations. It has already embodied in that culture and practices. Any new products would introduced a cultural conflict and reduce the values of this cultural events. It's already becoming like a iconic item for the event. So that's why I think that some products still remain as the way it is, even though many improvements can still be develop upon it.

R : OK. How about this 2nd (B2) conceptual design? (Pointing and explaining the speculative design of mortar and pestle – in a form of **rough prototype B2**)

W20 : maybe there is a cover which can be adjusted and only cover half of the surface part?

W23 : what if its being cover with a clear plastic part (design B2)?

W21 : maybe the top cover part is only half circle and can be adjusted accordingly. May be this could only form as optional accessories to this product.

W23 : That's could solve current problems in our urban environment (having adds on components to support the bottom part). I just don't understand that people still wanted to have this product while living in urban environment. They just can't get rid of these traditional elements. They still eat with a hand at home, that's for sure although having spoon and forks placed in their kitchen.

W20 : to me this product is difficult to be change completely as seems not compatible with the new environment but some adds on accessories can assist to make this product to be more reliable with the current environment.

W21 : I noticed people used spoon and forks while enjoying western food but not the traditional dishes. They still used hands. Then they need those products (pointing at hand washing pot)

W20 : Maybe it's the mentalities of the users and the environment that are not ready for the changes and improvement. We live in the city but still carries cultural elements from our ancestors and traditional society. I think your design could have some similarities with us in term of design criteria.

R : How about this design (showing B2)?

R : Let's relate this with W20 conceptual design.

W20 : I have a combination of material. The wall is made from wood while the bottom one is actually rubberized to reduce the knocking sounds when being in use. It's got like an almost closed rounded shape at the top to avoid splashes of ingredients into user's eyes or whatsoever. As blender a fully closed when in use so I was trying to adapt the blender's concept.

R : your ideas are more focussing to the practical use of the product.
OK let see W19 design? Your drawing is more like a cross section drawing but I still could understand it as being a designer myself. (His life background which was more exposed to city life has produce a better quality output/ design compare to other participants)

W19 : it used the spring concept. So when being press, it will always bounce back.

R : I think this is what you are trying to tell us. (editing W19's drawing and explained) I personally think that the height should be build shorter to avoid the high pressure bouncing and uneven control of the product when being in use. And will avoid the unnecessarily splashing of the ingredients. Your drawing is in cross section view required me to imagine more about this design and how it will be use.

Ok how about this one?

W23 : this is from a special kind of material, maybe wood that can absorb sounds.

R : it could be broken easily compare to the existing material, granite due to nature of use (in this culture). We have to consider on that too.

R : what about yours, W24?

W24 : this top cover is design mainly to reduce sounds and avoid splashes of Ingredients; anti sound and anti spill (refer to SW24(b)). The bottom part are rubberized material to support and react as a cover.

R : its a good concept but needs a bit of improvement in term of form and details function. OK. What about you W22?

W22 : I created the top part as a hamper as a surface cover to avoid spills and bottom part with rubber to reduce sounds (refer to SW22). It almost the same ideas like everyone else.

APPENDIX F:

HE 03 – Hanafi (traditional cookies chef)

(Briefing about my research and introducing myself)

R : I am not sure if the traditional methods of preparing these cakes would work better for you, as I noticed when frying a noodles using a charcoal stove would make the it taste better.

H : It's just the same as if I used a traditional cooper mould to make these cakes. It would definitely taste better and bring out the flavour and smells but for commercial production, I would prefer to use the modern appliances for some specific reasons.

R : Yes, I have seen those processes of using traditional tools when Indian people are frying noodles but not with these cakes production.

H : you will need to see the people who actually makes them (the raw ingredients). It might looks like an easy process to adapt though but when you are actually doing it, it would not be that easy. It is not as easy as it seen.

R : Did you produce the ingredients here or somewhere else? Where are you from anyway?

H : My home town is just a small village in the East coast of Malaysia. I have migrated here 6 years ago since studying at local university here in Penang and then married a local girl here. To me, the traditional cakes mould like the one made from cooper is much more better in term of its final texture, the time to heating up, and the output of the final product would be more details and superior, if to compare with this current mould that I used.

R : why people don't used the cooper mould anymore?

