Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects

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ABSTRACT

The lack of appropriate training materials has been found to be a hindrance in sewing income generating projects (IGPs) in rural communities. While the development of material for these communities has been undertaken and a variety of commercial materials exist, its appropriateness (in terms of grade level, content, language and format) for application in rural sewing IGPs has remained questionable. The aim of this study was therefore to review existing training materials and to determine the sewing training needs in order to develop and implement new sewing training material interventions for IGP participants, and to evaluate the appropriateness of these materials employed in the rural sewing IGPs in the North-West Province (NWP), South Africa (SA). This study comprised five objectives using both qualitative and quantitative methods which were executed within the six phases of the intervention research (IR) design. During the IR phase one, situation analysis and project planning was undertaken. In the IR phase two, existing sewing training materials were reviewed for appropriateness and application in rural sewing IGPs. This was achieved by conducting interviews with IGP community facilitators and undertaking document analysis of the commercially available sources. The findings of this explorative and descriptive qualitative phase provided the researcher with an understanding of the uses and challenges of textual sewing training material within the unique context of the rural sewing IGPs, while also identifying the most prominent sewing training needs within these units. The outcome revealed a need to redesign training materials for these rural sewing IGPs and proposed criteria to ensure appropriateness for low-literate end-users. Based on these findings, two sewing training instructional pamphlets were designed (IR phase 3) and pilot tested (IR phase 4). The design attempted a decolonised approach by incorporating an indigenous framework with factors related to culture and language being applied throughout the development. Pilot testing was undertaken to determine the perceived readability and understanding of the IGP participants as intended users thereof, as well as the usefulness, learning and quality of the pamphlets. The results of the pilot test revealed that the participants liked the pamphlets, that they perceived it to be easy to read and understand, and that they understood all the visual materials within them. Three of the four participants indicated that they should be shorter. Based on these results, the pamphlets were modified prior to the main investigation. The results of the intervention (presented within IR phase 5) indicated that both of the sewing training instructional pamphlets exerted a large impact on the outcomes of the interventions. The results also showed large effect sizes across all three rankings of educational attainment (for low-literate; low-to-medium literate; and literate individuals) confirming the appropriateness of the sewing training materials for the participants in rural sewing IGPs (as disseminated within IR phase 6).

KEYWORDS

- Income generating projects
- Intervention
- Low-literacy
- Pamphlets
- Rural communities
- Sewing
- Training material

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'If we continue to seek learning, to serve God and His children better, it is a blessing of great worth' – Henry B. Eyring

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CHAPTER 1:
CONTEXTUALISING THE STUDY

1.1 Introduction

Community engagement has become a prevalent objective in the mission statements of tertiary academic institutions along with its core activities of teaching, learning, and research. Their role in community engagement is customarily directed towards the improvement of the health and welfare of neighbouring communities. The North-West University (NWU) is involved in such initiatives, and more specifically the Transition and Health during Urbanisation of South Africans (THUSA) study. In the year 2000 the THUSA study identified the rural communities of the North-West Province (NWP) as extremely vulnerable populations, adversely affected by poverty, low levels of education and limited access to income and job opportunities, amongst others (Vorster *et al.,* 2000:505). A comprehensive needs assessment in the broader socio-economic context of this rural area was carried out, with the findings highlighting the need for income-generating opportunities. During 2002, the Farm Labour and General Health (FLAGH) programme was initiated in response to these findings with two income-generating community projects established under the protocol of the Holding Hands projects; a glass recycling project and a sewing project. The sewing project was developed to teach rural women sewing skills so that they could obtain an income or supplement a low income. As part of the broader intervention programmes, these projects are aimed at uplifting, empowering and sustaining vulnerable communities within rural areas.

Recent research pertaining to the Holding Hands community projects indicated that the sustainability of these projects and activities have been hindered by the lack of training resources and that continual practical skills development is necessary (Niesing, 2012:3; Niesing, 2016:74). Additionally, the Africa Unit for Transdisciplinary Health Research (AUTHeR) study also revealed a prevalent need for skills training such as needlework as a means to combat unemployment (Coetzee & Du Toit, 2011:31). As the provision of training is essential to the success of any community based income generating project (IGP) endeavour (Oldewage-Theron *et al.,* 2005:319; Van Niekerk, 2006b:13), it follows that the training materials used are suitable for its intended use by its intended population. The term ‘training materials’ refers to a variety of textual (written) materials developed to aid a training process and can take the form of training manuals, instructional guides, textbooks, e-books or work and activity books. This study was concerned with the sewing training materials for use in IGPs in rural communities. The term ‘sewing training materials’ refers to training materials that focus on sewing and sewing related content.

1.2 Background and Motivation

In order to gain an understanding of the setting in which this research was situated, factors related to poverty, limited education and unemployment, particularly for black South Africans residing in rural areas, are discussed. This is followed by an introduction of IGPs (in general) and sewing IGPs. Because of its importance within IGPs, literacy is discussed next. This section includes a description of literacy-related terms, followed by a justification of the literacy grade level groupings employed in this study (to indicate low-, low-to-medium and literate participants). Lastly, the role of training materials and facilitators to address and assist practical skills training is briefly discussed.

1.2.1 Poverty, low education and unemployment as critical issues for black South African women in rural areas

The South African policy of apartheid prior to 1994 resulted in sustained poverty amongst black South Africans. The most recent census results indicate that 93% of the poor people in South Africa (SA) (referring to those who lack sufficient money to sustain normal living) stem from the black population (Statistics South Africa [StatsSA], 2017a:57). This population group constitutes 80.8% of the total population in SA (StatsSA, 2017b:2), and although 73.9% of this group had attended some form of schooling, only 5.7% had attended any post school education and skills training at institutions such as Community Education and Training Colleges (formerly known as Adult Based Education and Training, [ABET]), Technical and Vocational Education and Training Colleges (formerly known as Colleges for Further Education and Training, [FET]) and, Technical and Traditional Universities (StatsSA, 2012a:8). This unfavourable situation may contribute greatly to their access to job opportunities and intensifies the unemployment rate (the proportion of the labour force that is unemployed [StatsSA, 2018:17]), which was 27.2% during the second quarter of 2018 (StatsSA, 2018:1). For the black African population, the unemployment rate was 30.5% during the second quarter of 2018 (StatsSA, 2018:21). This figure is even worse in rural areas where unemployment is estimated at almost 50% of the rural population (Davies, 2012; Development Policy Research Unit [DPRU], 2017:15).

Rural areas are also described as traditional, former homeland or farm areas. Besides low population densities, these areas lack infrastructure, education and economic activities (StatsSA, 2014:73), which results in high levels of poverty. With the majority of poor South Africans living in rural areas, the rural/urban poverty divide becomes apparent with levels of poverty twice as high in the rural areas compared with urban areas (with 81.3% versus 40.6% respectively) (StatsSA, 2017a:68). Poor people living in rural areas are also described as the poorest of the poor, as they are significantly worse off than their poor counterparts living in urban areas (StatsSA, 2017a:69). Residents of rural areas, known as farm dwellers, are very often dependent wage labourers and

their families who work and reside on commercial farms (Collinson *et al.,* 2007:78). These individuals experience isolation as they do not have access to the opportunities present in urban areas (Kruger *et al.,* 2006:830). The lack of educational infrastructure is one of the most prevalent problems in rural areas (Gardiner, 2008:13). With the highest level of education provided in some of the farm schools in the North West Province (NWP) as Grade 7, it has been found that some adults had obtained a grade below Grade 4 (Kruger *et al.,* 2006:833). The effects of limited literacy on already limited employment opportunities, especially for rural women is detrimental.

South African women remain more disadvantaged than men (StatsSA, 2017a:69) as they experience a triple burden of poverty, illiteracy and unemployment as they comprise the majority of the poor (57.2% [StatsSA, 2017a:57]) and have higher functional illiteracy (13.3% for women versus 11.4% for men aged 15 years and older with no education or highest level of education lower than Grade 7 [StatsSA, 2012c:34, 35]) and higher unemployment rates (41.2% versus 33.7% for men [StatsSA, 2018:38, 39]), with overall percentages being the highest for black African women. Unemployment rates are 30.5%; 23.3%; 10.4%; and 8% for the population groups black African, coloured, Indian/Asian and white women respectively (StatsSA, 2018:21-22). Besides having less access to economic opportunities than their male counterparts, rural women often have extensive caregiving responsibilities prohibiting them from seeking remunerative employment opportunities elsewhere (Presidency SA, 2008:8). As the empowerment of women is recognised as an essential factor for the eradication of poverty and social development of a country (Organisation for Economic Co-operation and Development [OECD], 2012:2), it follows that community based initiatives should be geared towards women living in rural poverty.

1.2.2 Income generating projects

Income generating projects (IGPs) provide much needed hope in income-deprived communities as an attempt to address the problem of unemployment (Van Niekerk & Van Niekerk, 2009: 131,140). The aim of income-generating community projects is to develop skills within the communities while the participants earn an income (Niesing, 2016:68) and establish a small business by directing resources towards productive activities (Kaeane & Ross, 2012:20). While it affects the economic positions of people (Albee, 1994:2), various non-economic reasons for participation in IGPs have been noted and include the desire for self-respect, dignity and the respect of community members (Mavalela *et al.,* 2002:49), as well as the need for a creative outlet where stories about tradition and lives could be shared (Segalo, 2011:232).

1.2.2.1 Income generating sewing projects

Income generating sewing projects have been well applied in community development endeavours such as sewing businesses (businesses that produce goods by employing sewing methods and techniques). In past years, sewing businesses have been popular start-ups for IGPs (Botha, 2005:3) mainly because relatively small amounts of capital are required to purchase the necessary machinery and sewing equipment (for example domestic sewing machines and sewing supplies including fabric, scissors and sewing needles). Along with the produced sewing items, traditional craft products such as beaded and hand embroidered motifs have also become popular activities in community based projects. The skills required to produce such items are typically culturally inherited, transferred from one generation to the next, and shared among the women in social groups. The skills necessary to sew textile products include an array of competencies ranging from basic mathematical skills (e.g., reading a tape measure) to literacy skills (reading sewing instructions), and hand-eye coordination (sewing in a straight line). Overall, sewing training curricula (Readers Digest, 2010; Smith, 2009; Van Wyk, 2015) stipulate proficiency in the following fundamental tasks:

- understanding the sewing machine and related parts as well as the supplies and the setup of the sewing area;
- pattern selection and layout, determining fabric direction, marker making and cutting;
- pattern alteration and fitting;
- basic construction techniques, including both hand and machine stitches, construction of various seams, forming of different types of darts, creating decorative styles of tucks, pleats, and forming gathers, shirring and ruffles;
- construction of various styles of neckline finishes and collars; sleeves, sleeve finishes and cuffs;
- making and applying various types of pockets;
- completing hems and decorative hem finishes; and
- application of various types of fasteners, including: zippers, assorted buttonholes, other fabric closures such as button loops and frogs, and the correct positioning and securing of hooks and eyes, snap fasteners and tape fasteners.

Despite the above sewing activities being seemingly simple, research conducted by Van Niekerk (2006b) found that numerous practical sewing tasks proved challenging for the participants of sewing IGPs. In many cases, the participants, however eager to participate, have no prior practical sewing experience or knowledge of sewing and production techniques. For this reason, many community based IGPs amongst rural women in SA have been undertaken in past years, of which only a few operate successfully or independently (Niesing, 2012:26; Niesing, 2016:iii; Trollip, 2001:45) and very few projects remain active for a period longer than 10 years (Van Niekerk, 2006b:72-74). Because failure has been ascribed to the traditional sewing and craft

products being generally unmarketable due to inferior quality (Van Niekerk, 2006b:33), their training resources are rendered questionable. While an array of commercially available sewing and instructional materials (addressing practical skills training) are available in the form of books and e-books (FaveCrafts, 2009; Giddens, 2012; Percy, 2008; Readers Digest, 2010; Smith, 2009) these may not be accessible to, or appropriate for, rural IGP participants with limited literacy skills.

1.2.3 Justification of literacy terms

Literacy is defined as a set of cognitive skills associated with reading and writing (Posel, 2011:41; United Nations Educational, Scientific and Cultural Organisation [UNESCO], 2006:149). Considered within the broader concept of literacy, numeracy skills involve an individual's ability to locate and interpret numeric information, and to use such information to complete simple calculations (Reyna *et al.,* 2009:945). Within the context of a sewing IGP, numeracy skills are particularly important. At the most basic level, numerical competency is required for operational tasks such as reading a tape measure. At a more advanced level, the ability to perform multi-level calculations (Reyna *et al.,* 2009:945) such as determining the price per meter versus price per roll (when purchasing raw materials) could have a vast impact on the success of a project. Visual literacy refers to an individual's ability to decipher, recognise and interpret visual signs, symbols and pictures (UNESCO, 2006:148). Within the domain of sewing, the prominence of symbols (indicating, for example, grain direction or cutting lines) required to read pattern information makes visual literacy skills imperative. Functional literacy requires higher order decoding and reasoning skills (Wallendorf, 2001:505) and refers to the above competencies (for literacy and numeracy) (Gau *et al.,* 2012:1686) and specific settings, and may relate to specific subject fields (Viswanathan & Gau, 2005:188) such as the context of the Holding Hands rural sewing IGPs.

1.2.3.1 Challenges associated with justification of the term low-literacy in SA

Description of the term low literacy for use in this South African study proved to be complex. Difficulties arose mainly due to the disparity between the internationally and nationally applied definitions, as well as inconsistencies for determining literacy standards across definitions. Within the South African context, a person is described as functionally literate if he/she can function adequately in their day to day life owing to literacy competencies equivalent to that of Grade 3. This national standard is much lower than the internationally applied description for the same term requiring educational attainment of Grade 6 or 7 (Posel, 2011:41). Likewise, the South African description of the term functional illiteracy refers to persons aged 15 years and older with no education or the highest level of education of less than Grade 7 (StatsSA, 2012b:34). This description is similar to the internationally applied term low-literate which also refers to a person who did not complete Grade 7 at school (Adkins & Ozanne, 2005a:93).

Another factor causing ambiguity regarding literacy definitions is using the highest educational completion to approximate literacy levels. Due to the compromised quality of teaching in historically disadvantaged schools, there is likely to be considerable variation in literacy abilities among learners with the same level of education (Posel, 2011:43). As a result, studies that addressed literacy in schools have typically found a low correlation between literacy level and grade level (Posel, 2011:41), which differs up to four grades (Wasserman *et al.,* 2010:1). Furthermore, adults with low levels of education could possibly have acquired functional literacy skills elsewhere, such as an employer, a friend, family or community outreach programme. In such instances where there are no formal assessments or accreditations, the outcome of literacy ability obtained remains questionable. Despite the considerable disparities noted, there is overall consensus that the term low literacy varies across disciplines (Gau *et al.,* 2012:1685) and indicates that an individual has failed to meet socially determined standards related to literacy and educational attainment (Adkins & Ozanne, 2005b:154). As an extension of the term, the phrase low-literate adults describes members of a disadvantaged group, who experience difficulty with reading and writing in their first language (Martini & Page, 1996:123) and relates to individuals with limited formal schooling (Gau *et al.,* 2012:1685).

1.2.4 Appropriate training materials to address practical sewing skills training

Practical skills training, such as sewing training, has become the focus of many community outreach programmes as a means to sustain the effectiveness of these endeavours (Oldewage-Theron *et al.,* 2005:319; Van Niekerk, 2006b:99). One of the values of community based IGPs lies in the skills and training opportunities that participants obtain (Van Niekerk, 2006b:51,66), thus emphasising the importance of appropriate training materials. In order to be deemed appropriate, training materials for use in rural sewing IGPs should be formulated in such a manner that they suit the training needs,practical skills as well as the literacy levels as well as the culture of the IGP members for whom they are intended (Niesing, 2012:18, 28).

The practical skills level of the participants is the primary consideration for the formulation of the development of appropriate training materials. Past research related to the Holding Hands rural sewing IGPs found that the skills levels of the participants were always lower than anticipated, that participants displayed a limited range of accomplished skills, and that they found it difficult to learn new skills (Van Niekerk, 2006b:79). Therefore, a user-centered approach should be undertaken to explore their most prominent sewing training needs and specific practical sewing challenges experienced with the production of items. The end-users' past experience and prospective use of training material should also be explored in order to identify possible problems that could result from limited reading ability. At the outset, it can be anticipated that the rural IGP participants, who may be poorly educated, may experience difficulty using typical text based training materials in terms of their inability to read and understand documents effectively.

Low-literacy has been reported to be an obstacle in IGPs as it presents a barrier to further skills development and it limits abilities of individuals to perform certain tasks (Niesing, 2012:18, 29). It also holds various significant implications for the development of appropriate training materials. Low-literate individuals process textual information differently from their literate counterparts (Jae *et al.,* 2011:312; Viswanathan *et al.,* 2005:15), and have been found to experience problems related to the use of textual information as they have a preference for information presented in a concrete and visual format (Viswanathan & Gau, 2005:189). To this end, several national and international research projects have been undertaken over past decades to develop understandings of the cognitive processes of low-literate individuals and their consequent use of textual and visual information. The research is found mainly within the fields of health-care, pharmaceutical, marketing and consumer sciences and provide valuable findings for further interventions in populations with low-literacy. A summary table of those studies relevant to this study is presented below in Table 1.1.

Table 1.1: Summary of research on low-literate individuals and their use of textual and visual information

Field	Year	Author(s)
Health-care and pharmaceutical information	1985	Doak *et al.*
	1996	Doak *et al.*
	1996	Zimmerman *et al.*
	1997	Ngoh & Shepherd
	1998	*Dowse & Ehlers
	2003	*Mansoor & Dowse
	2005	*Dowse & Ehlers
	2007	Kripilani *et al.*
	2007	Mwingira & Dowse
	2008	Zeng-Treitler *et al.*
	2009	Cordasco *et al.*
	2011	Braich *et al.*
	2011	*Dowse *et al.*
	2011	Choi
	2012	Choi
	2012	Eckman *et al.*
	2012	Mbuagbaw & Ndongmanji
	2012	Richler *et al.*
	2013	Montagne
Marketing and consumer research	2004	Jae & Delvecchio
	2005	Viswanathan & Gau
	2005	Viswanathan *et al.*
	2008	Gau & Viswanathan
	2009	Viswanathan *et al.*
	2011	*van Biljon & Jansen van Rensburg
	2012	Gau *et al.*
	2012	Jae & Viswanathan
	2017	*Van Staden *et al.*
Review articles	2006	Houts *et al.*
	2006	Katz *et al.*

*National publications

The emergent findings of this research on low-literate individuals hold that their comprehension of written information can be greatly increased through the careful design of visual material stimuli, either pictorial or graphic, known as pictographic images, to enhance information processing and improve understanding (Dowse & Ehlers, 2005:63; Jae & Delvecchio, 2004:342; Jae & Viswanathan, 2012:1680; Kripalani *et al.,* 2007:369). Pictographic images used in conjunction with text serve a dual function in that they not only enhance reading but also convey messages from the text, thereby facilitating the conceptual processing of a message and increasing the memory to recall the message (Jae & Viswanathan, 2012:1675). Pictographic thinking extends beyond the reliance on pictures and may include the understanding of symbolic information (Gau *et al.,* 2012:1686; Jae & Delvecchio, 2004:343; Viswanathan *et al*., 2005:21; Viswanathan & Gau, 2005:189). It is important to pilot test pictorial images when applied cross-culturally to ensure their appropriateness and that certain groups do not misinterpret the images (Kripalani *et al.,* 2007:375). In addition to pictographic thinking as a cognitive predilection, low-literate individuals frequently engage in concrete thinking (Viswanathan *et al.,* 2005:15). Concrete thinking is the tendency to process single pieces of information without deriving higher level abstractions (Viswanathan & Gau, 2005:189). With reference to reading text, the low-literate individual has to devote more time to the process of reading itself (at the word level) and consequently the capacity for the content of the text comprehension is compromised (Jae & Viswanathan, 2012:1674). Due to this limitation on information processing, pictographic illustrations in combination with text should be carefully developed as it could lead to cognitive overload (Jae & Viswanathan, 2012:1679) while picture-only conditions best benefit low-literature individuals.

Another major consideration for the development of appropriate materials is the incorporation of an indigenous framework. Such a framework takes into account indigenous knowledge, which is seen as 'the knowledge that local people use to make a living' (Niesing *et al.,* 2015:264) and includes that knowledge shared by the community members in a specific place that has common social and cultural ties (and may include worldviews, spiritual being and ancestral knowledge of a specific community [Goduka, 2012:7]). When researching past interventions in rural based IGPs, no evidence could be found of any sewing training material taking into account indigenous frameworks, decolonised or Africanised approaches, or culture. Taking into consideration the cultural characteristics of a particular group of people would entail taking cognisance of their language, social habits and arts (Zimmermann, 2015) and is underpinned by the cultural beliefs, norms, values and premises that govern their conduct (Joubert, 2010:5). As such, training materials specifically developed for rural IGP participants should incorporate their home language, and schedules should allow for practices of food preparation, eating and storytelling. The use of indigenous art elements (colours and patterns applied as decorative features) could also create a sense of familiarity. The above factors would not only increase the appropriateness

of training materials for use in rural sewing IGPs but could also have a major impact on end-user satisfaction.

1.2.4.1 Facilitators to assist practical skills training

In addition to appropriate training materials, facilitators play an important role in the successful operation of rural sewing IGPs (Trollip, 1997:6). Within community IGPs, two types of facilitators are known, those who are external to the IGP and/or the community, and those who stem from within. For the purpose of this study the terms outside facilitators and community facilitators are used. Outside (external) facilitators are often appointed to assist community based IGPs. These appointments arise from government programmes, industry goodwill initiatives, or the community engagement activities of academic institutions. Qualified and experienced to facilitate the project, outside facilitators can fulfil various roles including that of organiser, manager and supervisor (Van Niekerk, 2006b:121). They add expertise and skills not available among members of the group; they mediate funding; they set product goals, quality standards and delivery dates; they develop business strategies, and exert effort to operate the project more profitably (Trollip, 1997:6; Trollip, 2001:47). The assistance provided by outside facilitators contributes greatly to the success and sustainability of community based groups. National research has indicated that IGPs working in accordance with outside facilitators function more successfully than those that operate without (Trollip, 1997:5). On the other hand, community facilitators are self-appointed project leaders and individuals from within the local community, who are trusted and respected by their peers who form part of the IGP management team (Van Niekerk, 2006b:71, 75). National research found that community facilitators are a vital component for project sustainability as they provide several functional benefits which include: representation of the community, resolution of conflict, motivation and encouragement of IGP participants, and provision of guidance to overcome barriers (Van Niekerk, 2006b:71, 75, 130). Community facilitators may also provide ongoing support through sharing competencies (Duvenhage *et al.,* 2013:30), and very importantly, they understand the culture of the group (Trollip, 2001:48). A summary is presented in Table 1.2 to differentiate between the outside facilitator and the community facilitator with reference to their respective roles and functions. This information is based on the research conducted by Duvenhage *et al.* (2013:30), Trollip (1997:6; 2001:47, 48) and Van Niekerk (2006b:71, 75, 121, 130).

Table 1.2: Roles and functions of outside and community facilitators (adapted from Duvenhage et al. [2013], Trollip [1997; 2001] and Van Niekerk [2006b]).

Type of facilitator	OUTSIDE FACILITATOR	COMMUNITY FACILITATOR
ROLES	• Organiser • Manager • Supervisor	• Community representative • Facilitator of the training programme • Leader of the group
FUNCTIONS	• add expertise and skills, • mediate funding, • set product goals, • set quality standards, • set delivery dates, • develop business strategies, and • exert effort to operate the project more profitably.	• resolves conflict, • motivates and encourages the IGP participants, • provides guidance to overcome barriers, • provides ongoing support through sharing competencies, • understands the culture of the group, and • supervises day to day project activities.

In addition to community facilitators, project members may at times act as peer facilitators, providing informal support to members of the group. Their function is to offer ad hoc informal assistance. The value of peer facilitators is that by accomplishing certain tasks they demonstrate to others like them that the task is achievable. Duvenhage *et al.* (2013:30) similarly promote the 'train-the-trainer' approach where local residents are trained to facilitate the group training endeavours. Within this approach, members of the community in which the project operates take leadership and provide ongoing support to the other participants in the group. These peer facilitators display the same characteristics in terms of poverty, education and low-literacy as other community members. It is therefore imperative to specifically customise interventions for these individuals to empower them (Niesing *et al.,* 2015:270).

1.3 Problem Statement

This study was concerned with training materials for the Holding Hands sewing based IGPs in rural communities of SA. In line with the FLAGH programme (discussed in section 1.1) a manual was compiled for arts and crafts training within these Holding Hands sewing IGPs (Van Niekerk, 2006a), hereafter referred to as the 2006 Manual. The content of the 2006 Manual relates to business and production related aspects, but for the purpose of this study, only the content relevant to production (related to sewing) tasks applied. Specifically developed for low-income women with little or no formal education, this 2006 Manual was aimed at assisting community facilitators. As community facilitators are active project members in the community in which these projects are based, it may be anticipated that, in terms of poverty and low-literacy, they display similar characteristics as the other members of the group. An apparent challenge with the 2006 Manual was that it has not been formally evaluated to determine its appropriateness when used

by the low-literate community facilitators as intended users thereof. It was therefore uncertain if the 2006 Manual was appropriate in terms of the format (as a literacy and grade level indicator), content (pertaining to actual sewing training needs) and context (addressing the unique challenges associated with rural sewing IGPs).

Even though this 2006 Manual was the only training material available to the Holding Hands sewing IGPs at the time of the investigation, it was uncertain if it was used in practice. Research conducted in 2012 reported a lack of training facilities as a factor hindering the sustainability of IGPs (Niesing, 2012:3). If the 2006 Manual was not being practically applied, reasons for non-use had to be explored and addressed. Limited resources for community development may have been wasted if the training material for use in rural IGPs were not appropriately developed and employed. If the development of a new sewing training material intervention was nessesitated (that addressed both the practical sewing training needs and literacy levels of not only the community facilitators, but also the IGP participants of the project units) it proposed the following advantages:

- IGPs have been known to be highly dependent on facilitators (Niesing, 2012:1-4; Van Niekerk, 2006b:9). Appropriately developed sewing training materials could enable the IGP participants to help themselves in the absence of a facilitator. Not only would doing so create a sense of empowerment and personal achievement for the low-literate participants, but having a decreased reliance on facilitators to convey information from training materials could have a long term positive impact on the sustainability of the IGP;
- These training materials could further assist newcomers to the group with no prior experience of sewing and production training (as the composition of community based IGPs are not stagnant and new members are added to these groups on a regular basis [Niesing *et al.,* 2015:265]), as well as to shorten training times of existing project members; and
- Newly developed sewing training material could increase standardisation of items produced across various Holding Hands IGP units as well as increase production quality.

Several national studies have focused on aspects related to IGPs (Brits *et al.,* 2000; Mavalela *et al.,* 2002; Trollip, 1997; Trollip, 2001; Van Niekerk, 2006b; Van Niekerk & Van Niekerk, 2009) and various research studies related to low literacy have been conducted (refer to Table 1.1). However, a lack of research related to low literacy specifically within IGP settings persists. Furthermore, no evidence could be found (on NEXUS PROQUEST, SABINET, or the South African National ETD Portal) of any research related to sewing training materials for low-literate individuals, or its uses within sewing IGPs. Because this study is positioned within these Holding Hands sewing IGPs, a short summary of previous research within this community is presented in Table 1.3.

Table 1.3: Summary of research related to the Holding Hands sewing IGPs

Researcher	Title
Du Plessis, 2004	An educational intervention programme for female farm dwellers directed at income generation: creating interior products.
Botha, 2005	An educational intervention programme aimed at the repair and recycling of clothes and textile goods.
Van Niekerk, 2006b	Women's income generating activities in a disadvantages farming community: towards sustainability.
Niesing, 2012	Evaluation of the sustainability indicators used in the Holding Hands community project in the North West Province.
Van der Merwe, 2013	Motivation of women to participate in an income-generating project: the FLAGH programme.
Niesing *et al.,* 2015	The process of defining the concept of sustainability: A case study of the "Holding Hands" income-generating community projects in the North West Province.
Niesing, 2016	The development of a conceptual framework to guide the planning, implementation, measurement and evaluation of income generating community projects to facilitate sustainable development.

Despite these research undertakings (presented in Table 1.3), significant gaps about which practical measures actually work to ensure the success of rural sewing IGPs, exist. The latest published research pertaining to the Holding Hands groups carried out by Niesing (2016) found that "even after a developmental framework of 12 years, these projects still cannot function without the assistance of a support organisation, and can, therefore, not function as a sustainable business" (Niesing, 2016:3). This statement indicates continued dependence on external organisations for support and necessitates further research and development to facilitate sustainable development. As a factor imperative for IGP development, this study questions the appropriateness of sewing training materials employed in rural sewing IGPs for meeting practical skills training needs.

1.4 Research question

The broad research question of this study is: How appropriate are existing sewing training materials for meeting practical sewing training needs within rural sewing IGPs? Further, how can a sewing training material intervention be developed, implemented and evaluated for appropriateness in rural sewing IGPs? In order to answer the broad research question, the study addressed the following specific research questions:

1.4.1 How appropriate are existing sewing training matrials (the 2006 Manual and conventional materials in the form of books and online sources) for application in rural sewing IGPs?

1.4.2 What are the most prominent sewing training needs within rural sewing IGPs?

1.4.3 How can appropriate sewing training materials for low-literate individuals in rural IGPs be developed taking into consideration their most prominent sewing training needs?

1.4.4 How can appropriate sewing training materials for low-literate individuals be implemented in rural IGPs?

1.4.5 How can the newly developed sewing training material be evaluated for appropriateness and implementation for low-literate individuals in rural sewing IGPs?

1.5 Overarching research aim

The broad aim of this study was to review existing training materials and determine the sewing training needs in order to develop and implement sewing training material interventions for IGP participants, and to evaluate the appropriateness of these materials employed in the rural sewing IGPs in the North-West Province, South Africa.

1.6 Research Objectives

In order to achieve the overarching research aim, the following threefold (literature-, empirical- and implication related) research objectives were set.

1.6.1 Literature related objectives

The literature related objectives of this study were to conduct literature reviews to provide:

1.6.1.1 A contextual understanding of the research setting in terms of the communal (socio-economic) factors influencing the participants of rural sewing IGPs; and

1.6.1.2 Insights towards understanding the individual (low-literate adult IGP participants) by means of the theoretical perspectives Transformative Learning Theory (TLT) as theoretical basis for adult learning, as well as Social Cognitive Theory (SCT) to form an understanding of how low-literate individuals processed information.

Literature was continuously sourced during the study (various scientific databases including One Search, google Scholar and Ebscohost were consulted).

1.6.2 Empirically related objectives

The following specific empirically related objectives of this study were to:

1.6.2.1 Review the 2006 Manual for appropriateness and application in rural sewing IGPs. This was explored in terms of:

- Its use by the community facilitators of the rural sewing IGP units; and
- Document analysis of its literacy level (including considerations, the amount of reading, the context in which information is presented and the nature of the materials) and its content.

1.6.2.1.1 Explore the availability and prospective use of other conventional training materials (in the form of books and online sources) within the rural sewing IGP units.

1.6.2.1.2 Analyse the data of 15 other conventional sewing training materials for its possible appropriateness for use in the rural sewing IGPs in terms of:

- Considerations towards literacy levels (including the amount of reading, the context in which information is presented and the nature of materials); and

- Considerations for the content of the training materials.

1.6.2.2 Explore the most prominent sewing training needs within rural sewing IGPs in order to:

- Gain an understanding of the challenges experienced as a result of unattended sewing skills training needs;
- Identify the two most prominent sewing training needs; and
- Develop criteria for the development of more appropriate sewing training materials for use in rural sewing IGPs.

1.6.2.3 Develop appropriate sewing training materials for low-literate individuals based on sewing training needs within rural sewing IGPs; in order to:

- Design two sewing training instructional pamphlets, and
- Undertake early development (of the above mentioned sewing training instructional pamphlets) by means of expert review.

1.6.2.4 Implement developed appropriate sewing training materials for low-literate individuals in rural IGPs in field based interventions. More specifically, this objective aimed to:

- Develop the procedure for implementation of the sewing training instructional pamphlets;
- Development of assessment rubrics (in order to obtain an objective measure of the intervention effect);
- Develop a participant satisfaction questionnaire;
- Pilot test the sewing training materials to obtain feedback for further development; and
- Determine user satisfaction in terms of perceived readability, understanding, use, learning and perceived quality of the developed sewing training instructional pamphlets in the form of frequency distributions during main investigation.

1.6.2.5 Evaluate newly developed sewing training materials for appropriateness and implementation within rural sewing IGPs. As a phase of quantitative research, this objective specifically intended to:

- Determine the demographic information of the participants by means of descriptive statistics in terms of age, educational attainment and home language;
- Determine the impact of the sewing training material interventions by means of Wilcoxon Signed rank tests for the pamphlet's body measurement and pattern layout, followed by paired-samples *t*-test to determine effect sizes of the sewing skills training pamphlet interventions;
- Determine the association between the pre-test post-test results by means of cross-tabulation to compare the observed frequencies per ranked category for not achieving, partially achieving and achieving each of the tasks in the intervention activities;

- Determine the statistical significance of the interventions across the three levels of educational attainment (of below Grade 7; Grades 8 to 11; and Grade 12) by means of paired samples *t*-tests; and
- Determine the effect of numeracy ability on the completion of the intervention tasks for pattern layout (by comparison of tasks that require basic numeracy skills [tasks 6 and 8] to those who do not [tasks 3 and 5]) by means of frequency tables.

1.6.3 Implication related objectives

The implication related objectives of this study were to establish criteria for the design and development of appropriate sewing training materials, and to develop and implement these sewing training material interventions within the Holding Hands rural sewing IGPs.

1.7 Significance of the study

This study provides insight into the use of, and challenges associated with sewing training materials within the unique setting of rural sewing IGPs. No research has been conducted in this field to date. It also attempts a decolonised approach to the design and development of new sewing training material interventions, unexplored within the field of sewing training. The processes and methods developed for implementation and evaluation can serve as point of departure for broader investigations and lead to other advancements related to practical skills training. The significance of this study is the contribution made to the body of knowledge pertaining to design and development of training materials for low-literate end-users in rural IGPs. This knowledge could be applied to further development of materials for a wide spectrum of practical training fields including: recycling projects; woodwork; ceramic pottery and many others that are prevalent in community based IGPs in rural SA.

1.8 Paradigmatic perspectives towards understanding low-literate adults

Paradigmatic perspectives involve philosophical worldviews that bring about assumptions related to the research, and intersects the research designs and specific methods (Creswell, 2014:5). These assumptions influenced the researcher's perception and the manner in which the research was approached and conducted. Meta-theoretical and theoretic assumptions were applied.

1.8.1 Meta-theoretical perspective

The researcher approached the research from a pragmatist perspective. Within the pragmatic philosophical worldview, the emphasis was on the research problem rather than the method (Creswell, 2014:10) as the researcher aimed to construct knowledge about a real world issue (Ivankova *et al.,* 2007:262) using the suitable method at the time (Creswell, 2014:11). Gaining

comprehensive knowledge of sewing training materials as well as low-literate participants of specifically rural IGPs was pivotal to address the research questions. As such, the researcher considered various methods to obtain the information required in order to gain a more complete understanding of the research questions.

1.8.2 Theoretic perspectives

Theoretical perspectives provide an overall orientating lens that contribute to critical thinking and reflection on a specific subject (Creswell, 2014:249; Dirkx, 1998:4; Kaiser, 1997:32). It informs and discloses those values, beliefs, and assumptions or meanings acquired through lived experience that form the point of view (Dirkx, 1998:4) applied in the pursuit of knowledge. In the instance of this study, the viewpoints and beliefs held by the low-literate IGP participants, as well as the meanings they made of everyday occurrences provided an understanding within the specific field. The complexities of understanding low-literate adult learners included a review of the theoretical perspectives TLT (as contextual theoretical basis for adult learning), as well as SCT (as an understanding of how low-literate individuals processed information). When the IGP participants engage in sewing training, they are regarded as adult learners, and this presents various factors for consideration. Based on prior knowledge and experience, their points of view (beliefs, feelings and attitudes) and habits of mind (broad abstract and habitual ways of feeling or doing) (Mezirow, 1997:5, 6) towards the use of training materials may be negative, necessitating the facilitation of transformative learning to occur. Guidelines for the practical facilitation of TLT towards the sewing training material interventions are therefore explored. In SCT, human behaviour is explained in terms of a triadic reciprocal interplay between behavioural, socio-environmental, and personal cognitive factors (Ambrose & Chiravuri, 2010:248; Bartholomew *et al.,* 2011:102; Michie *et al.,* 2014:20; Phipps *et al.,* 2013:1228). Social cognitive theory applies to the development of appropriate sewing training material interventions as it seeks to understand why, when, and how a behaviour does or does not occur, as well as the factors to be targeted to alter the behaviour (Michie *et al.,* 2014:22). As this understanding may improve the likelihood that the interventions will be effective (Michie *et al.,* 2014:22), a further discussion of the SCT constructs and its application to this study are presented in Chapter 2.

1.9 Research methodology

An intervention research (IR) design with six phases containing qualitative and quantitative methodologies were applied in this study. The collection of both qualitative and quantitative data was a useful strategy to understand the need for and the impact of the intervention endeavour (Creswell, 2014:218). In the instance of this study, it applied to the need for, and the consequent evaluation of, sewing training materials. The six phases of IR were dually aligned with the phases of empirical research, as visually presented in Figure 1.1. Additionally, the phases in this figure

also prescribe the chapter divisions of this thesis. A full description of the IR design and phases, the methods employed, and the ethical considerations are presented in Chapter 3.

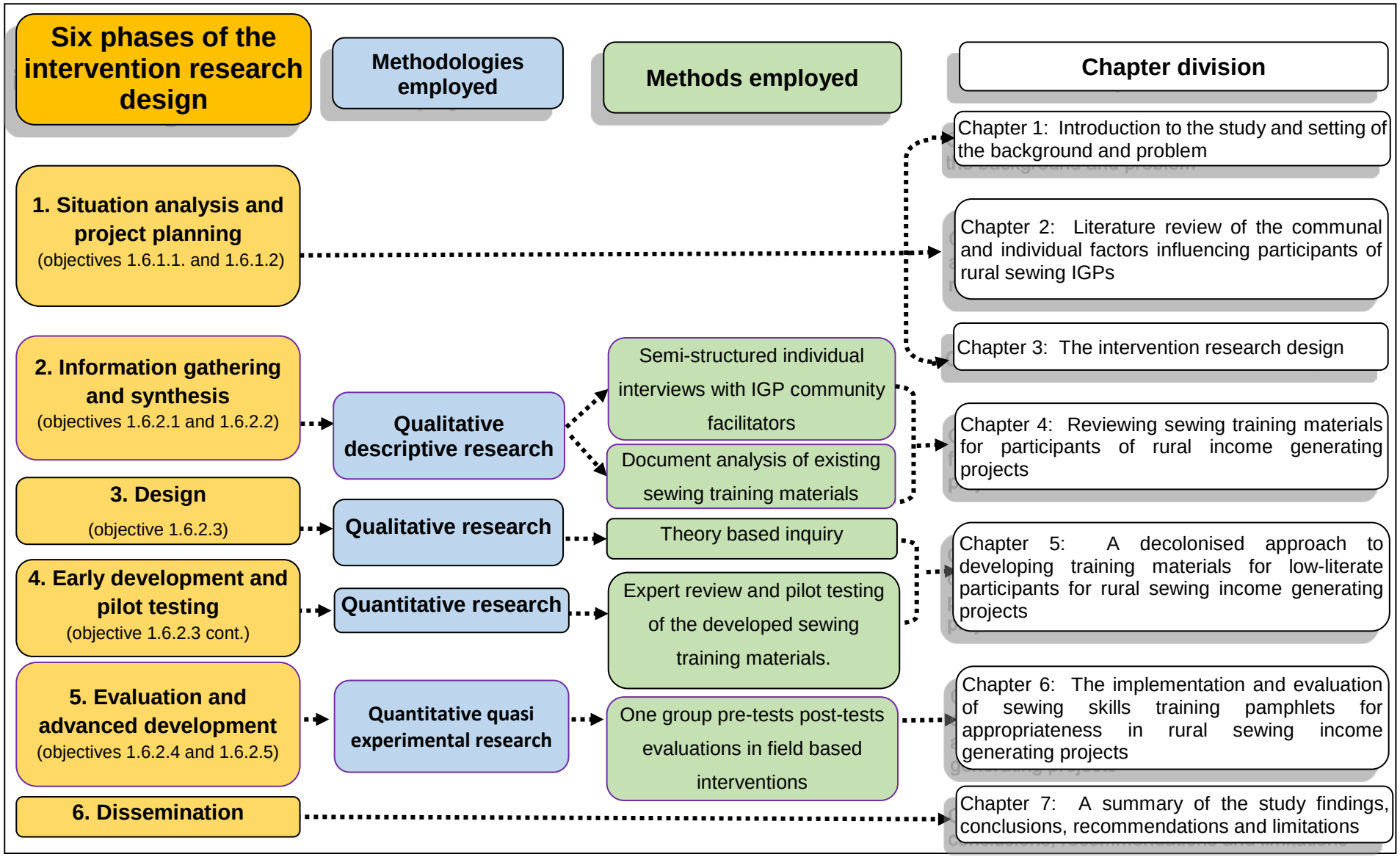


Figure 1.1: Phases of IR using both qualitative and quantitative approaches and methods (Adopted from Rothman & Thomas, 1994:10, 28) as dually aligned with the chapters within this thesis

1.10 Provisional chapter division

This thesis consists of seven chapters, the contents of which are summarised as follows:

Chapter 1 Comprises the introductory protocol including the background and motivation, the problem statement, research questions, research aim, and specific objectives. The paradigmatic perspectives and research design are also briefly introduced.

Chapter 2 Presents a literature review related to the communal (socio-economic) and individual factors (related to the theoretical perspectives) affecting participants of rural based IGPs.

Chapter 3 Includes a discussion of the design and development of the intervention research approach, including the phases of the study, the approaches employed, the methods of data collection and analysis, as well as a detailed description of the population and sample.

Chapter 4 A research article addresses the qualitative phase of the study and serves to discuss the findings obtained from the individual interviews with IGP community facilitators and the document analysis of commercially available sewing training materials.

Chapter 5 A research article presents a detailed description of the design and development of sewing training material interventions for low-literate rural IGP participants, as facilitated by a decolonised approach.

Chapter 6 A research article presents the quantitative phase of the study and the outcomes of the pre- and post- tests in line with the field based interventions.

Chapter 7 Outlines the major conclusions, recommendations based on the interpretation of the findings and suggestions emanating from the findings for future work.

1.11 Research outputs

The findings of this study are presented in article format and aspects within this study have also been presented at various conferences and research seminars.

1.11.1 Research articles

Based on the results of this research, three research articles were completed within this study as depicted in Table 1.4.

Table 1.4: Research articles

Chapter within this thesis	Article title	Submission/publication
4	Reviewing sewing training materials for participants of rural income generating projects.	Submitted to the Journal of Consumer Sciences.
5	A decolonised approach to developing training materials for low-literate participants for rural sewing income generating projects.	Published by the Design Education Forum of Southern Africa (DEFSA), 2017*.
6	The implementation and evaluation of sewing skills training pamphlets for appropriateness in rural sewing income generating projects.	Paper to be submitted to The International Journal of Consumer Studies.

*http://www.defsa.org.za/sites/default/files/downloads/2017conference/Coetzee_van-Staden_Oldewage-Theron%23decolonise.pdf

1.11.2 Conference and research presentations

The findings of this study have also been presented at various conferences and research seminars as presented in Table 1.5 below.

Table 1.5: Conference and research presentations emanating from this study

Title of the presentation	Conference/Research seminar
Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects	Academic research presentation at the 9th Annual Research Seminar of the Faculty of Human Sciences at the Vaal University of Technology, 22 July 2016.
Reviewing sewing training materials for participants of rural income generating projects	Paper presented at the 13th International SAAFECS Conference, held in Centurion SA, from 5-9 March 2018.
A decolonised approach to developing training materials for low-literate participants for rural sewing income generating projects	Paper presented at the 2017 DEFSA (Design Education Forum of Southern Africa) conference held at Freedom Park, Pretoria, from 27-29 September 2017.

1.12 Author's Contributions

This study was executed by a team of researchers, each fulfilling a certain role as depicted in Table 1.6.

Table 1.6: The research team

Author	Contribution
Me Nicolene Coetzee	Researcher/student
Dr Hanlie van Staden	Promoter and general project advisor
Prof. Wilna Oldewage-Theron	Co-promoter
Dr Christi Niesing	Co-promoter
Prof. Suria Ellis	Statistical analysis and consultation

I declare that I have approved the article(s) included in this thesis, that my role in the study, as indicated, is a representative of my actual contribution, and that I hereby give my consent that it may be published as part of the Doctor Philosophiae in Consumer Sciences of Me. N Coetzee.

_____

Me. N Coetzee
PhD Student

The co-authors of this study confirm their individual role in the research, giving permission that the articles as presented within Chapters 4, 5 and 6 may form part of this thesis.

_____	_____
Dr H van Staden	Prof. W Oldewage-Theron
Promoter and co-author	Co-promoter and co-author
_____	_____
Dr C Niesing	Prof. SM Ellis
Co-promoter	Statistician and co-author of the quantitative research article

1.13 Concluding summary

This chapter recognised that IGPs such as the Holding Hands sewing units, provide opportunities for income generation and skills training, but it is not without challenges. Previous research studies within the Holding Hands sewing IGPs (over the past 14 years) have produced valuable findings (related to educational intervention programmes and factors related to project sustainability and participant motivation) and indicate that further research inquiry is essential for the effective development of sewing training material interventions to facilitate the development of practical skills training within these units. Training materials could bridge the gap between sewing challenges and practical sewing skills, provided they are appropriate for the participants of rural sewing IGPs. As such, a review of the 2006 Manual and subsequent design, development

and evaluation of new sewing training material interventions specifically for low-literate individuals become relevant.

In this study, the need for research investigating the sewing training materials for use by participants of rural sewing IGPs is undertaken. It is positioned within a broader community engagement initiative of the NWU, namely the FLAGH programme, and targets the Holding Hands sewing IGP groups. This chapter introduced the background against which the investigation is set in terms of poverty, low education and unemployment as experienced by women residing in rural areas. Factors related to IGPs including practical sewing skills, literacy considerations, training materials and facilitators were introduced and described. The research questions and objectives were set against the problem statement. Brief descriptions of the intervention research methodology, meta-theoretical and theoretical perspectives were provided, followed by the chapter outline including the contributions of authors to research articles. This chapter concludes with the significance of the study.

1.14 Reference List

Adkins, N.R. & Ozanne, J.L. 2005a. The low literate consumer. *Journal of consumer research,* 32(1):93-105.

Adkins, N.R. & Ozanne, J.L. 2005b. Critical consumer education: empowering the low-literate consumer. *Journal of macromarketing,* 25(2):153-162.

Albee, A. 1994. Support to women's productive and income-generating activities. Evaluation and research working paper series, number 1. http://www.caledonia.org.uk/papers/Support-to-Women-Albee-1994.pdf Date of access: 15 Jul. 2016.

Ambrose, P.J. & Chiravuri, A. 2010. A socio-cognitive interpretation of the potential effects of downsizing on software quality performance. *Information systems,* 20:239-265.

Bartholomew, L.K., Parcel, G.S., Kok, G., Gottlieb, N.H & Fernandes, M.E. 2011. *Planning health promotions programs: an intervention mapping approach.* 3rd ed. San Francisco, CA: Jossey-Bass.

Botha, E. 2005. Die ontwikkeling van'n opvoedkundige intervensieprogram vir vroulike plaasbewoners gerig op die herstel en herwinning van klere en tekstielartikels. Potchefstroom: NWU. (Dissertation - Master's degree).

Braich, S.P., Almeida, D.R., Hollands, S. & Coleman, M.T. 2011. Effects of pictograms in educating 3 distinct low-literacy populations on the use of postoperative cataract medication. *Canadian journal of ophthalmology,* 46(3):276-281.

Brits, J.S., Steyn, N.P., Blunck, H., Lesoala, V. & Mambolo, L. 2000. An income-generating community-based nutrition project for rural women. *South African journal of clinical nutrition,* 13(1):11-14.

Choi, J. 2011. Literature review: using pictographs in discharge instructions for older adults with low-literacy skills. *Journal of clinical nursing,* 20(21):2984-2996.

Choi, J. 2012. Development and pilot test of pictograph-enhanced breast health-care instructions for community-residing immigrant women. International journal of nursing practice, 18:373-378.

Coetzee, H. & Du Toit, I. 2011. Research Report 2: Needs assessment conducted in the Vaalharts Region, North West and Northern Cape Provinces, South Africa. A North-West living labs baseline project. Potchefstroom: Research Logistics.

Collinson, M.A., Tollman, S.M. & Kahn, K. 2007. Migration, settlement change and health in post-apartheid South Africa: triangulating health and demographic surveillance with national census data. *Scandinavian journal of public health,* 35(69): 77–84.

Cordasco, K.M., Asch, S.M., Bell. S.D., Guterman, J.J., Gross-Schulman, S. Ramer, L., Elkaya, U., Franco. I., Leatherwood, C.L. & Mangione, C.M. 2009. A low-literacy medication education tool for safety-net hospital patients. *American journal of preventative medicine,* 37:209-216.

Creswell, J.W. 2014. Research design: qualitative, quantitative and mixed methods approaches. 4th ed. Thousand Oaks, CA: SAGE.

Davies, R. 2012. Alarming rise in rural unemployment. *Mail and guardian,* 12 Sep. http://mg.co.za/article/2012-09-12-alarming-rise-in-rural-unemployment-mps-told Date of access: 15 Apr. 2018.

Development Policy Research Unit [DPRU]. 2017. Monitoring the performance of the South African labour market. http://www.dpru.uct.ac.za/sites/default/files/image_tool/images/36/2017-03-02%20Factsheet%2016%20-%20Year%20ended%202016Q3%20-%20Updated.pdf Date of access: 19 Aug. 2018.

Dirkx, J.M. 1998. Transformative learning theory in the practice of adult education: an overview. *Journal of lifelong learning,* 7(1):1-14.

Doak, C.C., Doak, L.G. & Root, J.H. 1985. Teaching patients with low literacy skills. 2nd ed. Philadelphia, PA: Lippincott Company.

Doak, L.G., Doak, C.C. & Meade, C.D. 1996. Strategies to improve cancer education materials. *Oncology nursing forum,* 23(8)1305-1312.

Dowse, R. & Ehlers, M.S. 1998. Pictograms in pharmacy. International journal of pharmacy practice, 6(2):109-118.

Dowse, R. & Ehlers, M.S. 2005. Medicine labels incorporating pictograms: do they influence understanding and adherence? *Patient education and counselling*, 58:63-70.

Dowse, R., Ramela, T. & Browne, S.H. 2011. An illustrated leaflet containing antiretroviral information targeted for low-literate readers: development and evaluation. *Patient education and counselling,* 85(3):508-515.

Du Plessis, T. 2004. 'n Opvoedkundige intervensieprogram vir vroulike plaasbewoners gerig op inkomstegenerering: vervaardiging van interieurprodukte. Potchefstroom: NWU. (Dissertation - Master's degree).

Duvenhage, S.S., Oldewage-Theron, W.H., Egal, A.A., & Medoua, G.N. 2013. Home-prepared soya milk: potential to alleviate protein-energy malnutrition in low-income rural communities in South Africa*? Health SA gesondheid,* 18(1):21-33.

Eckman, M.H., Wise, R., Leonard, A.C., Dixon, E., Burrows, C., Khan, F. and Warm, E. 2012. Impact of health literacy on outcomes and effectiveness of an educational intervention in patients with chronic diseases, *Patient education and councelling,* 87(2):143-151.

FaveCrafts. 2009. Sewing for beginners: learn to sew with free sewing patterns. http://www.favecrafts.com/Sewing/Sewing-for-Beginners-eBook Date of access: 12 Aug. 2015.

Gardiner, M. 2008. Education in rural areas. *Centre for education policy development,* 4(4):4-13.

Gau, R., Jae, H. & Viswanathan, M. 2012. Studying low-literate consumers through experimental methods: implications for subsistence marketplaces. *Journal of business research,* 65(12):1683-1691.

Giddens, J. 2012. Sewing technique: lapped zipper. http://extension.usu.edu/files/publications/factsheet/FC_Clothing&Textiles_2012-02pr.pdf Date of access: 19 May. 2016.