H : one reason is the cost factor, another is its weight. I have tried it myself, when I was back home (in my village). It used lots of energy and after few rounds of baking, I started to feel pain on my muscle. Another thing is those mould do not have handles. There's not even an edge on the mould which can be use to assist to removal of it from the baking oven. Its funny but that's the truth as you can see it here. (he's using engineering tools form his toolbox to bring out and push in the mould into the oven)
this is like a traditional Malay pancakes so its quite rare to find it "hot and ready" at this city so it's a good business opportunity for me.

R : I am focussing more on the tools people used in the kitchen but your experience

could be significant to my studies. I just attended a meeting interview at Science University recently.

H : owh, I used to study there before. I did my undergraduate there.

R : I need to snap images of your hands and the mould while operating if with that oven.

H : It would be erode soon, wear away gradually. I could need a longer part to react as an anti- heat holder.

R : This is a picture of Zahari, another expert cook for this kind of pancakes.

H : I knew him and we used to attend a same cooking course before. I also know that he is facing difficulties with his packaging. I think it's a hygienic issue. He should not used hands to handle the cakes for his packaging. That could be the cause. Like in my recipe, I add in more sugar to prolong the expired date of my cakes. Well, it could last up to another 2 days.

R : I am sure you are quite verse with this process, especially when handling the moulds and this baking machines.

H : the main problem here is the cooking dust that blend together every time I insert the moulds into the oven. I could have the system of trays and can be function like a drawers but we also have to consider the amount of heat here. These trays and its tracks could be erode in longer use. I have used these moulds for nearly 4 months now and soon I need to change into a new one. Maybe if the size is bigger, then it would be easier but then it could create another problem to fit into or with the trays.

R : your concept of producing these cakes is different than the one with Zahari's.

H : even with them, in mass productions, their mould is still the same as mine, the size has not change. It cant be change for some reason. As in most cases, these process require consistent heat control during baking hours. And it always been produced in the same process. As far as I know, it will never work any faster than what we have today.

R : what if the mould size is bigger, for instant. What will happens?

H : if its bigger in size (the cakes mould), then it would requires longer time to transfer it into each mould. It would not be as in its desired temperature. When its cold, it will be sticky and difficult to release from its mould after the baking process. However, if the mould is too small, it required a lots of movement (in and out) on the baking trays into the oven. This existing mould can be considered as most suitable size for this process. Unless if we can have a

standardize nozzle, which can produced a fixed size on amount of ingredients to be placed into each mould.

R : OK. It seems like a bit complicated. Where do you work before?

H : I used to do housekeeping at a hotel in Genting Highlands. This cooking skills and knowledge about traditional pancakes I gained from my mother inlaw.

To me, if there is a machine or a nozzle that only press once into the mould, like for example 12 moulds as in the same size, would make the processes much easier and quicker.

Even though there is a special machine, I am sure, people like me (small entrepreneur can afford all those facilities). It could cost me a fortune.

R : I thought you can seeks financial support from our local government?

H : Only in term of trainings and cooking skills including certain budget to buy machines but not in term of improving existing production difficulties. I have another oven at home (as I also produce these at home) and I have to do some modifications as to improve the usability and safety aspect of the productions.

R : it seems like its quite difficult to pull out and push in the mould. (Snap the images)

H : that's true, the temperature in the oven is more than 100degree.

R : why don't you use glove for cooking or baking?

H : it's not practical. Its too hot is here, my hands will be sweating and makes difficult to remove it as I also need to pour the mixed ingredients into the mould before baking it in this oven. I am doing this all by myself, as one man show.

R : What I have noticed, in most cases, the users will modified the system themselves. Don't you think it is going into that direction?

H : I have modified the trays, as to adds in roller. Roller which make easier to pull. I can only afford to produce one roller at this moment so I don't have to slot the mould with my hands into the hot oven. I only have to arrange the moulds on the tray and pour the ingredients into each moulds. Like now, here, I have to take out and insert each mould every time.

I think that could be the main reason why people are not interested to invest and operate this traditional cooking stuff. Not many turned this products into

commercialize. People would preferred to enjoy this product as home based productions for themselves. In the old days, these cakes are only made for own self and not for commercial purposes but there is still demands for this products here in the city. The market is always there but the tools and processes seems are not efficient and convenience for users like me or even the commercial food producer.

R : like in a case of hand washing pot as users have to somehow come out with their own ways to keep that product reliable as being also used in most of cultural events by the caterer.

H : maybe in the beginnings that product (hand washing pot) are only made for home use and not for commercial based. It has been designed only to be use for one family maybe. But as time progresses, this product seems to be dominant and last within the culture and lifestyle. It might have travel into a wider use and becoming part of the culture itself, a symbolic item to represent certain events, I guess.

R : interesting. Are you always here all the time? I mean in this shopping mall?

H : I travels and do not live near here, I am here all afternoon until evening.

R : you don't seems to speak in your own dialect (the east coast accent)?

H : I have been here long enough and mixed with local people. That's why I have not been able to practice my own dialect and perhaps losing it bit by bit (laughing)

R : for some people, they really depends on modern machine for producing traditional food stuff. They could do it traditionally, but could lose the production time and cost. (like a case of "satay")

H : Yes, I agree. Sometime a 5 hours work could takes up to 8 hours time if there is no appropriate machines and tools. Like me, I am still new in this field, and I am no expert to determined my cost and budget for bigger production house.

R : I can see that in commercial based production, these traditional foodstuff do required modern appliances and systems. But then, the quality and values would not be the same as it is being produced in traditional ways.

H : the cooking methods influence the quality of end products. Like in my case, I also noticed many others are also using this engineering tools to assist with this baking process, especially in handling these moulds into a hot oven. There's no any other way, as these moulds are designed without handle or any gripping points/edges. This is a safety and hygienic issues.

R : what is your comments about regarding the moulds? Its material..

H : this cooper mould can still be found in my place (my home town) as in the east coast, the cooper industry still exist compare to those around here. However, these days, they are using aluminium to replace cooper.

Inner part and texture is more smooth. Like this one, cast iron, its not smooth and very rough, maybe the material of the mould is not suitable

H : temperature if using this cooper mould can reach up to 230degree.

APPENDIX G -

SELECTED IMAGES FROM MAIN FIELDWORK
AND DESCRIPTIVE NOTES

APPENDIX G :

Example of Selected Images and its description from the Main field work

HE 01

Note: Problems in not having appropriate tools could led to ergonomics problems (eg. posture while working in this condition) and also hygienic, however, this image illustrate a collectivism values in preparing traditional food. This image also show that this process and productions of traditional food still remains to assist with high demands from modern 'cultural migration' lifestyle.

HE02

Note: The use of modern equipments does not necessarily lead to speed up the process in traditional food preparation. In this case, the oven needs to be modified to have a top and bottom flames for appropriate baking activity for the production of these specific traditional cookies.

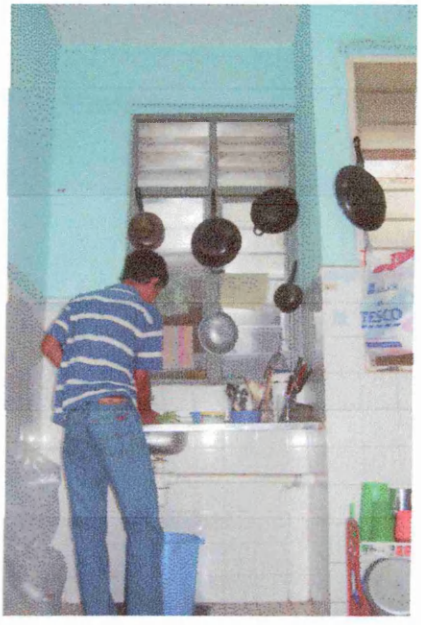
HE 03

Note: In using engineering tools to assist him to remove the traditional cookies moulds from the modern oven, he revealed that by using traditional tools with modern equipments could led to ergonomics, safety problems. He show the researcher his burn marks on his hand from this activities.

HE04

Note: Users (traditional expert cooks) explained that material play important role to sustain the good quality of traditional food for modern 'cultural migration' market. (i.e a plastic cookie mould which can be easily found in the market is not best replacement material to the production of good quality wood traditional cookies).

HE05



Note : Lack of proper storage and space for traditional cooking tools in urban kitchen.

HE06

Note : A traditional Rice Grinder migrated to become a decorative item in urban garden

APPENDIX H -

SELECTED IMAGES FROM INITIAL WORK
AND DESCRIPTIVE NOTES

APPENDIX H :

Initial Work (Example of Selected Images and its description notes from my initial work)

PR 01

Kitchen oil and stove cover – using European cooker, Malaysian use aluminium foil as a disposable layer to avoid oil splashing on walls due to their stir fry activities (traditional cultural practices)

PR 2

Hand Water Mixer – Malaysian eat with their hand (Traditional cultural Practices). This ideas converts cheap kitchen taps in a rented house to become a mixer. This product idea accommodated appropriate water temperature to assist them in washing their hands.