Goduka, N. 2012. Re-discovering indigenous knowledge – Ulwazi Lwemveli for strengthening sustainable livelihood opportunities within rural contexts in the Eastern Cape Province. *Indilinga, African journal of indigenous knowledge systems,* 11(1):1-19.

Houts, PS, Doak, CC, Doak, LG & Loscalzo, MJ. 2006. The role of pictures in improving health communication: a review of research on attention, comprehension, recall, and adherence. *Patient education and counselling,* 61:173–90.

Ivankova, N.V., Creswell, J.W. & Plano Clark, V.L. 2007. Foundations and approaches to mixed method research. (*In* Maree, K., *ed.* First steps in research. Pretoria: Van Schaik. p. 256-280).

Jae, H. & DelVecchio, D.S. 2004. Decision making by low-literacy consumers in the presence of point-of-purchase information. *Journal of consumer affairs,* 38(2):342-354.

Jae, H., DelVecchio, D.S. & Childers, T.L. 2011. Are low-literate and high-literate consumers different? Applying resource matching theory to ad processing across literacy levels. *Journal of consumer psychology,* 21:312-323.

Jae, H. & Viswanathan, M. 2012. Effects of pictorial product-warnings on low-literate consumers. *Journal of business research,* 65(12):1674-1682.

Joubert, P. 2010. Introduction to consumer behaviour. Cape Town: Juta.

Katz, M.G., Kripalani, S., & Weiss, B.D. 2006. Use of pictorial aids in medication instructions: a review of the literature. *American society for health system pharmacists*, 63:2391–2397.

Kaiser, S.B. 1997. The Social Psychology of clothing: symbolic appearances in context. 2nd ed. New York, NY: Fairchild.

Kaeane, R. & Ross, E. 2012. Income-generating projects: alleviating or perpetuating poverty? *Social work,* 45(1):17-34

Kripalani, S., Robertson, R., Love-Ghaffari, M.H., Henderson, L.E., Prasca, J., Strawder, A., Katz, M.G. & Jacobson, T.A. 2007. Development of an illustrated medication schedule as a low literacy patient education tool. *Patient education and counselling*, 66:368-377.

Kruger, A., Lemke, S., Phometsi, M., Van't Riet, H., Pienaar, A.E. & Kotze, G. 2006. Poverty and household food security of black South African farm workers: the legacy of social inequalities. *Public health nutrition,* 9(7):830-836.

Mansoor, LE & Dowse, R. 2003. Effect of pictograms on readability of patient information materials. *The annals of pharmacotherapy*, 37:1003-9.

Martini, T.S. & Page, S. 1996. Attributions and the stigma of illiteracy: understanding help seeking in low literate adults. *Canadian journal of behavioural science,* 28(2):121-129.

Mavalela, H.R., Schenck, R. & O'Neil, M. 2002. The story of "Phela o Phedise" income generating project. *The social work practitioner researcher,* 14(1):48-66.

Mbuagbaw, L. & Ndongmanji, E. 2012. Patients' understanding of prescription instructions in a semi-urban setting in Cameroon. *Patient education and councelling,* 88(1):147-151.

Mezirow, J. 1997. Transformative learning: theory to practice. *New directions for adult and continuing education,* 74:5-12.

Michie, S., West, R., Campbell, R., Brown, J. & Gainforth, H. 2014. ABC of behaviour change theories. London: Silverback.

Montagne, M. 2013. Pharmaceutical pictograms: A model for development and testing for comprehension and utility. *Research in social and administrative pharmacy,* 9(5):609-620.

Mwingira, B. & Dowse, R. 2007. Development of written information for antiretroviral therapy: comprehension in a Tanzanian population. *Pharmacy world & science,* 29(3):173-182.

Ngoh, L. & Shepherd, M.D. 1997. Design, development and evaluation of visual aids for communicating prescription drug instructions to nonliterate patients in rural Cameroon. *Patient education and counselling,* 30:257–270.

Niesing, C.M. 2012. Evaluation of the sustainability indicators used in the Holding Hands community project in the North West province. Potchefstroom: NWU. (Dissertation - MBA).

Niesing, C.M. 2016. A conceptual framework for sustainable community development. Potchefstroom: NWU. (Thesis - PhD).

Niesing C.M., Scholtz, E.M. & Kruger, A. 2015. The process of defining the concept of sustainability: a case study of the "Holding Hands" income-generating community projects in the North West Province. *International e-journal of advances in social sciences*, 1(2):263-272.

Oldewage-Theron, W., Dicks, E., Napier, C. & Rutengwe, R. 2005. A community-based integrated nutrition research programme to alleviate poverty: baseline survey. *Public health,* 119(4):312-320.

Organisation for Economic Co-operation and Development (OECD). 2012. Poverty reduction and pro-poor growth: the role of empowerment. http://dx.doi.org/10.1787/9789264168350-en Date of access: 5 Apr. 2018.

Percy, C. 2008. Sewing in a zipper. http://www.threadsmagazine.com/item/3728/sewing-in-a-zipper/page/all Date of access: 5 Apr. 2018.

Phipps, M., Ozanne, L.K., Luchs, M.L., Subrahmanyan, S., Kapitan, S., Catlin, J.R., Gau, R., Naylor, R.W., Rose, R.L., Simpson, B. & Weaver. T. 2013. Understanding the inherent complexity of sustainable consumption: a social cognitive framework. *Journal of business research*, 66:1227-1234.

Posel, D. 2011. Adult literacy rates in South Africa: a comparison of different measures. *Language matters,* 42(1):39-49.

Presidency South Africa. 2008. Towards an anti-poverty strategy for South Africa: a discussion document. http://www.thepresidency.gov.za/docs/pcsa/economic/draft_antipoverty1008.pdf Date of access: 25 Jun. 2015.

Readers Digest. 2010. The new complete guide to sewing. Sydney: Readers Digest.

Reyna, V.F., Nelson, W.L., Han, P.K. & Dieckmann, N.F. 2009. How numeracy influences risk comprehension and medical decision making. *Psychological bulletin,* 135(6):943.

Richler, M., Vaillancourt, R. Celetti, S.J., Besanqon, L., Arun, K.P. & Sebastien, F. 2012. The use of pictograms to convey health information regarding die effects and/or indications of medications. *Journal of communication in healthcare*, 5:220-226.

Rothman, J. & Thomas, E.J. 1994. Intervention research: design and development for human service. New York, NY: Haworth Press.

Segalo, P. 2011. Our lives through embroidery: narrative accounts of the women's embroidery project in post-apartheid South Africa. *Journal of psychology in Africa,* 21(2):229-238.

Smith, A. 2009. The sewing book. New York, NY: DK Publishing.

Statistics South Africa. 2012a. Census 2011 Fact sheet. http://www.statssa.gov.za/census/census_2011/census_products/Census_2011_Fact_sheet.pdf Date of access: 15 Aug. 2015.

Statistics South Africa. 2012b. Census 2011. Statistical release. http://www.statssa.gov.za/publications/P03014/P030142011.pdf Date of access: 15 Aug. 2015.

Statistics South Africa. 2012c. Census 2011. Statistical release. P0301.4 https://www.statssa.gov.za/publications/P03014/P030142011.pdf Date of access: 19 Aug. 2018.

Statistics South Africa. 2014. Poverty trends in South Africa: an examination of absolute poverty between 2006 and 2011. http://beta2.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf Date of access: 15 Aug. 2015.

Statistics South Africa. 2017a. Poverty Trends in South Africa. An examination of absolute poverty between 2006 and 2015. http://www.statssa.gov.za/publications/Report-03-10-06/Report-03-10-062015.pdf Date pf access: 5 Apr. 2018.

Statistics South Africa. 2017b. Mid-year population estimates. http://www.statssa.gov.za/publications/P0302/P03022017.pdf Date of access: 5 Apr. 2018.

Statistics South Africa. 2018. Quarterly Labour Force Survey. http://www.statssa.gov.za/publications/P0211/P02112ndQuarter2018.pdf Date of access: 19 Aug. 2018.

Trollip, A.M. 1997. Towards developing a model for the empowerment of rural South African women. *Journal of dietetics and home economics*, 25(1):2-10.

Trollip, A.M. 2001. The development of a strategy for the facilitation of income-generating projects in rural communities: an insider account. *Journal of family ecology and consumer sciences,* 29(1):45-51.

United Nations Educational, Scientific and Cultural Organisation [UNESCO]. 2006. EFA Global monitoring report: Understandings of literacy. http://www.unesco.org/education/GMR2006/full/chapt6_eng.pdf Date of access: 19 Aug. 2014.

Van Biljon, W. & Van Rensburg, M. 2011. Branding and packaging design: Key insights on marketing milk to low-income markets in South Africa. African journal of business management, 5(22):9548-9558.

Van der Merwe, L. 2013. Motivation of women to participate in an income-generating project: the FLAGH programme. Potchefstroom: NWU. (Dissertation – Master's degree).

Van Niekerk, L. 2006a. A facilitators guide to arts and crafts training. (Unpublished).

Van Niekerk, L. 2006b. Women's income-generating activities in a disadvantaged farming community: towards sustainability. Potchefstroom: NWU. (Dissertation - Master's degree).

Van Niekerk, L. & Van Niekerk, D. 2009. Participatory action research: addressing social vulnerability of rural women through income-generating activities. *Journal of disaster risk studies,* 2(2):127-146.

Van Staden, J., Van der Merwe, D., Van Aardt, A. & Ellis, S. 2017. Low-literate consumers use of clothing labels amidst personal and product related challenges. *International journal of consumer studies,* 41:79-86.

Van Wyk, A.W. 2015. National Diploma Fashion Design. Vanderbijlpark: VUT, Main Campus. (Study guide 21005).

Viswanathan, M. & Gau, R. 2005. Functional illiteracy and nutritional education in the United States: a research-based approach to the development of nutritional education materials for functionally illiterate consumers. *Journal of macromarketing,* 25(2):187-201.

Viswanathan, M., Rosa, J.A. & Harris, J.E. 2005. Decision making and coping of functionally illiterate consumers and some implications for marketing management. *Journal of marketing,* 69(1):15-31.

Vorster, H., Venter, C., Kruger, H., Kruger, A., Malan, N., Wissing, M., De Ridder, J., Veldman, F., Steyn, H. & Margetts, B. 2000. The impact of urbanization on physical, physiological and mental health of Africans in the North West Province of South Africa: the THUSA study. *South African journal of science,* 96(9):505-515.

Wallendorf, M. 2001. Literally literacy. *Journal of consumer research*, 27(4):505-511.

Wasserman, Z., Maja, T.M. & Wright, S.C.D. 2010. Assessment of the English literacy level of patients in primary health care services in Tshwane, Gauteng Province: Part 2. *Health SA gesondheid,* 15(1):1-6.

Zikmund-Fisher, B.J., Ubel, P.A., Smith, D.M., Derry, H.A., McClure, J.B., Stark, A., Pitsch, R.K. & Fagerlin, A. 2008. Communicating side effect risks in a tamoxifen prophylaxis decision aid: The debiasing influence of pictographs. *Patient education and counselling,* 73(2):209-214.

Zimmerman, M, Newton, N, Frumin, L & Wittett, S. 1996. Developing health and family planning materials for low-literate audiences: a guide <http://www.path.org/files/DC_Low_Literacy_Guide.pdf.>. Date of access: 5 May. 2016.

Zimmermann, K.A. 2015. What is culture? *LiveScience,* 12 Jul. 2017 http://www.livescience.com/21478-what-is-culture-definition-of-culture.html Date of access: 11 May. 2018.

CHAPTER 2:
LITERATURE REVIEW

2.1 Introduction

Income-generating projects (IGPs) are defined as those small scale activities, undertaken by one or more persons, which are ultimately expected to produce an income or supplement current income (Ala, 1996:6; Van Niekerk & Van Niekerk, 2009:129) and are often used to help vulnerable communities to secure an income by means of their own efforts (Chitiga-Mabugu *et al.,* 2013:3). Against this definition, a characteristic of an IGP is the self-help orientation for the economic improvement of the members involved (Mavalela *et al.,* 2002:51). This notion of IGPs has also been used synonymously with the term cooperatives (Menyuko, 2011:12), described as a group of people united voluntarily and interconnected through social or economic interest to produce goods, or to sell individually produced goods or to provide a service in order to generate income (Chitiga-Mabugu *et al.,* 2013:9). Despite the various descriptions, there is general consensus that the participants of these groups come together to direct resources from within the community towards the production of marketable items in order to generate an income (Albee, 1994:2; Brits *et al.,* 2000:11; Chitiga-Mabugu *et al.,* 2013:16; Menyuko, 2011:11; Segalo, 2011:237; Trollip, 2001:47). The items produced very often include such traditional activities as: beading, bread baking, stone or wood carving, brick making, basket weaving or arts and crafts. The relatively low skills base and minimal infrastructure required to engage in the aforementioned activities render IGPs a feasible alternative for the members in resource poor communities to generate employment and obtain an income for themselves in order to improve their well-being (Chitiga-Mabugu *et al.,* 2013:4).

While sources documenting the impact of IGP's is limited, the reasons for participants joining IGP endeavours have been reported to include not having a consistent source of income, a need for additional income to care for families, the inability to obtain paid employment and a desire to make constructive use of available time (Menyuko, 2011:70). Despite of the fact that participants primarily join IGPs to generate income, limited research findings have indicated that participants remain committed to these projects, irrespective of income generation (Menyuko, 2011:107). Participation in IGPs hold various advantages and some of the non-economic benefits it presents include opportunities to gain non-monitory incentives (such as produce, or clothing produced by the IGP unit), personal development, establishing supportive relationships, making a positive contribution to the community by caring for others (Menyuko, 2011:71). It also creates feelings of empowering the poor (as it has been found to restore self-esteem and a positive attitude towards self-help) (Department of Social Development [DSD], 2005:35; Niesing, 2012:26), it improves the wellbeing of communities (Chitiga-Mabugu *et al.,* 2013:7) and creates a sense of entitlement

(because it enables participants to develop socio-economically by means of facilitation) (Niesing, 2012:26; Segalo, 2011:237). These benefits motivate the need for the continued existence and sustainability of IGPs, such as the Holding Hands sewing IGPs initiated within the rural communities of South Africa (SA).

A reported factor threatening the sustainability of IGPs, such as the aforementioned Holding Hands rural sewing IGPs, is a lack of training resources (Niesing, 2012:3). Most recent research pertaining to these IGP units found that this shortage of training materials impacted on the practical functioning of projects (Niesing, 2016:51) as the participants had a continued need to develop their skills levels (Niesing, 2012:18, 29). As a factor determining the appropriateness of traning materials for use in rural sewing IGPs, the obstacle of low-literacy further hindered skills development. Based on the persistent practical training needs, the broad aim of this research investigation is therefore to review existing training materials and determine the sewing training needs in order to develop and implement sewing training material interventions for IGP participants, and to evaluate the appropriateness of these materials employed in the rural sewing IGPs in the North-West Province (NWP), SA.

The design, development and implementation of appropriate sewing training material interventions can however not be undertaken without a thorough understanding of the context of the rural sewing IGPs, as well as the low-literate adult IGP participants, as consumers of the training material interventions. To gain this understanding, other research conducted in subsistence communities (referring to those having barely 'sufficient resources for day-to-day living' [Viswanathan *et al.,* 2008:243] such as the rural areas where the Holding Hands groups are based), suggest taking a threefold approach focusing on the public (or communal), individual and cultural factors affecting those people living in poverty (Viswanathan & Rosa, 2010:535). Because cultural factors cannot be separated from the individual or the public where it subsists, this literature chapter will follow a twofold approach focused on (1) the communal and (2) individual factors influencing the participants of rural sewing IGPs within the NWP of SA. The aim of this literature chapter is therefore to gain an understanding of these communal and individual factors in order to position the research investigation within the context where the problem occurs, as well as from the perspective of the individual who experiences the problem. These factors are essential in the foreseeable event that design, development and implementation of sewing training material interventions takes place during the subsequent phases of the study. Firstly, the literature related to the communal factors (including socio-economic factors) influencing participants of rural sewing IGPs is reviewed in section 2.2 (with reference to the literature objective 1.6.1.1). Secondly, individual factors are explored in terms of the theoretical perspectives for understanding low-literate adult participants in rural sewing IGPs in section 2.3 (with reference to literature objective 1.6.1.2). Relevant sources of information were gathered

from textbooks, published empirical research, articles, websites, newspaper publications and national statistical publications presenting official demographic, economic, and social censuses and surveys.

2.2 Communal factors influencing participants of rural sewing IGPs

Communal factors are those collective socio- and economic factors that are shared within a community and in terms of this study refers to the situations and or circumstances experienced by the participants in sewing IGPs in rural SA. In order to gain an understanding of this research setting, existing sources of information are consulted (De Vos & Strydom, 2011:480). In the next section, the literature review provides discussions on national unemployment and poverty, rural conditions of destitution (including low levels of education, lack of infrastructure and limited access to income and job opportunities), all factors that contribute to the poor health and wellbeing of rural communities. The realities of women in particular within rural communities are also reviewed. Lastly, the role players (from both government and tertiary education) contributing to the research and development of IGPs are discussed.

2.2.1 National conditions of unemployment and poverty

Unemployment and poverty are critical communal issues in SA (Phogole, 2010:1-6). Poverty holds a unique configuration following the legacy of apartheid (Aliber, 2003:487). Since the initiation of the new democratic SA in 1994, the national government has developed an array of initiatives aimed at enabling the unemployed to enter the labour market and reducing national poverty (Chitiga-Mabugu *et al.,* 2013:1; Triegaardt, 2006:1). Some of these initiatives include the Reconstruction and Development Programme (RDP) (adopted by government with the focus of 'poverty reduction and redressing inequalities', as persisting among South African citizens [Chitiga-Mabugu *et al.,* 2013:8]), presidential lead projects; the poverty alleviation fund, and the anti-poverty strategy for SA (which provides a basis for, amongst others, the creation of economic employment; the investment in human capital through education and training; and basic income security) (Presidency SA, 2008:25, 29, 33). Despite massive investments in infrastructure and developments towards job creation (Aliber, 2003:475; Presidency SA, 2008:56) these efforts have met limited success. National statistics indicate that in 1995 the official unemployment rate in SA was much lower at 16.9% (Statistics South Africa [StatsSA], 1998:23) indicating that government is losing the struggle against unemployment and subsequently poverty as the situation remains challenged.

2.2.1.1 Unemployment in South Africa

Unemployment keeps rising in SA (Trading economics, 2016) and two definitions of unemployment, namely the broad and the narrow definitions, are applied. The broad definition includes those who were without work in a given period and are available for work but did not take active steps to look for work (Africa Check, 2014). The narrow definition refers to 'those persons (aged 15–64 years) who were not: employed in the reference week; actively looked for work or tried to start a business in the four weeks preceding the survey interview; were available for work, (i.e. would have been able to start work or a business in the reference week); or had not actively looked for work in the past four weeks but had a job or business to start at a definite date in the future and were available' (StatsSA, 2017c:17). The official unemployment rate refers to the narrow definition of unemployment and most recent national statistics report official unemployment at 27.2% in the second quarter of 2018 (StatsSA, 2018b:1). Between the year 2000 and 2016 this rate averaged 25.29% (Trading economics, 2016), indicating that for almost two decades a quarter of South Africans have been willing and able to work, but could not obtain employment.

2.2.1.2 Poverty in South Africa

Increasing unemployment accounts for the increasing rates of poverty (Aliber, 3002:473, 478; Phogole, 2010:3). Poverty is understood to be a deficiency in the economic capabilities of an individual (Phogole, 2010:3; Presidency SA, 2008:4) as can be measured across various population groups, ages, educational levels, provinces and genders. The term poor is defined as the population living below the poverty line (StatsSA, 2014a:73); two types of poverty lines exist, namely the upper bound poverty line (UBPL) and the food poverty line (FPL). The UBPL is used as the primary poverty line and is defined as 'the level of consumption at which individuals can purchase both adequate food and non-food items' (estimated at ZAR992 per person per month in 2015), while the FPL is used to describe the 'level of consumption below which individuals are unable to purchase sufficient food' (estimated at ZAR441 per person per month in 2015) (StatsSA, 2017a:14). The most recent national statistics indicate that while 13.8 million people (20.2%) live below the FPL (in 2015) (StatsSA, 2017a:14), 30.4 million people in SA (a poverty headcount of 55.5%) live below the UBPL, indicating that more than one out of every two South Africans were living in poverty in 2015.

High poverty rates may be attributed to inadequate employment opportunities, particularly for low-skilled and unschooled people (Motloung & Mears, 2002:536), further implying a relationship between low income and low literacy levels (Viswanathan & Gau, 2005:187; Viswanathan *et al.,* 2012:161). This holds true in the South African context, where two-thirds of adults (specifically 65%) with no formal education were found to be poor and 92.3% of poor households had a household head who had not attained Grade 12 (StatsSA, 2014a:36, 43). In terms of

unemployment statistics, the most recent national results indicate that those adult individuals who have not completed secondary school contribute the majority of the unemployed in SA (represented by 2 818 000 South Africans during the 2nd quarter of 2018, versus the 2 110 000 unemployed who have complete Grade 12 [StatsSA, 2018b:76]). As an upper middle-income country, it is widely accepted that SA has one of the most skewed distributions of personal income in the world (Joubert, 2007:141; Machethe, 2004:1). This scenario is due to the policy of apartheid that limited the opportunities available to the majority of the black population at a communal level (Aliber, 2003:476), depriving entire communities of infrastructure development and amenities. Such communities are likely to remain trapped in poverty.

Chronic poverty

A relevant consideration in SA is the extent to which poverty is carried forward from one generation to the next (Aliber, 2003:476; Hulme *et al.,* 2001:5) referred to as chronic poverty. Chronically poor households are often less educated and have lower literacy levels than other categories of poor households (those who can be classified as occasionally poor or never poor [Aliber, 2003:477; Hulme *et al.,* 2001:12]). National government proclaims that the orientation of the Anti-poverty policy (of 2008) is directed at these chronically poor and most vulnerable people while identifying different types of poverty in order to devise appropriate strategies (Presidency SA, 2008:11, 49). The purpose is not to give the chronically poor advantage over other poor people, but rather to recognise that some initiatives are more suitable to aiding the chronically poor than others (Aliber, 2003:488). The characteristics of the chronically poor therefore holds important considerations in terms of developing appropriate poverty alleviation strategies. Chronically poor individuals such as those living in rural areas, may, in the absence of remunerative opportunities, have little or no prior or formal education and training, and lack the abilities to engage in economic and other opportunities (Aliber, 2003:479; Hulme *et al.,* 2001:34; Hulme & Shepherd, 2003:417). They are therefore likely to remain in poverty in the absence of external assistance (Hulme *et al.,* 2001:34). This position brings about the need for external role players such as government appointed facilitators or community engagement practitioners to initiate poverty alleviation projects (further discussed under section 2.2.3).

Additionally, national poverty is dually challenged. Efforts to alleviate poverty are continuously hindered by the loss of job opportunities in the formal economy (Aliber, 2003:473) such as the nearly 50,000 jobs lost since 2012 in the South African mining sector (Mathews, 2017; Seccombe, 2016). Furthermore, the national education system of the South African government is failing to protect the right to a primary education for the majority of South African youth (Gardiner, 2008:14; Spaull, 2013:10; Tshabalala, 2008:134). With unqualified and low skilled people being twice as likely to live in poverty, it becomes clear that the cycles of chronic poverty will not be broken if the

educational outcomes of children and young people are not improved (Presidency SA, 2008:60), especially for those individuals living in destitute conditions in rural areas.

2.2.2 Conditions of destitution in rural areas

The consequences of poverty, as reported in the latest national census results, indicated that the most vulnerable to poverty are represented by black South Africans living in rural areas, with women and children being the most affected (StatsSA, 2017a:56). Rural areas are distanced from the towns and cities where the education and infrastructure for economic development prevail (Gardiner, 2008:8). The geographic dimension of the incidence of poverty also indicates that the majority of chronically poor in SA are living in rural areas (Aliber, 2003:475, 487) where employment opportunities commonly consist of, and are very often limited to, agriculture and agriculture-related activities (Machethe, 2004:1). Farm workers in SA have historically received low wages under unfair labour practices, experienced poor living conditions and have been exposed to inadequate housing, water and sanitation services, continuously locking these individuals into chronic poverty and dependence (Thekiso *et al.,* 2013:293). Many of the challenges experienced in rural areas are due to low levels of education, lack of infrastructure and limited access to income and job opportunities often resulting in poor health and well-being (Kruger *et al.,* 2006:833). This especially effects the women living in rural areas. This situation is discussed accordingly.

- **Low levels of education**

Many South African adults in rural areas experience literacy challenges (StatsSA, 2012a:34). The unequal access to education and other skills training is a primary cause of multiple rural problems, such as SA illiteracy rate being the highest in rural areas (Oldewage-Theron *et al.,* 2005:313; Posel, 2011:39), reflecting an apartheid legacy (Chitiga-Mabugu *et al.,* 2013:14). Owing to the long geographical distances between farm dwellings and the nearest schools, farm workers and the families of farm workers have limited access to education (Kruger *et al.,* 2006:833).

Farm schools provide primary education, and very occasionally secondary education, to the children of black farm workers on privately owned commercial farms (Gardiner, 2008:27). However, the quality of education in farm schools remains questionable. The lack of educational services to rural communities is evident in the small number of farm schools that provide education beyond Grade 7 and high dropout rates accounting for many adults on farms having education only up to Grade 4 (Gardiner, 2008:28; Kruger *et al.,* 2006:832; Tshabalala, 2008:136). As much as a quarter of rural children leave primary schools without even basic literacy and numeracy skills (Presidency SA, 2008:59) thus rendering their future opportunities doubtful. This also holds implications for the successful operation of rural IGPs. Recent research in rural SA found that various skills remain in short supply in rural areas (Chitiga-Mabugu *et al.,* 2013:14) and

that their highest level of education achieved proved to be a major challenge for the participants of IGPs as it impacted on their capacity to manage the projects (Mudau & Netshandama, 2016:1).

- **Lack of infrastructure**

Besides the educational systems, basic infrastructure is also lacking in rural areas. Basic facilities such as roads, buildings, schools, clean water and adequate sewage systems are underdeveloped or very often absent in rural areas. Due to this absence, other opportunities for advancement (such as skills training) are also scant in rural communities (Kruger *et al.,* 2006:381; Thekiso *et al.,* 2013:308). This causes many households to be trapped in rural areas where they do not have the necessary resources to develop.

- **Limited access to income and job opportunities**

The absence of remunerative employment opportunities in rural communities has been reported to be the single greatest cause of rural poverty (Aliber, 2003:480). This situation has been worsened by the recurring decline in employment of farm workers over the past decades. For contextual background, a summary table is presented (Table 2.1) to illustrate the decreases in agricultural employment across 5-year intervals (over the 40 years between 1970 and 2010); for the past 7 years (annual results) and the most recent (2018a and 2018b) quarter on quarter changes. The table also presents the rate of change. This information is based on national statistics for quarterly labour force surveys (for each 3rd quarter) citing the following sources: Department of Agriculture, Forestry and Fisheries [DAFF], (2016a:4); South Africa (2010: iv); and Statistics South Africa (2010: viii; 2011:vi; 2012b: v; 2013: iv; 2014b; 2015: iv; 2016; 2017b:1; 2018a:1, 2018b:19).

Table 2.1: Number of employees within the South African agricultural industry (including farm and domestic workers on farms)

Intervals	Year	Number of employed people	Rate of change
5 year intervals (over 40 years between the years 1970 and 2010)	1970	1, 600 000	-
	1975	1, 433 500	-166 500
	1980	1, 235 200	-198 300
	1985	1, 323 700	88 500
	1990	1, 184 700	-139 000
	1995	891 000	-293 700
	2000	965 000	74 000
	2005	628 200	-336 800
	2010	640 000	11 800
Annual statistics for the past 7 years (for the 3rd quarter of each year)	2011	624 000	-16 000
	2012	661 000	37 000
	2013	706 000	45 000
	2014	686 000	-20 000
	2015	897 000	211 000
	2016	881 000	-16 000
	2017	810 000	-71 000
Most recent quarter to quarter change (latest results)	1st quarter of 2018	847 000	37 000
	2nd quarter of 2018	843 000	-4 000

Table 2.1 highlights continual and significant decreases in agricultural employment over the past five decades. During 1970 the number of people employed on farms were 1.6 million (as agriculture contributed to more than 6% of the Gross Domestic Profit [GDP] [DAFF, 2016b: v]). This number steadily decreased to only 891 000 during 1995 (DAFF, 2016a:4). Further to the above, a large percentage of these workers were employed as casual or seasonal workers, working for an unspecified duration of time. The high number of casual workers resulted in less job security for farm workers and their families. During the period from 2000 to 2005, the agriculture sector experienced substantial job losses (of more than 300 000), shortly followed by the global economic crisis (during 2008) which resulted in a further decline in employment in all sectors of the economy, including agriculture (StatsSA, 2010:2). In 2010, employment gains amounted to a total employment of 640 000 in the agriculture sector, which remained relatively stable until 2014 (with employment numbers of 624 000; 661 000; 706 000; 686 000 for the years 2011; 2012; 2013; 2014 respectively). In this sector, 2015 witnessed a substantial increase (of 211 000 agricultural jobs since 2014), employing 897 000 individuals accounting for 5,7% of the total labour force (StatsSA, 2015: iv). While it still held a low industry share in national employment (and accounted for only 1.9% of GDP [DAFF, 2016b: v]), the agricultural sector in districts where farming is prevalent, for example the NWP, provided jobs for 18% of the labour force during 2015 (Davis, 2015), which was much higher than the national figures in non-agricultural districts. The latest national statistics indicate that agriculture accounted for 843 000 employed persons during the second quarter of 2018, and compared to the first quarter of this year, 4 000 jobs have recently been lost in this sector (StatsSA, 2018a:1; 2018b:1).

Various investigations into the reasons for the decline in employment in the agricultural sector over the past decades have been undertaken, from both economic as well as non-economic perspectives. From an economic viewpoint, agricultural job losses could be ascribed to factors such as higher labour costs that lead to the substitution of permanent labour with more laboursaving mechanical and technological approaches (Simbi & Aliber, 2000:6). This included cost savings that farmers find practical and attractive, rendering many farm workers redundant. From a non-economic perspective, a report on the agricultural employment crisis in SA suggests that a collective decision by farmers to limit permanent workers has been driven by considerations such as fear of losing control of land to resident farm workers due to legislation (with reference to the land reform process aimed at restitution, land tenure reform and land redistribution), as well as challenges imposed by the labour law (Simbi & Aliber, 2000:2). Regardless of the reasons, such lay-offs limit the access to income and pose a threat to the overall wellbeing of farm workers and their families.

- **Poor health and wellbeing of farm dwellers**

The findings of a national study conducted in 2013 in the rural areas of the NWP indicated that farm workers and their families experience various health problems and poor psychological well-being (Thekiso *et al.,* 2013:306). Their despondency may be ascribed to unfulfilled basic needs, as 58% of households in the NWP reported having insufficient financial means to obtain basic necessities such as food and clothes (South African National Health and Nutrition Examination Survey, 2013:3). Other research in the rural areas of the NWP also reported poor nutritional status of adults and children, as well as the regular use of alcohol by both male and female farm workers as a means to compensate for destitute living conditions (Kruger *et al.,* 2006:835). These factors bring about a low quality of life and other poverty induced unfulfilled needs (Thekiso *et al.,* 2013:306) as often experienced by the women living in rural areas.

- **Women living in rural areas**

Poverty in SA is predominantly experienced by black women living in rural areas (Kaeane & Ross, 2012:17; Kehler, 2001:41; Machethe, 2004:1). This was highlighted by the anti-poverty strategy for SA which specified that extra attention be paid to women living in rural poverty (Presidency SA, 2008:59). Recent labour legislation reflects this priority as the basic conditions of employment for farm workers in SA have been amended to a minimum monthly wage of ZAR3 169.19 (in 2018) (South African Labour Guide, 2018) and includes the salaries of domestic workers (including women working as housekeepers, gardeners or nannies) on farms. The employment equity amendment act also dismissed gender discrimination by the 'code of good practice on equal pay for work of equal value' (Scheepers, 2014). Despite these efforts, a disparity between the men and women living in rural areas persists. Female headed households are still at a significantly higher risk of poverty (Rogan, 2012:491; Rogan, 2016:987). With limited employment opportunities for women on farms, many female farm dwellers continue to depend on the income of their male partners or other family members working on the farms (Kruger *et al.,* 2006:834). They lack the education and/or skills to engage in a wider economy and find it very problematic to generate income (Van Niekerk, 2006:66). The geographical distance between the rural communities and the nearest big cities also makes it unfeasible and cumbersome to look for employment or benefit from the opportunities presented there (Van Niekerk, 2006:66). Recent research within the Holding Hands rural sewing IGPs found that the majority of the IGP participants (68%) were responsible for caring for four or more persons, which proves onerous considering that they do not have permanent income (Niesing *et al.,* 2015:267). Bearing the burden of caring for children under miserable circumstances therefore further prohibits them from pursuing opportunities elsewhere (Presidency SA, 2008:8). Adversely affected by their circumstances and in the face of limited and often absent remunerative employment opportunities, the need for development of successful and sustainable IGPs, especially for these women in rural areas, becomes apparent.

2.2.3 Role players in the research and development of IGPs

Due to deficiencies within their own education and infrastructure, many rural communities have become dependent on external assistance for the establishment of IGPs. It is accepted that rural based IGPs seldom arise spontaneously; rather, they are often initiated by external agents (Ala, 1996:6) such as government organisations or academic institutions. These fundamental role players and their contributions towards the research and development of IGPs are subsequently discussed.

2.2.3.1 The role of government in the research and development of IGPs

For government, fundamental national role-players in IGP development include the National Development Agency (Mayer *et al.,* 2011:30) and the DSD, making funding and support services (such as the facilitation of poverty alleviation activities) available for the initiation of IGPs (Chitiga-Mabugu *et al.,* 2013:10). However, the DSD allocates only minimal amounts of its budget to poverty relief projects (estimated at ZAR200 million per year in 2018), while the vast majority of the annual budget is assigned to social grants (which account for 94.4% of the budget and an estimated ZAR176 billion per year on average [as budgeted for 2018; National Treasury, 2018:3]) for the 17 million beneficiaries in SA receiving at least one form of social grant (during 2017/2018 [Rossouw, 2017]). While recent research findings have shown that social grants have succeeded in significantly reducing poverty rates (particularly for the African population, people in rural areas and in female-headed households [Satumba *et al.,* 2017:33]), these distributions indicate inequitably high budget allocations to social welfare, and low government spending on projects (such as IGPs) that could address economic needs. It is also noted that the documentation pertaining to the governments' IGP approach to poverty alleviation is insufficient and unsupported with published research (Menyuko, 2011:17). Subsequently, the data for measuring the impact of income generating activities by government, as well as the effectiveness of these interventions for creating pathways out of poverty, is nearly non-existent (Chitiga-Mabugu *et al.,* 2013:14). This is unfortunate as detailed information (such as that supported by formal research findings) about their endeavours can be used to draw lessons from and could prove to be immensely valuable for future poverty relief IGPs.

As a matter of interest in this study, an online search was conducted to review the training materials issued by government as part of their skills training programmes (such as the Cape skills e-Literacy training materials [Western Cape Government, 2013]). While several projects aimed at rural development have been formulated (such as the Comprehensive Rural Development Programme [CRP] and the Recapitalisation and Development Programme [RADP]) no evidence could be found on the EDT portal, ProQuest, the Nexus databases or government websites of any training material for rural income generating programmes either supplied or

researched by government. This presents a serious shortcoming, rendering the present study imperative.

2.2.3.2 The role of tertiary education in the research and development of IGPs

Tertiary academic institutions, on the other hand, have provided ample published research on IGPs in SA. Some of their most valued findings related to the attributes promoting success as well as probable causes of IGP failures. Research findings related to factors for success included participants taking ownership of the projects (Menyuko, 2011:15), adequate training (adapted to the culture and skills level of the community [Niesing, 2012:27]) and co-facilitators who contribute to the sustainability of the project after the departure of the external agents (Menyuko, 2011:15; Trollip & Boshoff, 2001:53). Factors hindering their successful operation have also been reported to include insufficient funds for equipment and stock, lack of transport to markets and suppliers, defective equipment caused by unskilled handling, insufficient knowledge of the market, and inadequate participant skills to operate equipment and practically construct the products which render the products unmarketable (Trollip, 1997:7). These findings, identified within our unique national context, are valuable to other IGP research endeavours in SA. In addition, many academic institutions in SA have also practically engaged with, and initiated sewing based IGPs, some of which include:

- University of Pretoria (UP): *Tswaraganang*: A craft based IGP near the city of Pretoria in the Motla community, producing handmade crafts (Trollip & Boshoff, 2001:53). *Amajobjob:* A social entrepreneurial unit where participants have the opportunity to earn an income by constructing trousers known as '*African Happy Pants'* a proudly South African product (Strydom & Tshelepis, 2013:29).
- University of South Africa (Unisa): *Phela O Phedise:* An income-generating project (Mavalela *et al.,* 2002:48).
- North-West University (NWU): *Holding Hands*: An initiation within the FLAGH programme to establish sewing IGPs.

These practical projects and their outcomes (including research findings as disclosed within published sources) constitute a useful starting point for other practice based investigations and future sewing training endeavours. In the instance of this study, reference can be made to these projects as it discloses valuable experiences gained (such as trial and error) and create a contextual background for sewing IGPs.

The literature presented in this section (2.2) has furnished insights into some of the communal-social and economic factors causing conditions of destitution for some of the most despondent South African citizens such as those women living in rural communities. It has demonstrated that, although the South African government has initiated many poverty relief endeavours, particularly

those individuals in rural communities, remain in need of external facilitation if they are to overcome their predicament of chronic poverty through the establishment of IGPs. Discussions on national poverty and unemployment as well as some of the challenges experienced in rural areas have created a contextual understanding of the research setting (where the rural sewing IGPs are based) and the research problem (why the problem of the lack of training materials persists) thereby providing a vital point of departure for the broader research undertaking. In the next section (2.3), the theoretical perspectives TLT and SCT offer an understanding of the IGP participant by exploring some of the complexities related to low-literate adult learners within rural sewing IGPs.

2.3 Individual factors influencing participants of rural sewing IGPS: Theoretical perspectives for understanding low-literate adults

To facilitate the understanding of low-literate adult participants of rural sewing IGPs, theoretical perspectives are applied. Because theoretical perspectives contribute to critical thinking and reflection on specific subjects (Creswell, 2014:249; Dirkx, 1998:4; Kaiser, 1997:32), this section offers theories that describe and explain adult learning and behaviour by informing and disclosing those values, beliefs, assumptions and meanings acquired through lived experience that informs the point of view applied in the pursuit of knowledge (Bryan *et al.,* 2009:558; Dirkx, 1998:4). Motivated by the need to better understand rural IGP participants, as users of the sewing training materials under investigation, dual theoretical perspectives warrant consideration. Firstly, the complexities relevant to adult learners (as facilitated by the TLT) and secondly, information processing of low-literate individuals within the social group setting of an IGP (as informed by SCT) are considered. Employing these theories provide the opportunity to better understand the individual end-user and to analyse broad issues regarding the design of interventions (Michie *et al.,* 2014:17) such as the design of the sewing training interventions undertaken during a subsequent phase of this study. Firstly, the theoretical perspectives are presented in accordance with the literature framework (Figure 2.1) illustrating the components of the contextual premise and key constructs within TLT and SCT. Following their descriptions, specific guidelines are provided for practical application so as to facilitate the processes of transformative learning and social cognitive behavioural change within sewing training material interventions.

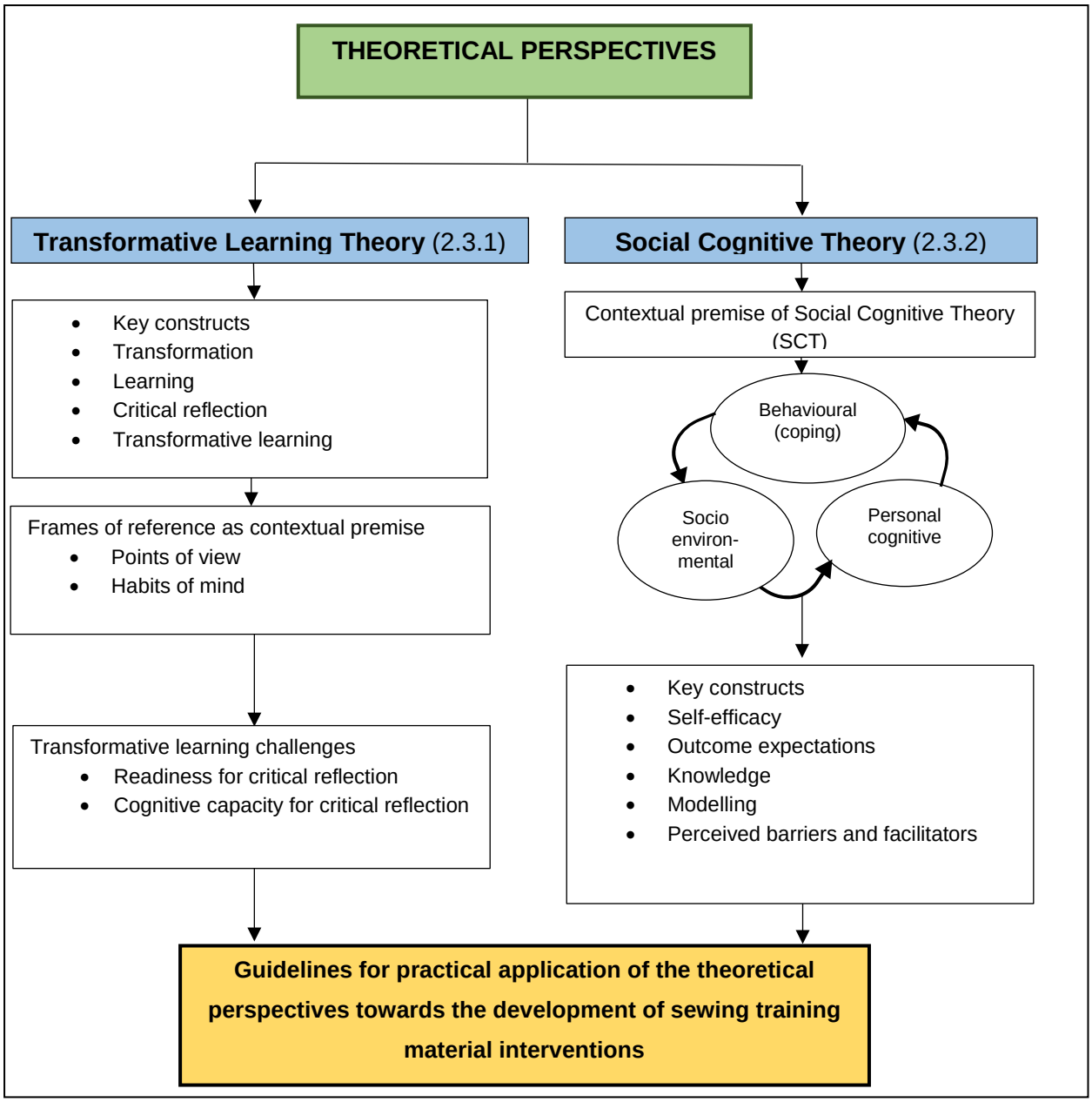


Figure 2.1: Theoretical framework, perspectives towards understanding low-literate adults for development of sewing training materials (adapted from Bartholomew *et al.*, 2011:104; Jordan *et al.*, 2008:60; Merriam & Leahy, 2005:1; Mezirow, 1997:10; Schunk, 2012:157, 158).

2.3.1 Transformative learning theory: background for understanding adult learners

As a theory of adult learning, TLT it is a comprehensive, idealised, and universal model providing the constructs, principles and processes of transformative learning (Mezirow, 1994:222) and is described as the essence of adult education (Dirkx, 1998:1, 9; Mezirow, 1997:11). Transformative learning theory is also referred to as learning that changes the way individuals think about themselves and their world (Merriam, 2011:29; Teaching Excellence in Adult Literacy [TEAL], 2011:1, 2) by making meaning of experiences and questioning assumptions based on prior

experiences (Cranton, 2006:8). Although TLT is not the sole theoretical foundation of this study, it provides a point of departure and background for the investigation as a deeper understanding of the barriers of transformation can offer insights into the manner in which adult learners perceive training materials. This, in turn, may lead to the development and implementation of more appropriate sewing training material interventions in line with the broader aim of this research undertaking. In view of this study, Mezirow's theories (1994; 1997; 2000) are applied as related to critical reflection within transformation. The key constructs of TLT are discussed below.

2.3.1.1 Key constructs within transformative learning theory

Adult learners are defined as mature, socially responsible individuals, who participate in sustained (informal or formal) activities that lead them to the acquiring and elaboration of new knowledge, skills, or values, revision of their basic beliefs and assumptions or changing the way they view some aspects of themselves or the world (Cranton, 2006:2). Within the domain of transformational learning, the term *transformation* refers to a reformulation of structures of meaning by reconstructing dominant views (Mezirow, 2000:19). The term *learning* is defined as a social process of using a prior interpretation, or a process of construing a new or revised interpretation of the meaning or one's experience as a guide to future action (Mezirow, 1994:222; 1997:10; 2000:5). The practice of learning occurs in the social environment of everyday life (Schunk, 2012:118; Tett & St. Clair, 2010:101). *Critical reflection* refers to the act of attending to the grounds of one's beliefs (Mezirow, 1994:223), while *transformative learning* occurs when an individual encounters an alternative perspective that causes prior habits of mind to be called into question (Cranton, 2006:23).

In view of this study, the term transformation refers to the ability or willingness of the IGP participants to restructure their existing meanings or assumptions by recreating their principal views. The IGP participants from rural sewing IGPs may have undergone a prior negative experience with the use of training materials, causing them to believe that such sources do not apply to them, is not made for them, is too difficult for them to use or that it is not directed towards meeting their needs. In order for transformative learning to take place, this principle view has to be reconstructed and prior negative feelings transformed into motivation to participate in the learning process. Learning refers to the social processes within the group environment of the rural sewing IGP, where existing knowledge (within the collective of the IGP unit) on the basis of prior experiences and personal perceptions is used to interpret a new understanding of a meaning, and to guide future actions. Critical reflection takes place when the IGP participants start to question prior uncriticised beliefs (such as the belief that training materials do not apply to them) by considering the option that it might, in fact, address their needs. As the end goal, transformative learning takes place when the IGP participants are exposed to the alternative perspective (in the form of newly developed sewing training material interventions) and questions their principle

beliefs (they no longer have negative perceptions or feelings towards the use of the sewing training materials).

2.3.1.1.1 Frames of reference as the contextual premise of transformative learning theory

Frames of reference, also described as meaning structures, perspectives or worldviews, are those structures of assumptions through which individuals understand experiences as they selectively shape (and consequently delimit) their expectations, perceptions, cognition, and feelings (Eitington, 2002:586; Mezirow, 1994:223; 1997:5; 2000:16). These frames of reference are mainly the result of family, communal, cultural influences and the influences of primary caregivers such as parents (Cranton, 2006:19; Mezirow, 1997:6). Individuals are known to have a strong tendency to reject ideas that fail to fit their frame of reference (Mezirow, 1997:5). This holds implications when adult learners are exposed to something new such as a new sewing training material intervention and question its appropriateness on the foundation of their established frames of reference. The composition of their frame of reference therefore warrants further consideration, which includes two dimensions, namely points of view and habits of mind (Mezirow, 1994:223; 1997:5, 6).

- **Points of view**

Points of view refer to manifestations of meaning perspectives as a collection of beliefs, value judgements, feelings and attitudes that shape an interpretation (Mezirow, 1994:223; 1997:6). Based on their prior knowledge and experience, the rural IGP participants in this study may believe that training and training materials are not appropriate in terms of their actual sewing training needs. This may cause them to experience negative feelings about training in general. Such established viewpoints may negatively affect their attitudes and warrants consideration when developing more appropriate sewing training material interventions.

- **Habits of mind**

Habits of mind are broad, abstract, habitual ways of thinking, feeling and acting, influenced by assumptions that constitute a set of codes which may be social, cultural, economic, educational, psychological or political (Mezirow, 1997:5, 6). These often 'uncritically assimilated ways of knowing, believing and feeling' are based on the background, experience, culture and personality of the individuals (Cranton, 2006:23). Research related to low-literate adults has found that these individuals are known to engage in habitual thinking (Viswanathan & Gau, 2005:189), for example, the marked behaviour of relying on more literate friends, or the over-reliance on visual aids to obtain information (Jae & DelVecchio, 2004:349). Habits of mind may also include negative misrepresentations, falsifications, biases, intolerances, and stereotypes. Rural IGP participants who often experience low educational attainment may feel or believe that they will not be able to read or understand textual training materials. This assumption may be based on a prior negative

experience with the use of training materials that resulted in feelings of incompetence, embarrassment or stress. Such negative frames of reference necessitate facilitation of transformative learning to occur. The sequential transformative process (Mezirow, 1997:7) including plausible responses of low-literate adults with reference to sewing training materials is presented in Table 2.2.

Table 2.2: Example of low-literate adult learners' probable response to the process of transformative learning with reference to the use of sewing training materials (as adapted from Mezirow, 1997:7)

Step	Sequential process of transformative learning	Implications for low-literate adults in terms of training materials
1	To elaborate on existing point of view	Low-literate adults may hold beliefs about training materials, manifesting in negative feelings about such sources in general (for example; that books cannot be used to address their skills training needs).
2	To establish new points of view	The introduction of new training materials may cause participants to question their prior beliefs once they realise that they may be able to read and understand it (once they see the prominence of visual material they may become enthusiastic about using the training materials).
3	To transform point of view	This may transform their belief when the new training material does apply to them as they can read and understand it.
4	To transform the habit of mind	They may have new positive feelings towards the use of training materials.

Although the process of transformation seems simple, it holds various considerations for application by low-literate adults within the context of rural IGPs.

2.3.1.2 Transformative learning considerations with reference to adult participants of rural IGPs

Adult participants in IGPs voluntarily engage in socio-economic activities (Menyuko, 2011:13), normally without entry requirements or qualifying criteria. When rural IGP participants engage in training (practical skills or theory orientated) they are regarded as adult learners, and this presents dual factors for consideration. Firstly, adult learning has been described voluntary and intentional as people choose to transform through learning activities, or not (Cranton, 2006:6). Based on this assumption, all adults are motivated to learn (Cranton, 2006:23; Eitington, 2002:534; Ren, 2014:107), but this may not be valid in all situations. Rural IGP participants may feel obligated to engage in learning due to the persistent need for income generation. In such instances, their readiness to critically reflect on their existing frames of reference may present a barrier to learning. Their uncompromising and established ways of thinking or doing could cause reluctance to transform through learning, rendering their desires to possess adequate sewing skills an unachievable goal. Secondly, the process of transformative learning may not be feasible for all low-literate adults. It has been found that adults living in poverty or other extreme social conditions

are less likely to participate in transformative learning as a certain level of cognitive development is required to participate in the process of critical reflection (Cranton, 2006:7). As such, low-literate rural IGP participants with limited schooling (between Grades 0-6) may lack the cognitive capacity to participate in the transformative learning process. According to the descriptors for the 2012 South African Qualifications Authority (SAQA) National Qualifications Framework (NQF) for level two (equal to an elementary certificate [completion of Grade 7]) learners at this level use their own knowledge to select and apply known solutions to well-defined routine problems (SAQA, 2012:6). Decisions are therefore made on the basis of personal experience and perceptions as learners at this level are not likely to possess the ability to critically reflect on and address complex problems, as outlined in the learning outcomes appropriate to a qualification at that NQF level 7, which is comparable to a Bachelor's degree or advanced diploma (SAQA, 2012:12).

In the light of the limited cognitive capacity ascribed to limited formal schooling, coupled with the accepted coping strategies of low-literate individuals, such as the tendency to make decisions habitually (Viswanathan & Gau, 2005:189) or based on single attributes without considering other more abstract deliberations (Viswanathan *et al.,* 2005:25), the ability of low-literate adults to participate in a transformative process seems questionable. However, it must be considered that individuals often seek new ways of performing their current jobs in order to better adapt to work demands (Dirkx, 1998:2). This assumption applies to the rural IGP participants of the sewing IGPs. The dire economic conditions in rural areas could provide the motivation necessary to explore prior uncriticised beliefs. With prior research findings indicating that the participants of the Holding Hands groups are wanting to extend their skills base (Van Niekerk, 2006:80), the process of transformative learning does become viable.