PR3

Traditional Mortar and Pestle does not change very much in cultural migration however users tended to add additional shock absorbing materials under the pestle to avoid damaged to their kitchen top in modern design house.

APPENDIX H

Field Note (March – June 2008)

APPENDIX H.1- Expert Interview

Participant	Occupation	Place	Date and Time	Note
E01	Design Manager	Design Council Office, Kuala Lumpur.	11.03.08 11am	• Easy access to participant as it developed from my personal contacts of being his junior when attending my first degree in ITM • Professional and warm welcome • Pointed me to some potential products and traditional cultural practices • Pointed me to some potential participants for my Home Interview • Giving some info to get into contacts with potential HE participants
E02	Celebrity Chef And Lecturer	Lecturer Room at University Technology Mara In Penang	19.03.08 2pm	• Contacted through a friend who also have connection with participant • Different views as he is expert in using kitchen tools (for being a chef and cooking teacher) • Social changes and lifestyle effected to tools • Product transformed in its function and use

E03	Chairman of Consumer Association In Malaysia	CAP (Consumer Association Of Penang)	27.03.08 3pm	• Friendly and show strong traditional values and being an environmentalist • Very particular to traditional values and against modern practise and 'Globalisation' of product •
E04	Designer and Lecturer	Deputy Dean Office, University Science Malaysia, Penang	31.03.08 1pm	• Discussed more on his experience in design education • Shared his view on how student from rural area started to change their designing perspective after 2 or 3 years being living in the urban – becoming more simple and global • Complicated design into simplicity
E05	Craft Institute Manager and Traditional Product Designer	Office Of Craft Institute Kedah Northern Region	13.04.08 2 pm	• Travelling experience • Traditional practices and global products (giving example of modern hotel's toilet) • Lifestyle changes • The treat for traditional products
E06	Fine Art Artist Ethnographer Investigating Malay Culture	Public Art Room Penang	21.04.08 11am	• She has experience living in Indonesia and pointed to some similarities of regional culture • Shared her experience investigating culture • Pointed to some example from her work and contact persons (i.e E10)

E07	Sociologist And Lecturer From University Science Malaysia	Lecturer Room University Science Malaysia	29.04.08 11 am	• Pointed to some traditional products and its origin • Traditional practices and changes in lifestyle and environment, space •
E08	Director Of Art Centre, Social Writer and Artist	Office Art Centre, University Science Malaysia	29.04.08 2 pm	• Pointed to some theoretical ideas about social change and products • Shared experience engaging with social scientist • Show contradiction to current art streams and young designer thinking • Showed interest to mystical ideologies and experiments
E09	Archaeologist, Anthropologist And Museum Director	Office Northern Museum, Merbok, Kedah.	04.05.08 11am	• discussed artefacts origin and early settlements • Have knowledge about historical and also economics • Interest to pointed to economically issues in its relation to changes in lifestyle and products people employed • Experienced cultural migration from rural to urban then back to rural •

E10	Anthropologist, Professor and Director of Malay Civilization Institute	Director Room Malay Civilization Institute, UKM Kuala Lumpur	23.06.08 4pm	• Giving good examples of how culture influence to space and environment (i.e in Malay Culture) • Facilitated me to sources related to Malay Culture • Shared his views on Malay Practices, customs

APPENDIX H.2 - Home Interview

Participant	Occupation	Location	Date And Time	Note
HE01	Expert Cook Of Traditional Food to Assist with Modern lifestyle	Home Back yard kitchen area/ open space kitchen), Penang	17.03.08 10am	• Contacted from snow ball approach and information gained from locals contacts, which required some knowledge about local environment and customs • Had to find on ways to access to this sampling • Well known in his area and community • Explaining more about difficulties with tools • Shared views on changes in social – using community involvement to support with local demands on this traditional food • Explained and gave example of local community social lifestyle • Values of Collectivism and changes in community