2.3.1.3 Guidelines for the facilitation of the transformative learning process

The processes of transformational learning can be facilitated by building the strategies for transfer into the training intervention design (Merriam & Leahy, 2005:1) and providing precautionary strategies to overcome possible barriers to transformation. Recommendations drawn from theory suggest the inclusion of the adult learners in the development of the sewing training materials (Merriam & Leahy, 2005:1); the reflection of the real life experiences of the adult learners within the training material and promotion of group work where group members could actively engage in discourse as well as redefine and solve problems (Mezirow, 1997:11); the incorporation of new material onto the already well-developed frame of reference of the learners (Mezirow, 1997:10, 11) where instructional steps for a sewing process should be added to the existing methods used; the fostering of a supportive environment and the creation of opportunity for problem solving and discourse (Merriam & Leahy, 2005:1; Mezirow, 1997:11) and can be practically applied to the development of a sewing training material intervention within this research undertaking.

2.3.1.4 Practical application of the transformative learning guidelines to the sewing training material interventions for low-literate adults

The recommendations that transpire from theory may be applied in the practical development of sewing training material interventions as follows: to take a user-centered approach by consulting the IGP participants as adult learners and users of the sewing training material under investigation in order to obtain an understanding of their sewing training material needs and challenges within the unique setting of the rural sewing IGPs; to reflect the real life experiences of the adult learners within the training materials; to build the contents of the training material interventions into the already well-developed frame of reference of the learners by conducting a needs assessment (determining what is known); to use an instructional step-by-step format in the design of the training materials; and to include a positive format within the programme design by emphasising desired outcomes.

2.3.2 Social Cognitive Theory: an approach to understanding low-literate participants in the social group environment of the rural sewing IGPs

As a theory of behaviour change, the SCT is applied as the primary theoretical perspective positioning this intervention study. The application of a behavioural change theory is important for developing the sewing training material interventions because it seeks to explain why, when and how a behaviour does or does not occur, as well as the factors to be targeted to alter the behaviour (Michie *et al.,* 2014:22). The value of understanding the nature of a behaviour as well as the context in which it exists, may improve the probability that the intervention will be effective (Michie *et al.,* 2014:20).

The social cognitive theory developed by Bandura (1977) addresses fundamental aspects of how learning occurs (Slavich & Zimbardo, 2012:575) by focusing on understanding the individual thought processes and their perceptions by concentrating on the smaller details of individual accounts and behaviours within a framework of daily interactions in their environment (Kaiser, 1997:33, 34). The SCT therefore applies when exploring the manner in which low-literate individuals, as group members of sewing IGPs, perceive and apply sewing training material interventions within the rural and social group settings of the IGP units. Although limited, other research (Kripalani *et al.,* 2007:369; Ngoh & Shepherd, 1997:260) on the development of informational materials for low-literate individuals have also applied the SCT. The contribution of SCT to the development of the sewing training material is that it explores the manner in which information may be processed, interpreted (decoded), analysed (represented), remembered (retrieved), or used within the social world (Bandura, 2001:5; Baron & Byrne, 1997:76; Crisp & Turner, 2007:39). This holds particular importance to this research investigation as very little is known about how low-literate individuals use and apply textual information (Jae *et al.,* 2011:312). Following is a discussion of the contextual premise of SCT.

2.3.2.1 The triadic interplay as contextual premise of social cognitive theory

Social cognitive theory is an interpersonal theory that explains human behaviour in terms of a triadic reciprocal interplay where behavioural, socio-environmental and personal cognitive factors operate as interacting determinants (Ambrose & Chiravuri, 2010:248; Bartholomew *et al.,* 2011:102; Michie *et al.,* 2014:22; Phipps *et al.,* 2013:1228). Because these factors are crucial to the development of appropriate sewing training materials, a discussion follows.

2.3.2.1.1 Behavioural factors

Behavioural factors include those actions and habits that contribute to an individual's behaviour (Phipps *et al.,* 2013:1229) and affects the success of interventions directly. The behavioural actions taken by individuals may prove to be either enhancing (leading to improved actions) or compromising (resulting in worsened actions) (Kelder *et al.,* 2015:161). Behavioural factors also include an existing repertoire of capabilities, abilities or coping skills of an individual or of a collective. In the instance of this study, the coping mechanisms of low-literate individuals warrant further consideration. These individuals have been known to develop various coping mechanisms in response to their cognitive limitations (Viswanathan *et al.,* 2008:247). Within SCT, some of the strategies that the low-literate participants of rural sewing IGPs could employ when introduced to the sewing training material interventions include heuristics (creating cognitive shortcuts), the use of categorisation, and attribution (creating meaning of their experiences).

- **Heuristics as cues to simplify and explain reality**

Cues are often used to simplify and make sense of complex reality, and may also refer to cognitive shortcuts (or heuristics) enabling low-literate individuals to not only process information but also to cope when having to deal with more information than they can process (Baron & Byrne, 1997:80; Kaiser, 1997:34) known as information overload. The training material interventions developed for low-literate IGP participants should therefore contain the minimum number of words in order to convey the intended message (Dowse *et al.,* 2011:513; Mwingira & Dowse, 2007:175). Another factor for consideration is memory. The act of remembering refers to an individual's ability to reproduce or recognise entities such as presented material (Mayer, 2001:15). Previous research suggests that low literacy negatively impacts on working memory, defined as 'the temporary storage of information while an individual is actively processing information from long term storage' (Viswanathan *et al.,* 2009:391). Low-literate individuals may have the working memory capacity to comprehend any but the simplest of written messages (Jae *et al.,* 2011:313), consequently rejecting any text they find to be complex. Presenting information in ways that are concrete, specific and simple may therefore assist low-literate individuals in decoding the textual information (Mwingira & Dowse, 2007:174). Structures for reinforcement (such as repetition and revisions) within training materials may also counter negative effects.

- **Categorisation as cognitive consistency and continuity**

Based on the assumption that people actively work to maintain cognitive consistency and continuity by categorising objects, events, situations or people within the known mental framework of the individual (Jordan *et al.,* 2008:262; Kaiser, 1997:34), they may reject ideas that fail to fit their frame of reference, labelling those ideas as irrelevant (Mezirow, 1997:5), thus resulting in cognitive dissonance. Cognitive dissonance therefore occurs when an individual is confronted with an apparent inconsistancy or imbalance between their ongoing beliefs, values or knowledge and their current position (Eitington, 2002:584). The nature of the new sewing training material intervention should therefore encourage engagement and discourage intimidation in terms of interaction with it when in use and in its physical form (a format that is familiar to the rural IGP participants). Additionally, it follows that the new sewing training material interventions should align with the context in which the information is presented, as relevant to a rural IGP unit and the culture of the IGP participants.

Culture as an important factor for cognitive consistency

In the instance of this study, culture presents important considerations for cognitive consistency when establishing the appropriateness of training materials for black African end-users. Depending on the cultural context, various aspects of the materials such as the use and structure of words and images may be interpreted differently or with limited understanding. Additionally, deeper layers of culture imbedded within the intended conversation (relating to aspects of authority or other power relationships relevant to age, gender, religion or even past experiences of intercultural interactions) renders all forms of cross-cultural communication complex and challenging (Schmitz, 2012:35). Additionally, the development of informational materials targeted cross-culturally at low-literate readers requires special attention (Dowse *et al.,* 2011:513) and twofold factors apply. Firstly, the material should be culturally acceptable (Mansoor & Dowse, 2003:1006) so that it does not include any foreign or unfamiliar text or images that may be interpreted as improper or even offensive to certain groups. Secondly, the material should be culture-specific (Houts *et al.,* 2006:180) as cultural familiarity contributes to the perceived comprehension of low-literate readers. By including some culture specific examples (such as indigenous language, familiar phrases or diction) within the training materials, cognitive consistency and continuity can be facilitated. To promote the success of this research endeavour positioned within rural SA, a decolonised, indigenous framework should be judiciously applied throughout the development of the new sewing training material intervention.

A decolonized approach towards the development of tartining materials

By definition, the term decolonisation posits that

> "…it is important to be conscious of the value of African cultures in the framework of universal civilization, but not to compare this value with other cultures, not with the view of deciding its superiority or inferiority, but in order to determine, in general a framework of struggle for progress, what contribution African culture has made and can or must receive elsewhere" (Cabral, 1993:62).

Educational and training materials are customarily known to reflect westernised ideologies. Through apartheid, the South African curriculum has for long been subjected to Westernized colonisation (Gumbo, 2015b:105) and while education in Africa in the 21st century has to operate in both global and post-colonial contexts, the curriculum in postcolonial Africa is still to a large extent confronted by the legacy of colonial education (still in place decades after the political decolonisation) leaving the voices of the indigenous populations ever negated (Higgs, 2015:1). This poses the question: How are the institutions of education and training responding to the competing forces of Africanisation or Decolonisation? Despite various calls for a decolonised education over past years within the South African educational landscape, the developers of such sources may still be unfamiliar with the cultural dynamics of their end-users. While the student populations in most African Universities remain predominantly Black, these universities' curricular are still dominated by Western knowledge systems without acknowledging 'other' indigenous knowledge systems (Gumbo, 2015a:33). As a result, various aspects, such as the language of instruction, causes Black learners to feel misrecognised (DHET, 2015:6).

Some of the many ways of expressing the aspect of decolonisation include festivals, ways of dressing and through the development and education and training (Arowolo, 2010:1, 2). Because research has found that learning is more likely to be effective when learners' community and background are taken into consideration (Msila, 2007:146) several critical factors about integrating indigenous knowledge (such as: incorporating community ownership and involvement, and incorporation of indigenous cultures, identities, knowledge and values [Gumbo, 2015a:36]) and should be emphasised in the development of training interventions.

- **Attribution as motivation to explain occurrences and outcomes**

Individuals have cognitive desires to develop explanations or potential causes of outcomes and occurrences, and to understand the meaning of their experiences (Kaiser, 1997:37). This attribution for causality may reflect low-literate individuals' reasons for cognitive preferences, such as their partiality for specific types of materials such as information presented as graphic images (Viswanathan *et al.,* 2009:389). Low-literate participants of rural sewing IGPs may also, for example, motivate that it is more difficult for them to read in English as their second or third language. This may cause them to be reluctant to use the commercial training materials available and warrants further investigation.

2.3.2.1.2 Socio-environmental factors

Socio-environmental factors refer to all the factors that can affect an individual but are external to that person and includes the physical environment (availability of resources, food) and the socio- and cultural environment (including family, community members, neighbours) (Bartholomew *et al.,* 2011:104; Phipps *et al.,* 2013:1229). In the instance of this study, the physical environment may cause individuals from rural communities to lack the education and other infrastructures necessary for learning and advancement within their immediate settings. Many historically disadvantaged schools, prominent within the African townships in rural areas of South Africa, still hold a complex set of problems including underqualified teachers, poverty among learners, high student to teacher ratios and inadequate infrastructure (Posel, 2011:40) as evident by the ongoing shortages of textbooks, sanitary facilities and ill-equipped classrooms. Such conditions could have limiting effects on the ability of these individuals to develop into independent and self-directed thinkers.

The socio- and cultural environment also holds important implications for the development of sewing training material interventions for rural IGPs. Community, referred to as not only a place or location, but also a cultural or social network of people, plays a critical role in knowledge attainment. Knowledge arises through social acts when individuals attempt to make sense of new experiences in their day-to-day lives (Dirkx, 1998:7, 9). As such, knowledge is constructed within the context of the environment in which it is present as the result of social interaction (Jordan *et al.,* 2008:59). The specific social group to which individuals belong offers a shared history, values and a collective identity which can have a profound effect on the manner in which group members act and how they perceive themselves (Jordan *et al.,* 2008:71, 73). In the instance of this study, the rural IGP group members may therefore construct knowledge (their practical skills base), viewpoints (how they think and feel about training materials) and their image of self (how they perform as oppose to others in the group) within the context of the social group environment of their IGP unit.

2.3.2.1.3 Personal cognitive factors

Personal cognitive factors include cognitive and affective considerations (Phipps *et al.,* 20131:1229) and impact on an individuals' attitude towards learning by affecting their motivation to learn and their belief that they have the skill and ability to apply the learning, as well as their expectation of what could result from the learning (Merriam & Leahy, 2005:5, 6). In view of this study, the low-literate IGP participants may feel enthusiastic about the opportunity to better their practical sewing skills (by means of the sewing training material interventions), and foster expectations about the type of products that they will be able to produce once they have acquired set skills. They may also hold strong beliefs that they will be able to apply the skills obtained within

the operation of the rural sewing IGPs. Following is a further discussion of cognitive and affective factors affecting low-literate participants of rural sewing IGPs.

- **Cognitive considerations related to low-literate participants of rural sewing IGPs**

Although participation in IGP activities is not limited to literacy attainment or cognitive ability, it is affected by these. Research on low-literate individuals suggests that these individuals may be fundamentally different in terms of their cognitive predispositions (Viswanathan & Gau, 2005:187, 189). At the outset, a discernible cognitive challenge experienced by low-literate individuals is the act of reading. Reading is described as an active experience, with substantiate thoughts conveyed through complex and precise language, forging the natural pathways needed for abstract thinking and developing the capacity to self-create images from written description (Wallendorf, 2001:508) such as the ability to visualise a sewing instruction when reading a description thereof. It therefore holds various rather challenging cognitive demands. The limited cognitive ability of low-literate individuals may not permit this multifaceted, complicated and nonconcrete practice. Because low-literate individuals have to devote more time to the process of reading itself (at the word level) their capacity for the content of the text comprehension often becomes compromised leaving little comprehension of the text (Jae & Viswanathan, 2012:1674). The influx of unfamiliar cognitive demands may cause low-literate individuals to read slowly, skip over uncommon words (contributing to missing context) and tire quickly, causing reluctance to engage with textual training material (Dowse *et al.,* 2011:512) which holds implications when developing sewing training material interventions for them.

- **Affective considerations for low-literate participants of rural sewing IGPs**

Apart from the apparent cognitive limitations, low literacy holds various negative psychological effects which impact on the success and sustainability of IGPs (Niesing, 2012:29; 42; 43). Research has found that low literacy causes individuals to fear participation and social interaction (Adkins & Ozanne, 2005:104; Niesing, 2012:18; Van Niekerk, 2006:50; Viswanathan *et al.,* 2008:243) which could result in reluctance to participate, or withdrawal from the IGP (Adkins & Ozanne, 2005:104; Viswanathan *et al.,* 2008:252). It also creates feelings of being unable to contribute to group discussions or activities and perform certain tasks (Niesing, 2012: 18, 29; Van Niekerk, 2006:50; Viswanathan *et al.,* 2008:257), while affecting self-confidence by creating feelings of uncertainty or shame as low-literate individuals often feel responsible for their literacy (*in*)abilities (Adkins & Ozanne, 2005:94; Viswanathan *et al.,* 2008:243). In the event of perceived social risk, low-literate project participants may not engage in extensive problem solving (Adkins & Ozanne, 2005:104), which may result in negative repercussions for the rural sewing IGP unit. If the sewing training material interventions are not carefully and appropriately developed in the light of these concerns, the materials could consequently be discarded, rendering much needed resources unused.

2.3.2.2 Social cognitive theoretical constructs and their application to the sewing training material interventions for low-literate IGP participants

Within SCT, the dynamic triad of factors presents key constructs and methods applied for behavioural change (Bartholomew *et al.,* 2011:104, 105; Schunk, 2012:157). These constructs inform the cognitive standpoint from which training materials for low-literate IGP participants can be developed. Following is a discussion of the key constructs of SCT including self-efficacy, outcome expectations, knowledge, modelling and perceived facilitation and barriers.

- **Self-efficacy** is defined as a personal belief (perception or judgement) of a person's capability to accomplish a task or certain level of performance (Bartholomew *et al.,* 2011:102; Schunk, 2012:146). As an internal mental process it is often referred to as perceived self-efficacy (Kelder *et al.,* 2015:162). Low-literate IGP participants with low perceived self–efficacy may not have confidence in their own capability to effectively use sewing training materials, and consequently choose to avoid them. To ensure that the sewing training material interventions are geared towards behavioural change requires that the self-efficacy of the low-literate IGP participants are developed. From a practical viewpoint, the materials should be so developed that it encourages low-literate participants of rural sewing IGPs to succeed in small, attainable but increasingly challenging tasks. Further recommendations to build self-efficacy transpire from theory and include: simplifying instructions into specific and small steps; providing the opportunity to rehearse (including time to practice skills independently); providing instructions that serve as a reference for correct procedures; including the low-literates' cognitive predilections (for pictographic and concrete thinking [Viswanathan & Gau, 2005:193; Viswanathan *et al.,* 2005:15]); providing encouragement and thereby increasing their confidence to use the materials (Bartholomew *et al.,* 2011:104; Kripalani *et al.,* 2007:369; Schunk, 2012:157).
- **Outcome expectations** refers to an individual's judgement of how well they will be able to perform in certain situations and greatly affects the types of outcomes they anticipate, that is, as outcome expectations (Bartholomew *et al.,* 2011:102, 103). Outcome expectations may be physical, experiencing the positive outcomes (improved sewing techniques/skills) following the sewing training material interventions, or social, as seen in the approval and praise by other members of the IGP unit (Kelder *et al.,* 2015:164) following improved bahavior. However, if the low-literate rural project participants believe that they cannot process, interpret or analyse textual sewing training material they may not make attempts at reading it, rendering such materials unused. In the instance of this study, the low-literate rural IGP participants therefore need to believe that the sewing training material intervention applies to them, and that they will benefit by employing it. To enforce outcome expectations within the development of the sewing training material interventions, an understanding of the relationship between the behaviour and the expectation of outcomes should be fostered. This

may be achieved by showing the participants how their correct behaviour (accurate application of a sewing technique, for example, cutting) affects the outcome (to accurately cut pattern pieces) by means of visually demonstrating the various outcomes (showing the effects of accurate versus inaccurate cutting and its consequent results). Attaining positive outcome expectancies may also impact on the individual's determination to engage in the activity and to set personal goals to affect such outcomes.

- **Knowledge** has an important cognitive influence of behaviour and is a precondition for change, although it is generally insufficient alone to produce the behavioural change (Kelder *et al.,* 2015:165). For individuals to perform a new or a particular type of behaviour, they must firstly know what the behaviour is (exposure to the newly developed information about the correct sewing procedure) and secondly, possess the knowledge on how to practically perform the behaviour (develop the necessary skills to complete the behaviour), referred to as behavioural capacity (*Bartholomew et al.,* 2011:103). Within rural IGPs, the low-literate participants may complete sewing activities by habitually copying from other, possibly more advanced, members of the group or relying on the advice of more literate friends (Jae *et al.,* 2011:312; Viswanathan *et al.,* 2005:25). Such coping strategies hold important considerations for the development of sewing training material interventions. The above-mentioned tendencies that low-literate individuals hold could be accommodated within the sewing training interventions by encouraging group discussion as led by IGP community facilitators.
- **Modelling** holds particular importance for the development of sewing training materials as it facilitates learning. By observing others, individuals acquire knowledge, skills, strategies, beliefs, and attitudes that can result in changes to their behavioural, cognitive and affective positions (Schunk, 2012:118). When low-literate IGP participants are shown that others like them succeed in reading and applying the sewing training material interventions, they may experience an increased sense of self-efficacy and motivation to use or apply it themselves (Bandura, 1998:626; Schunk, 2012:157, 158). As part of modelling, vicarious learning refers to those learning tools that accelerate learning by demonstrating the possible outcomes of performing various behaviours, simultaneously preventing people from personally experiencing the negative consequences following that behaviour (Schunk, 2012:21). Within the sewing training materials, simulations such as activities that reflect the reality (Eitington, 2002:139) of incorrect sewing procedures can present the unwanted outcomes, motivating the IGP participants to engage in the correct sewing tasks. Such references to facilitate correct procedures in turn improve self-efficiency and produce favourable outcome expectations (Kripalani *et al.,* 2007:369). To facilitate behavioural change through modelling within the sewing training material interventions, recommendations from the theory to be applied to the sewing training material interventions posit: presenting examples and solutions to problems in a step-by-step format with accompanying explanations illustrating how a

proficient problem solver would proceed; and presenting examples of desired outcomes and demonstrating various possible outcomes following different behaviours (Jordan *et al.,* 2008:60; Schunk, 2012:158).

- **Facilitation** is the provision of the means to take the desired action or, reducing probable barriers to the action (Bartholomew *et al.,* 2011:105). When IGP participants with limited formal schooling receive developed sewing training materials that have been simplified, their motivation to engage with the material could increase. Likewise, the provision of materials at an appropriate literacy level could also reduce many of the other related challenges that low literacy presents, not only related to reading, but also to fear of participation and feelings of being unable to perform certain tasks.

2.4 Conclusion

In order to address the sewing training needs that persist within these rural sewing IGPs within the broad research undertaking, this literature chapter provided insight of communal and individual factors offering an understanding of low-literate adult participants of rural IGPs, and their probable use of sewing training materials within their social units. The review of the communal factors influencing rural based IGPs (including low levels of education, lack of infrastructure and limited access to income and job opportunities) made it clear that the (very often chronically poor) individuals in need of IGPs may not be able or equipped to initiate these projects themselves. Additionally, reviewing some of the challenges experienced by women living in rural areas created a visual image of a vulnerable population and revealed the need for further research and interventions that would contribute towards the empowerment of these individuals. Reviewing literature related to the theoretical perspectives made it apparent that the low-literate adult participants of rural sewing IGPs may experience various cognitive challenges associated with the use of training material, for which TLT and SCT presented a valuable conceptual foundation. Understanding that the adult learners who participate in IGPs may resist any training material that does not fit within their established frames as reference (recognised through TLT) could affect their ability to participate in transformative learning. This process may also be hampered by prior uncriticised beliefs and therefore requires careful facilitation. Being mindful of these barriers to transformation may contribute to overcoming some of the challenges that adult learning presents. Low-literate individuals within rural sewing IGPs may also be affected by various behavioural, socio-environmental and personal cognitive factors, which may limit their cognitive abilities. The SCT behavioural strategies could be employed to cope in instances of information overload and cognitive inconsistency, as well as to understand the meaning of their experiences. Accordingly, a sewing training material intervention that is not in alignment with the literacy level of the low-literate IGP participant may lead to cognitive dissonance. To further enhance cognitive consistency, an Africanised and user-centered approach towards the design

of the training material should be attempted. The key constructs proposed in SCT literature (such as self-efficacy, outcome expectations, knowledge, modelling and facilitation) inform instruction that is geared towards behavioural change and could be well applied to the development of the sewing training material interventions during the subsequent phases of this study.

2.5 Reference list

Adkins, N.R. & Ozanne, J.L. 2005. The low literate consumer. *Journal of consumer research,* 32(1):93-105.

Africa Check. 2014. Factsheet: unemployment statistics in South Africa explained. *AfricaCheck,* 3 Dec. 2014 https://africacheck.org/factsheets/factsheet-unemployment-statistics-in-south-africa-explained/ Date of access: 24 Jun. 2016.

Ala, J. 1996. The process of empowering women in Zimbabwe. *Centre for Southern African Studies, 52*:1-19.

Albee, A. 1994. Support to women's productive and income-generating activities. Evaluation and research working paper series, number 1. http://www.gdrc.org/icm/wind/wind-unicef-wp.html. Date of access: 23 Feb. 2016.

Aliber, M. 2003. Chronic poverty in South Africa: incidence, causes and policies. *World development,* 31(3):473-490.

Ambrose, P.J. & Chiravuri, A. 2010. A socio-cognitive interpretation of the potential effects of downsizing on software quality performance. *Information systems journal*, 20(3):239-265.

Arowolo, D. 2010. The effects of Wester civilizations and culture on Africa. Afro Asian journal of social sciences, 1(1):1-12.

Bandura, A. 1977. Self-efficacy: toward a unifying theory of behavioral change. *Psychological review,* 84(2):191-215.

Bandura, A. 1998. Health promotion from the perspective of social cognitive theory. *Psychology and health,* 13:623-649.

Bandura, A. 2001. Social cognitive theory: an agentic perspective. *Annual review of psychology*, 52(1):1-26.

Baron, R.A. & Byrne, D. 1997. Social psychology. 8th ed. Boston, MA: Allyn & Bacon.

Bartholomew, L.K., Parcel, G.S., Kok, G., Gottlieb, N.H. & Fernandes, M.E. 2011. Planning health promotions programs: an intervention mapping approach. 3rd ed. San Francisco, CA: Jossey-Bass.

Brits, J.S., Steyn, N.P., Blunck, H., Lesoala, V. & Mambolo, L. 2000. An income-generating community-based nutrition project for rural women. *South African journal of clinical nutrition*, 13(1):11-14.

Bryan, R.L., Kreuter, M.W. & Brownson, R.C. 2009. Integrating adult learning principles into training for public health practice. *Health promotion practice,* 10(4):557-63.

Cabral, A. 1993. National literation and culture. (*In* Williamson, P & Chrisman, L. eds. Colonial discourse and post-colonial theory: A reader. Abingdon: Routledge).

Chitiga-Mabugu, M., Nhemachena, C., Karuaihe, S., Motala, S., Tsoanamatsie, N. & Mashile, L. 2013. Civil society participation in income generating activities in South Africa, (978-0-621-41970-2). Johannesburg: National Development Agency.

Cranton, P. 2006. Understanding and promoting transformative learning: a guide to educators of adults. 2nd ed. San Francisco, CA: Jossey-bass.

Creswell, J.W. 2014. Research design: qualitative, quantitative and mixed methods approaches. 4th ed. Thousand Oaks, CA: Sage.

Crisp, R.J. & Turner, R.N. 2007. Essential social psychology. London: Sage.

DAFF. Department of Agriculture, Forestry and Fisheries. ***see*** South Africa. Department of Agriculture, Forestry and Fisheries.

Davis, S. 2015. Sustainable development, North West Province. http://sharondavis.co.za/content/view/64/3 Date of access: 2 Feb. 2015.

De Vos, A.S & Strydom, H. 2011. Intervention research. (*In* De Vos, A.S. Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds*. Research at grass roots: for the social sciences and human service professions. 4th ed. Pretoria: Van Schaik. p. 473-489).

Department of Higher Education and Training. ***see*** South Africa. Department of Higher Education and Training (DHET).

Department of Social Development. ***see*** South Africa. Department of Social Development (DSD).

Dirkx, J.M. 1998. Transformative learning theory in the practice of adult education: an overview. *Journal of lifelong learning,* 7(1):1-14.

Dowse, R., Ramela, T. & Browne, S.H. 2011. An illustrated leaflet containing antiretroviral information targeted for low-literate readers: development and evaluation. *Patient education and counselling,* 85(3):508-515.

Eitington, J.E. 2002. The winning trainer. 4th ed. New York, NY: Butterworth Heinemann.

Gardiner, M. 2008. Education in rural areas. *Centre for education policy development*, 4(4):4-13.

Gumbo, M.T. 2015a. A model for indigenising the university curriculum: a quest for educational relevance. (*In* Msila, V & Gumbo, M.T. Africanising the curriculum: indigenous perspectives and theories. Cape Town: SUN press. p. 33-56).

Gumbo, M.T. 2015b. Contesting technology education curriculum for the schooling of African learners in South Africa. (*In* Msila, V & Gumbo, M.T. Africanising the curriculum: indigenous perspectives and theories. Cape Town: SUN press. p. 97-120).

Higgs, P. 2015. The African Renaissance and the decolonisation of the curriculum. (*In* Msila, V & Gumbo, M.T. Africanising the curriculum: indigenous perspectives and theories. Cape Town: SUN press. p. 1-16).

Houts, PS, Doak, CC, Doak, LG & Loscalzo, MJ. 2006. The role of pictures in improving health communication: a review of research on attention, comprehension, recall, and adherence. *Patient education and counselling,* 61:173–90.

Hulme, D., Moore, K. & Shepherd, A. 2001. Chronic poverty: meanings and analytical frameworks. Chronic poverty research centre, Working paper 2. https://www.odi.org/sites/odi.org.uk/files/odi-assets/publications-opinion-files/5102.pdf Date of access: 30 Apr. 2018.

Hulme, D. & Shepherd, A. 2003. Conceptualizing chronic poverty. *World development,* 31(3):403-423.

Jae, H. & DelVecchio, D.S. 2004. Decision making by low-literacy consumers in the presence of point-of-purchase information. *Journal of consumer affairs,* 38(2):342-354.

Jae, H., DelVecchio, D.S. & Childers, T.L. 2011. Are low-literate and high-literate consumers different? Applying resource-matching theory to ad processing across literacy levels. *Journal of consumer psychology*, 21(3):312-323.

Jae, H. & Viswanathan, M. 2012. Effects of pictorial product warnings on low-literate consumers. *Journal of business research,* 65:1674-1682.

Jordan, A., Carlile, O. & Stack, A. 2008. Approaches to learning: a guide for teachers. Berkshire: Open University Press.

Joubert, R. 2007. Purchasing power decisions. (*In* du Plessis, P.J. & Rousseau, G.G. *eds.* Buyer behaviours, understanding consumer psychology and marketing. Cape Town: Oxford University Press. p. 137-156).

Kaeane, R. & Ross, E. 2012. Income-generating projects: alleviating or perpetuating poverty? *Social work,* 45(1):17-34.

Kaiser, S.B. 1997. The Social Psychology of clothing: symbolic appearances in context. 2nd ed. New York, NY: Fairchild.

Kehler, J. 2001. Women and poverty: the South African experience. *Journal of international women's studies,* 3(1):41-53.

Kelder, S.H., Hoelscher, D. & Perry, C.L. 2015. How individuals, environments, and health behaviours interact. (*In* Glanz, K., Rimer, B.K. & Viswanath, K. *eds.* Health behaviour: theory, research and practice. 5th ed. San Francisco, CA: Jossey-Bass. p.159-171).

Kripalani, S., Robertson, R., Love-Ghaffari, M.H., Henderson, L.E., Praska, J., Strawder, A., Katz, M.G. & Jacobson, T.A. 2007. Development of an illustrated medication schedule as a low-literacy patient education tool. *Patient education and counselling,* 66(3):368-377.

Kruger, A., Lemke, S., Phometsi, M., Van't Riet, H., Pienaar, A.E. & Kotze, G. 2006. Poverty and household food security of black South African farm workers: the legacy of social inequalities. *Public health nutrition,* 9(7): 830-836.

Machethe, C.L. 2004. Agriculture and poverty in South Africa: can agriculture reduce poverty? Paper presented at the *Overcoming Underdevelopment Conference* held in Pretoria, 28-29 October, 2004.

Mansoor, LE & Dowse, R. 2003. Effect of pictograms on readability of patient information materials. *The annals of pharmacotherapy*, 37:1003-9.

Mathews, C. 2017. Job losses in mining close to 50,000 mark. *Businesslive,* 30 Mar. 2017 https://www.businesslive.co.za/bd/economy/2017-03-30-job-losses-in-mining-close-to-50000-mark/ Date of access: 9 May. 2018.

Mavalela, H.R., Schenck, R. & O'Neil, M. 2002. The story of "Phela o Phedise" income generating project. *The social work practitioner researcher,* 14(1):48-66.

Mayer, R.E. 2001. Multimedia Learning. New York, NY: Cambridge University Press.

Mayer, J.M., Gordhan, S., Manxeba, R., Hughes, C., Foley, P., Maroc, C., Lolwana, P., & Nell, M. 2011. Development planning division, working paper series no. 28. Johannesburg: Development bank of Southern Africa.

Menyuko, E.D. 2011. The experiences of participants in income-generating projects in Atteridgeville, Tshwane. Pretoria: UNISA. (Dissertation - MA).

Merriam, S.B. 2011. Adult learning. (*In* Rubenson, K. *ed.* Adult learning and education. Kidlington, OX: Elsevier. p. 29-34).

Merriam, S.B. & Leahy, B. 2005. Learning transfer: a review of the research in adult education and training. *Journal of lifelong learning,* 14(1):1-24.

Mezirow, J. 1994. Understanding transformation theory. *Adult education quarterly,* 44(4):222-244.

Mezirow, J. 1997. Transformative learning: theory to practice. *New directions for adult and continuing education,* 74:5-12.

Mezirow, J. 2000. Learning as transformation: critical perspectives on a theory in progress. San Francisco, CA: Jossey-Bass.

Michie, S., West, R., Campbell, R., Brown, J. & Gainforth, H. 2014. ABC of behaviour change theories. London: Silverback.

Motloung, B. & Mears, R. 2002. Combating poverty in South Africa. *Development southern Africa,* 19(4):531-543.

Msila, V. 2007. From apartheid education to the revised national curriculum statement: pedagogy for identity formation and nation building in South Africa. Nordic journal of African studies, 16(2):146-160.

Mudau, J. & Netshandama, V. 2016. Income generating projects as a development intervention of government – A case of government-funded agricultural projects in Limpopo. Programme to Support Pro-Poor Policy Development (PSPPD). http://www.psppd.org/wp-content/uploads/2017/08/8.-Income-generating-projects-as-a-development-intervention-of-government-A-case-of-government-funded-agricultural-projects-in-Limpopo.pdf Date of access: 29 Jun. 2018.

Mwingira, B. & Dowse, R. 2007. Development of written information for antiretroviral therapy: comprehension in a Tanzanian population. *Pharmacy world & science,* 29(3):173-182.

National Treasury. 2018. Estimates of national expenditure. http://www.treasury.gov.za/documents/national%20budget/2018/enebooklets/Vote%2017%20Social%20Development.pdf Date of access: 30 Apr. 2018.

Ngoh, L. & Shepherd, M.D. 1997. Design, development and evaluation of visual aids for communicating prescription drug instructions to nonliterate patients in rural Cameroon. *Patient education and counselling,* 30:257–270.

Niesing, C.M. 2012. Evaluation of the sustainability indicators used in the Holding Hands community project in the North West province. Potchefstroom: NWU. (Dissertation - MBA).

Niesing, C.M. 2016. A conceptual framework for sustainable community development. Potchefstroom: NWU. (Thesis – PhD).

Niesing C.M., Scholtz, E.M. & Kruger, A. 2015. The process of defining the concept of sustainability: A case study of the “Holding Hands” income-generating community projects in the North West Province. *International e-journal of advances in social sciences*, 1(2):263-272.

Oldewage-Theron, W., Dicks, E., Napier, C. & Rutengwe, R. 2005. A community-based integrated nutrition research programme to alleviate poverty: baseline survey. *Public health,* 119(4):312-320.

Phipps, M., Ozanne, L.K., Luchs, M.G., Subrahmanyan, S., Kapitan, S., Catlin, J.R., Gau, R., Naylor, R.W., Rose, R.L. & Simpson, B. 2013. Understanding the inherent complexity of

sustainable consumption: a social cognitive framework. *Journal of business research,* 66(8):1227-1234.

Phogole, M. 2010. Issues of increasing levels of poverty and hunger in Africa, with specific reference to South Africa*. Africa Institute of South Africa,* 8:1-8.

Posel, D. 2011. Adult literacy rates in South Africa: a comparison of different measures. *Language matters,* 42(1):39-49.

Presidency South Africa. 2008. Towards an anti-poverty strategy for South Africa: a discussion document. http://www.thepresidency.gov.za/docs/pcsa/economic/draft_antipoverty1008.pdf Date of access: 25 Jun. 2015.

Ren, K. 2014. Learning to learn from a Confucian perspective: insight from China. (*In* Deakin, R., Crick, C.S. & Ren, K., *eds*. Learning to learn, international perspectives from theory and practice. New York, NY: Routledge. p. 105-124).

Rogan, M. 2012. Poverty and headship in post-apartheid South Africa, 1997–2006. *Social indicators research,* 113(1):491-511.

Rogan, M. 2016. Gender and multidimensional poverty in South Africa: applying the global multidimensional poverty index. *Social indicators research,* 126(3):987-1006.

Rossouw, J. 2017. Why social grants matter in South Africa: they support 33% of the nation. *The conversation,* 16 Feb. 2017. http://theconversation.com/why-social-grants-matter-in-south-africa-they-support-33-of-the-nation-73087 Date of access: 30 Apr. 2018.

Satumba, T., Bayat, A. & Mohamed, S. 2017. The impact of social grants on poverty reduction in South Africa. *Journal of economics,* 8(1):33-49.

Scheepers, J. 2014. Equal pay for work of equal value. Factsheet, unemployment statistics in South Africa explained. http://www.labour.gov.za/DOL/legislation/sectoral-determinations/sectoral-determination-7-domestic-workers Date of access: 24 Jun. 2016.

Schmitz, A. 2012. Cultural intelligence for leaders. Creative Commons. https://2012books.lardbucket.org/pdfs/cultural-intelligence-for-leaders.pdf Date of access: 23 Aug. 2018.

Schunk, D.H. 2012. Learning theories: an educational perspective. 6th ed. Boston, MA: Pearson.

Seccombe, A. 2016. SA's mining sector has bled 47,000 jobs in three years. *Business Day,* 8 Feb. 2016. http://www.bdlive.co.za/business/mining/2016/02/08/sas-mining-sector-has-bled-47000-jobs-in-three-years Date of access: 27 Jun. 2016.

Segalo, P. 2011. Our lives through embroidery: narrative accounts of the women's embroidery project in post-apartheid South Africa. *Journal of psychology in Africa,* 21(2):229-238.

Simbi, T & Aliber, M. 2000. Agricultural employment crisis in South Africa. Trade and Industrial Policy Secretariat (TIPS), Working paper 13_2000. http://www.tips.org.za/files/415.pdf. Date of access: 11 Feb. 2016.

Slavich, G.M. & Zimbardo, P.G. 2012. Transformational teaching: theoretical underpinnings, basic principles and core methods. *Educational psychology review,* 24(4):569–608.

South Africa. 2010. Estimate of the contribution of the agriculture sector to employment in the South African economy. http://www.daff.gov.za/docs/Economic_analysis/Contribution_agriculture_sectorSAeconomy.pdf Date of access: 30 Apr. 2018.

South Africa. Department of Agriculture, Forestry and Fisheries (DAFF). 2016a. Abstract of agricultural statistics. http://www.daff.gov.za/Daffweb3/Portals/0/Statistics%20and%20Economic%20Analysis/Statistical%20Information/Abstract%202016%20.pdf Date of access: 16 May. 2018.

South Africa. Department of Agriculture, Forestry and Fisheries (DAFF). 2016b. Economic review of the South African agriculture. http://www2.senwes.co.za/files/main_ProductsServices/AgriServices/2016/Economic_Review_2015.pdf Date of access: 16 May. 2018.

South Africa. Department of Higher Education and Training (DHET). South Africa. 2015. Annexure 5: Reflections of higher education transformation, 2nd National Higher Education Summit, Durban, South African on 15-17 October 2015, http://www.justice.gov.za/commissions/FeesHET/docs/2015-Report-SecondNationalHETSummit.pdf Date of access: 29 Mar. 2019.

South Africa. Department of Social Development (DSD). 2005. Sustainable livelihoods programme: pilot project of linking grants to livelihood. Pretoria: Government Printer.

South Africa. Labour force survey 2000. September. https://www.datafirst.uct.ac.za/dataportal/index.php/catalog/117 Date of access: 16 May. 2018.

South African labour guide. 2018. New minimum wages: farm and forestry workers sectors 1 March 2018 to 28 February 2019. https://www.labourguide.co.za/workshop/1397-2018-farm-and-forestry1/file Date of access: 3 May. 2018.

South African National Health and Nutrition Examination Survey [SANHANES-1]. 2013. Cape Town: HSRC Press. http://www.hsrc.ac.za/uploads/pageNews/72/SANHANES-launch%20edition%20(online%20version).pdf Date of access: 30 Apr. 2018.

South African Qualifications Authority (SAQA). 2012. Level Descriptors for the South African National Qualifications Framework. http://www.saqa.org.za/docs/misc/2012/level_descriptors.pdf Date of access: 1 Nov. 2017.

Spaull, N. 2013. South Africa's education crisis: the quality of education in South Africa 1994-2011. Centre for Development and Enterprise. http://www.section27.org.za/wp-content/uploads/2013/10/Spaull-2013-CDE-report-South-Africas-Education-Crisis.pdf Date of access: 30 Apr. 2018.

Statistics South Africa. 1998. Unemployment and employment in South Africa. http://www.statssa.gov.za/publications/EmployUnemploy/EmployUnemploy1997.pdf Date of access: 30 Apr. 2018.

Statistics South Africa. 2010. Quarterly labour force. http://www.statssa.gov.za/publications/P0211/P02113rdQuarter2010.pdf Date of access: 30 Apr. 2018.

Statistics South Africa. 2011. Quarterly labour force. https://www.statssa.gov.za/publications/P0211/P02113rdQuarter2011.pdf Date of access: 16 May. 2018.

Statistics South Africa. 2012a. Census 2011. Statistical release. P0301.4.http://www.statssa.gov.za/publications/P03014/P030142011.pdf Date of access: 15 Aug. 2015.

Statistics South Africa. 2012b. Quarterly labour force. http://www.statssa.gov.za/publications/P0211/P02113rdQuarter2012.pdf Date of access: 16 May. 2018.

Statistics South Africa. 2013. Quarterly labour force. https://www.statssa.gov.za/publications/P0211/P02113rdQuarter2013.pdf Date of access: 16 May. 2018.

Statistics South Africa. 2014a. Poverty trends in South Africa: an examination of absolute poverty between 2006 and 2011. http://beta2.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf Date of access: 15 Aug. 2015.

Statistics South Africa. 2014b. Quarterly labour force. http://www.statssa.gov.za/?p=3453 Date of access: 16 May. 2018.

Statistics South Africa. 2015. Quarterly labour force. http://www.statssa.gov.za/publications/P0211/P02113rdQuarter2015.pdf Date of access: 16 May. 2018.

Statistics South Africa. 2016. Quarterly labour force. http://www.statssa.gov.za/?p=10658 Date of access: 16 May. 2018.

Statistics South Africa. 2017a. Poverty Trends in South Africa. An examination of absolute poverty between 2006 and 2015. http://www.statssa.gov.za/publications/Report-03-10-06/Report-03-10-062015.pdf Date pf access: 5 Apr. 2018.

Statistics South Africa. 2017b. Quarterly labour force. http://www.statssa.gov.za/publications/P0211/P02113rdQuarter2017.pdf Date of access: 16 May. 2018.

Statistics South Africa. 2017c. Quarterly Labour Force Survey. http://www.statssa.gov.za/publications/P0211/P02114thQuarter2017.pdf Date of access: 4 Apr. 2018.

Statistics South Africa. 2018a. Quarterly Labour Force Survey. http://www.statssa.gov.za/publications/P0211/P02111stQuarter2018.pdf Date of access: 16 May. 2018.

Statistics South Africa. 2018b. Quarterly Labour Force Survey. http://www.statssa.gov.za/publications/P0211/P02112ndQuarter2018.pdf Date of access: 19 Aug. 2018.

Strydom, M. & Tselepis, T.J. 2013. Applying the design process to apparel prototype development: students' experiences of a community service-learning project. *Journal of family ecology and consumer sciences,* 41:28-41.

Teaching Excellence in Adult Literacy (TEAL). 2011. TEAL Centre fact sheet no. 11: adult learning theories https://lincs.ed.gov/sites/default/files/11_%20TEAL_Adult_Learning_Theory.pdf Date of access: 8 Apr. 2018.

Tett, L. & St. Clair, R. 2010. Adult learning education. (*In* Rubenson, K. *ed.* Adult learning and education. Kidlington, OX: Elsevier. p. 100-105).

Thekiso, S.M., Botha, K.F.H., Wissing, M.P. & Kruger, A. 2013. Psychological well-being, physical health and the quality of life of a group of farm workers in South Africa: the FLAGH Study. (*In* Wissing, M.P., *ed.* Well-being research in South Africa, cross cultural advancements in positive phycology. Dordrecht: Springer. p. 293-313).

Trading Economics. 2016. South Africa Unemployment Rate, 2000-2016. http://www.tradingeconomics.com/south-africa/unemployment-rate Date of access: 16 Feb. 2016.

Triegaardt, J.D. 2006. Reflections on poverty and inequality in South Africa: policy considerations in an emerging democracy. Annual Association of South African Social Work Education. https://www.dbsa.org/EN/About-Us/Publications/Documents/Poverty%20and%20inequality%20in%20South%20Africa%20Policy%20considerations%20in%20an%20emerging%20democracy.pdf Date of access: 10 Apr. 2015.

Trollip, A.M. 1997. Towards developing a model for the empowerment of rural South African women. *Journal of dietetics and home economics,* 25(1):2-10.

Trollip, A.M. 2001. The development of a strategy for the facilitation of income-generating projects in rural communities: an insider account. *Journal of family ecology and consumer sciences*, 29(1):45-51.

Trollip A.M. & Boshoff, E. 2001. Income-generating projects in rural communities, from theory to practice: a personal report. *Journal of family ecology and consumer sciences,* 29(1):52-29.

Tshabalala, M.J. 2008. The right to basic education: what about farm school learners? Vaal Triangle: NWU. (Dissertation – M.Ed).

Van Niekerk, L. 2006. Women's income-generating activities in a disadvantaged farming community: towards sustainability. Potchefstroom: NWU. (Dissertation - Master's).

Van Niekerk, L. & Van Niekerk, D. 2009. Participatory action research: addressing social vulnerability of rural women through income-generating activities. *Journal of disaster risk studies*, 2(2):127-146.

Viswanathan, M. & Gau, R. 2005. Functional illiteracy and nutritional education in the United States: a research-based approach to the development of nutritional education materials for functionally illiterate consumers. *Journal of macromarketing*, 25(2):187-201.

Viswanathan, M., Gau, R. & Chaturvedi, A. 2008. Research methods for subsistence marketplaces. (*In* Kandachar, P. & Halme, M. *eds.* Sustainability challenges and solutions at the base of the pyramid. Sheffield: Greenleaf. p. 242-260).

Viswanathan, M. & Rosa, J.A. 2010. Understanding subsistence marketplaces: toward sustainable consumption and commerce for a better world. *Journal of business research,* 63(6):535-537.

Viswanathan, M., Rosa, J.A. & Harris, J.E. 2005. Decision making and coping of functionally illiterate consumers and some implications for marketing management. *Journal of marketing*, 69(1):15-31.

Viswanathan, M., Sridharan, S., Ritchie, R., Venugopal, S. & Jung, K. 2012. Marketing interactions in subsistence marketplaces: a bottom-up approach to designing public policy. *Journal of public policy and marketing*, 31(2):159-177.

Viswanathan, M., Torelli, C.J., Xia, L. & Gau, R. 2009. Understanding the influence of literacy on consumer memory: the role of pictorial elements. *Journal of consumer psychology*, 19(3):389-402.

Wallendorf, M. 2001. Literally literacy. *Journal of consumer research,* 27(4):505-511.

Western Cape government. 2013. Cape skills e-Literacy training materials. https://www.westerncape.gov.za/general-publication/cape-skills-e-literacy-training-materials Date of access: 17 Jul. 2018.

CHAPTER 3:
THE INTERVENTION RESEARCH DESIGN

3.1 Introduction

The intervention research (IR) design is appropriate for this study as it promotes the development of sewing training materials for low-literate participants of rural income generating projects (IGPs). Intervention research is a form of applied research where the research investigation is designed to provide data that could be used to solve a problem or improve a situation (Jansen, 2016:9), such as the persistent lack of training material in rural sewing IGPs in the instance of this study. Because the IR design is aimed at a practical goal, rather than a theory or hypothesis to be explored, it serves as a bridge between theoretical research and practice, while it results in a threefold outcome: (i) the design and development of intervention materials, (ii) the application or implementation of the intervention in the form of a treatment or activity, and (iii) the evaluation of the intervention (De Vos & Strydom, 2011:475; Eitington, 2002:587; Fraser *et al.,* 2009:4, 25; Rothman & Thomas, 1994:12; Schilling, 1997:173, 174). In this study, these IR outcomes apply to: (i) the design and development of new sewing training material interventions, (ii) employing the interventions (materials and procedures), and (iii) evaluation of the sewing training material interventions when used to address practical skills training needs within the Holding Hands rural sewing IGPs in the Northern Cape Province (NCP) and North West Province (NWP), South Africa (SA).

In this chapter, the IR design and methodology applied in this study are presented. The comprehensive sequential IR phases and activities allowed the researcher to move from project planning to project dissemination (Rothman & Thomas, 1994:28), while addressing the specific objectives of the study. Within IR phases two and five, empirical research inquiry takes place (in the form of qualitative exploratory descriptive research and quantitative experimental research respectively). The methodologies in terms of the research design, population and sampling, entry and informed consent, data collection and analysis, and rigour are described, followed by a detailed description of the ethical considerations.

3.2 Intervention research phases

Leaders in intervention research, Rothman and Thomas (1994), coined a phase model for the design and development of research interventions. Further developments in the field of IR have been undertaken, some of which include the works by Bartholomew *et al.* (2011); De Vos and Strydom (2011); Fawcette *et al.,* 1994:28; Fraser *et al.* (2009); Fraser and Galinsky (2010); and Schilling (1997), offering various adaptations, simplifications or extensions to the original IR

approach and its phases, steps, and delineating activities. For the purpose of this IR study, the IR phase model, as originally developed by Rothman and Thomas (1994:10), was applied. It was selected as it presents an integrated model, including some of the important common features of developmental research, social research and development and related approaches (Rothman & Thomas, 1994:9). This model consists of six phases including: situation analysis and project planning; information gathering and synthesis; design; early development and pilot testing; evaluation and advanced development; and dissemination. In this phase model, the key activities required to implement each phase as highlighted by Fawcette *et al.* (1994:26-51) were accordingly applied. Employing these activities ensured the success of the research undertaking while allowing the researcher to respond to opportunities and challenges within the shifting context of applied research (Fawcette *et al.,* 1994:27). The range of activities within each IR phase is indicated in Figure 3.1. The six phases and delineating activities as applied in this IR study are discussed below.

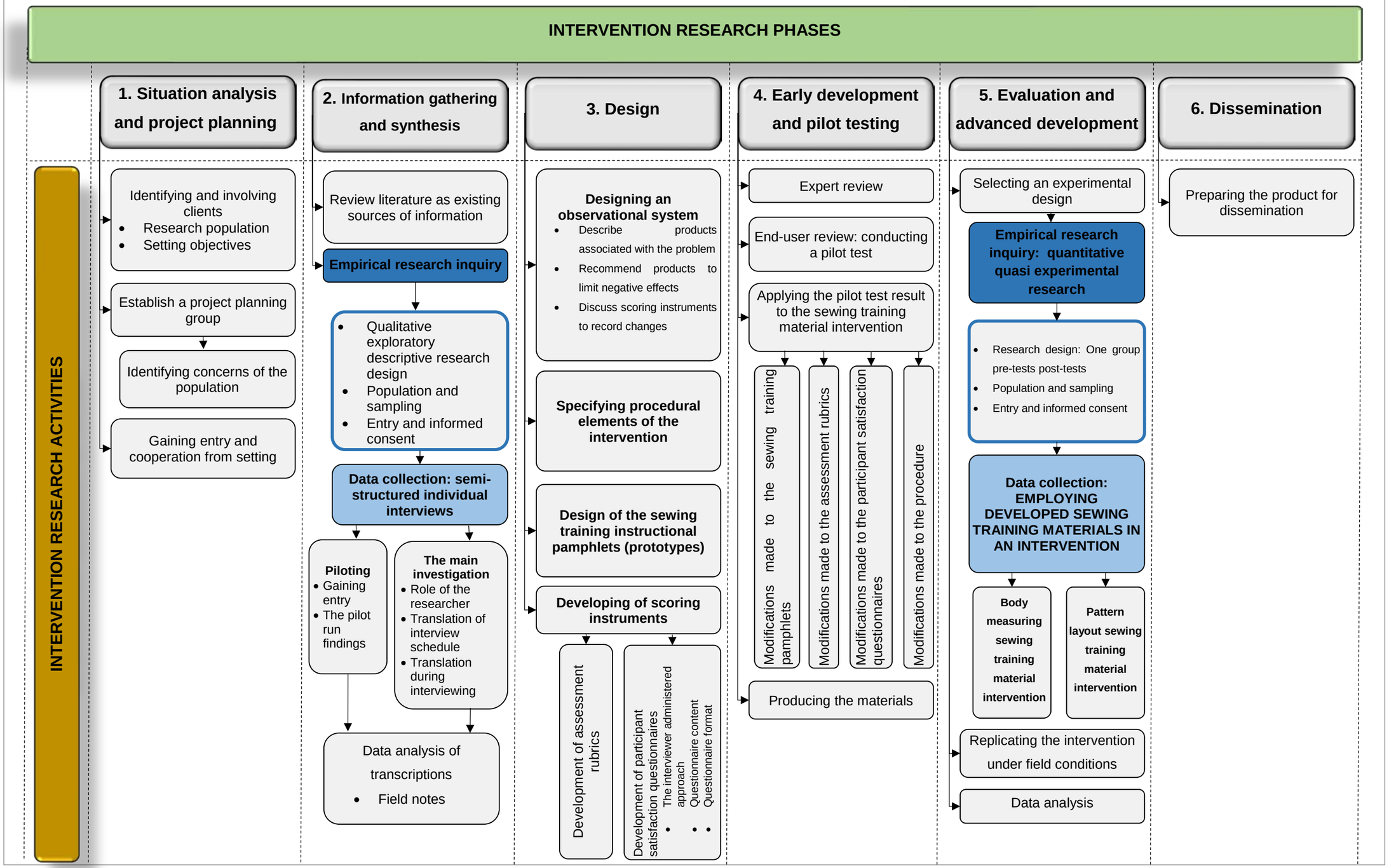


Figure 3.1: Phases and activities of intervention research (as adapted from Fawcette *et al.*, 1994:28; Rothman & Thomas, 1994:10)

3.2.1 Phase 1: Situation analysis and project planning

In phase 1 of the IR design, several actions are critical to situation analysis and project planning. These include: identifying and involving clients, establishing a project planning group, and gaining cooperation and entry from the research setting. A discussion of these activities follows.

3.2.1.1 Identifying and involving clients

In this IR action, the researcher carefully selects the research population whose issues or problems are of emerging or current interest (Fawcette *et al.,* 1994:27). In this study, the FLAGH programme of the NWU has engaged in longstanding relationships with the Holding Hands IGPs and the participants have directed various research and development initiates towards these groups. Drawing from these research studies, the need for sewing training materials directed at low-literate participants within the Holding Hands rural sewing IGPs has not only been anticipated but confirmed. The Holding Hands sewing IGP units based in rural SA therefore provided an appropriate setting and sample for this research. A discussion of the research population of this research follows.

3.2.1.1.1 The research population

The study was conducted within rural communities where three Holding Hands sewing IGPs have been established. The total population of IGP community facilitators and participants were included in the study. Community facilitators are IGP participants who have been informally appointed as project leaders and fulfilling facilitating roles. The IGP participants refer to those active project members (seamstresses/seamsters) who engage in the income generating activities within the IGPs, thereby including community facilitators. The population for the main investigation included two Holding Hands sewing IGPs based in the rural area of the Dr Kenneth Kaunda district municipality in the NWP of SA. The NWP hosts a population of 3.5 million people as indicated in Census 2011 results, a 6.8% share of the South African population. The main languages spoken in this area is Setswana (63.4%) followed by Afrikaans (9%) (Anon, 2012a). The part of the population unable to meet consumption needs was figured at 50% in the 2011 Census results (Statistics South Africa, 2014:31). This figure supports higher poverty rates in the rural areas than those evident in urban areas.

The population for the pilot testing consisted the (one) Holding Hands sewing IGP unit located within the rural area of the Phokwane municipality in the NCP, in SA. Although this IGP unit is located outside of the NWP the pilot test, the participants displayed the same characteristics as the participants in the main investigation, being that of a rural community adversely affected by poverty and low-literacy; speaking primarily Afrikaans (53.8%) and Setswana (33.1%)

(Anon, 2012b). Table 3.1 presents a summary of the Holding Hands project units and member counts.

Table 3.1: Summary of Holding Hands Income Generating Projects (IGP) populations

Holding Hands IGP	Project unit 1	Project unit 2	Project unit 3
Purpose in this research	**Pilot test sample**	**Main investigation**	
Province	Northern Cape Province	North-West Province	
Municipality	Phokwane municipality	Dr Kenneth Kaunda district municipality	
Number of community facilitator(s)	2	1	2
Number of IGP participants	4	6	7
TOTAL number of project participants	4	6	7

While the participants for the main investigation included a total of three community facilitators and 13 project participants, the participants for the pilot test sample included two community facilitators and four project participants. The total population of this study consisted of 17 IGP participants.

3.2.1.1.2 Setting objectives

Based on this selected population the broad objectives of the research project were set (Fawcette *et al.,* 1994:27). Below follows a brief summary of the objectives (detailed in Chapter 1) as set against the relevant IR phases.

- Phase 2 of IR: information gathering and synthesis
- To review the existing sewing training amterials for appropriateness and application in rural sewing IGPs (objective 1.6.2.1) and to explore the most prominent sewing training needs within rural sewing IGPs (objective 1.6.2.2).
- Phase 3 of IR: design
- To develop appropriate sewing training materials for low-literate individuals based on sewing training needs within rural sewing IGPs (objective 1.6.2.3).
- Phase 5 of IR: evaluation and advanced development
- To implement developed appropriate sewing training materials for low-literate individuals in rural IGPs in field based interventions (objective 1.6.2.4) and to evaluate newly developed sewing training materials for appropriateness and implementation within rural sewing IGPs (objective 1.6.2.5).

3.2.1.2 Establish a project planning group

Project planning within IR involves the establishment of a collaborative planning group with key informants who represent the research setting (Bartholomew *et al.*, 2011:19, 20). In this study, a project planning group was established with key informants who were experts in community engagement in research and who had vast experience working with the Holding Hands rural sewing IGPs. The key informants to this study included:

- **Project assistant:** Also known as the outside facilitator appointed within the FLAGH programme of the NWU to assist the Holding Hands IGPs. She supervises the projects, obtains orders, oversees production and provides technical assistance. She is aware of the challenges experienced in rural IGPs and has a longstanding relationship working within the Holding Hands groups. She facilitated access to the research participants, and during data collection, she fulfilled dual roles as both mediator and an on-site Setswana speaking translator during data gathering;
- **Project coordinator:** Appointed within the FLAGH programme, the project coordinator facilitated the operational aspects of the research investigation (including access to the research participants) and provided expertise pertaining to the research setting; and
- **Principle project manager:** Also appointed within the FLAGH programme, she fulfils a role as gatekeeper. Due to her established relationships with the community leaders, she enjoys ongoing approval and permission to enter the Holding Hands groups. Within this study she facilitated access to the Holding Hands IGPs.
- Together with the researcher, the Holding Hands project assistant and project coordinator formed part of the project planning group.

These members of the project planning group were able to explain and clarify aspects of the setting to the researcher (such as the normal functioning of the IGP units) and assisted the researcher to better articulate the potential benefits for the participants (De Vos & Strydom, 2011:476; Fawcette *et al.,* 1994:29). Additionally, fostering collaborative relationships with key informants contributed to the success of the intervention research project as it aided the planning of the project and the implementation of the interventions as well as the identification of possible problems (such as the limited availability of project participants) and concerns of the population. A short discussion of the latter follows.

3.2.1.2.1 Identifying concerns of the population

Within this action of the IR contact, sessions are scheduled to obtain information about the local context, problems and strengths within the setting (De Vos & Strydom, 2011:478; Fawcette *et al.,* 1994:29). To ensure that the researcher did not impose her own views of the

problem and possible solutions to the problem, she attempted to understand the issues that were important to the population. In this study, an initial meeting with the project planning group provided the researcher with key operational information pertaining to the Holding Hands IGP units. This information included the configuration of the IGP units (number of participants per unit; as well as their attendances, ages, schooling and past experiences using training materials), their modus operandi and their language preference. At this time, issues surrounding the gatekeeping and mediating during entry as well as data collection were also discussed (Bartholomew *et al.,* 2011:19, 20).

3.2.1.3 Gaining cooperation and entry to the setting

The project coordinator and project assistant of Holding Hands facilitated access to the research participants, and provided the researcher with goodwill permission to conduct the research within the Holding Hands communities including the Rysmierbuilt, Castello and Jan Kempdorp project units. In the next section, the activities related to phase 2, information gathering and synthesis are discussed.

3.2.2 Phase 2: Information gathering and synthesis

This IR phase included a review of the existing sources of information by conducting a literature review (3.2.2.1) as well as a study of natural examples through empirical research inquiry (3.2.2.2).

3.2.2.1 Review literature as existing sources of information

During this IR activity, literature reviews of other research, reported practice and institutional endeavours were undertaken (Fawcette *et al.,* 1994:32). To provide insights into the complexity of the problem (Fouché & Delport, 2011b:134) and form a contextual theoretical basis for this research, a literature review was conducted (Chapter 2). In this review, the first section addressed socio- and economic factors influencing participants of rural sewing IGPs and included discussions on the national and rural conditions affecting the women in rural IGPs in particular. In the second section, a review of transformative learning- and social cognitive theoretical perspectives provided insights into the learning and behaviour of low-literate adult participants within IGPs (referred to as individual factors). The latter review provided valuable insights into the challenges that adults could experience with the use of newly developed sewing training materials (such as their inability to change uncompromising and established ways of thinking or doing), as well as the coping mechanisms that low-literate individuals employ to deal with their limitations (such as the tendency to make decisions habitually [Viswanathan & Gau, 2005:189] or based on single attributes [Viswanathan *et al.,* 2005:25]); factors that are important for the subsequent empirical phases of this study.

3.2.2.2 Empirical research inquiry

Studying natural examples through empirical research inquiry is a particularly useful source of information as interviews with people who actually experience the problem can provide insights into which interventions may or may not succeed, and may disclose the variables that may affect the success of the interventions (De Vos & Strydom, 2011:481; Fawcette *et al.,* 1994:32). For these reasons, a phase of qualitative exploratory descriptive research was undertaken.

3.2.2.2.1 Qualitative exploratory descriptive research design

The qualitative exploratory descriptive inquiry depended on the participants' subjective views of the situation under study as individuals develop subjective meanings of their perceptions and experiences of the world in which they live (Creswell, 2014:8; Nieuwenhuis, 2007b:51). The qualitative research approach holds a unique advantage for uncovering insights, and for this reason, it has been particularly valuable when studying low-literate individuals (Gau *et al.,* 2012:1684; Viswanathan *et al.,* 2005:18). In this study, exploratory research is conducted in order to gain broad insights into the situation, the individual and the community (as the first phase in a sequence of research phases), while descriptive research presents the specific details of the situation (Fouché & De Vos, 2011:95). During this exploratory descriptive phase of the research, the views of the IGP community facilitators related to the use of sewing training materials within in the day-to-day operation in the respective IGP units were obtained. As exploratory and descriptive research may be interrelated in practice (Fouché & De Vos, 2011:95), the purpose of this qualitative inquiry was twofold. Firstly, it aimed to review the existing facilitator's training manual developed by Van Niekerk (2006) (stipulated as objective 1.6.2.1 to review the 2006 Manual for appropriateness and application in rural sewing IGPs), as a point of departure for the empirical investigation (as exploratory research). Reviewing the 2006 Manual entailed determining its use, and providing insight of the manual (with reference to the reading level) (Niseteo, 2016), thereby determining its appropriateness for use in low-literate settings. Secondly, the most prominent sewing training needs within rural sewing IGPs had to be determined (stipulated as objective1.6.2.2 to explore the most prominent sewing training needs within rural sewing IGPs) as descriptive research. This was essential to ensure the appropriateness of the content in the subsequent design phase. Conducting this form of 'needs assessment' was essential to ensure the appropriateness of the content and the format of the new sewing training material intervention (De Vos & Strydom, 2011:481; Fawcette *et al.,* 1994:32). Similarly, the findings of this phase informed the development of quantitative data collection instruments in subsequent phases.

3.2.2.2.2 Population and sampling

All-inclusive sampling entailed the inclusion of the entire population of community facilitators as participants in this research. Voluntary sampling required that each participant volunteer their participation, while purposive sampling ensured that the most relevant persons participated in the research. Therefore, all-inclusive, voluntary and purposive sampling was applied to the total of five community facilitators from the Holding Hands sewing IGPs in the NCP and NWP, SA. Although this provided a very limited sample size, the actual experience and knowledge of these expert participants regarding the problem provided the necessary insights to address the research questions (Creswell, 2014:246; De Vos & Strydom, 2011:480). Additionally, they were the only anticipated users of the 2006 Manual under review. Purposive sampling further entailed that those participants who would best contribute to the research were selected to participate (Botma *et al.,* 2010:201). The use of purposive sampling necessitated a clear formulation of the inclusion criteria (Botma *et al.*, 2010:201). Thus the sample included:

- Community facilitators of the Holding Hands community IGPs, in the NCP and NWP as this is the setting of this research.
- Community facilitators with prior experience in the facilitation of sewing IGPs.
- Community facilitators above the age of 18 years to be able to give informed consent.
- Community facilitators who were willing to participate in the interviews.
- Community facilitators who were either Afrikaans, English or Setswana speaking.

3.2.2.2.3 Entry and informed consent

Ethical approval for this study was obtained from the Health Research Ethics Committee (HREC) at the NWU to conduct this research, reference code: NWU00043-16-S1 (Annexure A1: Ethical approval certificate of project). As part of the project planning group, the Holding Hands' project coordinator and project assistant, facilitated access to the research participants. The project assistant further fulfilled a role as mediator between the researcher and the research participants. This mediator has extensive experience working in rural IGP units, and she is trusted by the IGP participants. The mediator approached the community facilitators and arranged to meet with them. At this meeting she explained the purpose of the research, why they were being asked to participate, who the researchers are and that the HREC had approved the research project and may inspect the research records, and that any queries about the research may be directed towards the researcher or the HREC offices (contact numbers of relevant persons were provided).

As the low-literate rural participants might have been unfamiliar with interviewing, the researcher ensured that extra time and care was taken to carefully explain what their experiences may be. The mediator then answered any questions that the participants had, ensuring that the participants understood the purpose of the research (Viswanathan *et al.,* 2008:257).

At the time of the initial meeting, the mediator provided the participants with the information leaflets and consent forms, and verbally read all the information to them. The consent form included information such as the range of topics included in the interviews, the duration of the interviews, that the interviews would be audio recorded on tape, and that the researcher would be taking field notes while the interviews are taking place (Annexure A2: Approved information leaflet and consent form, interviews with IGP community facilitators; and A3: Approved information leaflet and consent form, interview with IGP community facilitators, translated Setswana). After providing sufficient time for review, the mediator returned to the facilitators and obtained written informed consent, for volunteering their participation. The mediator also signed the informed consent at the same time as the person obtaining consent. Thereafter the researcher made arrangements for the interviews to take place.

Before commencement of the interviews, the researcher verbally confirmed consent from the participants (as audio tape recorded). At this point, the researcher granted the participants the opportunity to ask any questions that they had (questions could be directed either at the mediator or the researcher herself), and provided them with any additional information pertaining to the research if required. Following a principle of respect for persons, consent to participate was voluntary and based on accurate information that allowed for informed choice. The researcher also signed the consent form in confirmation of this process.

3.2.2.2.4 Data collection by means of five semi-structured individual interviews

Semi–structured interviews are frequently used in qualitative research as it enables the researcher to gain a detailed account of the opinions of the participants of the particular topic (Botma *et al.,* 2010:208; Creswell, 2014:19; Greeff, 2011:350; Rubin & Babbie, 2010:104). Various authors within low-literate research settings have recommended its use (Adkins & Ozanne, 2005; Viswanathan & Gau, 2005; Kaeane & Ross, 2012; Menyuko, 2011; Segalo, 2011) this may be ascribed to the less-formal and more flexible nature of this approach resulting in less anxiety for low-literate participants (Viswanathan *et al.,* 2008:257). Individual interviews were conducted. Due to the relatively low literacy levels within the South African population, individual interviews have become one of the most popular methods of collecting

information (Babbie & Mouton, 2014:249). As such, it was appropriate to the sample of rural IGP community facilitators.

An interview schedule contained the pre-determined open-ended questions with associated sub questions that the interview addressed (Botma *et al.,* 2010:209; Creswell, 2014:139). Opening with broad questions encouraged the participants to speak about the aspects that they considered important (Viswanathan *et al.,* 2008:245). The use of sub-questions allowed for clarification of answers (Nieuwenhuis, 2007c:87) thereby providing greater scope for discussion. The interview schedule consisted of three sections including: demographic information about the community facilitator, the review of the 2006 Manual and prominent learning needs. A total of five (5) questions were asked with accompanying sub-questions. To further elaborate, probes were presented in the interview schedule. The use of probes encouraged participants to further explain a certain given example (Nieuwenhuis, 2016:94) such as the examples of the sewing training needs, while ensuring that the same examples were presented during each interview (Babbie & Mouton, 2014:254). The interview questions, accompanying sub-questions/probes and the reason for the question are presented in the Table 3.2.

Table 3.2: Interview questions with sub-questions/probes and reasons for asking the question

Question		Sub questions/probes	Reason for the question/probe
1	**Please tell me about your role as a community facilitator at Holding Hands**	How long have you been at this IGP?	To determine prior experience facilitating at the IGP.
		Where did you learn how to sew?	To determine if facilitators skills were obtained from within the IGP.
		Where did you attend school? Did you finish school?	To broadly assess literacy abilities as it relates to the literacy levels of training materials.
2	**To what extent are you familiar with this training manual?**	*-Show 2006 Manual* *- Show example: The new complete guide to sewing (Reader's Digest, 2010).*	To determine if they have been provided with the manual. [If they have no knowledge of it, ask if any 'other' training material is used and if so, request a detailed description of that item and proceed to ask question 2.1 based on it].
2.1	**Tell me about your use of the training manual/ or alternative materials**	How do you feel about using it?	To explore reasons why it may/may not appropriate?
		How do you feel about the usefulness of the information?	To describe/determine appropriateness of content.
		What are your views about how the manual is written?	To describe/determine appropriateness of format in
		How easy do you think it is to read?	

		How easy do you think it is to understand?	terms their ability to read and understand the document.
3.	**Tell me about your specific needs for training material to assist you with specific sewing tasks?**	Probes of sewing task: • maintaining the sewing machine • inserting a zip • matching the grain lines of the pattern and the fabric? • making gathers or ruffles? • different kinds of hand stitches?	To determine most prominent and specific practical learning needs.
3.1	**What do you think are the most challenging sewing tasks, related to the items made?**	Will you please describe a specific sewing problem?	To determine what the practical sewing challenges are.
		What are your views about material losses due to construction problems?	To explore possible negative consequences resulting from challenges.

The questions were developed to directly address the first and second research objectives. When reviewing the 2006 Manual (objective 1.6.2.1), the actual manual as developed by Van Niekerk (2006) was shown to the participants. Making use of such concrete stimuli, rather than abstract discussions, enabled the participants to better relate to actual experiences, increasing the likelihood of more valid findings (Viswanathan *et al.*, 2008:245, 256). When asked if any other materials were used, the researcher showed an example of an instructional sewing training book. Doing so enhanced comprehension and led to richer conversation and discussion (Viswanathan *et al.*, 2008:245). (As a matter of interest in this study, document review of eight books and seven online sources were also undertaken, futher dicussed in chapter 4).

The interview schedule was shown to each of the participants. Showing the questions to the participants have been found to assist low-literate individuals when processing information (Viswanathan *et al.,* 2008:248) while also reducing the risk of test anxiety (Gau *et al.,* 2012:1687). Each interview took no more than an hour to complete. A scheduled break took place after the second section of interviewing.

In line with the cognitive predilections that low-literate individuals hold for concrete thinking (Viswanathan *et al.,* 2008:248), special care was taken in the formulation of the questions to keep questions straightforward. The interview questions were formulated at a grade level lower than Grade 6 (grade 5.2 specifically, as measured by the Flesch-Kincaid grade level indicator). The interview schedule was reviewed by the project planning group (refer to section 3.2.1.2) for their inputs and approval prior to data collection as they have prior experience collecting data within the research setting (Botma *et al.,* 2010:209; Fraser *et al.,* 2009:37; Fraser & Galinsky, 2010:463) of the rural IGPs.

- **Piloting the semi-structured individual interviews**

Following expert review by the project planning group, a pilot run was necessary in order for the researcher to review and ensure the practical aspects of interviewing, including: establishing entry and making contact with interview participants, as well as becoming aware of her own level of interviewing skills (Greeff, 2011:350). Additionally, the interview schedule required piloting to ensure that the questions covered the topics the researcher wanted to address in order to answer the objectives. The questions were also piloted to ensure accurate interpretation and understanding, which are important in cross-cultural settings. Two community facilitators at the IGP unit in the NCP were interviewed during the pilot run.

Gaining entry to the pilot run population

Regarding entry, the Holding Hands' project coordinator and project assistant/mediator, facilitated access to the research participants. The mediator then made contact with the community facilitators at the IGP unit in the NCP and explained the purpose of the pilot run to them. Both of the community facilitators at this IGP unit were invited to participate, both of whom were willing to volunteer their participation and agree to the audio tape recording. Although a very limited sample, these participants were the only community facilitators (other than those included in the main investigation) who were affiliated with the Holding Hands projects. They were regarded as experts who have knowledge and experience of the topics under investigation, enabling them to answer questions pertaining to them. This procedure of obtaining entry did not pose any challenges.

The pilot run findings

The pilot run provided two valuable findings. Firstly, the researcher realised that it was necessary to include additional probes when enquiring about the specific training material needs (refer to question 3). Although the IGP community facilitators could not think of other or future situations where training materials could be needed, the needs were recognised when probed. The given probes (five) were therefore supplemented with nine additional examples of basic sewing tasks (representing activities that seemed likely to be related to the type of items produced at the IGPs) including: reading pattern information; determining the fabric grain direction; cutting accurately; placement of pattern pieces; transferring pictures to the fabric; the threading of machines; quality control; finishing; and packing). Together with an area of interest indicated by the pilot run participants (taking body measurements), an additional nine probes were added to the final interview schedule used in the main investigation. The second consideration following the piloting pertained to the environment within the rural IGPs. During one of the pilot test interviews, the researcher became aware that other people (including the other IGP participants, children at play and people in passing)

in the immediate environment were very noisy. This negatively affected the quality of the voice recordings. The researcher realised that better measures had to be put in place to ensure reduced environmental noises when conducting the interviews during the main investigation (such as conducting the interviews in a private area that is removed from external noises). Additionally, the researcher became mindful of her own communication techniques applied during the interviews (Strydom & Delport, 2011:394). These techniques included: minimal verbal responses; paraphrasing; clarification; reflection; encouragement; listening; probing and reflective summary (Greeff, 2011:294, 295).

Despite being based outside of the NWP, the data generated during piloting formed part of the total data of this qualitative research inquiry, as the pilot sample displayed the same characteristics as the population for the main investigation. While this unit functions more independently and manufactures more other items than those units based in the NWP, the findings were relevant to the review of the 2006 Manual, the use of other textual training materials within a rural sewing IGP and the sewing training material needs of IGP community facilitators.

- **The main investigation**

Three community facilitators at the respective IGP units in the NWP were interviewed during the main investigation. The same procedure for gaining entry as described for the pilot phase was applied. An area that was private, interruption free and convenient to the participants was used. As researchers should reach low-literate individuals where they are (Viswanathan *et al.,* 2008:245), it was appropriate to conduct the interviews at the location of the IGP unit. It was most convenient for the community facilitators because there were no risks regarding travel or associated costs. With the permission of the participants, the interviews were audio recorded.

Role of the researcher

Interviews were conducted by the researcher who had been trained by the AUTHeR for conducting community engagement research. Additionally, she was coached by her study promoters, who have extensive prior experience working in similar research settings. The researcher also learned the interview schedule in advance enabling her to concentrate on the conversation taking place with the participant, while simultaneously monitoring coverage of the scheduled questions. To counter any negative effects that may have occurred from the possibility of power relationships between the researcher and the research participants, the researcher took precautions including: reassuring the participants that they were the experts, that their comments were valued, and that they were making an appreciated contribution to

the study. Additionally, the researcher developed genuine rapport with the research participants (Viswanathan *et al.,* 2008:258), and treated them with respect. After completion of the interviews, the participants were debriefed and the researcher responded to any further questions (Gau *et al.,* 2012:1688; Viswanathan *et al.,* 2008:251).

Translation of interview schedule

Prior to data collection, the interview schedule was translated from English to Setswana by an accredited translator (Dowse *et al.,* 2011:509). This translator did not form part of the research team, but worked away from the research site attending to matters such as the translation of the information leaflet, the consent forms and the interview transcripts post data collection. Making use of the same person to complete these tasks contributed towards greater standardisation and ensured a higher degree of contextual correspondence. The translator signed a confidentiality agreement.

Translation during interviewing

During data collection the mediator also served as an on-site Setswana speaking translator. She provided assistance during the data gathering by ensuring that all the interview questions were accurately understood by Setswana speaking participants during the process of interviewing and allowed the participants to answer the interview questions in their first language, if they chose to do so. Prior to gathering the data, the mediator was trained by the researcher in terms of the purpose of the study, the process of interviewing, and the communication techniques employed during interviewing.

3.2.2.2.5 Data analysis of the transcriptions

After completion of the data collection, a sequential six step procedure for data analysis was applied (Creswell, 2014:196-201). This procedure included: organising and preparing the data for analysis, reading or looking through the data, coding the data, using the coding process to generate categories, summarising data into tables presenting multiple perspectives, and interpreting the findings (Creswell, 2014:196-201). As applied in this study, a brief description of these steps follows.

- Organising and preparing the data for analysis

The initial step entailed organising and preparing the raw data for analysis by translating the interviews conducted in Setswana into English, and transcribing audio data verbatim into text. This was performed by the accredited translator. Thereafter, the transcripts were read by the researcher while listening to the corresponding tape recordings so as to verify the correctness of the transcriptions (Botma *et al.,* 2010:214). The field notes taken by the researcher were

also typed and sorted. These field notes, together with the transcriptions became the main source of data for analysis.

- Reading or looking through the data

Secondly, the researcher read through all the interview data in order to become conversant with the content. This was carried out to obtain a general sense of the information and to reflect on its general meaning (Creswell, 2014:197). The reviewing of audio taped interviews while reading and re-reading the interview transcripts enabled the researcher to develop a deeper understanding ofthe needs of each of the participants and the challenges they face (Adkins & Ozanne, 2005:94; Viswanathan *et al.,* 2008:245) pertaining to sewing training materials within the context of their respective IGPs.

- Coding the data

The third step of data analysis entailed coding the data. In the instance of this study, the researcher (interviewer) served as coder during data analysis. Coding was undertaken in order to identify and summarise the message content (Nieuwenhuis, 2007a:101). This was achieved by examining the presence or repetition of certain words or phrases within the text in order to make inferences (Babbie & Mouton, 2014:491) by marking the segments of data with symbols, descriptive words or unique identifying names (Nieuwenhuis, 2007a:105). While some codes were based on topics that the researcher expected to find (based on the review of literature and prior research), other codes where surprising in that they were not anticipated at the beginning of the study (Creswell, 2014:198). In order to establish consensus of the findings, a co-coder was employed. This person formed part of the research team, has knowledge about the research field and has experience conducting qualitative research in similar research settings.

- Using the open coding process to generate categories

Step four of the data analysis involved grouping the codes and creating corresponding categories by displaying multiple perspectives from individuals, as supported by diverse quotations (Creswell, 2014:199, 200). While focusing on some of the categories and disregarding other parts of them, a few major categories emerged (Adkins & Ozanne, 2005:94) providing more complex layers of analysis from the data.

- Summarising data into tables presenting multiple perspectives from the individuals

During step five, the data was organised and summarised into tables presenting the codes, categories and topics with multiple perspectives from individuals in the form of quotations (Creswell, 2014:200).

Table 3.3 presents an example of the coding and summerising method adopted.

Table 3.3: Example of the coding and summerising method adopted

Topic	Category	Codes	PARTICIPANT		
			Response	**#**	**Grade achieved**
The use of conventional sewing training material	Enthusiasm at prospective use	Positive remark	"I will be grateful if I can have this book, I will be happy"	1	2
		Positive remark	"I need it"	2	12
		Positive remark	"I would like to use it"	3	5
		Hesitant-requires assistance	"Maybe I can use it, if some-one shows me first"	4	5
		Positive remark	"It will be used"	5	12
	Task of reading	Words	"The problem is to read. I can see the pictures and understand them. But this [reading] is the challenge"	1	2
		Words	"I will not be able to understand some words. There are some which I understand when I read English, but some… [shakes head]". "Some of the words, it gonne [going to] be difficult for me to understand"	3	5
		Functional illiteracy	"I have never come across the stitching words, so it is going to be difficult words"	5	12
	Coping strategy	Overreliance on more literate friends	"She must read for me, so I can understand what is being said"	1	2
		Culture of helping each other	"I am the one teaching them to put it in, how to do it"	1	2
			"we share, the experience that we taught ourselves, we pass on to others"	2	12
			"Yes I can understand it. But only if some-one shows me"	3	5
			"If someone keep[s] explaining to me, I will understand"	5	12
		Pictorial dependence	"I see the pictures very clearly" but [can] not read"	1	2
			"It makes it easier. For someone who can't read"	2	12
			"At times you read and do not understand, but when you read looking at that picture to see how it is like, and then be able to [read]"	4	5
	Amount of reading	Too much information	"There is too much to go through"	2	12
			"There is too much information here"	4	5

- Interpreting the findings

Finally, interpretations could be made from the findings during step six. This included: a comparison of the findings with those of other studies in previous research; comparing the findings with information gleaned from the literature and theories; and making suggestions for new research questions to be asked in future research (Creswell, 2014:200).

- **Field notes**

The researcher took field notes during the data collection (Creswell, 2014:195) which included a written account of what the researcher experienced and thought during the course of the interviews (Greeff, 2011:359). In the instance of this study, theoretical notes formed the basis for data analysis as it documented those 'sense-making' thoughts of the researcher while the interviews were taking place, while the personal notes taken reflected on the feelings and perceptions observed by the researcher (Botma *et al.,* 2010:219; Polit & Beck, 2008:406, 407), such as the researcher's perception of a participant acting dismissive when handed the conventional sewing training textbook. The value of the field notes was documentation of the researchers' general understanding of the research context (where the need for appropriate sewing training material occurs) as well as the research participants (the individuals in need of appropriate sewing training materials) within the unique setting of rural sewing IGPs.

3.2.2.2.6 Outcome of the qualitative findings

A detailed presentation of the findings of the qualitative phase is presented in an article format in Chapter 4. The outcome of the qualitative findings was twofold. It provided the researcher with a better understanding of the use of, and challenges associated with, the use of textual sewing training material, while also identifying relevant content of the sewing training intervention material. This falls in line with Strydom and De Vos (2011:481) who posits that conducting empirical research will yield results on which to base the intervention, the design of which is presented in the next section (IR phase 3).

3.2.3 Phase 3: Design

In this study, the IR phase concerned the design of the newly developed sewing training materials (the prototypes) to be used in the intervention. Training materials are often a product resulting from IR (Rothman & Thomas, 1994:33). This phase also specified designing the observational system and procedural elements of the intervention (De Vos & Strydom, 2011:489; Rothman & Thomas, 1994:33) which is subsequently discussed.

3.2.3.1 Designing an observational system

In IR, the observational system is directly linked to the process of designing the intervention as it serves as the feedback system for refining the early prototypes (De Vos & Strydom, 2011:482). Following the identification of most prominent sewing training needs (empirical research during IR phase 2 [3.3.2.2]), the development of the observational system was discussed in a meeting with the project planning group. At this time, the following three parts of the observational system were addressed:

- Identification and descriptions of the products associated with the problem
  The Holding Hands project coordinator explained that various training materials have been given to Holding Hands IGP participants in the past. Some of these materials included posters and handouts. A workbook had also been developed; however, it is uncertain if it was ever used. From the discussion, two conclusions were drawn: (i) that the rural women may not have been accustomed to using the posters/hand out copies received, and (ii) that the content of the previously received materials could have been inadequate in addressing their actual skills training needs.
- Recommend products to limit the negative effects (as IGP participants may be unfamiliar with the use of certain media)
  The project assistant and mediator of the investigation recommended the use of pamphlets as a medium to convey the sewing instructions. Pamphlets hold various advantages. Not only is it a portable instructional material, but it is a format that is familiar to the rural IGP participants. Within the rural communities, informational pamphlets (also referred to as leaflets) are frequently distributed to convey information pertaining to, for example: government elections, HIV awareness, consumer services and human rights.
- Discuss scoring instruments to record changes following the intervention
  It was decided that the outcomes of the sewing training interventions would be measured using assessment rubrics, and assessed by the members of the project planning group in a group marking session. It was also discussed that the participants would complete a satisfaction questionnaire in order to provide their subjective opinions of the newly developed materials as intended users thereof (details regarding the modified assessment rubrics and participant satisfaction questionnaires follow in section 3.2.4.3).

3.2.3.2 Specifying procedural elements of the intervention

Completing sewing tasks provided the opportunity for practical application of the developed sewing training material and enabled the evaluation thereof. The procedural elements of applying the interventions, as well as the proposed dates, times and methods of administering the interventions were decided upon in consultation with the project planning group.

3.2.3.2.1 Procedure for the sewing training material interventions

It was decided that two sewing related tasks would be undertaken, including the tasks of taking body measurements and pattern layout. These tasks were based on the identified challenges that the participants had experienced, as informed by the findings of the qualitative phase (detailed within Chapter 4). As it is important to keep the low-literate participants engaged in

an activity (Viswanathan *et al.,* 2008:246), the researcher designed interesting but simple sewing related tasks.

- Pre-test evaluation: As a pre-test measure, the participants were required to complete the sewing related tasks (taking body measurements and accurate pattern layout) without having had any exposure to the sewing training intervention materials. The project planning group assed the task by means of an assessment rubric.
- Training material intervention: The participants then received the newly developed sewing training material as the intervention and allowed to read/review it at their own time.
- Post-test evaluation: The participants were then be asked to complete the same/a similar task as before, as a post-test measure. The same assessment rubric served to provide the second measure of the task. Any deviation in the results between the pre-and post-measures determined the effect of the intervention material as results of the evaluative phase. It was emphasised that the purpose of the evaluation was not to determine the skills levels of the participants, but rather to determine the appropriateness of the developed sewing training materials in an intervention to assist low-literate IGP participants when completing sewing tasks.
- Finally, the participants completed a satisfaction questionnaire to determine their satisfaction with the newly developed training materials as consumers of these materials.

In the instance of low-literate research participants, structured approaches could cause undue anxiety (Viswanathan *et al.,* 2008:256). To counter this risk, all the methods related to the procedure for the sewing training material interventions were kept semi-structured. The cognitive challenges that low-literate participants may experience due to their unfamiliarity with data collection methods were taken into consideration. Additionally, the researcher allowed adequate time to complete the intervention activities.

3.2.3.3 Design of developed sewing training materials to be used in the intervention

Within this IR activity, the development of appropriate sewing training materials for low-literate individuals was undertaken (objective 1.6.2.3). The design was based on literature related to the development of materials for low-literate individuals, as well as the findings of the qualitative inquiry (IR phase 2) and included designing prototypes of the sewing training instructional pamphlets (3.2.3.3.1) and developing the scoring instruments (3.2.3.3.2) as discussed below.

3.2.3.3.1 Designing the sewing training instructional pamphlets (prototypes)

Review of the literature presented valuable guidelines and considerations for the design and development of the new sewing training materials for low-literate individuals (Cordasco *et al.,* 2009; Kripalani *et al.,* 2007; Mansoor & Dowse, 2003; Mwingira & Dowse, 2007; Ngoh & Shepherd, 1997; Richler *et al.,* 2013). Integrated into three sequential steps, the design process included: conceptualisation of the information message; designing the materials; and assessing user perception/comprehension, as briefly discussed.

- Conceptualisation of the message content was informed by the project learning needs as determined during the qualitative descriptive individual interviews (stipulated as objective1.6.2.2 to explore the most prominent sewing training needs within rural sewing IGPs). Drawing from the findings, two sewing training needs were identified as being the most prominent (the task of taking body measurements and the task of laying out pattern pieces onto fabric). These tasks served as the message content for developing two sewing training prototypes in the form of fold-out pamphlets (fold out pamphlets to follow in figures 3.4 and 3.5).
- The practical design of the materials included threefold considerations for the literacy level, the acknowledged cognitive predilections of low-literate individuals (for pictographic and concrete thinking), and culture and language. A full description of the design procedure is presented in Chapter 5: A decolonised approach to developing training materials for low-literate participants of rural sewing IGPs.
- Finally, assessing the low-literate users' comprehension of the developed materials warranted consideration. This was undertaken by both objective and subjective measures as described in the next section.

3.2.3.3.2 Development of scoring instruments

The scoring instruments developed in this study included the development of assessment rubrics (in order to obtain an objective measure of the intervention effect) as well as the development of an interviewer administered participant satisfaction questionnaire (to obtain a subjective evaluation by the user of the sewing training instructional pamphlets).

- **Development of assessment rubrics**

To obtain an objective measure of the intervention tasks, memoranda and samples depicting correct completion of the procedures were developed by the researcher, following the techniques and principles applied in practice. A sewing expert confirmed its technical accuracy. Corresponding assessment rubrics served as scoring instruments, capturing the use and application of the instructional pamphlets by participants. The use of structured

assessment rubrics assessed by the project planning group in a group marking session aimed to ensure greater objectivity.

- **Development of interviewer administered participant satisfaction questionnaire**

In addition to objective measures, it was also necessary that the IGP participants provided their subjective opinions of the newly developed sewing training materials. As intended users, their opinions directly impact on the implementation and use thereof, warranting further investigation. To this end, an interviewer administered participant satisfaction questionnaire was developed. The questionnaire aimed to determine the IGP participants' perceived readability, understanding, usefulness, learning and quality of the sewing training instructional pamphlets by asking structured questions. These constructs were adopted from previous research on the development of educational materials for low-literature consumers, such as the studies by Viswanatha and Gau (2005) and Dowse *et al.,* (2011). The next section presents a discussion of the interviewer administered approach, the questionnaire content and the questionnaire format.

The interviewer administered approach

Quantitative methods seen as customary in consumer research (such as pen-and-paper surveys and collecting data from multiple participants simultaneously) may be challenging for low-literate research participants (Gau *et al.,* 2012:1686; Viswanathan & Gau, 2005:16). To counter these challenges, previous research recommends an interviewer administered approach as an alternative to traditional surveying (Kripalani *et al.,* 2007:371; Martins, 2005:144; Viswanathan & Gau, 2005:194). The relatively low-literacy of the South African population (Mansoor & Dowse, 2003:1004; Spaull, 2013:1) has made this approach a suitable method to collect survey data (Babbie & Mouton, 2014:249). In line with the interviewer administered approach, the questionnaire was shown to each participant and the responses recorded (Viswanathan *et al.,* 2008:246, 248). The nature of this approach reduced respondent anxiety by minimising the reading and writing required, thus improving the likelihood that respondents really understood the questions (Gau *et al.,* 2012:1686; Viswanathan *et al.,* 2008:260), thereby decreasing the potential for measurement error (Martins, 2005:144). The role of the interviewer was to collect the data in an unbiased and objective manner as assisted by the same Setswana speaking mediator who was present during the qualitative phase of the study.

Questionnaire content

Studies related to the development of information materials for low-literate individuals provided valuable evaluative constructs that guided the development of the questionnaire (Dowse *et al.,* 2011; Mansoor & Dowse, 2003; Mwingira & Dowse, 2007; Viswanathan & Gau, 2005). As the developed sewing training materials (independent variable) were specifically designed for the low-literate participants in the rural IGPs, it was necessary to determine their perceived: readability; understanding; usefulness; and learning (as dependant variables). As a factor affecting the implementation of the intervention, perceived quality was also considered. The questionnaire consisted three sections. In section A, the demographic details of the respondents including their age, educational attainment and home language were recorded. Inclusion of the older grade assignments (Standard 5 as equivalent to Grade 7) accommodated older respondents who participated in the study (Van Staden *et al.,* 2017:81). Section B related to readability, understanding, use and learning of the sewing training instructional pamphlet. Section C explored factors related to pamphlet quality by determining preferences for size of text, incorporation of pictures, length of material and preferred visual material and language. In consideration of the concentration span of the low-literate participants and their age, the length of the questionnaire was limited to 16 questions (Viswanathan *et al.,* 2008:257), yet addressed all aspects that needed to be investigated.

Questionnaire format

As a point of departure, general questionnaire development guidelines were consulted (Babbie & Mouton, 2014:239-249; Maree & Pietersen, 2007:160-168) regarding types of questions, the sequence of questions and questionnaire wording. To increase the likelihood of valid results, the questionnaire was customised (Viswanathan *et al.,* 2008:256) incorporating the cognitive preferences that low-literate individuals hold for concrete and pictographic thinking (Gau *et al.,* 2012:1686; Van Staden, 2012:77, 78; Viswanathan *et al.,* 2009:400, 401). The questions were asked in straightforward, simple everyday language with which the participants were comfortable in terms of their cognitive abilities, allowing them to focus on the idea behind the question rather than the wording, thereby responding with more confidence (Gau *et al.,* 2012:1686; Van Staden, 2012:78; Viswanathan *et al.,* 2008:248). The questionnaire was developed for an appropriate grade level (of Grade 3.3 with reading ease of 82.3, as measured by Flesh Kincaid [Microsoft Office, 2011]). Examples of the questions included: 'It is easy to read the pamphlet'; 'It is easy to understand the pamphlet' (more information regading the Flesch Kincaid measures is presented in Chapter 4). Simple visual presentations developed by Van Staden (2012:78) for binary (yes/no) and 3-point Likert scales were used to present response choices concretely and pictographically, while rating no more

than one attribute at a time (Viswanathan *et al.,* 2008:249). Examples of the binary and 3-point likert scales are presented in the Figures 3.2 and 3.3 below.

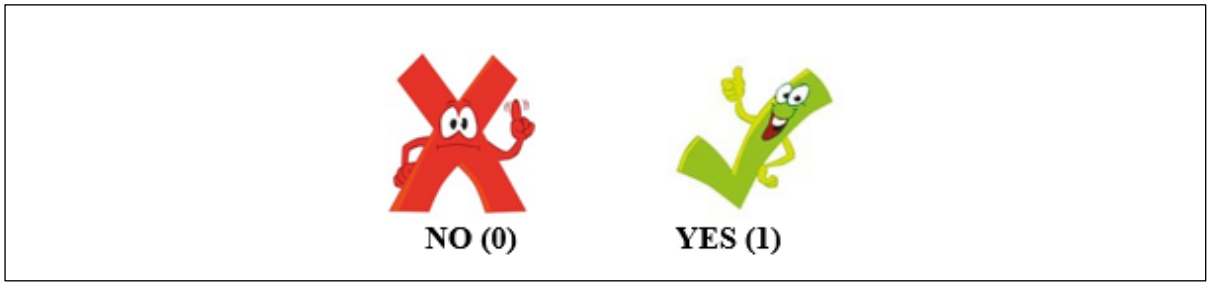


Figure 3.2: Binary scaling (developed by Van Staden 2012)

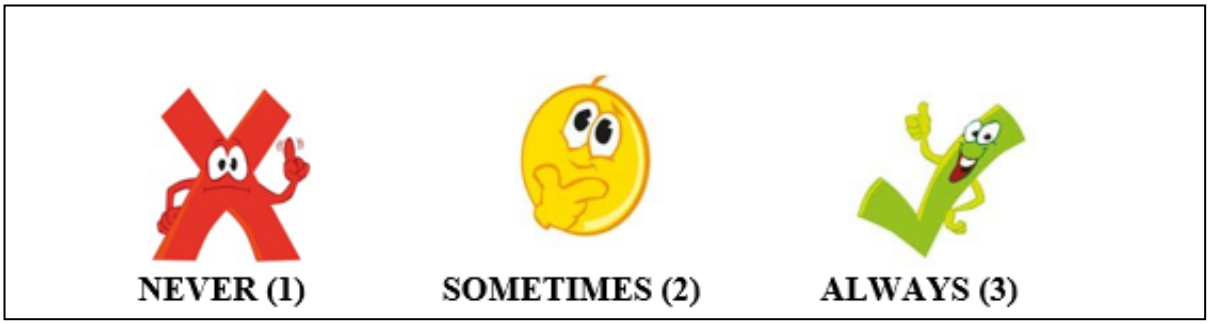


Figure 3.3: Three-point Likert scale (developed by Van Staden 2012)

A limited number of questions per page were typed in a large font (Arial of 16 points). Prior to the data collection, all headings and values were removed to further simplify the questionnaire. The Statistical Consultation Services (SCS) at the NWU was consulted during the development of the questionnaire.

3.2.4 Phase 4: Early development and pilot testing

During the early development and pilot testing, the first draft of the newly designed sewing training intervention materials was developed in a format that could be formally evaluated in practice (De Vos & Strydom, 2011:483) by means of expert review (3.3.4.1), end-user review (3.3.4.2) and applying the pilot test results (3.3.4.3).

3.2.4.1 Submit materials for external review by experts

The sewing training material was submitted to the project planning group for expert review (Fraser & Galinsky, 2010:463; Fraser *et al.,* 2009:37). The member of this group were academics and professionals with expertise in the problem under investigation, prior knowledge regarding the Holding Hands sewing IGPs and experience working with the IGP participants. As such they provided valuable comments and inputs related to the development

of the materials. All the comments made by the project planning group were considered and applied to the design of the materials. Additionally, the newly developed materials were submitted to three experts for external review. Firstly, it was submitted to an art expert (who has vast experience in the practice and teaching of drawing and illustration) to review the images, and secondly, a subject expert (a specialist garment constructor) revised the technical accuracy. Lastly, an expert of low-literacy (published author in the field of low-literacy research) made recommendations related to the format and nature of the materials. The comments and recommendations made by the experts were applied to the newly developed sewing training materials before they underwent pilot testing.

3.2.4.2 Submit material for end-user review: conducting a pilot test

Pilot testing of the developed sewing training materials (the prototypes) consisted a phase of quantitative research within a similar setting and with a sample displaying similar characteristics as the population for the main investigation (Maree & Pietersen, 2007:155; Strydom & Delport, 2011:243). Regarding entry, the project coordinator and project assistant of Holding Hands facilitated access to the research participants. Subsequently, the mediator of the Holding Hands IGPs made contact with the participants at the Holding Hands IGP unit in Jan Kempdorp, in the NCP and explained the purpose of the pilot test to them. All the participants at this IGP unit (4 participants) who were active members of the Holding Hands IGP and aged 18 or older, willing to participate in the pilot testing, and willing to volunteer their participation were invited to participate in the project. The researcher then made arrangements to conduct the pilot test session in exactly the same manner as planned for the main investigation. This procedure of obtaining entry did not pose any challenges.

The main purpose of the pilot test activity was the pre-assessment of the intervention sewing training material in order to obtain feedback in the form of recommendations made by participants to implement in the further development of the sewing training material intervention prior to being assessed in the main quantitative phase. Additionally, pilot testing allowed the researcher to determine whether there would be obstacles in administering the intervention, allowing for any possible deficiencies to be discovered timeously (Fouché & Delport, 2011a:73). The procedure of investigation as well as the wording, order, layout, length and interpretation of the data collection instruments could then be refined, thereby improving the success and effectiveness of the investigation (Strydom & Delport, 2011:241). Prior to the pilot testing, the information leaflet and consent form were translated from English to Setswana (Annexure A4: Approved information leaflet and consent form, pre-test post-tests in an

intervention and Annexure A5: Approved information leaflet and consent form, pre-test post-tests in an intervention, translated Setswana).

3.2.4.3 Applying pilot test results to the sewing training material intervention

Following the pilot testing, alterations were made to improve the sewing training material instructional pamphlets, the assessment rubrics, the participant satisfaction questionnaires as well as the procedure for employing the developed materials in an intervention.

3.2.4.3.1 Modifications to the sewing training instructional pamphlets

The modifications made to the pamphlets post pilot testing are presented in Table 3.3 below.

Table 3.4: Modifications made to the pamphlets

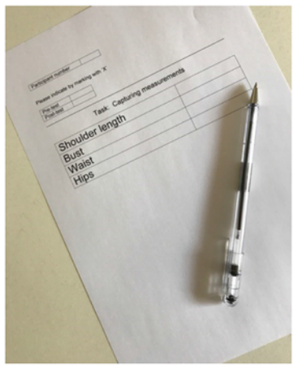
	Pg.	Modification	Reason
Pamphlet for body measuring	1-4	Removed 16 words (word count reduced from 137 to 121).	Three out of the four pilot test participants indicated that the pamphlet should be shorter. In light of the low-literacy observed within the group, superfluous words were eliminated.
	Front cover	Moved 1st sketch of facilitator to the cover page.	To shorten the overall length of the pamphlet.
	1, 2	Removed multiple borders.	This provided more open spaces within the pamphlet reducing the occurrence of information overload.
	2	Add a 'thumbs up' image.	To reinforce the indication of the correct side of the tape measure. This was done as some pilot test participants did not grasp that piece of information.
	3	Bullets were added.	To create a more reader-friendly format.
	3, 4	The contents of page 3 spread across two pages.	Including an additional page and extending the content over two pages allowed magnification of the image and more open spaces between the instructions.
	Back cover	Added the words 'Ke a leboga' to the back cover.	Thanking the participants for their participation.
Pamphlet for pattern layout	1-10	Removed 67 words (word count reduced from 333 to 266).	Two out of the four pilot test participant indicated that the pamphlet should be shorter. This pamphlet was shortened by 67 words.
	1 - 10	Removed multiple borders.	Providing more open spaces within the pamphlet reduced the occurrence of information overload.
	4	Added an arrow.	It was observed that the pilot test participants did not notice the pin as none of them completed this instruction.
	4 - 9	Added bullets	To break down paragraphs into a more reader-friendly format.
	6-9	Coloured the headings (for steps 1-4).	To draw attention to the steps to ensure they are not overlooked.
	Back cover	Added the words 'Ke a leboga'.	Thanking the participants for their participation.

Figures 3.4 and 3.5 present the modified sewing training instructional pamphlets for taking body measurements and pattern layout respectively.

O tla thoka

Teipi ya go meta

Pampiri ya dikarabo



Take note/Ela tlhoko

The tape measure has two sides.

The one side shows measurements in inches.

The other side shows measurements in centimetres (cm)

We use **cm**

How to take body measurements

Shoulder length

- Measure from bottom of neck to the edge of the shoulder.
- E kwale.

Bust

- Measure across fullest part of the bust.
- Measure all around.
- E kwale.

Waist

- Measure around the slimmest part of the waist.
- Measure all around.
- E kwale.

Hips

- Measure where the hips are widest.
- Measure all around.
- E kwale.

Ensure the measuring tape is not skew

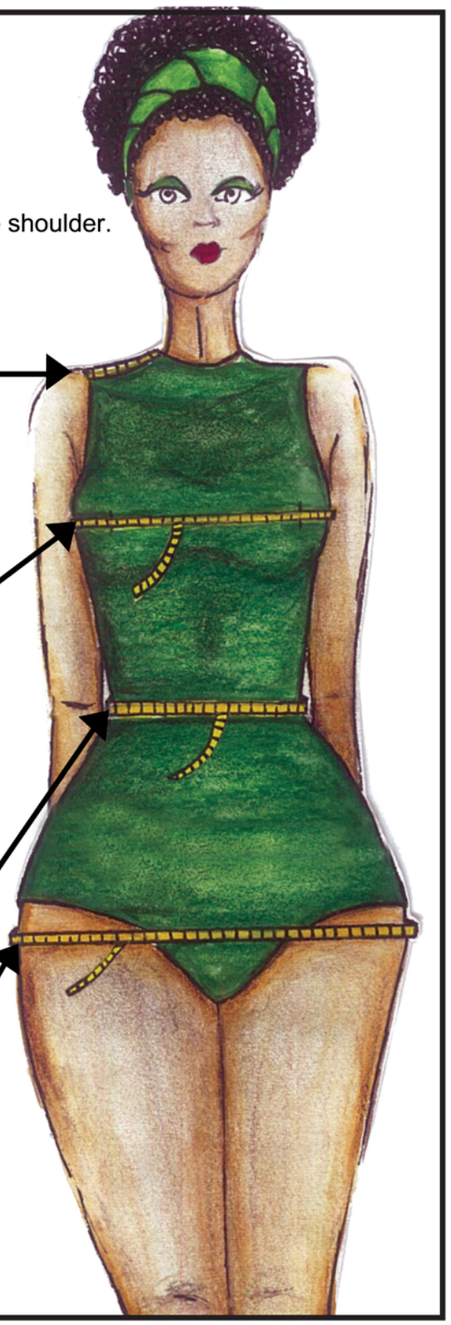


Figure 3.4: Modified sewing training instructional pamphlet for taking body measurements

O tla thoka

Diphini

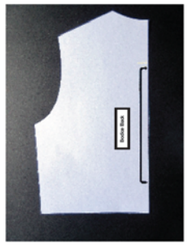
Theipi ya go meta

Letsela

½ scale Pattern pieces

Collar

Bodice Back



Bodice Front

Sleeve

Know your Pattern Symbols

The 'grainline'
Lerumo leno le kaya go:
align the pattern with the fabric edge.

The 'place on foldline'
Lerumo leno le kaya go:
place on the fold of the fabric.

PELE O SIMOLOLA

- Fold fabric lengthwise,
- Bring together and match raw ends.
- Ensure there are no folds.
- Pin in corners to keep in place.