HE02	Expert Cook Of Traditional Food to Assist with Modern Lifestyle	Home Back yard kitchen area/ open space kitchen), Penang	31.03.08 10 am	• Contacted from snow ball approach and local information, which required some knowledge about local environment and customs • Had to find on ways to access to this sampling • Well known in his area and community • Explaining more about difficulties with tools • Shared views on changes in social • Explained and gave example of local community social lifestyle • Values of Collectivism and changes in community
HE03	Expert Cook Of Traditional Food to Assist with Modern Lifestyle, Also a migration users (moving from rural to urban for better education, ends up building his career since then)	Traditional Food Kiosk In A modern Shopping Mall	31.03.08 4 pm	• Contacted through local information, which required some knowledge about local environment and customs • Shared his view on his difficulties with modern tools used to prepare traditional foodstuffs • High demands, knowledgably through his experience but not appropriate tools use for his production • Innovative ideas to improve tools • Ergonomics and safety issues

HE 04	Expert Cook Of Traditional Food to Assist with Modern Lifestyle	Home Back yard kitchen area/ open space kitchen), Penang	05.04.2008 2 pm	• Contacted through local information, which required some knowledge about local environment and customs • Shared his view on his difficulties with modern tools used to prepare traditional foodstuffs • High demands, knowledgably through his experience but not appropriate tools use for his production • Regional culture influence to tools use • Comparing traditional tools and modern (i.e Material and application) • Current demands is high on traditional foodstuff however machinery used including tools used and production speed could not support with this.
HE05	Migration Users (Young professional)	Kitchen In an Apartment House, Penang	06.04.08 2 pm	• Space and environment conflict to assist with their traditional practices and behaviour • Constraints on Interior Design • Retaining traditional and use what ever available • Economic factors
HE06	Migration Users	Kitchen In A town house	21.04.08	• Changes in how people appreciated and used of traditional products • Patterns of product transformation from socially functional items

				into just a decorative icon • Changes in social lifestyle i.e: how foods are being serve and tools supported those activities
HE07	Migration Users	Kitchen In A town house	21.04.08	• Changes in how people appreciated and used of traditional products • Patterns of product transformation from socially functional items into just a decorative icon • Changes in social lifestyle i.e: how foods are being serve and tools supported those activities
HE08	Migration Users (staying in one place such the village but The village transformed into A modern small town	Small Kitchen, Kedah	22.04.08 10 am	• Origins of tools • Regional culture influence • Social system change the way people perceived to foodstuff and that influence to tools • The needs for Traditional foodstuff and the lack of knowledge in preparation processes including material, ingredients and tools to be used •
HE09	Migration Users and Traditional And Modern Restaurant owner	Modern Traditional kitchen	25.04.08	• Changes in how people appreciated and used of traditional products • Patterns of product transformation from socially functional items into just a decorative icon

				• Changes in social lifestyle i.e: how foods are being serve and tools supported those activities • The emerging of locals and global foods but the remaining of traditional tools
HE10	Traditional Cook Teacher			• Knowledge about traditional tools and foodstuff • Working to produce a global and modern foodstuff however experimenting with local and traditional material • Changing how people appreciated and used of traditional products i.e in demands and needs for cooking classes- modern lifestyle – house husband • The emerging of locals and global foods but the remaining of traditional tools

APPENDIX H.3 - Workshops

Workshop (DW)	Participants	Location	Date And time	Note
DW01	Young Professionals Cultural Migration Users	Design Studio, USM Penang	14.03.08 10 am	• Show less response in the beginning of the workshop • The needs for me to pay attention on my ice breaking session • Show tendency to treat concept designs as finish product • Commenting more on the physical aspect of the concept designs • Productive in stage 02 and stage 03 however, I need to review my design presentation formats
DW02	International Students From Malay Culture- Cultural Migration Users	Student Room, UIA Kuala Lumpur	03.04.08 1 pm	• Again, the ice breaking stage is most important to get them talking! • Not necessarily the right choice group of participants • I discovered culture is not a inherited or transmission process • Concept designs did not work as I expected but this experience provided me with real examples from my understanding of the theory of culture as I have studied • Migrating community can be complex

DW03	Young Professionals (Chefs) Cultural Migration Users	Cooking Labs, UiTm, Penang	30.04.08 2 pm	• Ice breaking is most difficult part and it is important to get them to talk to me.... • Discovered more as this group represent the potential users of tools I observed • Shared their experience with tools, revealed issues related to ergonomics, safety and practicality • Productive in discussing especially in Stage 02 and stage 03 although some required assistance in stage 02 as they are not from design background
DW04	Young Professionals Cultural Migration Users	Common Room, Community College Penang	03.06.08 11 am	• Ice breaking is the important moment again... • Good discussion and cultural factors when they reflected back to traditional practices that embodied with users • Productive in discussion especially in stage 02 and stage 03 •