Fabric that is folded lengthwise

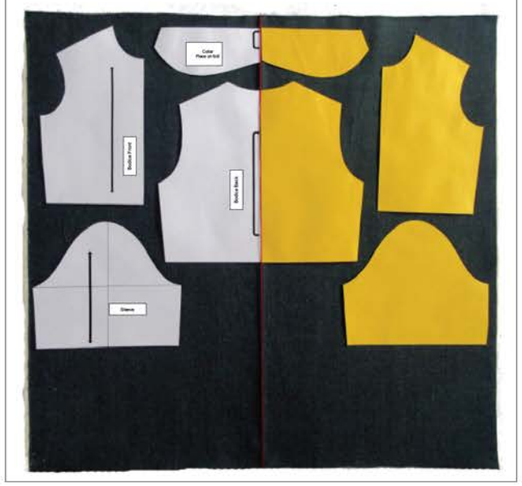
Ensure there are no folds

Pin in place

Take note - Ela tlhoko

We fold the fabric double when we lay down pattern pieces (one for the left, and one for the right side of the body).

When the fabric is opened



KGATO 1

Collar

- Place the collar on the fabric fold.
- When in place, pin at all corners.

Placement of collar on fabric

Fa o e beile, tlhomela diphini

KGATO 2

The Bodice Back

- Place just below the collar.
- Also on the fold of the fabric.
- When in place, put pins.

Placement of bodice back on fabric

Fa o e beile, tlhomela diphini

KGATO 3

Place the Bodice Front in the open space

- Align with the fabric's raw edge.
- To ensure this, measure both ends of the grainline (if the one point is 10 cm from the raw edge – then the other must also be 10 cm from the raw edge)

Placement of bodice front on fabric

Fa o e beile, tlhomela diphini

KGATO 4

Place the Sleeve

- Align with the fabric's raw edge.
- To ensure this, measure both ends of the grainline.

Placement of sleeve

Fa o e beile, tlhomela diphini

Figure 3.5: Modified sewing training instructional pamphlet for pattern layout

3.2.4.3.2 Modifications made to the assessment rubrics

Rubric assessing the task of taking body measurements: Following the pilot testing, the project planning team decided to include a range indicating the degree of deviation from the correct measurements. Within a deviation of <5 mm, the measurements were still deemed achieved as this minor difference could be ascribed to human error or poor eye sight. Importantly, such a discrepancy would not have major implications for garment fit. Deviation from the correct measurements that ranged between 5-10 mm was marked as partially achieved as an indication that the measurement was taken at the correct position, but not with acceptable accuracy. Such a deviation may have repercussions for garment fit. Any deviation greater than 10mm > was marked as not achieved. Such results served as an indication that the measurement was taken at the incorrect position, with no accuracy, or with the wrong measurement value (inches as opposed to centimetres).

Rubric assessing the task of pattern layout: The first two instructions (including 1: place the fabric flat on the table; and 2: remove all the folds and creases) were removed from the assessment rubric. During administration of the intervention the researcher and project assistant observed that those two instructions were automatically adhered to as the participants received their fabric uncreased and smooth on the tables. Assigning marks would therefore not be an accurate representation of sewing training material instruction adherence.

3.2.4.3.3 Modifications made to the participant satisfaction questionnaires

Minor alterations were made to the participant satisfaction questionnaire, as presented in Table 3.4.

Table 3.5: Modifications made to the participant satisfaction questionnaire following pilot testing

Section	Pg.	Question	Original	Altered to	Reason
A2	1	*What is your highest level in school that you passed?*	Options were provided from: Grade 3/Standard 1 to Grade 12/Standard 10	Including options: Grade 1/ Sub A and Grade 2/Sub B to include the full range from Grade 1 to 12.	A pilot test participant had obtained sub B, other such cases could be found in the main investigation.
C6	5	*Do you prefer…*	Options were provided for: The line drawings / The photographs	Including images of both a line drawing and a photograph illustrating the action.	During the pilot study, the participants were unsure what was meant by these two types of drawings, necessitating the researcher to explain.

Due to the change effected on page 5, the initial questionnaire was adapted and customised to address either the first pamphlet (for body measuring) or the second pamphlet (for pattern

layout) respectively. Additionally, a block was added to indicate the project unit of the participant as a control measure for administrative purposes (Annexure B1: Participant satisfaction questionnaire, the body measuring pamphlet, and B2: Participant satisfaction questionnaire, the pattern layout pamphlet).

3.2.4.3.4 Modifications made to the procedure

Finally, modifications were made to the procedure for employing the sewing training materials in field based interventions within the rural sewing IGP units. These modifications related to: the procedure for completing the sewing task: taking body measurements, and the procedure for completing the sewing task: pattern layout, as presented in Table 3.5 below.

Table 3.6: Modifications to the procedure of administering the sewing training materials in field based interventions

Task	Action modified	Original	Altered to	Reason
Taking body measurements	Order in which the participants completed individual interventions.	During pilot testing the researcher assigned numbers (on stickers) to assign the order of participants (from 1-4).	Allowing the participants to complete the task in the order of their preference, and then obtaining their participant number.	Some of the participants deviated from their assigned/allocated order as they wanted to complete the tasks before or after a friend.
Pattern layout	Seating arrangement within the IGP unit.	Makeshift partitions were created to ensure each of the participants had adequate space and privacy to complete the intervention task.	The researcher provided partitions (by means of modified cardboard boxes).	Conducting the pilot study made the researcher realise that due to limited space the subjects for the main investigation could become unintentionally aware of each other's activities.
Both the tasks	Scheduled breaks.	Breaks were scheduled before each intervention activity.	The participants indicated when they wanted to take a break.	Pilot test participants indicated that they did not feel like taking breaks at the planned times.

The main value of conducting pilot testing was the pre-assessment of the developed sewing training materials in a field based intervention in order to obtain feedback (including recommendations made by end-user participants) to implement in the further development prior to the main investigation. The detailed pilot test results are reported in article format in Chapter 5. After all the changes resulting from the pilot test were effected, multiple copies of the developed sewing training instructional pamphlets were produced in preparation for the next empirical research phase, Phase 5 of IR: evaluation and advanced development.

3.2.5 Phase 5: Evaluation and advanced development of new sewing training materials

Within phase 5 of the IR design, the empirical objectives to be reached included: to implement developed appropriate sewing training materials for low-literate individuals in rural IGPs in field based interventions (objective 1.6.2.4), and to evaluate newly developed sewing training materials for their appropriateness and implementation within rural sewing IGPs (objective 1.6.2.5). To achieve these objectives, the IR activities included: the selection of an experimental design, collecting and analysing data, replicating the intervention under field conditions and revising the intervention as necessary (De Vos & Strydom, 2011:476-489; Rothman & Thomas, 1994:11). A discussion of these activities as applied in this study follows.

3.2.5.1 Selecting an experimental design

A quantitative quasi experimental design was selected to evaluate the developed sewing training materials in an intervention. The purpose of the evaluation was to determine the appropriateness of the materials when implemented within the rural sewing IGPs. Additionally, the participants' satisfaction with the intervention material was also established. This was deemed necessary as materials developed for low-literate individuals require thorough evaluation in order to determine their appropriateness (Viswanathan & Gau, 2005:195).

3.2.5.2 Collecting and analysing data

As a phase of empirical research, a description of the quantitative quasi experimental research design follows.

3.2.5.2.1 Quantitative quasi experimental research design

As a form of experimental research, quasi experiments lack randomisation when assigning individuals to participate (Babbie & Mouton, 2014:351; Creswell, 2014:247) and are frequently used in evaluative research with specific samples of populations. In this study, a one group pre-test post-test was used.

- **One group pre-test post-test**

During the one-group pre-test post-test design (Figure 3.6), the researcher studied a single group by means of a pre-test, provided an intervention, and then determined if it had had any effect by conducting the post-test (Fouché *et al.,* 2011:146; Creswell, 2014:170; Du Plooy-Cilliers & Cronje, 2014:162; Royse, 2011:119). Unlike other experimental procedures, this design did not have a control group with which to compare the experimental group (Creswell, 2014:170) and the baseline was the measure that occurred before the intervention was

introduced and served as the control phase (Rubin & Babbie, 2010:178) (the reason for not having a control group is due to the small size of the population). Any difference that occurred in the data patterns between the first and the last measurements could then be attributed to the intervention, also known as the treatment effect (Du Plooy-Cilliers & Cronje, 2014:162).

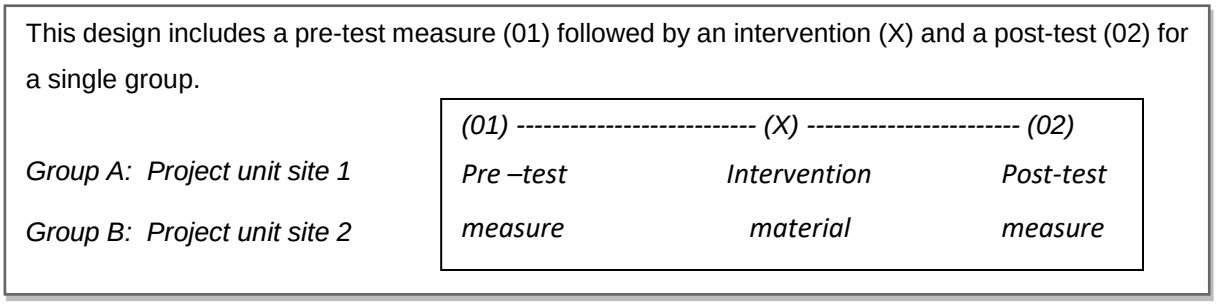


Figure 3.6 One-group pre-test post-test design (as adapted from Creswell, 2014:172)

3.2.5.2.2 Population and sampling

Two Holding Hands IGP units within the NWP participated in the one-group pre-test post-test during the main investigation. Group A consisted 6 IGP participants at the project unit site based in Castello. Group B consisted 7 IGP participants at the project unit site based in the informal settlement of Rysmierbuilt. All-inclusive voluntary and purposive sampling were applied to include the entire population of 13 IGP participants in this study. The only considerations for inclusion were that the participants had to be 18 years and older (to be able to give consent), and they had to be actively involved in the Holding Hands sewing IGPs. As the newly developed sewing training materials were specifically developed for implementation in rural IGPs, it follows that this sample of purposely selected rural IGP participants were able to best address the research problem. Accordingly, the results generated from this specific sample did not allow for generalisation to a wider population.

3.2.5.2.3 Entry and informed consent

Research within the Holding Hands project unit site 1 based in Castello was initially undertaken. Goodwill permission to conduct this phase of the study had been attained. Regarding entry, the Holding Hands project coordinator and project assistant facilitated access to the research participants. The mediator acted as a middleperson between the researcher and the research participants. This mediator had a long history of working with the participants of the IGP unit, was trusted by the members of the group. The mediator approached the IGP participants and arranged a meeting with them, during which she explained the purpose of the research, why they were being asked to participate, who the researchers were, that the HREC had approved the research project and may inspect the research records, and that any queries about the research may be directed towards the

researcher or the HREC offices (contact numbers of relevant persons were provided). As low-literate participants are usually unfamiliar with research and the methods employed, the researcher ensured that the mediator took extra time to carefully explain to the participants what their experiences would be. This included ensuring that the participants understood the purpose of questions asked as well as the purpose of the intervention tasks to be completed (Viswanathan *et al.,* 2008:257). The researcher then answered any questions that the participants had whereafter she provided them with the information leaflets and consent forms, and verbally read all the information to them. The consent form included information about the intervention, the pre-test post-tests, the duration of these tasks, the evaluation of the tasks, the satisfaction questionnaire, and the documentation of the research process. Prior to data collection, the information leaflet and consent form was translated from English to Setswana by a language expert (Dowse *et al.,* 2011:509).

The administration of the information leaflet and consent forms were completed in a group. Incorporating the opportunity for group discussion enabled the participants who were less literate and confident to confer with their more literate friends, while at the same time avoiding settings that could potentially expose their low-literacy (Viswanathan *et al.,* 2008:247). After sufficient time had passed, the mediator (as a person independent from the research) returned to the participants to obtain their written informed consent, granted that the participants volunteered their participation. The mediator also signed the informed consent with the participants at the same time. Thereafter, the researcher contacted the participants and made arrangements for the data collection to commence.

3.2.5.2.4 Data collection

During this phase of the study, data collection consisted of a pre-test evaluation; intervention (exposure to the newly developed sewing training materials); a post-test evaluation; and a participant satisfaction questionnaire. Two sewing training material interventions were undertaken. The first (the body measuring task) was conducted on a one-to-one basis, while the second (the pattern layout task) was undertaken in a group session. Both were completed within the same day so as to counter any experimental mortality (the risk of losing some research participants between pre- and post-testing) (Du Plooy-Cilliers & Cronje, 2014:166). The researcher conducted the training material interventions as she has prior experience conducting practical sewing training activities in community initiatives and is knowledgeable about research in community settings.

Data collection took place at a community hall in Castello. At the time of the investigation the IGP participants did not have an allocated venue from which the IGP operated. Rather, each participant completed sewing activities in their own time in their own private residences. Due to the measure of control required to ensure the validity of the intervention pre-test post-test results (responses not being skewed by exposure to other materials) it was not appropriate to conduct the intervention tasks there. As researchers within subsistence research settings should reach participants where they are (Viswanathan *et al.,* 2008:245), it was appropriate to have the data collection at the local hall. Additionally, this location provided adequate space with tables and chairs. It was also convenient to the participants as there were no risks relating to travel or associated costs or inconveniences. Before data collection commenced, the purpose of the research was briefly repeated by the researcher for the benefit of the participants. At this point the researcher explained the purpose of conducting an intervention and clarified that any communication or assistance between the participants would have detrimental effects for the research. The participants were then provided with the opportunity to ask questions. The researcher also verbally confirmed their consent.

- **Procedure for the body measuring sewing training material intervention**

The task of body measuring was undertaken first as it was deemed simpler than the task for pattern layout. This task was completed on a one-on-one basis and entailed that each individual participant measured a standard fitting doll at four positions and wrote down their answers on an answer sheet as a pre-test measure. Conducting these sessions in a private area ensured confidentiality and alleviated any potential for embarrassment associated with reading and writing (Viswanathan *et al.,* 2008:246). A measuring doll was selected (as opposed to an actual body) to ensure consistency across the various IGP units and to reduce any possibility of anxiety that could result from measuring a person. When satisfied with their answers, the participants informed the researcher who took in the answer sheets. Next, the participant received the sewing training material instructional pamphlet and reviewed it. There was no time limit given. While having access to the material (for reference) the participant then measured the doll at the four stipulated positions again, as a post-test measure. There were no demonstrations given or assistance provided. The post-test was slightly altered from the pre-test by randomly reordering the sequence to ensure greater internal validity of the experimental design (Du Plooy-Cilliers & Cronje, 2014:164, 165). When they had completed the task, they indicated this to the researcher, who then collected the post-test answer sheets and provided the participants with the participant satisfaction questionnaire.

As a measure of control, the participants did not receive a copy of the sewing training material at this time. Additionally, they were not permitted to discuss their task with any other members

of the IGP unit as it could influence the results of their post-test and therefore yield an inaccurate measure of the treatment effect. This was ensured by the on-site Setswana speaking mediator fulfilling the role of an invigilator. All the participants completed this intervention activity within 2 hours. The researcher then provided everyone with lunch before commencing the next activity.

- **Procedure for the pattern layout sewing training material intervention**

Following the body measurement task, the pattern layout was undertaken. For this task, each participant was allocated to a table and chair within the hall. The researcher ensured that the seating arrangement provided sufficient privacy to ensure that the participants did not become aware (intentionally or unintentionally) of each other's actions/responses. Partitions (fashioned from cardboard boxes) were assembled. The researcher then provided the participants with a cut piece of fabric; half scale pattern pieces (referring to patterns that are half the size of the full scale equivalent, at a 1:2 ratio, as customarily used in pattern making classes) consisting of the bodice front, bodice back, sleeve and collar as well as a tape measure and pins. Thereafter, she asked the participants to lay out the pattern pieces in the manner they thought was correct. The participants indicated to the researcher when they were done. She then collected the fabric (marked A 1-6 for each participant respectively). The participants then received the sewing training material and which they read/reviewed. The researcher supplied them with a new piece of fabric (marked B1-6 respectively) and a new set of patterns. The post-test patterns were slightly altered from the pre-test patterns (by altering the necklines and shifting the darts) to ensure greater internal validity of the experimental design (Du Plooy-Cilliers & Cronje, 2014:164, 165). When the participants felt that they had had sufficient time to review the material, they proceeded to lay the patterns out once again. As soon as the participants were satisfied with their result, the pieces were pinned in place and the researcher collected the (post-test) fabrics. For each of the participants, the entire range of activities was completed in less than an hour. After completion of the intervention tasks, the researcher debriefed the participants and proceeded to show them the correct procedure for completing the tasks (Gau *et al.,* 2012:1688; Viswanathan *et al.,* 2008:250). They were also provided with copies of the pamphlets.

Throughout the data collection procedures, the researcher was mindful of the implications for collecting data in cross-cultural research settings. The Setswana speaking mediator ensured that all the aspects pertaining to data collection were accurately understood by Setswana speaking participants during the process of data collection. Providing the participants with the opportunity to respond in their native language minimised the risks of emotional stress associated with participation in the research (Gau *et al.,* 2012:1684, 1686), a measure deemed

essential when collecting data in cross-cultural settings (Viswanathan *et al.,* 2008:256). This Setswana speaking mediator was trained by the researcher in terms of the purpose of this phase of the study, the importance of collecting data that is valid and the technical aspects pertaining to the intervention process. To counter any negative effects that could have occurred from the possibility of power relationships between the researcher and the research participants, the researcher took precautions which included: reassuring the participants that they were the experts in the research project, that their participation was valued, and that they made an appreciated contribution to the study. The researcher also treated the research participants with due respect and respected their rights.

3.2.5.2.5 Replicating the intervention under field conditions

Upon conclusion, the entire data collection procedure was replicated at the second Holding Hands IGP (project unit site 2), in Rysmierbuilt within the NWP. This IGP operates from an allocated building. As the researcher should reach individuals where they are (Viswanathan *et al.,* 2008:245), it was appropriate to perform the intervention tasks pertaining to the IGP sewing activities at this IGP itself. Additionally, this setting provided adequate space for completion of the tasks and proved most convenient to the participants as there were no risks involved regarding travel or associated costs or inconveniences.

3.2.5.2.6 Data analysis

Data analysis for the quantitative phase of the study included: descriptive statistics (in the form of frequency tables), Wilcoxon Signed rank tests, paired samples *t*-tests and cross tabulations. Statistical analysis was performed by the SCS of the NWU using IBM SPSS ® Statistics Version 23.

- **Descriptive statistics**

Descriptive statistics (mean ±SD) were completed for all the demographic sections including age, level of schooling and home language. To compare pre-and post-test results of those pattern layout tasks that require numerical abilities versus those that do not, two-way frequency tables were also used.

- **Wilcoxon Signed rank tests**

To interpret the pre-test post-test results and determine the effect of the interventions, Wilcoxon Signed rank tests were used as the non-parametric alternative to *t*-tests. These tests convert scores to ranks for comparison at time one and time two (Pallant, 2010:230) and are designed to use with repeated measures of smaller samples. As such, it was appropriate to determine the impact of the sewing training material interventions at the three IGP project units

(with group sizes of only four, six and seven participants each), converting the rubric scores to ranks and allowing a comparison between the pre-test and post test results (Pallant, 2010:230).

- **Paired sample *t*-tests**

To further explore the impact of the sewing training material pamphlet interventions, paired sample *t*-tests were conducted. Suitable for experimental designs employing pre-test post-tests, this test of repeated measures was used to compare the data garnered on two different occasions (Pallant, 2010:244) before and after exposure to the sewing training material interventions. Paired sample *t*-tests were also compiled to determine the effect of educational attainment on the results of the sewing skills training pamphlet interventions for the three groups of literacy attainment within the population.

- **Cross tabulations**

To explore the relationship between two or more variables, each with two or more categories, cross tabulations were used (Malhotra, 2010:494; Pallant, 2010:217). In this study, the outcome of each of the pre-test post-test measures was ranked in categories (as per rubric for: not achieved, partially achieved and achieved). The cross-tabulation tables present the counts of the number of responses per category including the computed percentages to provide greater insight (Malhotra, 2010:494), thereby comparing the observed frequency that occurs for each ranked score. Cramer's V was used to determine a measure of strength of association, for which values range from 0 to 1 with values of V the criteria of .1 small effect; .3 medium effect; and .5 large effect size.

The results of the quantitative empirical phase are presented and discussed in the format of an article in Chapter 6: the implementation and evaluation of sewing skills training pamphlets for appropriateness in rural sewing income generating projects.

3.2.6 Phase 6: Dissemination of newly developed sewing training materials

In the last phase in the IR design (phase 6), the newly developed sewing training materials were disseminated to the target audiences.

3.2.6.1 Preparing the product for dissemination

Sufficient quantities of the sewing training instructional pamphlets were produced, and information sessions were arranged at the Holding Hands project units. During these sessions, the outcomes of the study were shared with the study participants and the newly developed

intervention materials were distributed. The IGP participants, the researcher, and the project planning group was present during the sessions. The researcher communicated the study outcomes to the research participants, in a manner that was easy to understand.

3.2.7 Conclusion of the IR phases

The IR design was suitable for this study as it allowed for the employment of developed sewing training material in interventions for low-literate participants of rural IGPs in the NCP and NWP, SA. More specifically, the IR phases and activities allowed for the establishment of the project planning group and identifying and gaining entry from the research setting (during phase 1). The early establishment of the project planning group ensured that the researcher had expert assistance and accurate information (such as the details of the Holding Hands IGP units) from commencement to completion of the project. The IR phase 2 constituted a review of relevant literature to form a contextual theoretical basis for this research as a point of departure for the research undertaking. Additionally, it allowed for a qualitative research inquiry to explore current uses and challenges associated with the use of sewing training material (objective 1.6.2.1) and to describe the most pertinent sewing training needs within the rural sewing IGPs (stipulated as objective1.6.2.2). This phase of empirical research was instrumental in undertaking a more appropriate design during the subsequent IR phase 3. Activities within this phase (IR phase 3) ensured that an extensive design process followed to address the development of the sewing training material prototypes (objective 1.6.2.3) as well as the observation system, the procedure and the scoring instruments to record the intervention effects. The activities in IR phase 4, allowed for an expert review of the newly developed sewing training materials as well as end-user review by conducting a pilot test. Pilot testing of the instructional pamphlets (in field based interventions in the rural IGP unit in the NCP) provided valuable feedback for further development of the instructional pamphlets and the participant satisfaction questionnaire as well as the procedure for administering the interventions. After all the modifications were made, the phase of quantitative quasi experimental research (within IR phase 5) presented a suitable design for implementing (objective 1.6.2.4) and evaluating the appropriateness of the developed sewing training materials (objective 1.6.2.5), as employed within the unique setting of rural sewing IGPs. The IR activities provided an effective means to gain access to the relevant populations and involving experts at various stages within the investigation. While moving through these IR phases and activities, the researcher developed various research and interpersonal skills, fostered various collaborative relationships and collected and analysed different types of data, while being meticulously maintaining academic rigour.

3.3 Rigour

In this study, rigour held various considerations to the trustworthiness of the qualitative phase of the study (section 3.2.2.2 within Phase 2 of IR) as well as reliability and validity of the quantitative phase of the study (within section 3.2.5.2 Phase 5 of IR). A presentation and discussion of these considerations follows.

3.3.1 Trustworthiness of the qualitative phase of the study

In the instance of the qualitative phase of the study, considerations for the five standards of trustworthiness including; truth value, applicability, consistency, neutrality and authenticity, were applied (Botma *et al.,* 2010:235). Detailed specific strategies (as set by Botma *et al.,* 2010:234, 235; Rubin & Babbie, 2010:232, 233; Schurink *et al.,* 2011 421) were employed to adhere to those standards as discussed next in Table 3.6.

Table 3.7: Trustworthiness; standards, strategies and application of the criteria to the qualitative phase of the study

Standards and strategies	Application of criteria to this research phase
Truth value pertains to the strategy of credibility and refers to the established confidence in the truth of the research findings, (such as those findings of the participants), through the provision of authentic representations of the participants' perceptions.	• Prolonged engagement: The researcher engaged with the transcribed interview data and reflected on, and become conversant with the content. • Reflexivity of the researcher: Reflective field notes providing authentic representations/observations during data collection were taken by the researcher (such as those personal notes reflecting the feelings and perceptions observed by the researcher). • The expert project planning group were consulted for review of the interview schedule and questions, prior to data collection. • The researcher had previous experience conducting interviews, and was coached by her study promoters. • Ethical approval for this study was obtained from the HREC before the study commenced. • Triangulation: Triangulation of data sources occurred by means of coder and co-coder data analysis.
Applicability refers to the degree that the study findings could be applied or 'transferred' to other or larger populations, contexts or groups.	• Selection of sources or sampling: purposive all-inclusive sampling, in line with well-defined inclusion criteria ensured that the most relevant and knowledgeable persons participated. • Thick description: a thick and rich description of the research process and all methodological aspects were kept. • The researcher ensured that the report provided sufficient detail (regarding the context, study participants and data collection procedures) to enable other researchers to judge whether the findings are likely to apply (or be 'transferred') to similar contexts or with similar populations. Doing so could provide valuable information and assist researchers who want to conduct research in low-literate, rural IGP settings.
Consistency, which employs the strategy of dependability, considers whether the findings will be consistent if replicated under the same conditions, in the same context, and with similar participants.	• Traceable variability ascribed to identifiable sources: the researcher made use of identifiable sources and listed these sources in the reference lists. • Thick and dense description of the methodology: A thick and rich description of the employed methodology was furnished. This

	information could assist researchers wanting to conduct similar intervention studies in similar settings.
Neutrality entails that the research is free from bias, owing to the objective behaviour of the researcher throughout the research process (which relates to confirmability).	• The traditional concept of objectivity was determined by the co-coder confirming/verifying the findings of the study. • Reflexivity: Keeping accurate reflections (in the form of reflective field notes), contributed to the objectivity.
Authenticity implies that the research is authentic in presenting a faithful account, conveying the feeling tone of participants experiences and perceptions.	• Conveying a feeling tone of participants: participants' opinions and perceptions were honestly portrayed. • Create heightened sensitivity: The principle of fairness was observed throughout the research process.

In the next section, the reliability and validity of the quantitative phase of the study is detailed.

3.3.2 Reliability and validity of the quantitative phase of the study

The reliability of the quantitative phase of the study was ensured through reliable measuring instruments and research procedures. Validity extended beyond assessment of the satisfaction questionnaire (3.3.2.2) and included considerations for the internal validity of the experimental design. Following is a discussion of validity and reliability as applied in this study.

3.3.2.1 Reliability of the measuring instruments and research procedures

Reliability of a questionnaire relates to the quality of the measuring instrument. It is achieved when similar data are repeatedly obtained in instances where the particular instrument is applied to similar subjects from a similar population (Creswell, 2014:247; Maree & Pietersen, 2007:215; Rubin & Babbie, 2010:82). In the instance of this study, reliability was determined by means of pilot testing the measuring tools and using standardised measures for assessment (in the form of rubrics and memoranda). Additionally, the pre-test post tests were assessed by the project planning group. To ensure that the intervention procedures were accurately understood by the Setswana speaking participants, a trained Setswana speaking mediator was present during all the phases of data collection. To ensure that the measuring instruments display high internal consistency, reliability of the sub-scores of measuring instruments were investigated using Cronbach alpha coefficients, where values of <.6 indicated unsatisfactory internal consistency reliability (Malhotra, 2010:319).

3.3.2.2 Validity of the participant satisfaction questionnaire

Validity was determined by the extent to which the participant satisfaction questionnaire adequately reflected the variables it was supposed to measure (Koonin, 2014:256; Maree & Pietersen, 2007:216; Rubin & Babbie, 2010:83) and included considerations for:

- *Face validity* was determined by the assessment made by the researcher and other experts that the measure was a reasonable way to measure the variable (Rubin & Babbie,

2010:83) and that it 'looked' valid (Maree & Pietersen, 2007:217). To ensure face validity, the researcher firstly consulted with her study promoters, who are experienced researchers. Secondly, she obtained the expert opinion of the statistician in terms of the questionnaire format (with specific reference to the development of scales).

- *Content validity* was established by determining if the measure covered the entire range of meanings within the concept (Rubin & Babbie, 2010:84). The researcher ensured that all the necessary theoretical concepts, as identified in a review of literature as well as past research of similar investigations, were included within the questionnaire. For example, the measure 'understanding' covered both aspects pertaining to this measure including understanding of the text, as well as understanding of the visual materials. To ensure the content validity of the satisfaction questionnaire, the researcher presented a provisional version to experts in the field for their comments and inputs before finalising the instrument (Maree & Pietersen, 2007:217). These experts included the study promotors, who are seasoned researchers with experience in low-literate research settings.

- **Internal validity of the *experimental design***

When using experimental designs, various additional factors including history, testing and experimental mortality posed threats to internal validity (Du Plooy-Cilliers & Cronje, 2014:164, 165). The researcher aimed to control these factors by taking cognisance of the following:

- Ensuring that the participants were not exposed to any 'other' training materials, interventions or stimuli during the pre- test post-test procedure as this could influence the results. This was carried out by conducting the pre- and post-tests within a short period within a controlled environment.
- Due to the fact that the participants had already executed the pre-test, this could cause them to do better in the post-test, regardless of the intervention material. Therefore, the post-test was slightly altered from the requirements for the pre-test, whilst measuring the same constructs. In the instance of the body measurement task, the order in which the body measurements were taken during the post-test was rearranged from the order stipulated during the pre-testing. In the instance of the pattern layout task, some of the patterns used during pre-testing were slightly altered during the post-test (by shifting the darts and altering the necklines on the bodice blocks).
- To counter the possibility of experimental mortality, which refers to losing some of the participants between the pre- and post-testing (Du Plooy-Cilliers & Cronje, 2014:166), the pre- and post-tests were scheduled to take place over two consecutive days. Pre-tests were undertaken on the first day, with exposure of the intervention materials (the pamphlets) later that same day, with post-tests following on the second day. However,

the pilot test participants indicated that they would have wanted to proceed with the post-test on the same day (not wanting to wait a day before completing the post-tests). For this reason, the tests for the main investigations were completed on the same day. The sessions were no longer than 1 hour each, and took place at a time when all the participants were available for that duration of the experimental procedure.

3.4 Ethical Considerations

Because low-literate research participants are categorised as a vulnerable group, specific, detailed, and extensive ethical considerations were applied in this study (Artz, 2005:3-9). The primary ethical values of no harm (with relevance to beneficence), equality (no exclusion of groups in sampling), respect for persons (dignity through autonomy) and safety governed throughout all the phases of the IR design. Following an extensive review of literature pertaining to research ethics (Artz, 2005; Botma *et al.,* 2010; Creswell, 2014; Rubin & Babbie, 2010), the ethical considerations applied in this study were set. A discussion of these ethical considerations follows, including: goodwill permission and legal permission, recruitment of research participants, informed consent, risks and benefits, the competence of the researcher, confidentiality and the right to privacy, management and storage of data and the publication of the findings.

3.4.1 Goodwill permission and legal permission

Permission for the study warranted dual consideration. Firstly, goodwill permission was obtained by coordinator of the Holding Hands project and the project assistant to conduct this study. Secondly, legal permission was obtained as the researcher applied for and obtained approval from the HREC of the Faculty of Health Sciences, NWU to conduct the research.

3.4.2 Recruitment of research participants

The recruitment process started with access to the population. The Holding Hands project coordinator and project assistant facilitated access to the research population, and acted as mediator between the researcher and the research participants. This mediator had a long history of working with the sewing IGP units. The mediator approached the research participants and arranged to meet with them. At this meeting, she explained: the purpose of the research; why they were being asked to participate; who the researcher was; that the HREC approved the research project (and may consequently inspect the research records); and that any queries about the research may be directed towards the researcher or the HREC offices (contact numbers of relevant persons would be provided). She then answered any

questions that the participants had, and provided them with the information leaflet and consent forms. On the next day, she returned to the IGP participants to obtain written informed consent, granted they volunteered their participation. Thereafter, the researcher contacted the participants and made arrangements for the data collection procedures to take place. Before commencement of the data collection, the researcher confirmed verbal informed consent from the participants, and answered any questions that they had about the research (Botma *et al.,* 2010:15).

All three of the Holding Hands IGP project units were included in the study. All the community facilitators at the respective units participated in the exploratory descriptive interviews. In the instance of the quantitative phase, all the IGP participants at the project units were invited to participate, and volunteered participation.

3.4.3 Informed consent

Following a principle of respect for persons, consent to participate was voluntary and based on accurate information that allowed for an informed choice. It was therefore important that the consent to participate in the research was obtained by a person who was independent form the research, and trusted by the Holding Hands community. For that reason, the Holding Hands outside facilitator and project assistant fulfilled the role of Setswana speaking mediator in obtaining consent. To ensure that the consent was informed, the mediator explained the following in the preferred language (either English, Afrikaans, or Setswana) that was clearly understood by the participants: (i) the purpose of the research; (ii) the objectives and the research questions to be answered; (iii) the outcomes and benefits of the research; (iv) a detailed description of the activities required from the participants (including the amount of time required for their participation); (v) the methods of data collection (including information recording via tape recorder, translation at the research site, transcription via an accredited SATI transcriber away from the research site, presentation of the data in the thesis, articles and conference presentations), and that research participants would not be remunerated for participation but would receive refreshments (tea/coffee/juice), snacks (biscuits and fruits) and a meal (food parcel with desert) as tokens of appreciation; and (vi) that participants were free to participate, and may refuse to participate or withdraw from the research without any negative consequences or penalties.

To ensure that the consent was voluntary, the mediator explained in a simple, plain and clear language that the choice to participate was completely voluntary, and that there would not be any pressure, negative consequences or undue or adverse effects in the event that they declined participation. The participants were also given a sufficient period of time to consider

whether they wanted to participate or not, prior to the data collection. Provided that each participant volunteered participation, they were asked to sign a letter of consent before any data collection or participation commenced. Signing the informed consent form indicated that they understood all the information presented. The mediator also signed the informed consent with them, at the same time. Each participant received a hardcopy of the written consent form, if they chose to participate. The language of the consent forms was kept simple. Minimisation of reading improved the likelihood that the participants really understood the form (Viswanathan *et al.,* 2008:248). The information leaflet and consent forms were language edited and translated prior to data collection. The forms were provided in English as well as Setswana, the anticipated first language of the IGP facilitators and the participants (as suggested by Botma *et al.,* 2010:14). All translated documents were submitted to the HREC office for their approval. The researcher ensured that all the documents pertaining to the consent of the research had been completed.

3.4.4 Risks and benefits

The risks and benefits to the research participants may have been either direct or indirect, as detailed in tables 3.7 and 3.8 regarding the risks and benefits respectively.

Table 3.8: Direct and indirect risks of the research

Direct risks	Precautions to be taken
Physical risk: Fatigue	• The study participants, both the IGP community facilitators during the qualitative phase as well as the IGP participants during the quantitative phase, could experience increased levels of fatigue while engaging in the interviews or participating in the pre-test post-test tasks and satisfaction questionnaires. To counter for this risk, the researcher ensured that regular breaks were taken, and that the sessions were kept short (no more than one hour for the interviews/ per intervention session). The researcher was also sensitive to the possibility of tiring participants in light of their age, concentration span and levels of fatigue by paying attention to any signs of fatigue (participants looking uncomfortable or lethargic) and regularly offering breaks, if signs of fatigue occurred.
Psychological risk: Emotional discomfort	• The participants of the individual interviews could have experienced levels of emotional discomfort when answering the interview questions if they felt that their answers were not correct or ideal. To avoid this possibility of harm, the participants were informed that there were no right or wrong answers (Viswanathan *et al.,* 2008:248) and that their opinions were valued and treated as strictly confidential. • The participants of the quantitative phase of the study could possibly have experienced discomfort while completing the satisfaction questionnaire if they felt that their answers were not correct or ideal. To counter for the possibility of this risk, the participants were assured that there are no right or wrong responses, that their opinions pertaining to their satisfaction questionnaire were valued, and that the results of their responses were kept confidential (via a coding system), only available to the researcher and her study promotors. • In the instance of the quantitative pre-test, post-tests and intervention, it was anticipated that the participants would be comfortable with completing these tasks within the group as they were used to completing all their sewing related activities in that manner. In the event that some participants experienced some discomfort within the group, the researcher offered to conduct these tasks on a one-to-one basis. • The results of the tasks (as captured on the assessment rubrics) were handled with full confidentiality by the researcher. • Anonymity of responses ensured that that all the responses are kept confidential. • The low-literate participants could have experienced difficulty participating in the research (either answering the interview questions or completing the satisfaction questionnaires). In line with the cognitive considerations of low-literate persons, all the questions were short, direct and in plain everyday language that was easily understandable. All questions were verbally explained. All answering formats were kept simple. • The mediator of the Holding Hands projects recruited the participants and discussed the consent forms. As she was known and trusted by the community members, they did not feel forced to participate if they were not willing to do so.
Psychological risk: Anxiety	• The participants of the pre-test post-test interventions may have experienced unpleasant feelings associated with test anxiety (Eitington, 2002:193; Viswanathan *et al.,* 2008:248) while completing the intervention tasks and subsequent assessment of this task. To counter the possibility of this risk, the researcher clearly explained to the participants that their skills were not being evaluated, but rather the training material was undergoing assessment. Therefore, they should not experience any stress related to the correct/incorrect completion of the tasks.
Social risks	• No known social risks were anticipated.
Legal risks	• No known legal risks were anticipated.
Dignitary harm	• No known dignitary harm was anticipated.

Indirect risk	Precautions to be taken
Financial risk	• There were no known financial risks. The principle project manager of the Holding Hands projects provided confirmation that the participants would not incur any loss of income on account of the (i) community facilitators participating in the interviews, or (ii) the IGP participants completing the intervention sessions. The payment structure of the Holding Hands IGPs is that the project participants share in the profits upon completion of the projects. As such they do not receive (hourly) wages. Remuneration for loss of income for the hour(s) of participation was therefore not necessitated. Additionally, the researcher conducted the research at a time convenient for the participants, with the least interference or negative effects on their activities. This time was negotiated by the mediator, and confirmed by the researcher. As a token of appreciation (in addition to the snacks and meals provided), the researcher also provided the project units with sets of block patterns and pattern making equipment.

The direct and indirect benefits for participants participating in the research, as well as the benefit for the researcher and the NWU are described in Table 3.8 below.

Table 3.9: Benefits of the research

Direct benefits for participants.	• Immediate benefit during data collection of the quantitative phase: After the intervention task, the researcher demonstrated and explained the correct method of completing the sewing task (how to accurately take body measurements and how to correctly lay out pattern pieces to ensure maximum fabric usage). As such, it was a learning experience for the participants. • There were no direct benefits for the IGP community facilitators participating in the individual interviews. Upon completion of the study, the Holding Hands IGP participants recieved the new sewing training material instructional pamphlets that were specifically designed to address their sewing training needs and developed at an appropriate literacy level.
Indirect benefits for the participants.	• The respective IGP units could indirectly benefit financially from improved sewing skills obtained through the sewing training materials in the long term.
Benefits to researcher and NWU.	• Research outputs in the form of research publications and conference proceedings benefitted the researcher and the NWU.

The benefits outweighed the risks.

3.4.5 Competence of researcher

The researcher had experience in qualitative interviewing (resulting from her postgraduate studies) as well as practical experience facilitating sewing tasks with low-literate participants (seven+ years' experience with sewing community engagement endeavours). She also underwent ethics training as presented by HREC, NWU as well as a workshop related to community engagement in research (presented by AUTHeR, NWU).

The researcher was under the skilled supervision of the following experienced researchers and study promotors:

- Dr J van Staden, PhD: Consumer Sciences: as primary promotor of this study, Dr van Staden has experience in both qualitative and quantitative research projects, within low-literate research settings. She has also undergone ethics training.
- Prof. W Oldewage-Theron, PhD: Dietetics: Prof Oldewage-Theron has experience working in subsistence communities with low-literate research participants. She is also experienced in intervention research studies.
- Dr C Niesing, PhD: Business Administration: as a co-promotor of this study, Dr Niesing has vast experience working with the Holding Hands groups.

The researcher collected the data with persons who were equipped and qualified to do so. She ensured that the translation and transcription processes did not compromise the meaning of the research by making use of an accredited SATI translator and transcriber. The co-coder that assisted with analysis was an experienced researcher with prior experience analysing qualitative data. The mediator was competent and had adequate past experience working with the sewing IGPs. The researcher trained the mediator in terms of the broad aim and specific objectives of the research, as well as the research questions that the study aimed to answer. Throughout the study, the researcher planned for the research in such a manner that the findings had a high degree of validity.

3.4.6 Confidentiality and right to privacy

The researcher respected the confidentiality and right to privacy of the research participants. In terms of confidentiality, the content of all the data capturing forms were handled with full confidentiality. All the appropriate measures were taken to prevent the disclosure of the information regarding the participants. The identity of their responses was not revealed, either during or after the research was conducted. The researcher ensured that the personal information (such as biographic details), and the results of the intervention tasks and questionnaires were protected and kept confidential. To ensure anonymous reporting of data, a numbering system was used to identify participants and all identifiable information was removed. Limited access to the data was also ensured. Confidentiality was further extended to all the parties handling the

data, including: the Setswana translator, the Setswana speaking mediator (who served as on-site translator), as well as the co-coder who undertook confidentiality agreements. Confidentiality also applied to the safe and secure storage of data.

The right to privacy is a constitutional right (Botma *et al.,* 2010:13) and pertains to access of personal information and the subsequent protection of that information. The mediator asked permission from the participants to share their opinions or to participate in the intervention tasks. Participants who did not wish to share personal information were free to decline participation in any processes that threatened their privacy, with no negative consequences. Information could be disclosed only if the participant had granted the researcher the permission to do so (Botma *et al.,* 2010:19). It was the responsibility of the researcher to ensure that data were collected in a private and safe environment. The individual interviews (qualitative phase) were conducted in an area that was private and free form distractions.

In the instance of the quantitative data gathering phases, some of the intervention tasks were conducted within the group environment of the IGP. The researcher assembled partitions to ensure privacy (so that the group members could not become aware of each other's activities) during the process of data collection. It was anticipated that the participants would be comfortable with completing these tasks within the group environment, as they were used to completing all their sewing related activities in that manner. Despite the researcher offering to conduct these tasks on a one-to-one basis, none of the participants preferred to do so. The right to privacy related to confidentiality, as it was the researcher's duty to ensure that all the private information obtained was handled with confidentially throughout the research process.

3.4.7 Management, storage and destruction of data

The co-promotor of this study, Dr CM Niesing, is a full-time employee at the North-West University, Potchefstroom Campus. She has a permanent lockable and secure office (in Building G16, Room 258, Potchefstroom Campus) where all the data pertaining to this study will be kept. The data was made available to only the study promotors, the translator and transcriber, the co-coder, and the statistician, who undersigned confidentiality agreements, as relevant.

All electronic data are stored in password protected/encrypted electronic folders, and anti-virus programmes are installed and maintained (Botma *et al.,* 2010:19). Electronic data were captured by means of coding, and no identifiable information was provided. Data were also backed up on an external hard drive, and locked away in a lockable cabinet. Once the digitally voice recorded data were transferred onto the computer, the data were permanently removed (deleted) from the digital recording device. Once the transcriptions had been completed verbatim, the voice data were permanently removed (deleted) from the computer. All the hardcopies (participant consent

forms/transcribed interview data/questionnaires) are stored in a lockable cabinet (Botma *et al.,* 2010:19) in the office of the co-promotor. It will be kept to a duration of seven years. At the conclusion of this period, the study co-promotor will destroy all the data by disposing of it (by erasing or shredding) according to the prescribed rules and regulations of the NWU for data management.

The signed participant consent forms, although kept in the same office (and also within a lockable cabinet), are filed in a different place from the data. This is carried out such that no association could be made between the participants and their responses/results.

3.4.8 Dissemination of research results

The study findings are published in the thesis and in the form of academic articles. Prior to publication, a session was arranged with the project planning group where the research findings were shared. Any issues pertaining to copyright of the newly developed sewing training material will be clarified in agreement within the provision of the Copyright Act No. 98, of 1978.

3.5 Conclusion

The multifaceted IR design was a suitable research design for addressing the empirically related research objectives of this study, and while it proved to be time and labour intensive, the phases and activities ensured the success of the empirical research phases within challenging research settings. The IR outcomes included the design and development of new sewing training material interventions, employing the interventions (materials and procedures), and evaluation of the sewing training material interventions when used to address practical skills training needs within the Holding Hands rural sewing IGPs. Employing the IR design also enhanced the appropriateness of the developed sewing training material interventions as the sewing training pamphlets were continuously improved upon as informed by the project planning group, subject experts (section 3.2.4.1), and with the advice of the end-users as consumers thereof (section 3.2.4.3 for pilot testing during development).

Another value of the employed IR design is that it was based on the unique needs of a population. Because empirical research in low-literate research settings poses various challenges (Viswanathan *et al.,* 2005:16) the detailed and comprehensive IR phases and activities were well applied to the address the cognitive predilections of the low-literate IGP participants. As these individuals function within the concrete and visual realm (Viswanathan *et al.,* 2005:22), the IR activities were directed towards: concrete reasoning (by means of customising the participant satisfaction questions and intervention tasks to measure only one construct at a time); using simple visual presentations to endorse pictographic thinking; and maintaining the self-esteem of

the research participants by minimising reading and writing tasks within the data collection procedures (Van Staden, 2012:78; Viswanathan e*t al.,* 2008:244; Viswanathan *et al.,* 2005:19). The IR design therefore allowed for the specific and special considerations necessary when conducting research within a vulnerable population such as the low-literate participants of rural sewing IGPs in the NCP and NWP, SA.

In the next three chapters, the results of this study are presented in article format. Chapter 4 presents the research article addressing the qualitative phase of the study and serves to discuss the findings obtained from the individual interviews with the IGP community facilitators and the document analysis of sewing training materials. In Chapter 5, a research article presents a detailed description of the design and development of sewing training material interventions for low-literate rural IGP participants, as facilitated by an attempted decolonised approach. Chapter 6 presents the results of the quantitative phase of the study and the outcomes of the pre- and post- tests in line with the field based interventions.

3.6 Reference list

Adkins, N.R. & Ozanne, J.L. 2005. The low literate consumer. *Journal of consumer research,* 32:93-105.

Anon. 2012a. Northern Cape province, South Africa. http://www.southafrica.info/about/geography/northern-cape.htm#.VYwrZ_mqpBc Date of access: 25 Jun. 2015.

Anon. 2012b. North-West Province, South Africa. http://www.southafrica.info/about/geography/north-west.htm#.VYwrjfmqpBe Date of access: 25 Jun. 2015.

Artz, L. 2005. Ethics related to social science research with victims of violence and other vulnerable groups. Pretoria: Themba Lesizwe.

Babbie, E & Mouton, J. 2014. The practice of social research. Cape Town: Oxford.

Bartholomew, L.K., Parcel, G.S., Kok, G., Gottlieb, N.H & Fernandes, M.E. 2011. Planning health promotions programs: an intervention mapping approach. 3rd ed. San Francisco, CA: Jossey-Bass.

Botma, Y., Greeff, M., Mulaudzi, F.M. & Wright, S.C.D. 2010. Research in health science. Cape Town: Pearson.

Cordasco, K.M., Asch, S.M., Bell. S.D., Guterman, J.J., Gross-Schulman, S. Ramer, L., Elkaya, U., Franco. I., Leatherwood, C.L. & Mangione, C.M. 2009. A low-literacy medication education tool for safety-net hospital patients. *American journal of preventative medicine,* 37:209-216.

Creswell, J.W. 2014. Research design: qualitative, quantitative and mixed methods approaches. 4th ed. Thousand Oaks, CA: Sage.

De Vos, A.S & Strydom, H. 2011. Intervention research. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 473-490).

Dowse, R., Ramela, T. & Browne, S.H. 2011. An illustrated leaflet containing antiretroviral information targeted for low-literate readers: development and evaluation. *Patient education and counselling*, 85(3):508-515.

Du Plooy-Cilliers, F & Cronje, J. 2014. Quantitative data collection. (*In* Du Plooy-Cilliers, F., Davis, C. & Bezuidenhout, R.M. *eds*. Research Matters. Cape Town: Juta & Company. p. 147-172).

Eitington, J.E. 2002. The winning trainer. 4th ed. New York, NY: Routledge.

Ellis, S. & Steyn, H. 2003. Practical significance (effect sizes) versus or in combination with statistical significance (p-values). *Journal of the Southern African institute for management scientists*, 12(4):51-53.

Fawcette, S.B., Suarez-Balcazar, Y., Balcazar,, F.E., White, G.W., Paine, A.L., Blanchard, K.A., & Embree, M.G. 1994. Conducting intervention research: the design and development process. (*In* Rothman, J. & Thomas, E.J. *eds.* 1994. Intervention research: design and development for human service. New York, NY: The Haworth Press. p. 25-52).

Fouché, C.B. & De Vos, A.S. 2011. Formal formulations. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 89-99).

Fouché, C.B. & Delport, C.S.L. 2011a. Introduction to the research process. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 61-78).

Fouché, C.B. & Delport, C.S.L. 2011b. Steps unique to the quantitative process. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 133-141).

Fouché, C.B., Delport, C.S.L. & De Vos, A.S. 2011. Quantitative research designs. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 142-157).

Fraser, M.W. & Galinsky, M.J. 2010. Steps in intervention research: designing and developing social programs. *Research on social work practice,* 20(5):459-466.

Fraser, M.W., Richman, J.M., Galinsky, M.J. & Day, S.H. 2009. Intervention research: developing social programs. New York, NY: Oxford.

Gau, R., Jae, H. & Viswanathan, M. 2012. Studying low-literate consumers through experiential methods: implications for subsistence marketplaces. *Journal of business research*, 65:1683-1691.

Greeff, M. 2011. Information collection: interviewing. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 341-374).

Jansen, J.D. 2016. What is a research question and why is it important? (*In* Maree, K. *ed.* First steps in research. 2nd ed. Pretoria: Van Shaik. p. 2-14).

Kaeane, R. & Ross, E. 2012. Income-generating projects: alleviating or perpetuating poverty? *Social work,* 45(1):17-34.

Koonin, M. 2014. Validity and reliability. (*In* Du Plooy-Cilliers, F., Davis, C. & Bezuidenhout, R.M. *eds.* Research Matters. Cape Town: Juta & Company. p. 253-261).

Kripalani, S., Robertson, R., Love-Ghaffari, M.H., Henderson, L.E., Prasca, J., Strawder, A., Katz, M.G. & Jacobson, T.A. 2007. Development of an illustrated medication schedule as a low-literacy patient education tool. *Patient education and counselling*, 66:368-377.

Mansoor, L. E. & Dowse R. 2003. Effect of pictograms on readability of patient information materials. *The annals of pharmacotherapy,* 37:1003-1009.

Maree, K & Pietersen, J. 2007. Surveys and the use of questionnaires. (*In* Maree, K. *ed.* First steps in research. Pretoria: Van Schaik. p. 155-170).

Martins, J.H. 2005. Interviewer administered primary data collection. (*In* Tustin, D.H., *ed.* Marketing research in practice. Pretoria: Unisa Press. p. 141-180).

Menyuko, E.D. 2011. The experiences of participants in income-generating projects in Atteridgeville, Tshwane. Pretoria: UNISA. (Dissertation - MA).

Microsoft Office, 2011, Flesch Kincaid, test your document's readability, https://support.office.com/en-za/article/Test-your-documents-readability-0adc0e9a-b3fb-4bde-85f4-c9e88926c6aa?CorrelationId=3c8c8c15-7dd5-4df5-898d-b05215cc26b4&ui=en-US&rs=en-ZA&ad=ZA#BM2 Date of access: 5 Aug. 2014.

Malhotra, N.K. 2010. Marketing research. 6th ed. New York, NY: Pearson.
Mwingira, B. & Dowse, R. 2007. Development of written information for antiretroviral therapy: comprehension in a Tanzanian population. *Pharmaceutical world science,* 29:173-182.

Ngoh, L. & Shepherd, M.D. 1997. Design, development and evaluation of visual aids for communicating prescription drug instructions to nonliterate patients in rural Cameroon. *Patient education and counselling,* 30:257–270.

Niesing, C.M. 2012. Evaluation of the sustainability indicators used in the Holding Hands community project in the North West province. Potchefstroom: NWU. (Dissertation - MBA).

Niesing, C.M. 2016. A conceptual framework for sustainable community development. Potchefstroom: NWU. (Thesis – PhD).

Nieuwenhuis, J. 2007a. Analysing qualitative data. (*In* Maree, K. *ed.* First steps in research. Pretoria: Van Schaik. p. 99-122).

Nieuwenhuis, J. 2007b. Introducing qualitative research. (*In* Maree, K. *ed.* First steps in research. Pretoria: Van Schaik. p. 47-66).

Nieuwenhuis, J. 2007c. Qualitative research designs and data gathering techniques. (*In* Maree, K. *ed.* First steps in research. Pretoria: Van Schaik. p. 70-92).

Nieuwenhuis, J. 2016. Qualitative research designs and data-gathering techniques. (*In* Maree, K. *ed.* First steps in research. 2nd ed. Pretoria: Van Schaik. p. 72-102).

Niseteo, I. 2016. What is a book review? http://www.lib.sfu.ca/help/research-assistance/format-type/book-reviews#what-is-a-book-review Date of access. 3 Jun. 2016.

Pallant, J. 2010. SPSS survival manual: a step by step guide to data analysis using SPSS. 4th ed. New York, NY: Mc Graw.

Pietersen, J. & Maree, K. 2016. Statistical analysis: descriptive statistics. (*In* Maree, K. *ed.* First steps in research. 2nd ed. Pretoria: Van Schaik. p. 204-219).

Polit, D.F. & Beck, C.T. 2008. Nursing research: generating and assessing evidence for nursing practice. Philadelphia, PA: Wolters/Lippincott Williams & Wilkins.

Readers Digest. 2010. The new complete guide to sewing. Sydney: Readers Digest.

Richler, M., Vaillancourt, R. Celetti, S.J., Besanqon, L., Arun, K.P. & Sebastien, F. 2012. The use of pictograms to convey health information regarding die effects and/or indications of medications. *Journal of communication in healthcare*, 5:220-226.

Rothman, J. & Thomas, E.J. 1994. Intervention research: design and development for human service. New York, NY: Haworth Press.

Royse, D. 2011. Research methods in social work. 6th ed. Belmont, CA: Brooks/Cole.

Rubin, A. & Babbie, E. 2010. Essential research methods for social work. 2nd ed. Belmont, CA: Brooks/Cole.

Schilling, R.F. 1997. Developing intervention research programs in social work. *Social work research*, 21(3):173-180.

Schurink, W., Fouché, C.B. & de Vos, A.S. 2011. Qualitative data analysis and interpretation. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 397-423).

Segalo, P. 2011. Our lives through embroidery: narrative accounts of the women's embroidery project in post-apartheid South Africa. *Journal of psychology in Africa,* 21(2):229-238.

Spaull, N. 2013. South Africa's education crisis: the quality of education in South Africa 1994-2011. Centre for Development and Enterprise. http://www.section27.org.za/wp-content/uploads/2013/10/Spaull-2013-CDE-report-South-Africas-Education-Crisis.pdf Date of access: 30 Apr. 2018.

Statistics South Africa. 2014. Poverty trends in South Africa: an examination of absolute poverty between 2006 and 2011. http://beta2.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf Date of access: 15 Aug. 2015.

Strydom, H. & Delport, C.S.L. 2011. The pilot study in the quantitative paradigm. (*In* De Vos, A.S., Strydom, H., Fouché, C.B. & Delport, C.S.L. *eds.* Research at grass roots. 4th ed. Pretoria: Van Schaik. p. 236-247).

Van Staden, J. 2012. The use of clothing labels by female black low-literate consumers. Potchefstroom: NWU. (Thesis – PhD).

Van Staden, J., Van der Merwe, D., Van Aardt, A. & Ellis, S. 2017. Low-literate consumers use of clothing labels amidst personal and product related challenges. *International journal of consumer studies,* 41:79-86.

Viswanathan, M. & Gau, R. 2005. Functional illiteracy and nutritional education in the United States: a research-based approach to the development of nutritional educational materials for functionally illiterate consumers. *Journal of marketing,* 25(2):187-201.

Viswanathan, M., Gau, R. & Chaturvedi, A. 2008. Research Methods for subsistence marketplaces. (*In* Kandachar, P. & Halme, M. *eds.* Sustainability challenged and solutions at the base of the pyramid. Sheffield: Greenleaf. p. 242-260).

Viswanathan, M., Rosa, J.A. & Harris, J.E. 2005. Decision making and coping of functionally illiterate consumers and some implications for marketing management. *Journal of marketing,* 69:15-31.

Viswanathan, M., Torelli, C.J., Xia, L. & Gau, R. 2009. Understanding the influence of literacy on consumer memory: the role of pictorial elements. *Journal of consumer psychology*, 19(3):389-402.

CHAPTER 4

ARTICLE: REVIEWING SEWING TRAINING MATERIALS FOR RURAL INCOME GENERATING PROJECTS

Article written in accordance with the author guidelines of the Journal of Consumer Sciences as provided in Annexure C1.

This article is the first of three research articles related to the employment of developed sewing training material in an intervention for low-literate participants of rural income generating projects (IGPs). It forms the point of departure for the research investigation as it explores and describes the challenges associated with the use of sewing training materials in the unique setting of rural sewing IGPs (objective 1.6.2.1). Because it determines the most prominent sewing training needs within the rural sewing IGP units (objective 1.6.2.2), it also serves as the basis for the design and development of the sewing training instructional pamphlets in the next article. The research investigation is guided by the IR phase 2: information gathering and synthesis. The activities within this phase allowed for thorough research procedures of the qualitative research phase of this study. An extract of this phase with delineating activities is presented in Figure 4.1 below.

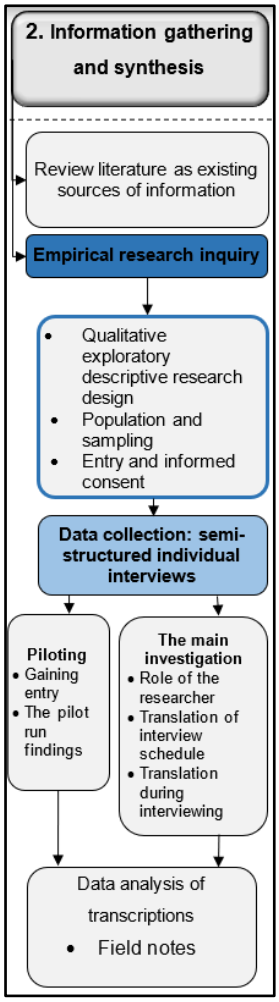


Figure 4.1: Extract of IR phase 2 with delineating activities as related to Chapter 4

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Reviewing sewing training materials for rural income generating projects

ABSTRACT

Training materials contribute to the effectiveness of community based projects as they can be used to address practical skills training needs, such as sewing training. While various types of sewing training materials exist, their suitability for use in rural income generating projects (IGPs) had not been reviewed and warrants investigation. The aim of this study was to review existing sewing training materials for their appropriateness and application in specifically rural sewing IGPs, and to explore the most prominent sewing training needs within these units. To achieve this aim, a qualitative study, executed in two phases was undertaken. In phase one, interviews were conducted with IGP community facilitators to review existing materials for their appropriateness within rural sewing IGPs, and to explore the training needs based on practical challenges encountered within these units. In phase two, document analysis was undertaken to review the material formerly developed for these units (the facilitator's manual), as well as conventional materials available today. The interview findings indicated that the material developed specifically for the rural IGPs has not been implemented, and that the use of probable commercial materials remained questionable. Various challenges associated with practical skills such as the task of taking body measurements and accurate pattern layout were also observed in the project units. Document analysis revealed that while many of the sources were theoretically appropriate for use by low-literate participants of rural sewing IGPs, they were less suitable in practice. The outcome of this study revealed a need to redesign training materials for sewing IGPs. On this basis, criteria are provided for the development of sewing training materials that are specifically appropriate for low-literate end-users in rural communities.

Keywords: income generating projects, low-literate, rural community, sewing training materials.

Abbreviated title: Reviewing sewing training materials for IGPs

INTRODUCTION

Income generating projects (IGPs) are initiatives that can improve the economic positions of people by directing resources from within the community towards the generation of income while engaging in productive activities (Albee 1994). It provides opportunities for individuals lacking prior education or training to generate an income. In IGPs, people often come together in groups with the aim of establishing a small business (Keane & Ross 2012), which often includes women's traditional roles of, beading, knitting, and baking (Somtunzi 2002). In the instance of this particular study, sewing IGPs were investigated. Due to the relatively small amounts of capital required to purchase the necessary machinery and equipment, sewing projects have become popular start-ups for income generation (Botha 2005). Many of these projects are aimed at uplifting vulnerable communities such as those within rural areas where employment opportunities remain scarce (Menyuko 2011).

The composition of sewing IGPs is diverse. These units usually comprise of different age groups, educational levels, and practical expertise. IGP participants enrol and exit at will since qualifying criteria to participate seldom exist. Due to low or no qualifying criteria, facilitators play an important role in the successful operation of sewing IGPs (Trollip 1997). Some facilitators are externally appointed (such as those from government programmes). Others are active project members (seamstresses) who engage in the income generating activities within the group while simultaneously fulfilling a leadership role. The latter are referred to as community facilitators, have been found to constitute a vital component for project sustainability (Van Niekerk 2006b), as these individuals (who may be informally appointed) motivate and encourage the IGP participants, understand the culture of the group, and supervise the day to day project activities (Duvenhage, Oldewage-Theron, Egal & Medoua 2013; Trollip 2001; Van Niekerk 2006b).

In addition to community facilitators, another major contributor to the effectiveness of community based projects is the training material (Oldewage-Theron, Dicks, Napier & Rutengwe 2005; Van Niekerk 2006b). Sewing training materials that refer to textual materials developed to aid sewing tasks, originally developed for academic or sewing training purposes, are relevant to this study. Such materials can take the form of training manuals, instructional guides, textbooks, or work books (printed or electronic) which can be used to supplement a training programme. The value of training materials in community based projects such as IGPs is that they can be used to address a training need for practical skills. While IGP participation is not subject to practical competencies, the lack of practical skills has been found to prohibit these projects from being profitable (Niesing

2012). Products of inferior quality render the items unmarketable (Van Niekerk, 2006b). Thus highlighting the need for appropriate sewing training materials to address much needed training and improvement of skills.

When reviewing sewing training materials for application in rural IGPs, their suitability for low-literate users is a major factor influencing their appropriateness. The term literacy is understood to be a set of cognitive skills related to reading and writing (Posel 2011; Unesco 2006), whereas illiteracy refers to people aged 15 years and older with education levels of less than Grade 7 (Statistics South Africa [StatsSA] 2012). The term low-literate refers to adult individuals (age 18 years and older) with an educational level lower than Grade 7 (Adkins & Ozanne 2005a; StatsSA 2012). Functional literacy refers to competencies needed to function adequately as adults in day-to-day life, it specifically links the skills associated with literacy and numeracy to specific settings and may relate to specific subject fields (Viswanathan & Gau 2005), for example, the ability to read sewing instructions.

Although South Africa (SA) has been set on a path of moral, economic and educational transformation since the onset of political transformation in 1994 (Rousseau 2007), a large segment of the population still experiences significant literacy challenges as approximately two-thirds of the South African adult population has only marginal reading skills (Dowse, Ramela, & Browne 2011; Mansoor & Dowse 2003). According to the latest official national census, the illiteracy rate of South African adults was estimated at 20.7% in 2015 (StatsSA 2016). Due to the absence of opportunities to attend school in rural areas, coupled with the fact that previously was not necessary for some rural farm dwellers to do so, many adults in rural SA lack basic literacy skills (Gardiner 2008). Almost a quarter of rural children exit primary schools without basic literacy skills (SA 2008; Spaull 2016). As such, these individuals are likely to experience difficulties using typical text based training materials (Mansoor & Dowse 2003) in terms of their inabilities to read and understand documents effectively.

South African women remain more disadvantaged than males as they have slightly lower literacy rates (93.4% and 95.4% respectively [StatsSA 2018b]) and higher unemployment (35.9% and 30.1% respectively [StatsSA 2018a]). Consequently, South African women are more impoverished (57.2% [StatsSA 2017]) with female headed households having a significantly higher risk of poverty (Rogan 2016). Females in rural areas have the least access to employment opportunities and often depend on the income of male family members working on farms (Kruger, Lemke, Phometsi, Van't Riet, Pienaar & Kotze 2006). Because skills training and other

opportunities for advancement are also scant in rural areas, female farm dwellers find it very problematic to generate an income (Van Niekerk 2006b). These factors motivate for continued research and developments towards rural IGP's.

As part of a community engagement initiative undertaken by the North-West University (NWU), three community based sewing IGPs were established within rural communities of SA. One unit was based in the North-Cape Province (NCP) and the other two units within the rural areas in the North-West Province (NWP). Training materials for these IGP's was compiled in the form of a manual (Van Niekerk 2006a) titled: A facilitator's guide to arts and crafts training (hereafter referred to as the 2006 Manual). This 2006 Manual focussed on sewing-related arts and crafts training to assist community facilitators with skills development training in the IGPs. It was specifically developed for these IGPs that involve rural women with low-income and little to no formal education.

Despite the 2006 Manual being the only training material developed for these sewing IGPs at the time of the investigation, it was uncertain if it was applied in practice. Research conducted in these IGPs (Niesing 2012) reported a lack of training resources, rendering its application questionable. Furthermore, its appropriateness in terms of format (as a literacy and grade level indicator), content (pertaining to sewing training needs) and context (addressing the unique challenges associated in rural sewing IGPs) was never established, warranting further review.

LITERATURE REVIEW

In this section, literature regarding considerations of literacy levels (including the amount of reading required, the context in which information is presented and the nature of sewing training materials) as well as considerations for the content of the training materials is reviewed.

Considerations for literacy levels

The first consideration requires establishing the approximate literacy level of a document. This can be achieved by determining comprehension capability for reading text by means of various validated tests, such as Flesch-Kincaid, the Fry readability assessment, the Coleman-Liau Index, and the Gunning Fog Index. These tests are based on the premise that years of formal schooling or estimated age are required to understand the text upon the first reading. In other words, a document with a literacy level of 12 prescribes that a Grade 12 learner (18-year-old) should be

able to understand the document (Flesch Kincaid, Microsoft Office 2018). No evidence could be found of any comparable tests with origins in SA. For this study, the Flesch-Kincaid was applied because it measures document readability on two levels, namely Flesch reading ease and the Flesch-Kincaid grade level. In reading ease, scores range between 0-100 and the higher scores indicate that the text that is easier to read (Kincaid, Fishburne, Rogers & Chissom 1975). The Flesch-Kincaid grade level refers to the level of education required to comprehend the text, and corresponds with the United States (US) grade levels (Kincaid *et al.* 1975).

The literacy level of a document suitable for low-literate individuals in rural areas extends beyond reading ease and grade level alignment (Viswanathan & Gau 2005). However, due to their cognitive and behavioural needs, low-literate individuals respond differently to textual materials in comparison with their literate counterparts (Jae, DelVecchio & Childers 2011; Viswanathan, Rosa & Harris 2005), and three factors present issues of concern when reviewing textual materials for low-literate individuals, namely the amount of reading, the context and the nature of the material (Viswanathan & Gau 2005).

Firstly, the amount of reading required to comprehend the material can be challenging as extensive theoretical materials inhibit the learning process for low-literate readers (Viswanathan & Gau 2005). Reading is a complex cognitive activity (Stevenson & Palmer 1994), and in the instance of training material where learning results as a consequence of reading, three sets of interrelated cognitive processes are required, namely word recognition (meaning of words), sentence (comprehend sentences read) and text comprehension (understanding of sentences constituting the text) (Stevenson & Palmer 1994). Due to the complexity of procedures, the relationship between the reader (as with low-literate individuals) and the training materials may be compromised by limited reading skills (Mwingira & Dowse 2007), and is often exacerbated through the prominence of text and numbers (Viswanathan *et al.* 2005). As low-literate individuals are known to rely on images to obtain information (Van Biljon & van Rensburg 2011; Viswanathan *et al.* 2005) the inclusion of visual materials is essential. Secondly, the context in which the information is presented is another issue of concern for low-literate individuals, as these individuals tend to engage in concrete thinking (the concrete understanding of single pieces of information) (Viswanathan & Gau 2005; Viswanathan *et al.* 2005). They may lack the ability to apply general information to their real-world setting and are unlikely to apply factual information to address their specific training needs. For example, the general instruction to ‘conduct quality checks’ could be better specified to ‘cut away all loose threads’. Thirdly, the nature of the material also presents a concern. Textual materials appear to be mostly designed to be read and not to be interactively used

in the learning process (Viswanathan *et al.* 2005). Underdeveloped rural areas seldom host libraries, resulting in a scarcity of printed information. People in rural communities may therefore not foster a culture of reading (Gardiner 2008) and may find the use of books unfamiliar or intimidating.

Considerations for content

Content is another major consideration when reviewing training materials for use in rural sewing IGPs. Overall, the content of existing commercially available materials include production related aspects that range from most elementary (introduction to the sewing machine and construction of seams) to general (constructing pleats, pockets, necklines, sleeves, hems, zips and fabric closures) and may include more advanced sewing techniques (such as corsetry and tailoring techniques). The skills required to produce any textile items range from hand-eye coordination (ability to sew in a straight line) to basic mathematical skills (reading numerical measurements) and literacy skills (to read and understand sewing instructions). Commercially available materials are customarily text based and directed towards literate audiences, with origins mainly in the US and United Kingdom.

In order to render existing training materials appropriate for application in IGPs, its content has to address the actual skills training needs within these units. The products produced in sewing IGPs typically include items such as bags, pencil cases, aprons, placemats, tablecloths and table runners. In some instances large scale production of more advanced items such as uniforms and traditional garments are undertaken. Despite the items produced generally being basic rather than complicated, IGP participants have been found to show a limited range of accomplished skills and found it difficult to learn new skills (Van Niekerk 2006b). To be relevant, the content of training material for this population should take a grass roots approach to addressing actual sewing skills training needs.

RESEARCH METHODOLOGY

Research design

A qualitative research design was chosen to explore and describe the use of existing sewing training materials and the associated challenges. Because individuals develop meanings and experiences of the world in which they live (Creswell 2014), it was necessary to obtain the

community facilitators' views on existing training materials within the unique settings of the sewing IGPs in the rural areas of SA.

Aim of the study

The aim of this study was to review existing training materials for appropriateness and application specifically in rural sewing IGPs, as well as to explore the most prominent sewing training needs within these units. It was executed in two phases.

In phase one, interviews were conducted to explore the subjective opinions of the IGP community facilitators regarding training materials and the users training needs. Interviews are particularly impactful for studying low-literate individuals (Gau, Jae & Viswanathan 2012; Viswanathan *et al.* 2005) and they permit uncovering insights regarding the real-life experiences in the day-to-day operation in the unique setting of rural sewing IGPs (Greeff 2011). In phase two, document analysis was conducted to establish whether the 2006 Manual was appropriate for application within the rural sewing IGPs in relation to its literacy level and content. Motivated by the need to explore the possible appropriateness of other existing materials for these units, a selection of commercially available sewing training materials in the form of books and online sources was also analysed.

Population and sampling

At the time of this investigation, five community facilitators were appointed within the sewing IGPs established by the NWU. Two were based at the unit in the NCP and three within the units in the NWP, SA. This all inclusive total population of five IGP community facilitators were purposively included in the sample. However limited, these participants were the only intended consumers of the 2006 Manual under review. Importantly, they had actual experience regarding the sewing training needs within their respective IGP units. The participants were included on the basis that they had prior experience in the facilitation of sewing IGPs; were above the age of 18 years; were willing to participate in the interviews and be voice recorded; and were Afrikaans, English or Setswana speaking. A research assistant fulfilled the role as mediator, negotiating entry and obtaining independent and informed consent before data were gathered.

Data gathering and analysis

In phase one, data were gathered by conducting semi-structured individual interviews. The interview schedule contained a total of five pre-determined open-ended questions with associated sub questions (Creswell 2014) and the same questions were presented to each of the participants. The questions included: please tell me about your role as a community facilitator at Holding Hands; to what extent are you familiar with this training manual; tell me about your use of the training manual/ or alternative materials; tell me about your specific needs for training material to assist you with specific sewing tasks; what do you think are the most challenging sewing tasks, related to the items made?

The questions were based on topics related to the aim of the study, and included: (1) review of the 2006 Manual. (2) Review of commercially available sewing training material. Participants were shown the Reader's Digest (2010). This book was selected because it addressed basic sewing tasks in a way that seemed likely to be of interest, it included visual material and it was appropriate in temrs of its grade level (of 4.5) and reading ease (with a score of 72.5 as measured by Flesch Kincaid). (3) Sewing training material needs (to facilitate discussion, participants were presented with a range of 14 activities that seemed likely to be related to the types of items produced in sewing IGPs, and included: maintaining a sewing machine, threading of machines, taking body measurements, determining fabric grain direction, reading pattern information, aligning the grain line of pattern and fabric, cutting accurately, transferring pictures to fabric (motifs for hand embroidery), making gathers or ruffles, pattern layout, inserting a zip, quality control, different kinds of hand stitches, and finishing and packing. (4) Most challenging sewing tasks, with reference to the items made within their respective IGP units. The raw data were organised and prepared by translating interviews conducted in Setswana into English; transcribing audio data into text verbatim; and typing and sorting the field notes. The researcher then became conversant with the content of the interview data prior to coding (by identifying the message content) (Nieuwenhuis 2007). The codes were then grouped into corresponding categories and the data were organised and summarized. In some instances, the summarised data and interpretations were presented in table format to create a visual image of the findings (Schurink, Fouché & De Vos 2011) and numeric values. Finally, interpretations could be made.

In phase two, the steps for data collection and analysis of documents as set out by Bowen (2009) were applied. These steps included finding sources, selecting, appraising and synthesising. The 2006 Manual was obtained from the NWU's appointed project coordinator for the rural sewing

IGP groups. Books were accessed from libraries. A broad selection was reviewed and from it, eight were chosen for inclusion (Table 1). The content within the selected books ranged from most basic (sewing hems) to more advanced tasks (constructing corsets and tailored garments). Some addressed more technical aspects related to production. Including this wide selection of sewing actions ensured that the materials would be sufficient to complete a comprehensive analysis.

TABLE 1: SELECTION OF COMMERCIALLY AVAILABLE SEWING TRAINING BOOKS (n=8)

Author	**Year**	**Title**	**Publisher and place of publication**
Eaton, J.	1986	*The encyclopaedia of sewing.*	Hamlyn, Middlesex.
Singer.	1990	*Sewing step-by-step.*	Cy DeCosse Inc., Minnetonka.
Henry, M.	1994	*The A-Z of the sewing machine.*	Batsford, London.
Westfall, M.G.	1997	*Successful sewing.*	Goodheart-Willcox co., Tinley Park.
Smith, A.V.	2009	*The sewing book.*	DK Publishing, New York.
Cole, J.C. & Czachor, S.	2010	*Professional sewing techniques for designers.*	Fairchild, New York.
Di Lorenzo, M.F.	2010	*Tailoring techniques for fashion.*	Fairchild, New York.
Readers Digest.	2010	*The new complete guide to sewing.*	Readers Digest Association, Pleasantville.

For online sources we used the web search engine Google to obtain initial information, but the overwhelming amount of results necessitated more targeted investigation. It was decided to examine the procedure suggested for inserting a zip (as this task relates to the items produced in sewing IGPs). As a basic sewing task, this activity was found in all the publications and therefore provided the basis for a standardised review. Seven online sources were found to address the insertion of a zipper, as presented in Table 2.

TABLE 2: SELECTION OF SEWING TRAINING ONLINE SOURCES (n=7)

Author	Year	Title	Link address
Percy, C.	2008	Threads Magazine.	http://www.threadsmagazine.com/item/3728/sewing-in-a-zipper/page/all
Giddens, J.	2012	Sewing Technique: lapped zipper.	http://extension.usu.edu/files/publications/factsheet/FC_Clothing&Textiles_2012-02pr.pdf
Lapped zipper tutorial.	2012	Lapped zipper tutorial.	http://scruffybadgertime.co.uk/2012/08/my-mammas-lapped-zipper-tutorial/
Browne, L.	2012	Sewing secrets.	http://coatsandclarksewingsecrets.com/blogcategory/sewing/sewing-a-lapped-zipper-in-a-skirt.
Nielsen, M.	2013	Tutorial: centred and lapped zippers.	http://blog.megannielsen.com/2013/05/tutorial-centered-and-lapped-zippers/
Inserting a lapped zipper.	2014	Inserting a lapped zipper.	https://lladybird.com/2014/07/07/oal-inserting-a-lapped-zipper/
Learn to sew: how to sew a zipper.	2016	Learn to sew: how to sew a zipper.	http://crazylittleprojects.com/2016/02/learn-to-sew-6-how-to-sew-a-zipper.html

Trustworthiness

Considerations for the five standards of trustworthiness by Botma, Greeff, Mulaudzi and Wright (2010) including; truth value, applicability, consistency, neutrality and authenticity were applied. To ensure truth value, the researcher engaged in reviewing the transcribed interview data at length. Reflexivity of the researcher ensured authentic representations of data collection in the form of field notes. Purposive sampling ensured that the most relevant and knowledgeable persons participated, thus contributing to the applicability of the participants. To enhance consistency, the researcher used only traceable and identifiable literature sources and provided a thick and dense description of the employed methodology. To ensure that the research was free from bias, the traditional concept of neutrality was achieved by means of co-coder reliability by the second author, thus confirming the findings of the study. Authenticity was achieved by honestly portraying opinions and perceptions of the participants.

FINDINGS AND DISCUSSION

The findings and discussion of this qualitative study are presented in accordance with the two phases of the investigation. First, the findings of the interviews with IGP community facilitators

are presented and discussed (phase one). This is followed by the findings of the document analysis of existing sewing training materials (presented and discussed in phase two).

Phase one: Interviews with IGP community facilitators

The findings and discussion of phase one are presented in accordance with the topics related to the aim of the study. Initially, the demographic information (including their background, level of schooling, and sewing skills obtained) of the participants as well as their roles as facilitators at the rural sewing IGP units were discussed.

Demographics: The ages of the participants ranged from 18 to 60+ years old. Their educational attainment also varied. One participant had obtained Grade 2, two had obtained Grade 5 and two attained Grade 12.

Topic 1: Review of the 2006 Manual

Concerning topic 1, none of the participants could recall ever having seen the 2006 Manual, and had no further comments to make about it. This response indicated that although the 2006 Manual was intended to be used by these participants, the material seemed not to have reached its intended end-users, nor did it become embedded in practice before this project was implemented. The scarce resources for community engagement may therefore be wasted if training materials developed for use in rural IGPs are not appropriately implemented.

Topic 2: Review of commercial sewing training materials

Concerning topic 2, four of the five participants reported that they did not have any other sewing training materials available to them, confirming Niesing's (2012) finding of a persistent lack of training resources within rural IGPs. Reasons for textual materials not being available or not being used in this context have not, to the best of our knowledge been reported in published literature and suggests a need for further inquiry.

While reviewing a commercially available sewing training textbook (Reader's Digest 2010), the participants showed enthusiasm at the prospect of using this material in future. However, challenges soon emerged. The first related to the task of reading:

'*The problem is to read. I can see the pictures and understand them. But this [reading] is the challenge'* [participant #1, Grade 2].

Most commercial materials are produced for users who are assumed to be able to read and have basic literacy skills (Viswanathan & Gau 2005). Such materials, however, may be beyond the proficiency of the cognitive skills of low-literate individuals. Linguistically unclear words and unfamiliar phrases in the material shown to our participants proved challenging. One participant responded:

'*I will not be able to understand some words. There are some which I understand when I read English, but some' [shakes head implying negative response]*[participant #3, Grade 5].

Surprisingly, even the literate participant indicated that the words were difficult:

'*I have never come across the stitching words, so it is going to be difficult words'* [participant #5, Grade 12].

Their responses suggested that they did not have the functional literacy proficiency to be able to read from the available textbook. To deal with the challenge that low-literacy presents, various coping strategies (such as overreliance on the help of more literate friends to complete activities [Jae *et al.* 2011]) have been identified to compensate for the lack of reading ability (Adkins & Ozanne 2005a; Van Staden 2012). Within this study, one of the participants remarked with reference to another project member, that:

'*She must read for me, so I can understand what is being said'* [participant #1, Grade 2].

Notably, four out of the five participants mentioned a culture of helping each other in the social group environment of the IGP by demonstrating sewing techniques:

'*We share the experience that we taught ourselves, we pass on to others'*
[participant #2, Grade 12].

This finding echoes the principle reported by Viswanathan and Gau (2005) that materials for low-literate individuals should encourage a 'do-with-me' style of facilitation, rather than just communicating instructions.

Pictorial dependence was also displayed in this study:

> '*at times you read and do not understand, but when you read looking at that picture to see how it is like, and then be able to [read]'* [participant #4, Grade 5].

These findings support those of Adkins and Ozanne (2005b), Van Staden, Van der Merwe, Van Aardt and Ellis (2017) and Viswanathan *et al.* (2005) that low-literate individuals employ and develop coping strategies to deal with reading limitations. Another challenge that our participants had experienced was the amount of reading that was required to comprehend the materials:

> '*…there is too much information here…'* [participant #4, Grade 5].

Learning may be hampered when the working memory capacity (also referred to as short term-memory) is exceeded in a reading task. This further implies that high-involvement content can consume the available cognitive resources, resulting in cognitive overload (De Jong 2010). For low-literate individuals, this could inhibit the learning process (Viswanathan & Gau 2005). The comments from the participants about the text that they reviewed points to the conclusion that currently available commercial sewing training materials are unlikely to be useful to low-literate end-users in their present form.

Topic 3: Sewing training material needs

Concerning topic 3, a clear understanding of the training material needs within the rural sewing IGPs was needed to better understand their practical sewing challenges (topic 4). The findings are presented in Table 3.

TABLE 3: SEWING TRAINING MATERIAL NEEDS OF INCOME GENERATING PROJECT COMMUNITY FACILITATORS

Sewing activity (n=14)	**Responses** (n=5)			
	Yes	**No**	*****	**N/A**
1. Maintaining a sewing machine	2	1	2	0
2. Threading of machines	0	3	0	2
3. Taking body measurements	5	0	0	0
4. Determining fabric grain direction	3	2	0	0
5. Reading pattern information	3	2	0	0
6. Align grain line of pattern and fabric	4	1	0	0
7. Pattern layout	3	1	0	2
8. Cutting accurately	1	2	0	2

9. Transferring pictures to fabric (motifs for hand embroidery)	0	2	1	2
10. Making gathers or ruffles	2	3	0	0
11. Inserting a zip	1	3	1	0
12. Quality control	2	2	0	1
13. Different kinds of hand stitches	3	1	1	0
14. Finishing and packing	1	4	0	0

Yes: There is a need for training material in this sewing activity.
No: There is no need for training.
*: The facilitators do not require training themselves, but it might apply to the other members of the group.
N/A: Not Applicable. This item was not discussed during the interviews.

The responses (Table 3) indicated various practical sewing training needs in the rural sewing IGPs with activities scoring 3 and above considered as prominent training needs. Drawing from the combined responses of the participants, two sewing training needs were identified as being most prominent: taking body measurements; and pattern layout.

Topic 4: Most challenging sewing tasks

To further explore the challenges resulting as a consequence of the mentioned training needs, the participants were also asked to describe any losses resulting from problems with the construction of their products (discussed within topic 4). One respondent indicated:

> '*…the only thing that we experience is when you put the pattern [position the pattern on the fabric], because you don't know how to set a pattern on a material [referring to the correct procedure for pattern layout], then we 'miscut' it [cut it incorrectly] and lose fabric. Then we have to buy another cloth, additional to replace the lost one…'* [participant #2, Grade 12].

This description made it clear that practical sewing challenges had far-reaching consequences. Not knowing the correct procedure for pattern layout resulted in incorrect pattern placement causing the garment to be cut off-grain. To rectify, the IGP member had to then purchase new material, with a cost to the IGP. Such expenses erode already small profit margins.

Phase two: Document analysis of existing sewing training materials

In the findings and discussion of phase two, the 2006 Manual is presented first, followed by the commercially available sewing training materials. The researcher completed the review. All of the

documents were reviewed in terms of considerations for literacy levels (measured by reading ease and grade level, and the presence of visual material) and content. When reviewing online sources, specific searches were applied and therefore conciderations of ‘content’ are not applicable.

The 2006 Manual

Given that the 2006 Manual was designed and intended for these specific rural IGPs, its appropriateness in terms of the match between its literacy level and that of the community facilitators as its consumers was reviewed.

Considerations for literacy levels

While two of the five community facilitators had attained Grade 12, two had attained Grade 5 and one Grade 2. This educational range confirms the findings of Kruger *et al.* (2006) of persisting shortfalls of basic education in rural areas. Determining the literacy level of the 2006 Manual entailed establishing its reading ease and grade level (Flesch Kincaid, Microsoft Office 2018). With an ease of reading score of 58.7, the 2006 Manual scored lower than the general range (of 60-70) for a standard document targeted at a literate audience (Flesch Kincaid, Microsoft Office 2018), rendering it even less appropriate for application by low-literate individuals. The grade level of the 2006 Manual scored 9.6, equivalent to a school level of nearly Grade 10, which is higher than the suggested score of 8.0 for most documents and the prescribed score of less than Grade 7 for low-literate users (Adkins & Ozanne 2005b). This standard applies to contemporary academic English based on United States (US) standards for English first language users. Within the rural areas where our IGP study was based, English is often not a first or second language and Setswana and Afrikaans are the most prevalent languages. Drawing from our findings, we conclude that the low-literate community facilitators of our South African rural IGPs were unlikely to be able to read or understand this document easily. In addition, the 2006 Manual did not make provision for the acknowledged predilection of low-literate individuals for pictographic thinking. The only pictures it contained were those used for decorative purposes. Low-literate individuals prefer visual information (Yan, Yurchisin & Watchravesringkan 2008) and may find it difficult to read and interpret sewing instructions presented in text format. Written information is therefore not appropriate as the only source of guidance for their use (Dowse *et al.* 2011).

The amount of reading, context and nature of the 2006 Manual

The 2006 Manual consisted of 115 pages and included extensive theoretical materials designed to be read rather than interactively used. This presents obstacles for low-literate individuals who have been found to lack the capacity to apply general information to unique settings (Viswanathan *et al.* 2005). In the absence of a strong association between the 2006 Manual and the need for help with specific practical application, it seemed unlikely that community facilitators who were low-literate would be able to apply the manual to address their specific training needs.

Considerations for content

The sewing section of the 2006 Manual presented broad production-orientated guidelines rather than concrete instructions. While we found that the manual did offer guidelines for the most part, it addressed only five sewing activities (out of the 14 presented within Table 3). It also did not specifically address the most prominent sewing training needs as identified during our interviews. These factors led to the conclusion that, in terms of this study, the 2006 Manual was not appropriate for use by low-literate community facilitators of rural sewing IGPs on the basis of its relatively high levels of literacy and non-specific content. Additionally, it questioned the approach taken by the developer. Materials developed from the perception of the developer (known as a top-down approach) may not be an accurate representation of the actual needs within the target population (Trollip 2001). It is therefore recommended to conduct a usability assessment to ensure the appropriateness of materials developed for community based initiatives (Fawcette, Suarez-Balcazar, Balcazar, White, Paine, Blanchard, & Embree 1994, Trollip 2001).

Commercially available sewing training materials

Tables 4 presents the analysis of eight commercially available sewing training textbooks in terms of the appropriateness of their literacy level and content.

TABLE 4: ANALYSIS OF COMMERCIALLY AVAILABLE SEWING TRAINING BOOKS (n=8)

Author/year of publication	**Considerations for literacy level**				**Considerations for content**	
	Readability tests		Visual materials			
	Reading ease	Grade level	Photos	Drawings	Number of sewing activities addressed (n=14)	Number of actual sewing training needs addressed (n=2)
Eaton (1986)	77.9	4.6		X	6	2
					43%	100%
Singer (1990)	**41.6**	8.1	X		8	2
					57%	100%
Henry (1994)	87.9	4.3		X	3	0
					21%	0%
Westfall (1998)	78.2	4.0		X	7	1
					50%	50%
Smith (2009)	83.0	4.4	X		9	2
					64%	100%
Cole and Czachor (2010)	82.8	**3.0**		X	7	1
					50%	50%
Di Lorenzo (2010)	80.2	3.3	X		5	2
					35%	100%
Readers Digest (2010)	72.5	4.5		X	10	2
					71%	100%
Averages	**75.5**	**4.5**	**-**	**-**	**7**	**1.5**
					50%	**75%**
Counts	**-**	**-**	**3**	**5**	**-**	**-**
			37%	**63%**		

In Table 4, analysis of eight online sewing training materials is presented (with reference to the appropriateness of its literacy level and content).

TABLE 5: ANALYSIS OF COMMERCIALLY AVAILABLE ONLINE SEWING TRAINING MATERIALS (n=7)

Author/title year	**Considerations for literacy level**			
	Readability tests		Visual materials	
	Reading ease	Grade level	Photos	Drawings
Percy (2008)	69.3	8.7	X	
Giddens (2012)	78.2	5.4	X	
Lapped zipper tutorial (2012)	75.7	**9.0**	X	
Browne (2012)	72.7	6.7	X	
Nielsen (2013)	80.1	6.2	X	
Insert a lapped zipper (2014)	78.5	7.3	X	
Learn to sew: how to sew a zipper (2016)	87.9	5.0	X	
Averages	**77.4**	**6.9**	**-**	**-**
Counts	**-**	**-**	**7**	**0**

Considerations for literacy levels

In Tables 4 and 5 a total of eight books and seven online sources were reviewed. Based on a calculated average, the readability tests indicated that the reading ease scores of books (75.5) and online sources (77.4) were higher than the general range (60-70), with higher scores indicating text that is easier to read for 14 of the 15 sources. This finding indicates that the selected commercially available sewing training materials were fairly easy to read. Grade level indicators of the commercially available sewing training materials ranged from as low as Grade 3 to as high as Grade 9, with books having generally lower grade level indicators than online sources (with averages of Grade 4.5 and Grade 6.9 for books and online sources respectively). All of the sources included visual materials aiding the instructions provided in the text. While many of the books (five out of the eight), contained drawings (63% drawings versus 37% photos), all the online sources contained photos. These findings render the literacy levels of the selected commercially available sewing training materials theoretically appropriate for use by low-literate end-users. However, in further consideration for its content the appropriateness of these sources for low-literate community facilitators, such as those who obtained Grade 2, remain questionable.

Considerations for content

With reference to the content in Table 4, all of the books addressed sewing training needs to some extent (50% of the 14 sewing activities were addressed on average). Five out of eight sources addressed both of the most prominent sewing training needs identified within the rural sewing IGPs (with an average of 75%). Drawing from this analysis, various sources seem, in theory, to qualify as theoretically appropriate for use by low-literate individuals. While none of these sources have been implemented and evaluated in practice within the IGP units, their suitability in practice could be questioned. In reviewing the amount of reading, the context and the nature of the commercially available sewing training materials presented issues of concern, which are now discussed.

The amount of reading: Covering a wide range of topics, the selected number of pages of the books ranged between 112 and 542. Such extensive theoretical materials could overwhelm or even intimidate low-literate individuals, undermining its use. While online sources provide a more targeted approach to accessing the required information, their effective use in rural IGPs remain questionable. Rural areas have the least access to the Internet in SA, as the availability of infrastructure and devices remain insufficient (Mzekandaba 2016). In addition, exceedingly rising data costs experienced in SA (Van Zyl 2016) may not make this option feasible or sustainable for use in rural IGPs.

The context of information: Both books and online sources present instructional text and visual materials in a general and idealised manner. In contrast, the conditions within the rural sewing IGPs are not ideal. Many rural IGPs lack basic infrastructure and equipment, and often make do with fabric scraps and makeshift furniture. In the event that the content (depicting the finest materials and best equipment) does not reflect their real-life setting, they may feel as if the training material does not apply to them. Additionally, none of the reviewed sources reflected any indigenous frameworks related to a rural community. No evidence could be found of any sewing training or instructional materials presented in an Africanised context (with reference to the inclusion of the Tswana culture and Setswana text).

The nature of materials: The fact that IGPs are not homogenous and comprise participants of various ages, educational levels and practical skills competencies have implications for the collective use of training material. An inference could be made that the older IGP community facilitators with low educational attainment (between Grades 2 and 5) may be uncomfortable, or even intimidated by the use of both books and online sources, while the younger facilitators with a higher educational attainment (Grade 12) may be more technology-orientated and more prone to use books. The above findings point to the fact that none of the commercially available sewing training materials are likely to be collectively used by community facilitators of rural sewing IGPs in the current form. Viswanathan *et al.* (2005) suggest that in such conditions, training materials need to be redesigned to suit the needs of low-literate participants of rural income generating projects.

CONCLUSION

The use of existing sewing training materials in the rural sewing IGP units proved to be highly problematic. Adopting a user-centered approach in phase one, the interview findings provided the researcher with a better understanding of the applicability of, and challenges associated with textual sewing training material within the unique settings of rural sewing IGPs, such as those related to the task and amount of reading. Additionally, the interviews served to identify the relevant content for the design and development of a sewing training material intervention (for the tasks of taking body measurements and accurate pattern layout) developed during a subsequent phase of the study. Reviewing commercially available sewing training material for appropriateness in rural sewing IGPs (during phase two) revealed that the 2006 Manual was not appropriate for use by low-literate project participants. The inherent nature of the document did not consider the cognitive challenges associated with low-literacy related to cognitive overload (inability to engage the extensive theoretical document) and cognitive inconsistency (as it was developed at an unrealistic grade level). Additionally, providing broad guidelines rather than specific contextual examples (Viswanathan & Gau 2005) further prohibited the process of inferring the informational materials to the unique context of the rural sewing IGPs. While most of the commercially available sewing training materials proved to be theoretically appropriate in terms of literacy level and content, they may be less suitable in practice. This could be ascribed to most sources consisting of extensive theoretical documents that present information in a generalised manner.

In conclusion, the sewing training materials for use in the rural sewing IGP units should be redesigned and customised. Based on the outcomes of the findings the following criteria are proposed to enhance their appropriateness. They should:

- Be developed at an appropriate literacy level to better accommodate the low-literate individuals within the IGP units (below grade 3);
- support cognitive predilections for pictographic thinking by including prominent visual materials;
- address small amounts of information at a time to avoid cognitive overload and align with the tendency of low-literate individuals to engage in concrete thinking;
- facilitate an interactive presentation style in line with the social group dynamic with the IGPs;
- be based on actual training needs to address the practical challenges experienced by the potential users themselves;
- be presented in a format supporting the group dynamic within IGPs (with a wide range of age, education, literacy level, and sewing expertise); and
- consider an indigenous framework with reference to culture and language to better empower the low-literate participants of rural sewing IGPs.

To ensure the appropriateness for application within the intended rural IGPs for whom they are intended, it is further recommended that the developed materials be implemented and evaluated in practice within the IGP units. A limitation within the scope of this study was that the reasons for textual materials not being available or not being used in practice (which may relate to factors such as accessibility or resource allocation) were not empirically investigated. This presents a need for future research.

This investigation was targeted towards three rural sewing IGP units. The findings of the study can therefore not be generalised to other populations but can be applied as a starting point for the development of sewing training materials for IGPs. The method of inquiry and the insights gained following empirical investigation can serve as a point of departure for broader investigations, such as the review of training materials in sewing IGP units provincially or nationally, as well as within various fields of study (related to IGPs that produce for example baked goods, woodwork or ceramic craft items).

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REFERENCES

Adkins, N.R. & Ozanne, J.L., 2005a, 'Critical consumer education: Empowering the low-literate consumer', *Journal of Macromarketing* 25(2), 153-162.

Adkins, N.R. & Ozanne, J.L., 2005b, 'The low literate consumer', *Journal of Consumer Research* 32(1),93-105.

Albee, A., 1994, 'Support to women's productive and income-generating activities', viewed 8 March 2018, from http://www.caledonia.org.uk/papers/Support-to-Women-Albee-1994.pdf

Botha, E., 2005, 'Die ontwikkeling van 'n opvoedkundige intervensieprogram vir vroulike plaasbewoners gerig op die herstel en herwinning van klere en tekstielartikels', Masters dissertation, School of Physiology, Nutrition and Consumer Sciences, North-West University.

Botma, Y., Greeff, M., Mulaudzi, F.M. & Wright, S.C.D., 2010, *Research in health science* Pearson, Cape Town.

Bowen, G.A., 2009, 'Document analysis as a qualitative research method', *Qualitative Research Journal* 9(2), 27-40.

Creswell, J.W., 2014, *Qualitative, Quantitative and Mixed Methods Approaches*. 4th edn., SAGE, London.

De Jong, T., 2010, 'Cognitive load theory, educational research, and instructional design: Some food for thought', *Instructional Science* 38(2), 105-134.

Dowse, R., Ramela, T. & Browne, S.H., 2011, 'An illustrated leaflet containing antiretroviral information targeted for low-literate readers: Development and evaluation', *Patient Education and Counselling* 85(3), 508-515.

Duvenhage, S.S., Oldewage-Theron, W.H., Egal, A.A., & Medoua, G.N., 2013, 'Home-prepared soya milk: Potential to alleviate protein-energy malnutrition in low-income rural communities in South Africa?', *Health SA Gesondheid* 18(1), 21-33.

Fawcette, S.B., Suarez-Balcazar, Y., Balcazar,, F.E., White, G.W., Paine, A.L., Blanchard, K.A. & Embree, M.G, 1994, Conducting intervention research: The design and development process, in J. Rothman & E.J. Thomas (eds.), *Intervention research: Design and development for human service*, pp. 25-52, Haworth Press, New York.

Flesch Kincaid, Microsoft Office, 2018, Test your document's readability, viewed 25 October 2018, from https://support.office.com/en-us/article/test-your-document-s-readability-85b4969e-e80a-4777-8dd3-f7fc3c8b3fd2?redirectSourcePath=%252fen-us%252farticle%252fTest-your-

documents-readability-0adc0e9a-b3fb-4bde-85f4-c9e88926c6aa&ui=en-US&rs=en-US&ad=US#__toc342546557

Gardiner, M., 2008, 'Education in rural areas', *Centre for Education Policy Development* 4(4), 4-13.

Gau, R., Jae, H. & Viswanathan, M., 2012, 'Studying low-literate consumers through experimental methods: Implications for subsistence marketplaces', *Journal of Business Research* 65(12), 1683-1691.

Greeff, M., 2011, 'Information collection: Interviewing' in A.S. De Vos, H. Strydom, C.B. Fouché & C.S.L. Delport (eds.), *Research at grass roots: For the social sciences and human service professions*, pp. 341-375, Van Schaik, Pretoria.

Jae, H., DelVecchio, D.S. & Childers, T.L., 2011, 'Are low-literate and high-literate consumers different? Applying resource-matching theory to ad processing across literacy levels', *Journal of Consumer Psychology* 21(3), 312-323.

Kaeane, R. & Ross, E., 2012, 'Income-generating projects: Alleviating or perpetuating poverty?', *Social Work/Maatskaplike Werk* 45(1), 17-34.

Kincaid, J.P., Fishburne, R.P., Rogers, R.L. & Chissom, B.S., 1975, Derivation of new readability formulas for navy enlisted personnel. National technical information service, U.S. Department of commerce, Springfield, VA. 22161.

Kruger, A., Lemke, S., Phometsi, M., Van't Riet, H., Pienaar, A.E. & Kotze, G., 2006, 'Poverty and household food security of black South African farm workers: The legacy of social inequalities', *Public Health Nutrition* 9(7), 830-836.

Mansoor, L.E. & Dowse, R., 2003, 'Effect of pictograms on readability of patient information materials', *Annals of Pharmacotherapy* 37(7-8), 1003-1009.

Menyuko, E.D., 2011, 'The experiences of participants in income-generating projects in Atteridgeville, Tshwane'. Masters dissertation, Department of Social Sciences, University of South Africa.

Mwingira, B. & Dowse, R., 2007, 'Development of written information for antiretroviral therapy: Comprehension in a Tanzanian population', *Pharmacy World & Science* 29(3), 173-182.

Mzekandaba, S., 2016, 'SA's internet user numbers surge', ITWeb, viewed 22 August 2017, from http://www.itweb.co.za/index.php?option=com_content&view=article&id=153224

Niesing, C.M., 2012, 'Evaluation of the sustainability indicators used in the Holding Hands community project in the North-West Province', Masters dissertation, NWU Business School, North-West University.

Nieuwenhuis, J., 2007, 'Analysing qualitative data', in K. Maree (ed.), *First steps in research*, pp. 99-117, Van Schaik, Pretoria.

Oldewage-Theron, W., Dicks, E., Napier, C. & Rutengwe, R., 2005, 'A community-based integrated nutrition research programme to alleviate poverty: Baseline survey', *Public Health* 119(4), 312-320.

Posel, D., 2011, 'Adult literacy rates in South Africa: A comparison of different measures', *Language Matters* 42(1), 39-49.

Readers Digest, 2010, *The new complete guide to sewing*, Readers Digest, Sydney.

Rogan, M., 2016, 'Gender and multidimensional poverty in South Africa: Applying the global multidimensional poverty index', *Social Indicators Research* 126(3), 987-1006.

Rousseau, G.G., 2007, 'Cultural influences on buyer behaviour', in P.J. du Plessis & G.G. Rousseau (eds.), *Buyer behaviour: Understanding consumer psychology and marketing*, pp. 47-66, Oxford University Press, Cape Town.

SA., Development, D.O.E., 2008, Towards an anti-poverty strategy for South Africa, a discussion document, viewed 8 March 2018, from http://www.thepresidency.gov.za/download/file/fid/1061

Schurink, W., Fouché, C.B. & De Vos, A.S., 2011, 'Qualitative data analysis and interpretation', in A.S. De Vos, H. Strydom, C.B. Fouché & C.S.L. Delport (eds.), *Research at grass roots*. 4th edn., pp. 397-423, Van Schaik, Pretoria.

Somtunzi, N., 2002, 'The role of local government in income-generating poverty alleviation projects in the Amahlati municipality', PhD Thesis, Department of Town and Regional Planning, University of Natal.

Spaull, N., 2016, *Learning to Read and Reading to Learn*, Zenex Foundation Panel RASA 2016 input, viewed 20 March 2018, from https://www.zenexfoundation.org.za/images/Laerning_to_read_and_reading_to_learn_-_Nic_Spaull.pdf

Statistics South Africa, 2012, Census: 2011, viewed 6 March 2015, from https://www.statssa.gov.za/publications/P03014/P030142011.pdf

Statistics South Africa, 2016, 'Education Series Volume III Educational Enrolment and Achievement 2016', viewed 20 March 2018, from http://www.statssa.gov.za/publications/Report%2092-01-03/Report%2092-01-032016.pdf

Statistics South Africa, 2018a, 'Quarterly Labour Force Survey', viewed 19 August 2018, from http://www.statssa.gov.za/publications/P0211/P02112ndQuarter2018.pdf

Statistics South Africa, 2018b, 'South Africa: Literacy rate from 2007 to 2015, total and by gender', viewed 26 October 2018, from https://www.statista.com/statistics/572836/literacy-rate-in-south-africa/

Stevenson, R.J. & Palmer, J.A., 1994, *Learning: Principles, Processes and Practices (Children, Teachers and Learning)*, Cassell Educational, New York.

Trollip, A.M., 1997, 'Towards developing a model for the empowerment of rural South African women', *Journal of Dietetics and Home Economics* 25(1), 2-10.

Trollip, A.M., 2001, 'The development of a strategy for the facilitation of income-generating projects in rural communities: An insider account', *Journal of Family Ecology and Consumer Sciences* 29, 45-51.

Unesco, 2006, Global monitoring report: Understandings of literacy, viewed 19 August 2014, from http://www.unesco.org/education/GMR2006/full/chapt6_eng.pdf

Van Biljon, W. & Van Rensburg, M., 2011, 'Branding and packaging design: Key insights on marketing milk to low-income markets in South Africa', *African Journal of Business Management* 5(22), 9548-9558.

Van Niekerk, L., 2006a, 'A facilitator's guide to arts and crafts training', North-West University, Potchefstroom.

Van Niekerk, L., 2006b, 'Women's income-generating activities in a disadvantaged farming community: Towards sustainability', Masters dissertation, School of Physiology, Nutrition and Consumer Sciences, North-West University.

Van Staden, J., 2012, 'The use of clothing labels by female black low-literate consumers', PhD Thesis, School of Physiology, Nutrition and Consumer Sciences, North-West University.

Van Staden, J., Van der Merwe, D., Van Aardt, A. & Ellis, S., 2017, 'Low-literate consumers use of clothing labels amidst personal and product related challenges', *International Journal of Consumer Studies* 41(1), 79-86.

Van Zyl, G., 2016, 'Data prices: How SA compares to the resto of the world', viewed 22 August 2017, from http://www.fin24.com/Tech/Multimedia/data-prices-how-sa-compares-to-the-rest-of-the-world-20160930

Viswanathan, M. & Gau, R., 2005, 'Functional illiteracy and nutritional education in the United States: A research-based approach to the development of nutritional education materials for functionally illiterate consumers', *Journal of Macromarketing* 25(2), 187-201.

Viswanathan, M., Rosa, J.A. & Harris, J.E., 2005, 'Decision making and coping of functionally illiterate consumers and some implications for marketing management', *Journal of Marketing* 69(1), 15-31.

Yan, R.N., Yurchisin, J. & Watchravesringkan, K., 2008. 'Use of care labels: Linking need for cognition with consumer confidence and perceived risk', *Journal of Fashion Marketing and Management* 12(4), 532-544.

CHAPTER 5

ARTICLE: A DECOLONISED APPROACH TO DEVELOPING TRAINING MATERIALS FOR LOW-LITERATE PARTICIPANTS OF RURAL SEWING INCOME GENERATING PROJECTS

Article written in accordance with the author guidelines for the Design Education Forum of Southern Africa (DEFSA) where it has been published.

http://www.defsa.org.za/sites/default/files/downloads/2017conference/Coetzee_van-Staden_Oldewage-Theron%23decolonise.pdf

This article forms the second of three research articles related to the employment of developed sewing training material in an intervention for low-literate participants of rural income generating projects (IGPs). It details the design of the sewing training pamphlets by an attempted decolonised approach (to develop appropriate sewing training materials for low-literate individuals based on sewing training needs within rural sewing IGPs, objective 1.6.2.3). This part of the research investigation is guided by the activities within IR phases 3 and 4. An extract of these phases with delineating activities is presented in Figure 5.1 below.

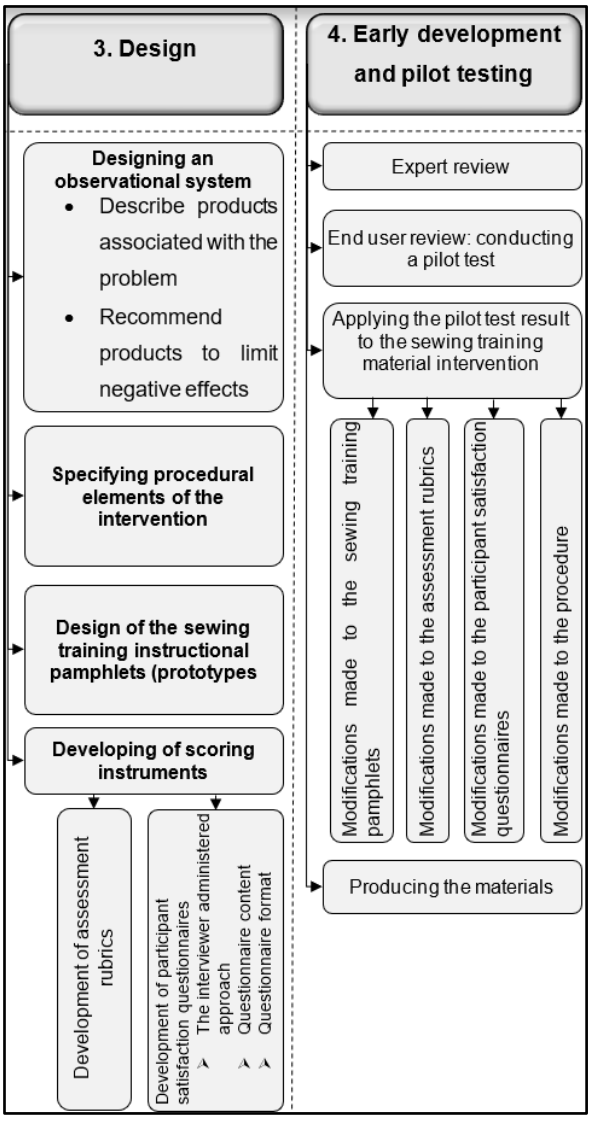

Figure 5.1: Extract of IR phases 3 & 4 with delineating activities as applied to Chapter 5

This work was also presented at the 2017 DEFSA conference held at Freedom Park Pretoria from 27 to 29 September 2017.

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#Decolonise!

Design educators reflecting on the call for the decolonisation of education

A Decolonised Approach to Developing Training Materials for Low-Literate Participants of Rural Sewing Income Generating Projects

Nicolene Coetzee *North-West University*

Hanlie van Staden *North-West University*

Wilna Oldewage-Theron *Vaal University of Technology*

Abstract

Whilst training materials can be effective tools for addressing skills training needs, inherently colonised approaches undermine their anticipated benefit and use. Developers of skills training materials are customarily highly trained professionals, academics and practitioners who are often culturally and otherwise separated from the population for which their materials are intended. As a result, they may overestimate their end-users' abilities to read and understand textual information effectively. In the instance of the conventional training materials developed for income generating projects (IGPs) within rural communities, the disparity between the reading abilities of low-literate project participants set against the level of the informational materials exposes inherent difficulties that individuals face when trying to use such sources. Due to such specific and technical problems as the use of incomprehensible language, too many and subject specific words, and overall seemingly cognitive overload, the materials may be perceived to be user-unfriendly, rendering much needed training resources underutilised.

In this paper, an attempted decolonised approach towards the design and development of two sewing training instructional pamphlets is reported on. Motivated by the need to empower low-literate project participants, a user-centered approach supported an understanding of their sewing training material needs and challenges within the unique setting of rural sewing IGPs, enabling pamphlet designs that are informed by the perspectives of such participants. As a primary factor influencing implementation, the literacy level and acknowledged predilections of low-literate individuals are considered. Necessitating an indigenous framework, factors related to the culture and language are applied throughout the development. Upon completion, an empirical research inquiry was undertaken to determine the IGP participants' satisfaction with the developed pamphlets as employed in a field based intervention. Pilot testing (in the Northern-Cape Province [NCP], South Africa [SA]) prior to the main investigation (within the North-West Province [NWP], SA) provided valuable feedback for improvement. Overall, the IGP

participants expressed positive reaction towards the pamphlets, with a particular preference for the use of visual materials. While this research endeavour is not the first to produce sewing training materials for rural sewing IGPs, it is the first attempt to adopt a decolonised approach. Additionally, it is the first to assess and affect user satisfaction during development.

Keywords: *income generating projects, low-literacy, rural communities, sewing training materials.*

Introduction

This paper forms the second part of a broader research investigation into the development of training materials for rural sewing income generating projects (IGPs). Adopting a user-centered approach, part one explored the sewing training material needs and practical sewing challenges within the unique settings of the rural sewing IGPs. The findings indicated that: (1) training materials that had been previously developed for these IGPs have not been implemented, (2) not only were these training materials found to be inappropriate in terms of literacy level (developed at Grade 10 level), they did not align with the acknowledged cognitive predilections that low-literate individuals hold for concrete (basing meaning on the literal meaning of single pieces of information) and pictographic thinking (the preference of information presented as pictorial elements) (Viswanathan, Rosa & Harris 2005, p. 21), (3) other commercially available sewing training materials also failed to address sewing training needs owing to challenges associated with reading as experienced by low-literate group participants, and (4) two prominent sewing training needs were identified during this investigation, namely the task of taking body measurements, and accurate pattern layout (Coetzee 2017). In this second part of the broader intervention research (IR) design, the research aimed to address the following research question: *How can appropriate sewing training materials for low-literate participants of rural IGPs be designed and developed, taking into consideration their most prominent sewing training needs?* The following specific objectives of this study were to design two sewing training instructional pamphlets, submit the designs for expert review in line with early development, complete pilot testing for further development, and to analyse the results of the user satisfaction questionnaire following the main investigation.

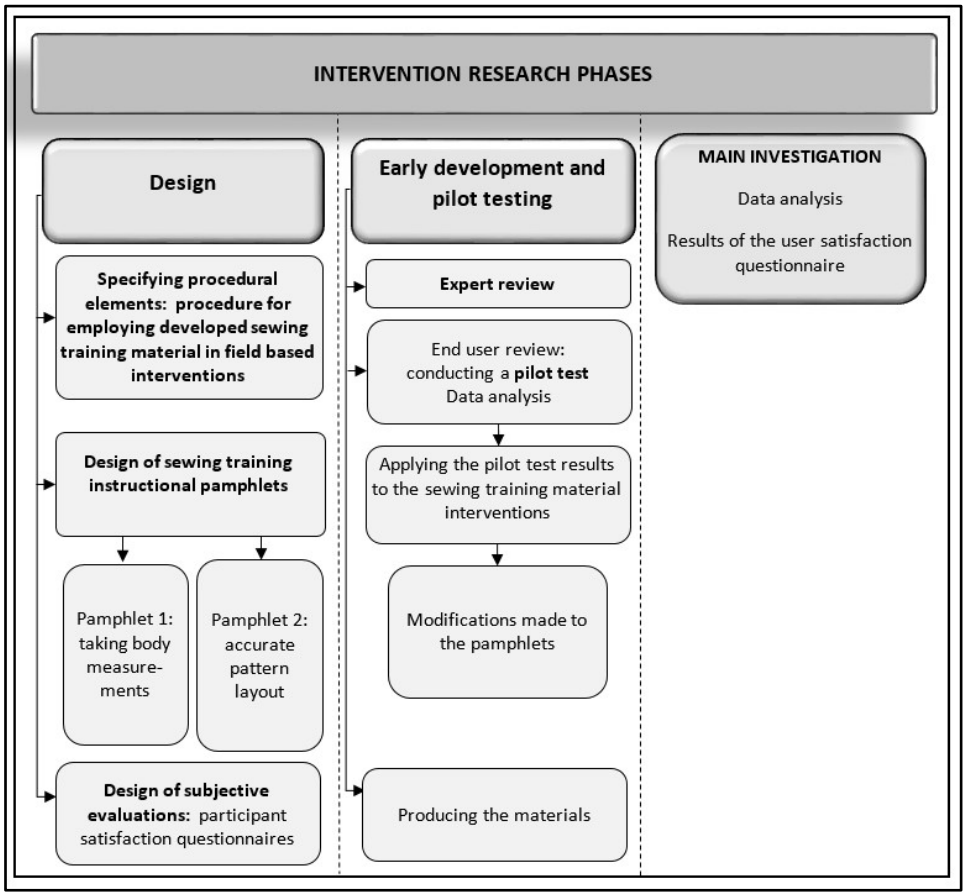

Figure 2: IR phases and activities for this phase of the research investigation (adapted from Rothman & Thomas 1994, p. 28)

Designing sewing training instructional pamphlets

The popular use of pamphlets by government (to convey information pertaining to, for example, elections and health awareness) renders it one of the most familiar forms of textual communication within rural areas. Pamphlets were therefore selected as an appropriate medium for communication in this study. Other South African research findings also support the use of pamphlets (Dowse, Ramela & Browne 2011, p. 508). Due to the nature of the sewing training materials having to be as practical and applicable as possible (Van Niekerk 2006, p. 80), the pamphlets were designed to function as job aids. Job aids present an economical and efficient substitute for training, or training enhancement (Eitington 2002, p. 587) to prevent post training relapse (Merriam & Leahy 2005, p. 8). The latter use is based on the assumption that the memory of an individual is too fragile to be relied upon, and necessitates tools to be used for reinforcement (Eitington 2002, p. 587). This aspect holds particular importance for low-literate IGP participants, whose limited cognitive abilities may impede training or instructional sessions. The use of job aids further coincides with just-in time training, namely the provision of training aids when they are actually needed, rather than repeating the training on an annual or deferred basis (Eitington 2002, p. 588) rendering trainees more open to the training itself. This factor is also particularly relevant as the composition of IGPs is not stagnant. Participants in IGPs enlist and leave voluntarily, causing members to be trained at different intervals, or to attend different training sessions, and to have vastly different levels of experience and practical skills. As is customarily used in support of learning, a step-by step instructional format was used as it more easily engages learners, better facilitates the modelling of tasks, and encourages the application of knowledge and skills (Ramos 2013; CARDET 2014), even when no training programme is available.

Considerations regarding the literacy level

It was crucial to ensure that the sewing training material pamphlets aligned with the literacy level of the rural IGP participants (Dowse, Ramela & Browne 2011, p. 508). Low-literacy amongst group participants has been reported to constitute an obstacle and barrier to skills development (Niesing 2012, p. 3). The internationally applied term 'low-literate' refers to adult individuals (aged 18 years and older) with the highest completed grade level lower than Grade 7 (Adkins & Ozanne 2005, p. 93). This description is similar to the nationally applied term 'functionally illiterate', which also refers to a person (aged 15 years and older) with no education or a highest level of education of less than Grade 7 (StatsSA 2012, p.34). Research towards the design of informational materials for low-literate populations recommends that text should be developed at a level equivalent to 5th to 6th grade (Choi 2012, p. 374). However, upon entering the research setting (during phase one of this study), the researcher found that, even though some IGP participants had obtained Grade 12, some had attained only a very low level of education (as low as Grade 2).

As a repercussion of the longstanding colonialism in education prior to the initiation of the new democratic government, many residents from rural areas experience literacy challenges. The lack of educational services in these areas is evidenced by the lack of classrooms, textbooks and qualified teachers, which has detrimental consequences. National statistics indicate an admittedly high drop-out rate, noting that almost a quarter of rural children in primary schools drop out (SA 2008, p. 59), leaving many farm dwelling adults without basic literacy and numeracy skills (Kruger et al. 2005, p. 833). Additionally, individuals from rural communities do not foster a culture of reading (Gardiner 2008, p. 12). This, coupled with concerns pertaining to the quality of education in some farm schools, prompted the researcher to develop the reading level of the pamphlets below Grade 3 level (as per the Flesch Kincaid acknowledged readability formula) (Choi 2012, p. 374). A grade level lower than Grade 3 was applied.

Acknowledged cognitive predilections of low-literate individuals: pictographic and concrete thinking

Due to the acknowledged cognitive predilection for pictographic thinking that low-literate individuals hold (Viswanathan & Gau 2005, p. 193), the use of visual materials is not only recommended, but also emphasised in literature as an integral component of communication when developing materials for low-literate individuals. The term 'visual materials' coincides with the notion of visual literacy, and thus with an individual's ability to decipher, recognise and interpret images (UNESCO 2006, p. 149). To facilitate low-literate individuals' preference for pictographic thinking, the sewing instructions were planned by considering a range of actions, visually depicted and presented in steps. Each step of the process was carefully planned, as visual materials that are poorly designed (by way of being too technical, abstract, or obscure) may have opposing effects for low-literate individuals (Ngoh & Shepherd 1997, p. 267), thus complicating rather than clarifying the instruction.

In addition to pictographic thinking, low-literate individuals also engage in concrete thinking (Viswanathan, Rosa & Harris 2005, p. 15), that is, the tendency to process single pieces of information without deriving higher level intellectual abstractions (Viswanathan & Gau 2005, p. 189). To simplify cognitive demands, they often resort to making decisions habitually. While the aforesaid may be effective coping behaviours, these may be limiting factors when having to perform more complex instructions consisting of multiple actions. To counter cognitive overload when using the instructional pamphlets, a minimum number of specific topics was identified and prioritised (Zimmerman et al. 1996, p. 27; Viswanathan & Gau 2005, p. 192), visual material relating to what the low-literate readers would know and understand was used and foreign or abstract images, symbols depicting gestures, images requiring a specific perspective, and the use of images that convey multiple steps in a process were avoided (Ngoh & Shepherd 1997, p. 267). A professional graphic designer was appointed for the composition of the pamphlets. Unlike designs commissioned for universal audiences, the researcher was actively involved during all the stages of development ensuring the appropriateness of the materials for the low-literate participants within a rural context.

Culture and language

Additionally, culture presented an important consideration (Dowse, Ramela & Browne 2011, p. 513). Depending on the cultural background of an individual, visual materials may be understood with limited clarity, or interpreted differently than intended. The materials developed for the predominantly Tswana IGP participants had to be culture-specific, as cultural familiarity plays an important role in the perceived comprehension of low-literate individuals (Houts et al. 2006, p. 180) and therefore the materials had to be culturally acceptable and not display any foreign symbols (Mansoor & Dowse 2003, p. 1006). As an extension of cultural relevance, the home language of the low-literate individuals was incorporated (Zimmerman et al. 1996, p. 26) in the form of familiar Setswana wording and diction. Some of the translated wording included descriptions of materials: *diphini* (pins), *theipi ya go meta* (tape measure) and *letsela* (fabric) as well as instructions including *kgato 1* (step 1) and *faoe beile*, *tlhomela diphini* (when in place, put pins). The development of text followed a personalised approach (Dowse, Ramela & Browne 2011, p. 509) by adopting an active voice within the message content. Text and corresponding visual materials were positioned in close proximity to one another. Limited cognitive ability could cause low-literate individuals to devote their available cognitive resources to search for corresponding words and pictures, thus diverting them away from the act of learning. Comprehension of the intended message would therefore be enhanced when corresponding text and visuals were presented within the same border (Mayer 2001, p. 81).

Early development of the sewing training instructional pamphlets

Materials developed for low-literate individuals require thorough evaluation to determine their appropriateness (Viswanathan & Gau 2005, p. 195). Thus the newly developed pamphlets were submitted for expert review before undergoing pilot testing within a user population (Kripilani et al. 2007, p. 375). An art expert was consulted to confirm the intended message of the visual materials. A sewing expert was consulted to confirm correctness of the step-by-step instructions. An expert in the field of low-literacy was consulted to ensure the relevance of materials for low-literate end-users.

Pilot testing of the sewing training instructional pamphlets

Pilot testing was undertaken to obtain feedback from the IGP participants for further development of the sewing training instructional pamphlets. Both pamphlets were implemented in a field based intervention within a sewing IGP in the rural community of Jan Kempdorp, NCP, SA. This project unit presented a sample displaying similar characteristics to the population for the main investigation, as well as a similar setting. All the participants at this unit (four participants) were purposely selected to participate, were willing to participate and volunteered their participation. Although a limited sample, the pamphlets were specifically developed for these rural sewing IGPs based on their practical sewing training needs and literacy challenges and could therefore not be generalised to other populations within domains or backgrounds of other IGPs.

Procedure for implementing the sewing training instructional pamphlets in the field based interventions

Completing practical tasks provided the opportunity for the implementation of the sewing training instructional pamphlets, and enabled end-user review. A one-group pre-test post-test design was employed (Creswell 2014, p. 170). The pamphlet for taking body measurements was implemented first. As a pre-test measure, each participant was required to measure a fitting doll at four (4) key body dimensions (namely the shoulder, bust, waist and hip) without having any exposure to the sewing training pamphlet, or any other instructions or assistance. Each participant then received the body measuring pamphlet and read/reviewed it in private in their own time. Once completed, the participant was asked to complete the same measuring task as before, as a post-test measure. To ensure that no undue anxiety was caused, the researcher emphasised that it was not the skill level of the IGP participants being tested, but rather, the appropriateness of the pamphlet for assisting with sewing tasks. Finally, each participant completed a subjective evaluation in the form of a questionnaire (administered verbally) in order to determine their satisfaction with the pamphlets as users thereof.

The procedure for the implementation of the pattern layout pamphlet followed in a similar manner.

Measuring instrument

An interviewer administered questionnaire was developed to determine the perceived readability, understanding, usefulness, learning of the participants and quality of the pamphlets. The questionnaire consisted of three sections. In Section A, the demographic details of the respondents, including their age, educational attainment and home language, were recorded. Section B was related to readability, understanding, ease of use and learning. As a factor impacting the implementation, Section C explored the perceived quality of the pamphlets by determining their preferences for size of text, the incorporation of pictures, length of material, and preferred visual material and language. A three-point Likert scale using pictographs developed by Van Staden (2012, p. 78) and specifically aligned with the cognitive predilections of low-literate individuals, was employed. The questionnaire was limited to 16 questions.

Data analyses

Statistical analysis was completed using IBM SPSS® Statistics Version 23. Descriptive statistics were applied to all the variables of the satisfaction questionnaire in the form of frequency distributions (presenting the number and percentages of times that variables were observed) (Rubin & Babbie 2010, p. 290).

Results and discussion following pilot testing

Demographic details of the pilot test respondents

The pilot test involved 4 respondents. They were between the ages of 18 and 65 years old. While two of them had attained Grade 12, the other two had very low levels of schooling (namely Grade 2 and Grade 5).

Results of the user satisfaction questionnaire following pilot testing

The pilot test results indicated an overall positive reaction towards the use of the pamphlets. Three of the four respondents indicated that the pamphlets were easy to read and easy to understand. While two respondents did not understand all the words, all four indicated their comprehension of the visual materials. Three respondents responded that they learned much from the pamphlets and will use them often in future. Most notably, three of the four respondents indicated that the pamphlets should be shorter. From previous research a correlation was found between individual working memory and cognitive abilities, and that any elements within the training materials not deemed necessary for learning may deter low-literate individuals from the learning process (De Jong 2010, p. 106). Additionally, instructional materials that are too long may cause reader disinterest and hinder concentration span (Mansoor & Dowse 2003, p. 1007), consequently rendering such material user-unfriendly. To counter for negative effects, the researcher shortened the body measurement pamphlet by 16 words to a total of 121 words, and the pattern layout pamphlet by 67 words to a total of 266. Additionally, bullets were added to make multiple points easier to read (Dowse, Ramela & Browne 2011, p. 513). Figures 2 and 3 below present the modified pamphlets.

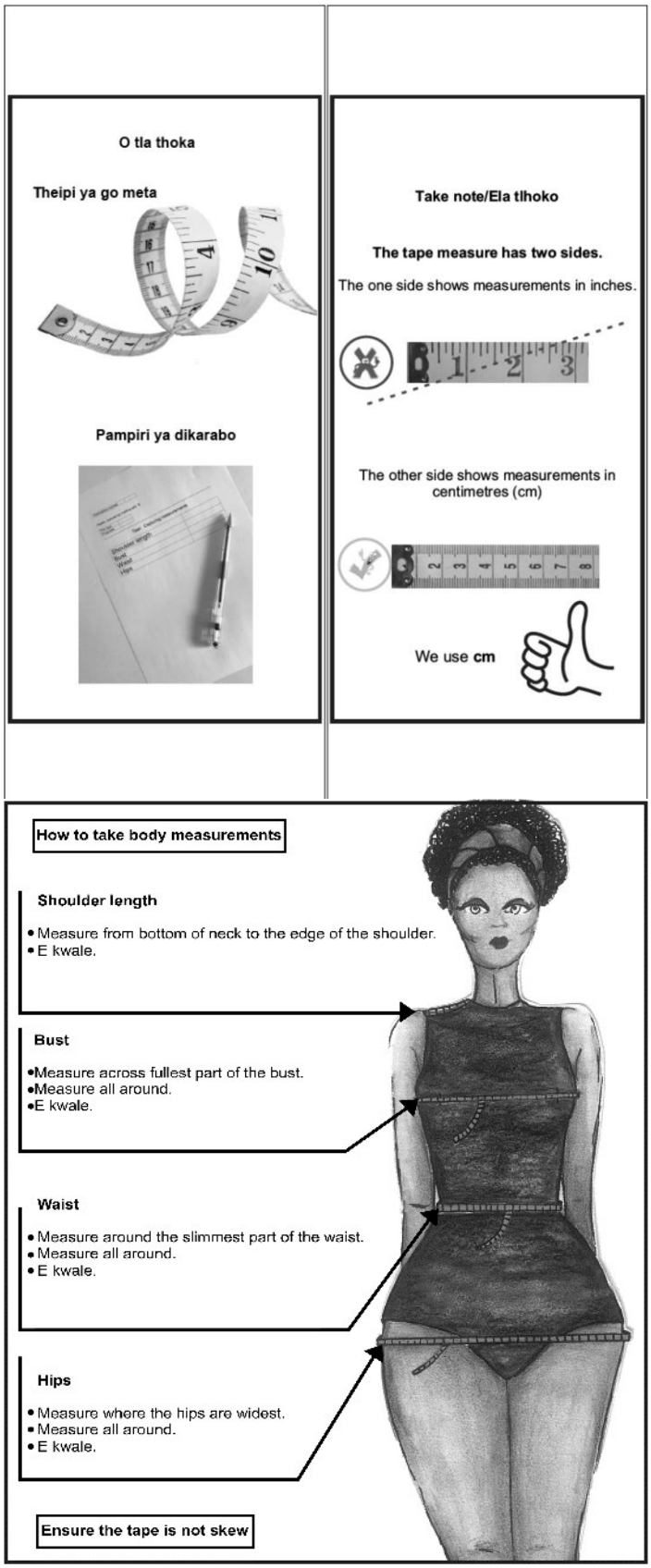

Figure 5.3: Pamphlet for taking body measurements

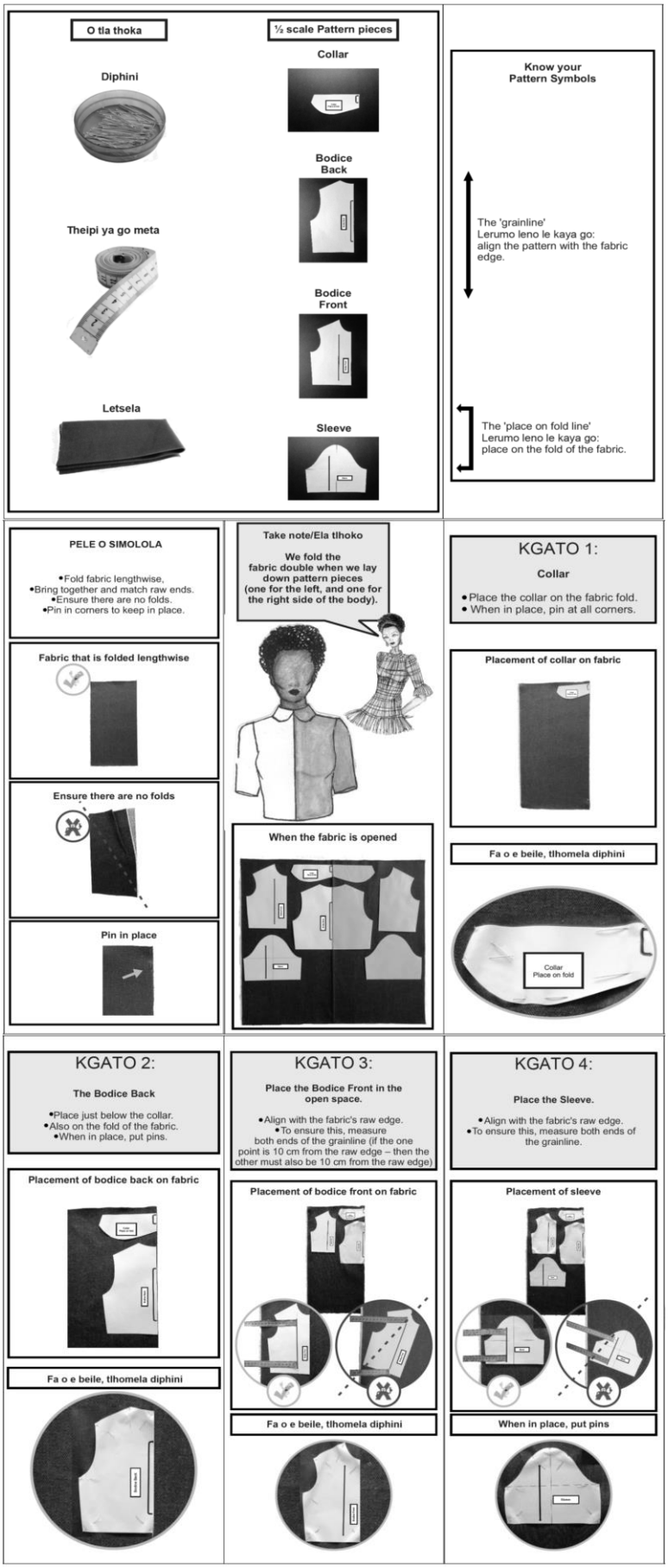

Figure 5.4: Pamphlet for pattern layout

Main investigation

The main investigation followed in the same manner as the pilot testing. The revised sewing training pamphlets were implemented during interventions within the sewing IGPs in the rural communities of Rysmierbuilt and Castello, NWP, SA. All the participants at these units (thirteen participants in total) were purposely selected to participate, were willing to participate and volunteered participation.
Data analyses followed in the same manner as the pilot testing.

Results and discussion of the main investigation

Demographic details of the main study respondents

The demographic details of the respondents are presented in Table 1.

Table1 Demographic details of the respondents

Demographic characteristics	Main investigation		
	N	n	%
Age	13		
18-29		5	39
30-39		3	23
40-49		2	15
50-59		3	23
Level of schooling	12		
Grade 4		1	8
Grade 7		3	23
Grade 9		1	8
Grade 10		2	14
Grade 11		2	14
Grade 12		3	23
Invalid response		1	8
Home language Setswana	13	13	100

The respondents in the main investigation were between the ages of 18 and 59 years old. Their highest level of schooling ranged between Grades 4 and 12. One respondent did not report on her educational attainment. Low-literate individuals are known to use dissimulation or avoidance as a coping strategy when they feel embarrassed about their literacy status (Viswanathan, Rosa & Harris 2005, p. 24). All the respondents were Setswana speaking.

Results and discussion of the main investigation

The user satisfaction questionnaire

Table 2 presents the results of the perceived readability, understanding, use, and learning of the respondents and the quality of the sewing training pamphlets.

Table 2: Perceived readability, understanding, use, learning and the perceived quality of the sewing training pamphlets

Question	Main investigation (N13)			
	Body measuring pamphlet		Pattern layout pamphlet	
	n	%	n	%
It is easy to read the pamphlet				
Yes	13	100	12	92
No	-	-	1	8
I don't know	-	-	-	-
It is easy to understand the pamphlets				
Yes	11	84	11	84
No	1	8	1	8
I don't know	-	-	-	-
No response	1	8	1	8
I could understand all the words				
Yes	13	100	13	100
No	-	-	-	-
I could understand all the pictures				
Yes	13	100	11	85
No	-	-	2	15
I will use other pamphlets like this one				
I will use it a lot	12	92.3	11	84
I will use it sometimes	-	-	1	8
I will use it a little	1	7.7	-	-
No response	-	-	1	8
I learned from the pamphlet				
I learned a lot	11	84.6	12	92
Average	1	7.7	-	-
I learned a little	1	7.7	-	-
No response	-	-	1	8
I liked the pamphlet				
I liked it very much	12	92	12	92
Average	1	8	1	8
I liked it a little	-	-	-	-
I liked having pictures in the pamphlet				
I liked it very much	13	100	13	100
Average	-	-	-	-
I liked it a little	-	-	-	-
The writing is big enough				
Yes	13	100	13	100
No	-	-	-	-
The pictures helped me to understand the pamphlets				
Yes	13	100	12	92
No	-	-	-	-
No response	-	-	1	8
The pamphlet should be shorter				
Yes	2	15	2	15
No	11	85	11	85
Do you prefer				
Line drawings	4	31	6	46
Photo's	9	69	7	54
In which language should the pamphlet be written				
Setswana	8	62	8	62
Afrikaans	-	-	-	-
English	5	38	5	38

The majority of respondents indicated that the body measurement and pattern layout pamphlets were easy to read (100% and 92% respectively) and easy to understand (84%). While all the respondents indicated an understanding of all the words, two (15%) did not understand all the pictures within the pattern layout pamphlet. In general, the pamphlets were considered to be useful (92% and 84%) and the respondents indicated that they learned much from them (85% and 92%). Shortening the content of the pamphlets and conveying only the smallest amount of information to complete the tasks may have ensured that the working memory capacity was not exceeded (De Jong 2010, p. 106). It may also have increased the likelihood that the users connected with and retained the informational material (Viswanathan & Gau 2005, p. 193). The respondents indicated a strong positive reaction towards the pamphlets (with a 92% response for liking it very much). Prior research has indicated that satisfaction with informational materials increases as familiarity increases (Dowse, Ramela & Browne 2011, p. 512). The incorporation of cultural elements within the pamphlets (such as sketches rendering a more Africanised figure; incorporating Tswana indigenous dress) may therefore have been a contributing factor. The link between low-literacy and pictographic thinking was emphasised as all the respondents not only liked having pictures in the pamphlets, but also reported that it helped them to understand the instructions. This may be ascribed to the fact that visual materials aid the opportunity for cognitive learning to occur (Ngoh & Shepherd 1997, p. 266) and facilitate the understanding of step-by-step procedures which would be otherwise incomprehensible to low-literate individuals (Choi 2012, p. 374). These results support the findings of Dowse, Ramela and Browne (2011, p. 511) and Kripilani et al. (2007, p. 375) that visual materials are considered valuable by low-literate users for enhancing their comprehension of written information. The vast majority (85%) of the respondents were satisfied with the length of the pamphlets. While prior research has indicated that home language significantly relates to the success of informational material (Mwingira & Dowse 2007, p. 180; Dowse, Ramela & Browne 2011, p. 513), five respondents (38%) indicated a preference for English. This may be due to the minimal amount of Setswana print material available, rendering them more accustomed to reading English text.

Conclusion

This is the first research paper to attempt a decolonised approach towards the design and development of training materials for implementation in rural sewing IGPs. Based on identified sewing training needs, two sewing training instructional pamphlets were developed. The appropriateness of the pamphlets for low-literate users was ensured by a comprehensive process (incorporating a low grade level and factors enabling pictographic and concrete thinking) to empower participants of rural IGPs to use training materials within the constraints of low-literacy. Overall, the respondents indicated satisfaction with the pamphlets. They found it easy to read and understand, they learned a lot from it and will use it in future.

Limitations

While the limited sample size prohibits generalisability of the study results, it could form the basis for other research towards the design and development of instructional pamphlets for low-literate users.

Recommendations for future developments

A further phase of empirical research should be undertaken to objectively assess the sewing training instructional pamphlets for their effectiveness in achieving skills training outcomes. Additionally, a vast number of skills training shortfalls need to be addressed within the rural sewing IGPs. Future developments could also advance ways in which instructional materials could be shortened, and could

further explore the dual text/visual and home language /English approach. These principles could be applied to an array of multidisciplinary rural IGP endeavours including glass recycling, crafts, and woodwork.

Ethics: This study was approved by the Health Research Ethics Committee (HREC) of the North-West University (NWU), reference NWU—00043-16-S1. Complete informed consent was obtained from each of the research respondents.

Competing Interests: The authors have declared that no competing interests exist.

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References

Adkins, NR & Ozanne, JL 2005, 'The low literate consumer', *Journal of Consumer Research*, vol. 32, no.1, pp. 93-105.

Centre for the Advancement of Research & Development in Educational Technology [CARDET] 2014, '*Designing and delivering successful training programs: designing instructional material and visual aids, overview of instructional material*', viewed 15 March 2016, <http://www.slideshare.net/Cardet1/mod6-ppt1-060609ty-2>.

Coetzee, N 2017, 'Employing developed sewing training materials in an intervention for lowliterate participants of rural income generating projects', PhD-Theses, North-West University, Potchefstroom.

Choi, J 2012, 'Development and pilot test of pictograph-enhanced breast health-care instructions for community-residing immigrant women', *International Journal of Nursing Practice,* vol. 18, pp. 373-8.

Creswell, J 2014, *Qualitative, quantitative and mixed methods approaches*. Sage Publications, London.

De Jong, T 2010, 'Cognitive load theory, educational research, and instructional design: some food for thought', *Instructional Science*, vol. 8, pp. 105-34.

Dowse, R Ramela T & Browne, SH 2011, 'An illustrated leaflet containing antiretroviral information targeted for low-literate readers: development and evaluation', *Patient Education and Counselling,* vol. 85, pp.508-15.

Eitington, JE 2002, *The winning trainer,* Butterworth Heinemann publications, Boston.

Gardiner, M 2008, 'Education in rural areas', *Centre for Education Policy Development (CEPD)*, vol. 4, no. 4, pp. 4-13.

Houts, PS, Doak, CC, Doak, LG & Loscalzo, MJ 2006, 'The role of pictures in improving health communication: a review of research on attention, comprehension, recall, and adherence', *Patient Education and Counselling*, vol. 61, pp. 173–90.

Kripalani, S, Robertson, R, Love-Ghaffari, MH, Henderson, LE, Prasca, J, Strawder, A, Katz, MG & Jacobson, TA 2007, 'Development of an illustrated medication schedule as a low-literacy patient education tool', *Patient Education and Counselling*, vol. 66, pp. 368-77.

Kruger, A, Lemke, S, Phometsi, M, van't Riet, H, Pienaar, AE & Kotze, G 2005, 'Poverty and household food security of black South African farm workers: the legacy of social inequalities', *Public Health Nutrition*, vol. 9, no. 7, pp. 830-6.

Mansoor, LE & Dowse, R 2003, 'Effect of pictograms on readability of patient information materials', *The Annals of Pharmacotherapy*, vol. 37, pp. 1003-9.

Mayer, RE 2001, *Multimedia learning,* Cambridge University Press, New York.

Merriam, SB & Leahy, B 2005, 'Learning transfer: a review of the research in adult education and training', *Journal of Lifelong Learning,* vol. 14, pp. 1-24.

Mwingira, B & Dowse, R 2007, 'Development of written information for antiretroviral therapy: comprehension in a Tanzanian population', *Pharmaceutical World Science,* vol. 29, pp. 173-82.

Ngoh, L & Shepherd, MD 1997, 'Design, development and evaluation of visual aids for communicating prescription drug instructions to nonliterate patients in rural Cameroon', *Patient Education and Counselling,* vol. 30, pp. 257–70.

Niesing, C 2012, 'Evaluation of sustainability indicators used in the holding hands community project in the North-West province'. Potchefstroom: NWU (Thesis – Masters in Business Administration).

Ramos, JAA 2013, *Preparation and evaluation of instructional materials*, viewed 16 March 2016, <http://www.slideshare.net/jhunarar/preparation>.

Rothman, J & Thomas, EJ 1994, *Intervention research: Design and development for human service*, Haworth Press, New York.

Rubin, A & Babbie, E 2010. *Essential research methods for social work*. Brooks Cole Publishing, Belmont.

SA Development 2008, 'Towards an anti-poverty strategy for South-Africa: A discussion document'. Pretoria.

Statistics South Africa (statistical release) 2012, Census 2011, P0301.4, viewed 15 August 2015 http://www.statssa.gov.za/publications/P03014/P030142011.pdf

UNESCO,2006, *Understandings of literacy, viewed 7 July 2017* <http://www.unesco.org/education/GMR2006/full/chapt6_eng.pdf>.

Van Niekerk, L 2006, 'Women's income-generating activities in a disadvantaged farming community: towards sustainability'. Potchefstroom: NWU (Thesis – Masters in Consumer Sciences).
Van Staden, J 2012, 'The use of clothing labels by female black low-literate consumers'. Potchefstroom: NWU (Thesis – PhD in Consumer Sciences).
Viswanathan, M & Gau, R 2005, 'Functional illiteracy and nutritional education in the United States: a research-based approach to the development of nutritional educational materials for functionally illiterate consumers', *Journal of Marketing,* vol. 25, no. 2, pp. 187-201.
Viswanathan, M, Rosa, JA & Harris, JE 2005, 'Decision making and coping of functionally illiterate consumers and some implications for marketing management', *Journal of Marketing,* vol. 69, pp. 15-31.
Zimmerman, M, Newton, N, Frumin, L & Wittett, S 1996, *Developing health and family planning materials for low-literate audiences: a guide*, viewed 5 May 2016, <http://www.path.org/files/DC_Low_Literacy_Guide.pdf.>.

CHAPTER 6

ARTICLE: The implementation and evaluation of sewing skills training pamphlets for appropriateness in rural sewing income generating projects

Article written in accordance with the author guidelines for the International Journal of Consumer Studies (refer to Annexure C3). Please note for examination purposes that data tables were moved to Annexure D.

This article forms the third and final research article related to the employment of developed sewing training material in an intervention for low-literate participants of rural income generating projects (IGPs). It presents the results of the quantitative phase of the study as it evaluates the appropriateness of the sewing skills training pamphlet interventions when implemented in the rural sewing IGPs. It addresses the last two empirical research objectives (to implement developed sewing training materials for low-literate individuals in rural IGPs in field based interventions [1.6.2.4] and to evaluate newly developed sewing training materials for appropriateness and implementation within rural sewing IGPs [1.6.2.5]). This part of the research investigation is guided by the activities in the IR phase 5, of which an extract is presented in Figure 6.1 below.

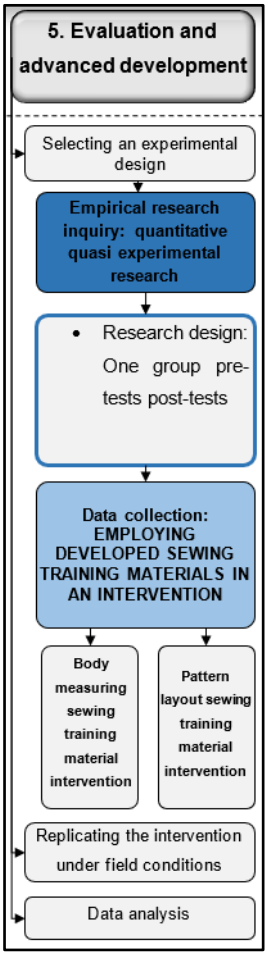

Figure 6.1: Extract of IR phase 5 with delineating activities as applied to Chapter 6

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KEYWORDS

- Income generating projects (IGPs)
- Consumers
- Intervention
- Low-literacy
- Pamphlets
- Rural communities
- Sewing training material

Short title: Evaluation of sewing training pamphlets

The implementation and evaluation of sewing training pamphlets for appropriateness in rural sewing income generating projects

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Abstract

The use of training resources in rural sewing income generating projects has proven to be highly problematic owing to challenges caused by limited literacy abilities among income generating project (IGP) participants. As a probable solution, two sewing training pamphlets were developed to address the skills training needs, but require objective evaluation to ensure their appropriateness for implementation within these units. In this study, the aim was to determine the impact of the sewing training pamphlets as implemented in interventions within the rural sewing IGPs, and to determine their appropriateness against the literacy levels of the IGP participants. The results of the pre-tests post-tests indicated that both the sewing training pamphlet interventions yielded large effect sizes. Similar results were observed across all three grade level groupings following the introduction of the pamphlet interventions. Results concerning tasks that require numeric ability showed that additional measures are required to improve numeracy skills. We conclude that our visual-based pamphlets proved to be an effective means to promote sewing skills training within the rural sewing IGPs and suggest that future training material endeavours need to apply visual materials to promote practical skills training outcomes.

1. Introduction

Income generating projects are recognised as a means of developing skills within a community while generating an income (Albee, 1994; Niesing, 2016). In the rural areas of South Africa (SA), sewing IGPs have emerged to empower the poor and enable them to develop on a socioeconomic level. Literacy, amongst other factors including poverty, poor health and well-being, plays an important role in IGP activities (Niesing, 2012). Limited literacy abilities among rural IGP participants have rendered the use of training resources very problematic (Coetzee N, 2018, unpublished data). Training materials developed for these IGP units (by Van Niekerk L, 2006, unpublished manual) have not been embedded in practice. Reasons for non-use could be ascribed to challenges related to the amount of reading, the context of the information and the nature of the material itself (Coetzee N, 2018, unpublished data). To counter for the barrier that low literacy levels presents in rural sewing IGPs, the design and development of two sewing training pamphlets were undertaken (Coetzee *et al.,* 2017). The pamphlet designs were informed by the guidelines set in the literature (related to the development of materials for low-literate users), particularly those in the South African context, by Mansoor and Dowse (2003) and

Mwingira and Dowse (2007) and research conducted within the rural sewing units (Coetzee N, 2018, unpublished data). Each of the sewing training tasks was visually depicted and presented in steps in the design of the pamphlets. As factors important for success, the design of the sewing training pamphlets held considerations for the culture and language of the intended-users and their literacy levels as well as the twofold acknowledged cognitive predilections of low-literate individuals, including concrete and pictographic thinking as supported by the research of Jae and Viswanathan (2012), Jae *et al.,* (2004), Van Staden, (2012), Van Staden *et al.,* (2017), Viswanathan and Gau (2005), Viswanathan *et al.,* (2005), Viswanathan et al., (2009). Concrete thinking concerns the tendency of low-literate individuals to simplify cognitive demands by using single pieces of information and avoiding higher level abstractions (Viswanathan & Gau, 2005). For this reason, a minimum number of topics were incorporated into the design of the pamphlets. In line with pictographic thinking, that is the use of pictorial images to visualise and obtain information (Viswanathan & Gau, 2005), visual materials were predominantly used.

Following the development of the sewing training pamphlets, a study was undertaken to investigate end-user satisfaction. The results of this study conducted by Coetzee *et al.* (2017) indicated that the IGP participants reported overall satisfaction regarding the use of the pamphlets, with a particular preference for the use of visual materials. While crucial to the evaluation of the materials, self-reported and subjective assessments hold various risks that may affect the results. Firstly, it poses a risk of participants being biased when reporting results in order to please the researchers (Houts *et al.,* 2006), especially in low-literate research settings where the participants are less likely to be knowledgeable about the goals of the research (Jae *et al.,* 2011). Secondly, it presents a risk of misinterpretation and limited understanding of the informational sources (Davis *et al.,* 2006), considering that information processing of low-literate individuals is different from that of literate individuals (Viswanathan *et al.,* 2005). These factors require an objective evaluation of materials developed for low-literate end-users in order to determine their effectiveness for achieving actual skills training outcomes (Gau *et al.,* 2012; Viswanathan & Gau, 2005). In order to substantiate the implementation of our pamphlets and to ensure that the scarce resources for training in rural IGPs are not wasted, the aim of this study was to evaluate two sewing training pamphlets for appropriateness when implemented in field based interventions in rural sewing IGPs. More specifically, our objectives were to:

- Determine the impact of the sewing training pamphlets as implemented in interventions within the rural sewing IGPs (objective 1), and
- Determine the appropriateness of the pamphlets against the literacy levels of the IGP participants (objective 2).

2. Literature

Considerations for literacy in a South African context

The considerations for literacy in this South African context and the terms applied are described. South Africa experiences significant literacy problems (Mansoor & Dowse 2003, Spaull, 2016) as approximately two-thirds of the South African adult population are reported to possess only marginal reading skills (Dowse *et al.,* 2011). This holds considerations for research in low-literate research settings. The first consideration is the low correspondence between a person's years of completed schooling and their reading ability (Posel, 2011) which may differ by up to four grades (Wasserman *et al.,* 2010). The second consideration is that low-literate individuals, who may want to maintain their self-esteem, could over-report their literacy abilities so as to prevent feeling embarrassed amongst more literate peers (Adkins & Ozanne, 2005). To counter some of these challenges, researchers suggest employing grade level groupings (of Grades 1-4 and Grades 5-8) to indicate the ranges of low to medium literacy (Viswanathan *et al.,* 2008). In urban South African research settings, similar groupings have applied, but ranged between Grades 1-7 for low-literate levels, Grades 8-10 for medium literacy, and Grades 11 and 12 to indicate literate individuals (Wasserman *et al.,* 2010). In rural SA, in the North-West Province (NWP), farm workers and their families were reported to have the least access to education (Kruger *et al.*, 2005) and the lack of educational infrastructure remains one of the most prevalent problems (Gardiner, 2008; StatsSA, 2014). The consequence of the lack of educational access is evident as recent research indicates that 58% of rural Grade 4 learners cannot read with comprehension, while 29% of learners show signs of illiteracy (Spaull, 2016). As almost a quarter of rural children leave primary schools without even basic literacy and numeracy skills (Presidency SA, 2008), the quality of education in farm schools remains questionable and renders many adults residing in rural communities unable to read or understand textual material effectively. For these reasons, the grade level groupings employed in this study were: below Grade 7 for low-literacy; Grades 7-11 for medium literacy; and those with Grade 12 for literate participants.

Literacy terms applied in this study

Literacy is understood as a set of cognitive skills associated with reading and writing (Posel, 2011; UNESCO, 2006). These are typically associated with the grade level of schooling achieved or categorised according to the ability of individuals to understand and employ printed information in order to function in society (with reference to functional literacy). In rural sewing IGPs, the ability of the participants to read, comprehend and adhere to text-based instructions proficiently is vital to the use of training materials within these units. Considered within the broader concept of literacy, *numeracy skills* entail an individual's ability to locate and interpret numeric information, and to apply such information to complete simple calculations in everyday life (Reyna *et al.,* 2009; Viswanathan & Gau, 2005). In the context of a sewing IGP, *numeracy skills* are particularly

important. At the most basic level, numerical competency is required for such operational tasks as taking measurements and counting the total number of items to complete orders. At a more advanced level, the ability to perform multi-level calculations (Reyna *et al.*, 2009) such as ascertaining price per meter versus price per roll (when purchasing fabrics) could mean the difference between generating profits or project failure. *Functional literacy* requires higher order decoding and reasoning skills (Wallendorf, 2001) and refers to the above competencies (for literacy and numeracy) applicable to specific settings and subject fields (Viswanathan & Gau, 2005) such as the context of rural sewing IGPs.

Visual literacy skills are also considered. It refers to an individuals' ability to decipher, recognise and interpret visual signs, symbols and pictures (UNESCO, 2006). Within the domain of sewing, the prominence of symbols (such as lines or notches indicating fabric grain direction or placement points) required to read pattern information makes *visual literacy skills* imperative. Of particular importance to this study, the term *visual materials* include pictorial or graphic stimuli and descriptive symbols and are known synonymously as pictograms, pictographs, pictorials or pictographic images (Choi, 2012). Many research studies have found the use of visual materials advantageous for low-literature individuals as it aids communication, improves understanding, increases adherence to instructions, recall of information and attention, and improves satisfaction (Choi, 2012; Houts *et al.,* 2006; Katz *et al.,* 2006; Mansoor & Dowse, 2003; Richler *et al.,* 2012).

Despite the numerous benefits mentioned, not all visual material based interventions have produced successful results (Jae & Viswanathan, 2012; Katz *et al.,* 2006). Visual materials that are too technical, abstract or overly rich have been found to complicate rather than clarify the instructions for low-literate individuals (Jae & Viswanathan, 2012; Ngoh & Shepherd, 1997). Furthermore, visual materials in combination with text could lead to cognitive overload while irrelevant (or poorly designed) visual materials can limit the information processing capabilities of low-literate individuals as they often lack selective attention (Jae & Viswanathan, 2012). There is also an acknowledged risk that visual materials may be understood with limited clarity, or interpreted differently, depending on the background of the specific end-users (Kripalani *et al.,* 2007, Richler *et al.,* 2012). If visual materials are potentially misleading, it may hold unexplored effects (Jae & Viswanathan, 2012; Viswanathan *et al.,* 2005). For example, an abstract image depicting hand placement when feeding material into the sewing machine could cause an individual to position their fingers too close to the needle, resulting in injury. To ensure that the sewing training pamphlets developed in our study do not cause undesirable effects, their appropriateness for the intended population warrants research investigation.

3. Research methods

The research methodology is described in terms of the research design, sampling, data gathering (procedures for implementing the sewing training pamphlets in field based interventions), statistical analysis, validity, and reliability.

Research Design

A quantitative quasi-experimental research design by means of one-group pre-tests post-tests was selected to evaluate our sewing training pamphlets in field based interventions. Employing a quantitative research paradigm ensured objectivity while the pre- and post-tests were selected as a means to measure learning transfer, indicating how the pamphlets were used to promote understanding and solve practice problems (Mayer, 2001) within the unique settings of rural sewing IGPs. Due to their unfamiliarity with data collection methods, structured approaches may cause undue anxiety for low-literate research participants (Viswanathan *et al.*, 2008). Therefore, the experimental methods related to this intervention were kept semi-structured (by way of participants indicating when they were ready to proceed to the next task, or in which order they wanted to proceed, rather than the researcher assigning time schedules and sequences). The researcher also emphasised that the purpose of the tests was not to determine the skills levels of the participants, but rather to determine the appropriateness of the pamphlets to assist the participants while completing sewing tasks.

Sampling

Non-probability purposive all-inclusive sampling was applied to include the entire population of 17 participants at three rural sewing IGP units as the sewing training pamphlets were specifically developed for these users. The sample consisted of four project participants from the sewing IGP within the rural community in the North-Cape Province (NCP), six IGP participants at a project unit in the NWP and seven IGP participants at another project unit within the NWP of SA. To participate, participants had to be 18 years and older (able to give and have given consent), and they had to be actively involved in the sewing IGPs.

Data gathering: procedure for implementing the sewing training pamphlets in field based interventions

The pamphlets addressed two actual sewing training needs within the rural sewing IGPs (Coetzee *et al.,* 2017). These tasks included (1) taking body measurements and (2) accurate pattern layout. For participants to practically complete these tasks provided the opportunity for the implementation of the pamphlets, and enabled an objective and a systematic review thereof. Data collection took place at the IGP units.

- For the sewing training pamphlet: taking body measurements

  The pamphlet for taking body measurements was implemented first. As a pre-test measure, each participant was required to measure a fitting mannequin at four key body dimensions (comprising the shoulder, bust, waist and hip) without having any exposure to the pamphlet, or any other instructions or assistance. The participants recorded their answers on an answer sheet. The participant then received the body measuring pamphlet and read/reviewed it in private in their own time. Once read/reviewed, the participants were asked to complete the same measuring task as before, as a post-test measure. A similar answer sheet was used to record the post-test results. To objectively assess the pre-test post-test results for this task, an assessment rubric displaying the correct measures at the four key body dimensions was compiled. Each measurement on the answer sheet was assessed according to the ranking for: not achieved (deviating from correct measurement more than ≥10 mm); partially achieved (making allowance for deviation from correct measurement of 5-10 mm to accommodate slight human error in instances where technique is accurate); and achieved (making allowance for deviation of ≤5mm for slight measurement error that will not have implications in practice). The same assessment rubric was used for pre- and post- test assessment.

- For the sewing training pamphlet: pattern layout

  A similar procedure for the implementation of the pamphlet for pattern layout was used. The same participants received a piece of fabric (labelled 1-17 A for pre-tests), a measuring tape for sewing, pins and four half scale pattern pieces. As a pre-test measure, each participant was required to lay out the pattern pieces without having had any exposure to the pamphlet, or any other instructions or assistance. When completed, the participants indicated that the researcher could collect the fabric with pattern pieces secured in place with pins. The participant then received the pattern layout pamphlet and read/reviewed it in private in their own time. Once read/reviewed, the participants were asked to complete the same pattern layout task as before, as a post-test measure. A similar piece of fabric (labelled 1-17 B for post-tests) and patterns were used to complete the post-test measures. No time limits were given. To objectively assess the pre-test post-test results for this task, a sample displaying an accurate layout of the four pattern pieces was constructed and served as a memorandum. The nine steps required to complete this task included: (1) fold fabric lengthwise and pin in place; (2) place collar on fabric fold line; (3) pin in place; (4) place bodice back on fabric fold line; (5) pin in place; (6) align bodice front with raw edge of fabric; (7) pin in place; (8) align sleeve grain line with fabric raw edge; and (9) pin in place. These tasks were recorded on an assessment rubric with ranked scores for: not achieved (1-3); partially achieved (4-7); and achieved (8-10). The same assessment rubric was used for pre-test and post-test assessment.

Finally, the participants were debriefed and all their questions were answered. As a direct and immediate benefit of participation, the correct procedures for taking body measurements and pattern layout were demonstrated to them by the researcher who is a qualified and experienced Fashion Design lecturer at a tertiary institution in SA.

Statistical analysis

The statistical analysis was conducted using IBM SPSS Statistics for Windows, Version 23.0 (IBM SPSS Statistics for Windows). Descriptive statistics (mean ±SD) were completed for all sections of the demographic questionnaire namely age, level of schooling and home language of the participants. To determine the impact of the sewing training pamphlets (objective 1), Wilcoxon signed rank tests, paired samples *t*-tests and cross tabulations were performed.

Wilcoxon signed rank tests were used to interpret the pre-test post-test results and determine the effect of both of the pamphlet interventions. Designed to use with repeated measures of smaller samples, the tests convert the scores to ranks for a comparison of the pre- and post-test results (Pallant, 2010). As such, it was appropriate to determine the impact of the sewing training material interventions at the three IGP project units (with group sizes of only four, six and seven participants each). Significance of the Wilcoxon signed rank tests are determined using the Z-values and the significant levels (*p*) where values ≤ .5 indicate that the difference between the two scores are statistically significant (Pallant, 2010). The effect size uses Cohen's (1988) criteria of .1 indicated a small effect size; .3 a medium effect; and .5 a large effect size.

Paired samples *t*-tests (also known as repeated measures) were conducted to determine statistically significant differences in means scores between the pre- and post-test results. Significance of the paired samples tests is indicated by *p,* where values ≤.05 indicate a significant difference in pre- post scores (Pallant, 2010). Results are presented in terms of the Mean (*M*), Standard Deviations (*SD*) of the two sets of scores. Eta squared statistics indicate effect sizes were .01 = small effect; .06 = moderate effect, and .14 = indicating large effect sizes (Pallant 2010:247).

Cross tabulations were used to explore the relationship between two or more variables, each with two or more categories (Malhotra, 2010, Pallant, 2010). It was used to compare the observed frequencies that occur in each ranked category (as per rubric for: not achieved, partially achieved, achieved) for each of the pre-test post-test measures, and present percentage values for each of the counts.

Two-way frequency tables were used to compare pre-and post-test results of those pattern layout tasks that require numerical abilities versus those that do not, were also compiled. To determine

the appropriateness of the pamphlets against the literacy levels of the IGP participants (objective 2), paired samples *t*-tests were compiled for each of the three literacy groupings within the population.

Validity and reliability

Face and content validity were ensured by experts in the field of consumer sciences and through a project planning group to evaluate the intervention processes and instruments. Consultations were also undertaken with the statistician. In the instance of experimental designs, various factors including history, testing and experimental mortality could pose threats to internal validity (Du Plooy-Cilliers & Cronje, 2014). We tried to apply controls for these factors by: ensuring that the participants were not exposed to any 'other' training materials, interventions or stimuli during the duration of the pre-test post-test procedures; slightly altering the post-test (whilst still measuring the same content) and conducting the research within a short period of time. Reliability was determined by means of pilot testing the measuring tools, establishing a project planning group to assess the pre-test post test results, using standardised measures for assessment (in the form of rubrics and memoranda) and having a trained Setswana speaking mediator present during all the phases of data collection (ensuring that the intervention procedures were accurately understood by the Setswana speaking participants). The values of the reliability of the measuring instruments were investigated using Cronbach alpha coefficients were all >.6, which indicated satisfactory internal consistency reliability (Malhotra, 2010).

4. Results and discussion

The results of the body measuring pamphlet are discussed first, followed by the results for the pattern layout pamphlet intervention. Subsequently, the appropriateness of the pamphlets against the literacy levels of the IGP participants is reported for each of the grade level groupings.

Description of sample population

The ages of the participants ranged between 18 and above years, with a large percentage of participants between the ages of 18 and 29 (41%). In terms of educational attainment, 18% of the participants achieved below Grade 7 (classified as low-literate) while 47% of the participants attained grades between 7-11, achieving low-to-medium levels of literacy, and 29% of participants had obtained Grade 12 (classified as literate). The majority of the participants (82%) were Setswana speaking (Table 1).

Table 1: Demographic details of the study participants (n17)

N	Demographic characteristics		n	%
17	**Age**			
	18-29		7	41
	30-39		3	18
	40-49		2	12
	50-59		4	23
	60+		1	6
16	Low-literate	**Level of schooling**		
		No schooling	-	-
		Sub A/Grade 1	-	-
		Sub B/Grade 2	1	6
		Grade 3	-	-
		Grade 4	1	6
		Grade 5	1	6
		Grade 6	-	-
	Low-to-medium literacy	Grade 7	3	17
		Grade 8	-	-
		Grade 9	1	6
		Grade 10	2	12
		Grade 11	2	12
	Literate	Grade 12	5	29
17	**Home language**			
	Setswana		14	82
	Other		3	18

The impact of the sewing training pamphlets

In terms of objective 1 (to determine the impact of the sewing training pamphlets as implemented in interventions within the rural sewing IGPs), the results indicated that both pamphlets exerted a large impact following the interventions.

The body measuring pamphlet intervention

The results of the Wilcoxon signed ranked tests indicated a significant increase in rubric score ranks following the implementation of the use of these pamphlets ($Z = 2.809$, $p<.005$) with a large effect size (0.68). From the paired sample *t*-test results, it can be concluded that there was a significant difference in the pre-test post-test results following the implementation of the pamphlet intervention for taking body measurements. The results indicated a significant (p=.002) increase in rubric scores from pre-tests ($M = 5.00$ $SD = 1.87$) to post-test ($M = 7.58$ $SD = 2.67$) and a large effect size (1.38).

The cross tabulations results indicated increased counts of the number of responses for each of the four body measuring tasks (Table 2).

Table 2: Cross tabulations for the body measurement pamphlet intervention

Taking body measurements at the four body dimensions	Pre-test results	Total	Post-test results			Total
	Categories	n17	1. Not achieved	2. Partially achieved	3. Achieved	n17
1. Shoulder	1. Not achieved	16	10 62.5%	2 12.5%	4 25.0%	16
	3. Achieved	1	1 100.0%	0 0.0%	0 0.0%	1
	TOTAL		**11 64.7%**	**2 11.8%**	**4 23.5%**	**17 100.0%**
2. Bust	1. Not achieved	13	6 46.2%	3 23.1%	4 30.8%	13
	2. Partially achieved	4	0 0.0%	2 50.0%	2 50.0%	4
	TOTAL		**6 35.3%**	**5 29.4%**	**6 35.3%**	**17 100.0%**
3. Waist	1. Not achieved	13	6 46.2%	1 7.7%	6 46.2%	13
	2. Partially achieved	3	1 33.3%	0 0.0%	2 66.7%	3
	3. Achieved	1	0 0.0%	1 100%	0 0.0%	1
	TOTAL		**7 41.2%**	**2 11.8%**	**8 47.1%**	**17 100.0%**
4. Hips	1. Not achieved	13	6 46.2%	3 23.1%	4 30.8%	13
	2. Partially achieved	2	1 50.0%	1 50.0%	0 0.0%	2
	3. Achieved	2	0 0.0%	0 0.0%	2 100.0%	2
	TOTAL		**7 41.2%**	**4 23.5%**	**6 35.3%**	**17 100.0%**

While significant improvements were noted in the post-test results, it remains problematic that the measurement tasks were not achieved by so many of the participants (for 65%, 35%, 41%, 41% of participants at the four key dimensions respectively). This supports previous research findings that the participants in rural sewing IGPs lack basic mathematical skills as many are unable to read a tape measure effectively (Van Niekerk, 2006).

The pattern layout pamphlet intervention

For the sewing training pamphlet pattern layout, the Wilcoxon signed ranked test results indicated a significant (Z = 3.554, p<.000) increase in rubric score ranks following the implementation of the pamphlets with a large effect size (0.86). The results of the paired sample t-tests indicated a significant (p<.001) difference in the pre-test post-test results of the pre-tests (M = 10.52 SD = 3.04) to the post-tests (M = 17.47 SD = 4.63) and a large effect size (2.28).

To determine the relationship between the pre-test post-test results for each of the pattern layout tasks, the results of the cross tabulations are presented in Table 3.

Table 3: Cross tabulations for the pattern layout pamphlet intervention

Pattern lay out tasks	Pre-test results	Total	Post-test results			Total
	Categories	N17	1. Not achieved	2. Partially achieved	3. Achieved	N17
1. Fold fabric lengthwise and pin in place	1. Not achieved	16	9 56.3%	0 0.0%	7 4.38%	16 100.0%
	2. Partially achieved	0	0 0.0%	0 0.0%	0 0.0%	0
	3. Achieved	1	1 100.0%	0 0.0%	0 0.0%	1 100.0%
	TOTAL		**10 58.8%**	**0 0.0%**	**7 41.2%**	**17 100.0%**
2. Place collar on fabric fold line	1. Not achieved	17	4 23.5%	6 35.3%	7 41.2%	17 100.0%
	2. Partially achieved	0	0 0.0%	0 0.0%	0 0.0%	0
	3. Achieved	0	0 000%	0 000%	0 000%	0
	TOTAL		**4 23.5%**	**6 35.3%**	**7 41.2%**	**17 100.0%**
3. Pin in place	1. Not achieved	16	5 31.3%	6 37.5%	5 31.3%	16
	2. Partially achieved	0	0 0.0%	0 0.0%	0 0.0%	0
	3. Achieved	1	0 0.0%	0 0.0%	1 100.0%	1
	TOTAL		**5 29.4%**	**6 35.3%**	**6 35.3%**	**17 100.0%**
4. Place bodice back on fabric fold line	1. Not achieved	16	4 25.0%	5 31.3%	7 43.8%	16
	2. Partially achieved	1	0 0.0%	0 0.0%	1 100.0%	1
	3. Achieved	0	0 0.0%	0 0.0%	0 0.0%	0
	TOTAL		**4 23.5%**	**5 29.4%**	**8 47.1%**	**17 100.0%**
5. Pin in place	1. Not achieved	13	5 38.5%	6 46.2%	2 15.4%	13
	2. Partially achieved	3	0 0.0%	1 33.3%	2 66.7%	3
	3. Achieved	1	0 0.0%	0 0.0%	1 100%	1
	TOTAL		**5 29.4%**	**7 41.2%**	**5 29.4%**	**17 100.0%**
6. Align bodice front with raw edge of fabric	1. Not achieved	14	6 42.9%	6 42.9%	2 14.3%	14
	2. Partially achieved	2	0 0.0%	2 100.0%	0 0.0%	2
	3. Achieved	1	1 100.0%	0 0.0%	0 0.0%	1
	TOTAL		**7 41.2%**	**8 47.1%**	**2 11.8%**	**17 100.0%**
7. Pin in place	1. Not achieved	14	6 42.9%	6 42.9%	2 14.3%	14
	2. Partially achieved	1	0 0.0%	0 0.0%	1 100.0%	1
	3. Achieved	2	0 0.0%	1 50.0%	1 50.0%	2
	TOTAL		**6 35.3%**	**7 41.2%**	**4 23.5%**	**17 100.0%**
8. Align sleeve grain line with fabric raw edge	1. Not achieved	14	8 57.1%	5 35.7%	1 7.1%	14
	2. Partially achieved	1	0 0.0%	0 0.0%	1 100.0%	1
	3. Achieved	2	0 0.0%	2 100.0%	0. 0.0%	2
	TOTAL		**8**	**7**	**2**	**17**

		47.1%	**41.2%**	**11.8%**	**100.0%**
9. Pin in place	1. Not achieved	15	5 33.3%	8 53.3%	2 13.3%	15
	2. Partially achieved	2	0 0.0%	0 0.0%	2 100.0%	2
	3. Achieved	0	0 0.0%	0 0.0%	0 0.0%	0
		TOTAL	**5 29.4%**	**8 47.1%**	**4 23.5%**	**17 100.0%**

Results indicated that for the category *Achieved,* eight of the nine tasks required to complete the pattern layout showed increased counts. The only pattern layout tasks that did not show significant improvements were tasks 6 and 8 ('*align bodice front with raw edge of fabric'* and '*align sleeve grain line with fabric raw edge'*). Because these tasks require basic numeracy skills, it was necessary to further investigate the results by comparing these pattern layout tasks with the results of those that do not require any numeracy ability (tasks 3 and 5 both *'pin in place'*) in Table 4.

Table 4: Frequency tables for the effect of numeracy ability on the completion of the intervention tasks for pattern layout (tasks 3 and 5 as compared to tasks 6 and 8)

Rubric score ranks	No numeric ability required to *'pin in place'*				Numeric ability required to measure *'align patterns with fabric raw edge'*			
	TASK 3		TASK 5		TASK 6		TASK 8	
	PRE	POST	PRE	POST	PRE	POST	PRE	POST
1 Not achieved	16	5	13	5	14	7	14	8
2 Partially achieved	0	6	3	7	2	8	1	7
3 Achieved	1	6	1	5	**1**	**2**	**2**	**2**
Total	17	17	17	17	17	17	17	17

Our findings indicate that while significant improvements were noted for the ranked categories '*not achieved'* and '*partially achieved'* following exposure to the intervention pamphlet, the ranked category '*achieved'* showed little to no improvement for tasks 6 and 8, indicating that the tasks that require numeracy skills remained challenging despite our sewing training pamphlet interventions. These results reiterate that additional measures are required to assist participants in achieving tasks requiring numeric skills and support the findings by Van Niekerk (2006) that the rural IGP participants lack basic mathematical skills and suggest that interventions targeted towards basic mathematical instructions should be further explored.

Overall, the results of this study confirm that our sewing training pamphlet interventions are appropriate for implementation in rural sewing IGPs, and that it has a significant impact on the outcomes of sewing tasks. The results further verify the value of visual materials in assisting communication of information from the text. The predominant use of visual materials within our pamphlets may also have reduced the amount of reading required on the part of the IGP participants (Doak *et al.,* 1985), thereby improving their ability to receive the relevant information. Visual materials could also have enhanced information processing which improved comprehension and understanding of the textual instructions (Dowse & Ehlers, 2005; Jae & Delvecchio, 2004; Katz *et al.,* 2006). Furthermore, the messages could have been understood with enhanced clarity (Choi, 2012). Other research carried out by Choi (2012) and Cordasco *et al.* (2009) also reported the value of visual materials for enhanced adherence, especially for step-by-step procedures of lengthy actions. Additionally, the participants could have perceived visuals to be engaging, thereby also increasing their attention (Choi, 2012; Houts *et al.,* 2006). While visual-based instructions prove promising when directing focus to important details (Katz, *et al.,* 2006) and to emphasise key points or procedural instructions (Doak *et al.,* 1985, Richler *et al.,* 2012), the customised visual materials could also have served as motivation to use the instructions (Doak *et al.,*1985). For these reasons, we recommend that training material implemented within rural IGPs be redesigned or adapted to include predominantly visual materials in order to improve skills training outcomes.

The appropriateness of the pamphlets against the literacy levels of the IGP participants

In terms of objective 2 (regarding the appropriateness of the pamphlets against the literacy levels of the IGP participants), our results indicated that the interventions yielded large effect sizes across all three levels of educational attainment.

For the three low-literate participants (achieving below Grade 7), the results of the body measuring pamphlet intervention indicated significant differences in rubric scores from pre-test *(M* = 5.25, *SD* = 1.89) to post-test (*M* = 8.25, *SD* = 3.86), *p* >0.190 with a large effect size (1.58). Similar results were achieved for the pattern layout pamphlet intervention (pre-tests *M* = 12.25, *SD* = 4.27 to post-test *M* = 17.50, *SD* = 4.43), *p* >0.185, with a large effect size (1.23).

For the eight participants who had achieved between Grades 7-11 (with low-to-medium literacy), the results for the body measurement pamphlet intervention indicated a significant increase in rubric scores from the pre-tests (*M* = 4.50, *SD* = 1.41) to the post-tests (*M* = 6.75, *SD* = 2.05, *p* <0.023) with a large effect size (1.58). For the pattern layout pamphlet intervention, the results also indicated significant increases in the rubric scores from the pre-tests (*M* = 9.12, *SD* = 3.05) to the post-tests (*M* = 15.25, *SD* = 4.74) with *p* <0.007, and a large effect size (1.29).

For the five literate participants (having achieved Grade 12), the results for the body measurement intervention showed significant differences in rubric scores between the pre-tests (M = 5.60, SD = 2.60) and the post-tests (M = 8.40, SD = 2.70), p >0.200 with the eta squared statistic (1.07) indicating a large effect size. For the pattern layout pamphlet intervention, the results indicated a significant increase in rubric scores from the pre-tests (M = 11.40, SD = 3.91) to the post-tests (M = 21.00, SD = 2.54), p <0.002 and a large effect size (2.45).

While it was expected that the participants with higher grades would outperform those with low- and medium literacy, this was not the case. This result could be ascribed to the mismatch between the level of educational attainment of the participants and their reading skills (Posel, 2011), or the possibility of individuals over-reporting their highest grade level achieved. During data collection, one participant reported her educational attainment to be Grade 5 during one session and Grade 6 during a later session, which could be ascribed to a tendency for low-literate individuals to use dissimulation when embarrassed about their literacy status (Viswanathan *et al.,* 2005). Perhaps a more reliable measure of reading abilities would be to ask the participants to rank their literacy skills by means of four rankings for: not at all; not well; fair; and very well as proposed by Posel (2011), or administering a literacy test to those participants who stated that they could read (Dowse & Ehlers, 2005).

5. Conclusion

This is the first research endeavour to implement and evaluate sewing training pamphlet interventions specifically developed for rural sewing IGPs in a South African context. While quantitative inquiry in low-literate research settings is challenging, quantitative methods are necessary to objectively test the effectiveness of interventions (Gau *et al.,* 2012). These were adequately utilised in our study and could serve as model for other fields of study. The quantitative quasi experimental research design afforded the researchers the opportunity to implement the pamphlets and enabled accurate evaluation. Our results indicated that both of the pamphlet interventions yielded a large effect on the outcomes of the sewing tasks, and that this effect was observed across all three grade level groupings. However, we observed that those tasks requiring numeracy skills remained challenging and suggested a need for further research and development to address this skills shortage. While the results furnish preliminary evidence that the sewing training pamphlets were appropriate for implementation within the rural sewing IGPs for which they were intended, the success of the sewing training pamphlets should be measured in the long term through further research including larger samples. Due to the sampling methods employed in this study and its target (the specific *Holding Hands* sewing IGP units), the results could not be generalised. Despite the small nature of this study, it may serve as a starting point for the expansion of other skills training pamphlets for implementation in rural IGPs.

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References

Adkins, N.R., & Ozanne, J.L. (2005). The low-literate consumer. Journal of Consumer Research, **32**, 93-105.

Albee, A. (1994). Support to women's productive and income-generating activities. Evaluation and research working paper series, number 1. http://www.gdrc.org/icm/wind/wind-unicef-wp.html. Date of access: 23 Feb. 2016.

Choi, J. (2012). Development and pilot test of pictograph-enhanced breast health-care instructions for community-residing immigrant women. International Journal of Nursing Practice, **18,** 373-378.

Coetzee, N., Van Staden, J., & Oldewage-Theron, W. (2017). A decolonised approach to developing training materials for low-literate participants of rural sewing income generating projects. Design Education Forum of Southern Africa. Conference proceedings, 14-28.

Coetzee, N. (2018). Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects. PhD Thesis, School of Physiology, Nutrition and Consumer Sciences, North-West University. (Unpublished).

Cohen, J. (1988). Statistical power analysis for behavioural sciences, 2nd ed. Hillsdale, NJ: Erlbaum.

Cordasco, K.M., Asch, S.M., Bell. S.D., Guterman, J.J., Gross-Schulman, S., Ramer, L., Elkaya, U., Franco. I., Leatherwood, C.L., & Mangione, C.M. (2009). A low-literacy medication education tool for safety-net hospital patients. American Journal of Preventative Medicine **37**, 209-216.

Davis, T.C., Wolf, M.S., Bass, P.F., Middlebrooks, M., Kennen, E., Baker, D.W., Bennett, C.L., Durazo-Arvizu, R., Bocchini, A., Savory, S., & Parker, R.M. (2006). Low-literacy impairs comprehension of prescription drug warning labels. Journal of General Internal Medicine **21,** 847-851.

Doak, C.C., Doak, L.G. & Root, J.H. (1985). Teaching patients with low literacy skills. 2nd ed. Philadelphia, PA: Lippincott Company.

Dowse, R., & Ehlers, M. (2005). Medicine labels incorporating pictograms: do they influence understanding and adherence? Patient Education and Counselling, **58,** 63-70.

Dowse, R., Ramela, T., & Browne, S.H. (2011). An illustrated leaflet containing antiretroviral information targeted for low-literate readers: development and evaluation. Patient Education and Counselling, **85,** 508-515.

Du Plooy-Cilliers, F., & Cronje, J. (2014). Quantitative data collection. In Research Matters, pp. 147-172. Cape Town: Juta & Company.

Ellis, S., & Steyn, H. (2003). Practical significance (effect sizes) versus or in combination with statistical significance (p-values). Journal of the Southern African institute for Management Scientists, **12,** 51-53.

Gardiner, M. (2008). Education in rural areas. Centre for Education Policy Development, **4,** 4-13.

Gau, R., Jae, H., & Viswanathan, M. (2012). Studying low-literate consumers through experiential methods: implications for subsistence marketplaces. Journal of Business Research, **65,** 1683-1691.

Houts, P.S., Doak, C.C., Doak, L.G., & Loscalzo, M.J. (2006). The role of pictures in improving health communication: a review of research on attention, comprehension, recall, and adherence. Patient Education and Counselling, **61,** 173–90.

IBM Corp. Released 2015. IBM SPSS Statistics for Windows, Version 23.0. Armonk, NY: IBM Corp.

Jae, H., & Delvecchio, D.S. (2004). Decision making by low-literacy consumers in the presence of point-of-purchase information. Journal of Consumer Affairs, **38,** 342-354.

Jae, H., Delvecchio, D.S., & Childers, T.L. (2011). Are low-literate and high-literate consumers different? Applying resource matching theory to ad processing across literacy levels. Journal of Consumer Psychology, **21,** 312-323.

Jae, H., & Viswanathan, M. (2012). Effects of pictorial product warnings on low-literate consumers. Journal of Business Research, **65,** 1674-1682.

Katz, M.G., Kripalani, S., & Weiss, B.D. (2006), Use of pictorial aids in medication instructions: a review of the literature. American Society for Health System Pharmacists, **63,** 2391–2397.

Kripalani, S., Robertson, R., Love-Ghaffari, M.H., Henderson, L.E., Prasca, J., Strawder, A., Katz, M.G., & Jacobson, T.A. (2007). Development of an illustrated medication schedule as a low-literacy patient education tool. Patient Education and Counselling, **66,** 368-377.

Kruger, A., Lemke, S., Phometsi, M., van't Riet, H., Pienaar, A.E., & Kotze, G. (2005). Poverty and household food security of black South African farm workers: the legacy of social inequalities. Public Health Nutrition, **9,** 830-836.

Malhotra, N.K. (2010). Marketing Research, 6th ed., New York, NY: Pearson.

Mansoor, L. E., & Dowse, R. (2003). Effect of pictograms on readability of patient information materials. The Annals of Pharmacotherapy, **37,** 1003-1009.

Mayer, R.E. (2001). Multimedia Learning. Cambridge: University Press.

Mwingira, B., & Dowse, R. (2007). Development of written information for antiretroviral therapy: comprehension in a Tanzanian population. Pharmaceutical World Science, **29,** 173-182.

Ngoh, L., & Shepherd, M.D. (1997). Design, development and evaluation of visual aids for communicating prescription drug instructions to nonliterate patients in rural Cameroon. Patient Education and Counselling, **30,** 257–270.

Niesing, C.M. (2012). Evaluation of the sustainability indicators used in the Holding Hands community project in the North West province. Potchefstroom: NWU. (Dissertation - MBA).

Niesing, C.M. (2016). A conceptual framework for sustainable community development. Potchefstroom: NWU. (Thesis – PhD).

Pallant, J. (2010). SPSS survival manual: a step by step guide to data analysis using SPSS 4th ed. New York, NY: Mc Graw Hill.

Posel, D. (2011). Adult literacy rates in South Africa: a comparison of different measures. Language Matters, **42,** 39-49.

Reyna, V.F., Nelson, W.L., Han, P.K., & Dieckmann, N.F. (2009). How numeracy influences risk comprehension and medical decision making. Psychological Bulletin, **165,** 943-973.

Richler, M., Vaillancourt, R., Celetti, S.J., Besanqon, L., Arun, K.P., & Sebastien, F. (2012). The use of pictograms to convey health information regarding die effects and/or indications of medications. Journal of Communication in Healthcare, **5,** 220-226.

South Africa, Presidency. (2008). Towards an anti-poverty strategy for South Africa: a discussion document. (Online). Available at: http://www.thepresidency.gov.za/download/file/fid/1061Date of access: 25 Jun. 2015.

Spaull, N. (2016). Learning to Read and Reading to Learn. Zenex Foundation Panel RASA 2016 input. (Online). Available at: https://www.zenexfoundation.org.za/images/Laerning_to_read_and_reading_to_learn_-_Nic_Spaull.pdf Date of access: 20 Mar. 2018.

Statistics South Africa. (2012). Census 2011 Fact sheet. (Online). Available at: http://www.statssa.gov.za/census/census_2011/census_products/Census_2011_Fact_sheet.pdf Date of access: 15 Aug. 2015.

Statistics South Africa. (2014). Poverty trends in South Africa: an examination of absolute poverty between 2006 and 2011. (Online). Available at: http://beta2.statssa.gov.za/publications/Report-03-10-06/Report-03-10-06March2014.pdf Date of access: 15 Aug. 2015.

UNESCO. United Nations Educational, Scientific and Cultural Organisation (2006). EFA Global monitoring report: Understandings of literacy. (Online). Available at: http://www.unesco.org/education/GMR2006/full/chapt6_eng.pdf Date accessed: 19 Aug. 2014.

Van Niekerk, L. (2006). Women's income-generating activities in a disadvantaged farming community: towards sustainability. Potchefstroom: NWU (Dissertation - Masters).

Van Staden, J. (2012). The use of clothing labels by female black low-literate consumers. Potchefstroom: NWU. (Thesis – PhD).

Van Staden, J., Van der Merwe, D., Van Aardt, A. & Ellis, S. (2017). Low-literate consumers use of clothing labels amidst personal and product related challenges. International Journal of Consumer Studies, **41,** 79-86.

Viswanathan, M., & Gau, R. (2005). Functional illiteracy and nutritional education in the United States: a research-based approach to the development of nutritional educational materials for functionally illiterate consumers. Journal of Marketing, **25,** 187-201.

Viswanathan, M., Gau, R. & Chaturvedi, A. (2008). Research methods for subsistence marketplaces. In Sustainability challenged and solutions at the base of the pyramid, pp. 242-260. Sheffield: Greenleaf.

Viswanathan, M., Rosa, J.A. & Harris, J.E. (2005). Decision making and coping of functionally illiterate consumers and some implications for marketing management. Journal of Marketing, **69,** 15-31.

Viswanathan, M., Torelli, C.J., Xia, L. & Gau, R. (2009). Understanding the influence of literacy on consumer memory: the role of pictorial elements. Journal of Consumer Psychology, **19,** :389-402.

Wallendorf, M. (2001). Literally literacy. Journal of Consumer Research, **27,** 505- 511.

Wasserman, Z., Maja, T.M., & Wright, S.C.D. (2010). Assessment of the English literacy level of patients in primary health care services in Tshwane, Gauteng Province: Part 2. Health SA Gesondheid, **15,** 1-6.

CHAPTER 7:
CONCLUDING DISCUSSION

7.1 Introduction

This intervention research study aimed to review existing training materials and to determine the sewing training needs in rural sewing income generating projects (IGPs). Based on these sewing training needs, new sewing training interventions were developed and implemented. Following implementation, the employed materials were evaluated for appropriateness within the rural sewing IGPs in the Northern Cape Province (NCP) and the North-West Province (NWP) of South Africa (SA). Achieving this aim and providing customised sewing training material that addresses the specific training needs of IGP participants could have a vast impact on the success of the rural sewing IGPs. In the long term, advancement in skills could bring about the production of better quality products which in turn would lead to higher income generation and ultimately, the betterment of economic conditions within the rural communities where these projects are based.

In this thesis, Chapter 1 served to contextualise the study and to position it within the available literature and previous research in the Holding Hands sewing IGPs. The research problem and objectives were set against this background. In Chapter 2, a literature review served to address the two stipulated literature objectives related to the factors (communal and individual) influencing participants in rural sewing IGPs. Chapter 3 furnished details of the intervention research (IR) phases and research methodologies undertaken to address the empirically related objectives. Chapter 4 presented the research article that addressed the qualitative phase of this study, while Chapter 5 presented the article reporting on the decolonised approach towards the design and development of the two sewing training pamphlets. In Chapter 6, the last research article, the result of the quantitative evaluation of these pamphlets was presented. In this final chapter, conclusive summaries of the literature related, empirically related and implication related objectives are presented. This is followed by a declaration of the relationship with other research. Then recommendations for future research are based on the interpretation of the current research and the limitations of this study are presented.

7.2 Conclusive summary

In this section, conclusive summaries of the literature related objectives, the empirically related objectives as well as implication related objectives are presented. The specific objectives for this study, as presented in section 1.6 of Chapter 1 were as follows:

Literature related objectives

The literature related objectives of this study were to conduct literature reviews to provide:

- A contextual understanding of the research setting in terms of the communal (socio-economic) factors influencing the participants of rural sewing IGPs (objective 1.6.1.1); and
- Insights into understanding the individual (low-literate adult IGP participants) by means of theoretical perspectives (1.6.1.2).

Empirically related objectives

The following specific empirically related objectives of this study were to:

- Review the 2006 Manual for appropriateness and application in rural sewing IGPs (1.6.2.1);
- Explore the most prominent sewing training needs within rural sewing IGPs (1.6.2.2);
- Develop appropriate sewing training materials for low-literate individuals based on sewing training needs within rural sewing IGPs (1.6.2.3);
- Implement developed appropriate sewing training materials for low-literate individuals in rural IGPs in field based interventions (1.6.2.4); and
- Evaluate newly developed sewing training materials for appropriateness and implementation within rural sewing IGPs (1.6.2.5).

Implication related objectives

The implication related objectives of this study were to establish criteria for the design and development of appropriate sewing training materials and to develop and implement these sewing training material interventions within the Holding Hands rural sewing IGPs.

In the next section, each of the above mentioned objectives is discussed in summary of their outcomes, highlighting the main findings.

7.2.1 Literature related objectives

To ensure that this research undertaking was informed regarding the circumstances of its population (as intended consumers of the sewing training materials developed and employed in this study), two literature objectives were set. These were presented in Chapter 2. Concerning the first literature objective, the literature review provided sufficient contextual information to formulate an understanding of the socio-economic conditions that subsist in rural SA. For the second objective, theoretical perspectives (including Transformative Learning Theory [TLT] as the contextual theoretical basis for adult learning, as well as Social Cognitive Theory [SCT] related to behavioural and cognitive processes of low-literate individuals) offered understandings of the participants of the rural sewing IGPs. Literature was continuously sourced during the study using

various scientific databases including One Search, Google Scholar and Ebscohost. The two literature related objectives are subsequently concluded.

Communal (socio-economic) factors influencing the participants of rural sewing IGPs (Objective 1.6.1.1)

While conducting the literature review of the socio-economic conditions in rural SA, it became clear to the researcher that despite government efforts to eradicate poverty for the most despondent South Africans, referring to those individuals living in rural areas, conditions of destitution prevail. Rural farm dwellers, who are often born into cycles of chronic poverty, are likely to remain chronically poor in the absence of external assistance. Rural women are a particularly vulnerable group as they are the most effected by poverty and low-literacy as they have the least access to opportunities. Understanding these factors provided the researcher with a realistic viewpoint of the research setting where the problem of lacking training materials persists.

Individual factors influencing participants of rural sewing IGPs: Theoretical perspectives transformative learning theory and social cognitive theory (Objective 1.6.1.2).

By reviewing the TLT and SCT, the researcher was able to understand and anticipate some of the cognitive challenges influencing participants of rural sewing IGPs. Through TLT the researcher understood that the participants of the rural based IGPs may have uncriticised points of view and habits of mind that may cause them to be reluctant to the use of training materials. The researcher consequently understood that for the sewing training material interventions employed in this study to be successful, the process of transformative learning would have to be facilitated. The SCT provided the researcher with further insights of the IGP participants in terms of their various behavioural, socio-environmental and personal cognitive factors. The review specifically included considerations for low-literate individuals, for example, their tendencies to make cognitive shortcuts, categorising new information into an already established known framework and their needs for attribution. Understanding these factors allowed for more informed decision-making on the part of the researcher and facilitated the development of precautionary measures to limit negative effects for low-literate IGP participants in the research investigation going forward. This review was imperative as it provided the researcher with an understanding of the environment in which the participants of rural sewing IGPs live and of some of the challenges (communal and cognitive) that they face on a daily basis, factors which impacted on the success of the training material interventions.

7.2.2 Empirically related objectives

The specific empirically related objectives of this study were set and investigated using the IR design. The IR design consisted of six phases including situation analysis and project planning, information gathering and synthesis, design, early development and pilot testing, evaluation and

advanced development and dissemination. Employing this design enabled the researcher to move from one IR phase to the next, while completing a range of activities to ensure thorough research procedures. The IR design also allowed detailed considerations for research in vulnerable research settings, such as the Holding Hands rural sewing IGPs. Following is a summary of the outcome to fulfil each of the specific empirical objectives.

Review the 2006 Manual for appropriateness and application in rural sewing IGPs (Objective 1.6.2.1)

As a point of departure for the qualitative phase of the study, the demographic information of the IGP community facilitators was discussed.

- **Demographic details of the IGP community facilitators**

The ages of the participants ranged from 18 to 60+ years (indicating that they cannot be confined to a certain age group) and their educational attainment also varied (ranging between Grade 2 and Grade 12).

The lack of appropriate materials to address training needs warranted an explorative and descriptive qualitative investigation, executed in two phases. In phase one, interviews were conducted with IGP community facilitators to obtain the viewpoints of the intended consumers of sewing training materials within rural sewing IGPs. Review of materials included the 2006 Manual and another commercially available textbook. In phase two, a selection of sewing training materials was reviewed by means of document analysis. The interview findings confirmed many of the issues reported in literature relating to the need to address the cognitive predilections of low-literate individuals regarding textual materials (with particular reference to pictographic thinking) and the problematic use of overly textual materials by low-literate end-users. During phase two, review of the 2006 Manual revealed that this document was not appropriate in practice. Document analysis further explored the prospective use of other conventional sewing skills training materials and revealed that while many sources seemed theoretically appropriate, their suitability remained questionable. Challenges were attributed to the amount of reading, the context in which the information was presented and the nature of the materials. Ultimately, these issues caused unattended sewing training needs to persist within the rural sewing IGP units.

Explore the most prominent sewing training needs within rural sewing IGP's (Objective 1.6.2.2)

While exploring the viewpoints of the IGP community facilitators (during the interviews conducted in phase one) the researcher gained an understanding of some of the challenges resulting from unattended training needs and the consequent negative effects they exerted on the profit generating abilities within the units. Different practical training needs were explored for the specific sewing tasks completed within each respective unit, and based on these findings, two sewing training needs were identified as most prominent, namely taking body measurements and

accurate pattern layout. In conclusion of this part of the investigation it became clear that none of the available training materials could address the sewing training needs within the rural sewing IGPs and criteria were proposed to enhance the appropriateness of the sewing training material interventions designed and developed in the subsequent phases of the broader research undertaking.

Development of appropriate sewing training materials for low-literate individuals based on sewing training needs within rural sewing IGPs (Objective 1.6.2.3)

The design and development of two sewing training pamphlets were undertaken. The appropriateness of these pamphlets was ensured by three factors. Firstly, basing the designs on a phase of qualitative explorative research ensured that the materials addressed the actual sewing training needs within the rural sewing IGPs. Secondly, aligning the design and development of the pamphlets with past research on low-literate individuals rendered the pamphlets suitable for use by low-literate end-users. Thirdly, attempting a decolonised, Africanised approach ensured that the pamphlets were culture specific, thereby ensuring cultural appropriateness. Early development of the pamphlets by means of expert review further ensured that the content of the pamphlets was accurate and appropriate for achieving the skills training outcomes.

Implement developed appropriate sewing training materials for low-literate individuals in rural IGPs in field based interventions (Objective 1.6.2.4)

The sewing training pamphlets were implemented in field based interventions in the rural sewing IGPs through the completion of practical sewing tasks. Implementing the pamphlets enabled pilot testing within the user-population and allowed administration of the participant satisfaction questionnaires, which produced valuable feedback for further development. Ensuring that the voice of the end-user was incorporated throughout the development process is a factor that had a marked positive impact on user satisfaction. The participants perceived the pamphlets to be easy to read and easy to understand, they indicated that they learned much from it and ‘liked it very much’. The IR design and developed procedures proved to be effective means of implementation of the new sewing training material interventions and could be applied when testing other prototypes in low-literate research settings and skills training populations.

Evaluation of developed sewing training materials for appropriateness and implementation in rural sewing IGPs (Objective 1.6.2.5)

As a point of departure for the quantitative evaluative phase of the study, the demographic profile of the sample population was determined.

- **Demographic details of the IGP participants**

The ages of the participants ranged from 18 to 62 years, indicating that they cannot be confined to a certain age group; however a large percentage (41%) fell between the ages of 18 and 29 years. Improved access to educational resources within the rural areas where the IGP units are based was also evident. Because low-income is commonly associated with low-literacy, the researcher expected prevalent low-literacy and limited formal schooling within the sample. However, upon data collection, the researcher was surprised to find that almost 50% of the participants had attained Grade 7 and above (47% and eight out of 17 participants), while almost a third (29% and five out of 17) of the population reported having completed Grade 12. The remaining 3 participants were theoretically low-literate (with an educational attainment of below Grade 7) and one participant incorrectly reported their highest level of schooling obtained. The results concluded that a large number of IGP participants were young adults with medium to high educational attainment. Their participation in the IGP units could be ascribed to increases in national unemployment, coupled with continued decreases of job opportunities in the South African agricultural industry, thus resulting in fewer opportunities for the young people residing in rural areas. If the situation of unemployment remains unchanged, the need for rural based IGPs as alternative means of income generation, and research and development towards the success of these endeavours remains imperative.

- **Impact of the sewing training pamphlets as implemented in interventions within the rural sewing IGPs**

The developed sewing training material pamphlets employed in interventions in the rural sewing IGPs exerted a large impact on the outcomes of the practical sewing tasks. These results were observed across all three rankings of educational attainment for low-literate participants (Grades 0-6), low-to-medium literates (Grades 7-11), and literate participants who had obtained Grade 12. Success of the pamphlet interventions could be attributed to various factors ranging from the research design employed to any number of specific procedures followed (including employing a project planning group, consulting experts during development and having experienced researchers supervise the study). While many aspects contributed, four factors unequivocally impacted on the success of the pamphlets, namely: (i) the application of the practical guidelines presented by TLT. Doing so facilitated the process of transformational learning and could have caused the participants to discard their previous uncriticised (possibly negative) perceptions of training material; (ii) the application of the practical guidelines presented in SCT, which could have contributed to the ways in which the low-literate individuals behaved and responded to the new training interventions; (iii) including prominence of visual material within the pamphlet design to facilitate instructions; and (iv) the application of a user-centered approach, coupled with the attempted decolonised design, which may have contributed to the manner in which the materials were perceived and received by the IGP participants. These factors ultimately improved the effectiveness of the interventions.

7.2.3 Implication related objectives

As practical outcomes of this study, the criteria for the design and development of appropriate sewing training materials were proposed. The procedure to develop and implement the sewing training pamphlets in field based interventions within the Holding Hands sewing IGPs were also developed. Additionally, recommendations emanating from this study are provided for developers of practical skills training materials and the role players in rural IGPs.

- **Implications for developers of practical skills training materials**

Developers of practical skills training materials should continually consult their end-users to ensure the appropriateness of the materials. In the instance of this study, the inputs obtained from community facilitators (prior to design) and feedback from the IGP participants (during development) provided unique and valuable insights, not available in previous or published research. The inputs prior to design ensured that the materials addressed relevant content, while the feedback obtained during the development enhanced the IGP participants' perceived readability, understanding, usefulness, learning and quality of the sewing training instructional pamphlets.

- **Implications for role players in the research and development of IGPs**

Role player strategies to reduce poverty by means of the initiation of IGPs cannot be undertaken without the provision of appropriately developed skills training materials. This statement extends to all external agents of IGP programmes and includes government and academic institutions. The findings of this study indicated that the participants of rural sewing IGPs did not have any training materials available to them, nor did they seem to have the resources (monetary or otherwise) to acquire such materials themselves. Appropriate training materials and the costs to develop and supply them should therefore be included within the financial plans of future IGP endeavours.

7.3 Relationship with other research

This study recognised the contribution of past research towards the design and development of informational materials for low-literate individuals within various disciplines (Table 1.1) as well as past research undertakings within the Holding Hands sewing IGPs (Table 1.3), some of which indicated the need for sewing training material to address practical skills training within these groups. The sewing training materials developed within this research undertaking aim to support future research endeavours within IGP units, while simultaneously empowering rural IGP participants by the use of training materials within the constraints of low-literacy.

7.4 Recommendations for future research

This is the first research undertaking to attempt a decolonised, Africanised approach towards the development of two sewing training pamphlets. It is also the first to implement the sewing training pamphlets in practice within the IGP units in order to evaluate their effectiveness in achieving skills training outcomes.

As the sewing training material pamphlet interventions were developed specifically for the Holding Hands sewing IGPs within the rural community of the NWP, the first recommendation pertains to the development of pamphlets to other IGP units in other communities and districts. While the use of visual materials, commonly known as a universal language, may aid facilitation of instructions to all populations, the identifiable culturally specific Setswana wording and imagery in these pamphlets may render the materials culturally foreign or unacceptable to other groups. By view of the methods and design employed in this study, future research endeavours could explore the customised development of sewing training materials for other populations. Similarly, the sewing training needs addressed within this research (for body measuring and pattern layout) may be unique to the Holding Hands sewing IGPs. This research can therefore be used as a starting point for the design and development of materials to address a vast number of other skills training shortfalls within the broader domain of rural sewing IGPs. It is further recommended that future research conduct an initial survey to ascertain the highest level of educational attainment prior to the design phase. Additionally, to counter the risk of over reporting educational attainment, a readability-test could be undertaken to establish actual reading ability of the end-user population. This could contribute to a more targeted and accurate approach than self-reported grade level and thus improve the design of the sewing training materials. Lastly, because the results of this study found that the sewing tasks requiring numeracy remained challenging, further studies may focus specifically on the development of training materials to address numeracy skills within the context of rural sewing IGPs.

7.5 Limitations of this study

The first limitation of this study pertains to sample size. Despite including the entire population of three Holding Hands IGP units in this research, this sample (of 17 participants) remains limited. It is therefore advisable to extend this research to other IGP communities. The second limitation relates to sample selection. Due to the voluntary and purposive sampling methods employed in this study and its target towards the specific Holding Hands sewing IGP units, the results cannot be generalised to wider populations. As a third limitation, the introduction of the sewing training materials was shortly followed by the post-tests determining their effect (on the same day). Further longitudinal research would be useful to determine the long term impact of the introduction of the sewing training material interventions on the improvement of practical skills and the subsequent

improvement in quality of the items produced in the rural sewing IGPs. As a fourth limitation, the educational attainment of the IGP participants was not verified (by means of documentation or a literacy test). As their highest level of school completed was self-reported it could therefore also be misreported. Due to the importance of literacy ability for the successful design, development and implementation of the training material interventions, future research should obtain an accurate measure of literacy skills prior to the design of the research. Lastly, this study developed sewing training materials in the form of instructional pamphlets. No other media were explored. This study may therefore serve as a basis for broader research projects investigating the use of other media, in both print form (exploring the option of having instructions printed onto fabrics and imbedded within the IGP environment in the form of tablecloths, curtains or sewing machine covers), and electronic sources. In the light of the high number of younger IGP participants, a multi-media approach using text, sound and motion video could prove to be an appropriate medium for implementation in the rural sewing IGPs. Young consumers are inclined to use technological devices (such as smart cellular devices) that enable access to filmed tutorials and instructional videos. While this medium may pose various challenges related to the availability of technological devices in rural areas, or the access and affordability of data, further investigation into its feasibility is warranted.

ANNEXURE A:

Ethical certificate and approved letters of consent

Annexure A1:	Ethics approval certificate of project
Annexure A2:	Approved information leaflet and consent form, interviews with IGP community facilitators
Annexure A3:	Approved information leaflet and consent form, interviews with IGP community facilitators, translated Setswana
Annexure A4:	Approved information leaflet and consent form, pre-test post-tests in an intervention
Annexure A5:	Approved information leaflet and consent form, pre-test post-tests in an intervention, translated Setswana

Annexure A1: Ethics approval certificate of project

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2016/09/02

ETHICS APPROVAL CERTIFICATE OF STUDY

Based on approval by **Health Research Ethics Committee (HREC)**, after being reviewed at the meeting held on **13/07/2016**, the North-West University Institutional Research Ethics Regulatory Committee (NWU-IRERC) hereby **approves** your study as indicated below. This implies that the NWU-IRERC grants its permission that provided the special conditions specified below are met and pending any other authorisation that may be necessary, the study may be initiated, using the ethics number below.

Study title: Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects.

Study Leader/Supervisor: Dr H van Staden
Student: N Coetzee

Ethics number:

N	W	U	-	0	0	0	4	3	-	1	6	-	A	1
Institution				Study Number						Year			Status	

Status: S = Submission; R = Re-Submission; P = Provisional Authorisation; A = Authorisation

Application Type: Single study

Commencement date: 2016-08-17 **Risk:** Medium

Continuation of the study is dependent on receipt of the annual (or as otherwise stipulated) monitoring report and the concomitant issuing of a letter of continuation up to a maximum period of three years.

Special conditions of the approval (if applicable):

- Translation of the informed consent document to the languages applicable to the study participants should be submitted to the HREC (if applicable).
- Any research at governmental or private institutions, permission must still be obtained from relevant authorities and provided to the HREC. Ethics approval is required BEFORE approval can be obtained from these authorities.

General conditions:

While this ethics approval is subject to all declarations, undertakings and agreements incorporated and signed in the application form, please note the following:

- *The study leader (principle investigator) must report in the prescribed format to the NWU-IRERC via HREC:*
  - *annually (or as otherwise requested) on the monitoring of the study, and upon completion of the study*
  - *without any delay in case of any adverse event or incident (or any matter that interrupts sound ethical principles) during the course of the study.*
- *Annually a number of studies may be randomly selected for an external audit.*
- *The approval applies strictly to the proposal as stipulated in the application form. Would any changes to the proposal be deemed necessary during the course of the study, the study leader must apply for approval of these amendments at the HREC, prior to implementation. Would there be deviated from the study proposal without the necessary approval of such amendments, the ethics approval is immediately and automatically forfeited.*
- *The date of approval indicates the first date that the study may be started.*
- *In the interest of ethical responsibility the NWU-IRERC and HREC retains the right to:*
  - *request access to any information or data at any time during the course or after completion of the study;*
  - *to ask further questions, seek additional information, require further modification or monitor the conduct of your research or the informed consent process.*
  - *withdraw or postpone approval if:*
    - *any unethical principles or practices of the study are revealed or suspected,*
    - *it becomes apparent that any relevant information was withheld from the HREC or that information has been false or misrepresented,*
    - *the required amendments, annual (or otherwise stipulated) report and reporting of adverse events or incidents was not done in a timely manner and accurately,*
    - *new institutional rules, national legislation or international conventions deem it necessary.*
- *HREC can be contacted for further information or any report templates via Ethics-HRECApply@nwu.ac.za or 018 299 1206.*

The IRERC would like to remain at your service as scientist and researcher, and wishes you well with your study. Please do not hesitate to contact the IRERC or HREC for any further enquiries or requests for assistance.

Yours sincerely

Prof LA Du Plessis
Digitally signed by Prof LA Du Plessis
Date: 2016.09.05 17:24:28 +02'00'

Prof Linda du Plessis
Chair NWU Institutional Research Ethics Regulatory Committee (IRERC)

Annexure A2: Approved information leaflet and consent form, interviews with IGP community facilitators

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Health Research Ethics Committee
Faculty of Health Sciences
NORTH-WEST University
(Potchefstroom Campus)
2016 -08- 15
HREC Stamp

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM FOR INDIVIDUAL INTERVIEWS WITH IGP COMMUNITY FACILITATORS FROM HOLDING HANDS SEWING IGPS

TITLE OF THE RESEARCH PROJECT: Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects

REFERENCE NUMBERS: NWU-00043-16-S1

PRINCIPAL INVESTIGATOR: Dr Hanlie van Staden / Ms Nicolene Coetzee

ADDRESS: Building F15
North-West University
Private Bag X6001
Potchefstroom

CONTACT NUMBER: 018 299 2084 / 082 378 8202

You are being invited to take part in a research project that forms part of my PhD degree about sewing training materials for use in Holding Hands sewing income-generating projects (IGPs). Please take some time to read the information presented here (or somebody can read it to you), which will explain the details of this project. You can ask the mediator of the researcher anything about this project that you do not fully understand. It is very important that you know how you can help this research, and that you are happy with everything about this research, and that you understand everything. You can decide for yourself if you want to take part in this research and it is your free will if you do not want to take part. If you say no, this will not harm you in any way. If you say yes to participate, you can stop at any time if you do not want to take part any longer.

The Health Research Ethics Committee (HREC) of the Faculty of Health Sciences of the North-West University (NWU) approved that we can do this study. The study will be done according to the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members to inspect the research records. There are three researchers involved in this study. Dr. J. van Staden, who has knowledge in the field of research, low-literacy and clothing construction. Prof. W.H. Oldewage-Theron, who has previous experience in study guidance and intervention research project management, especially in subsistence communities, and Mrs. N. Coetzee, who has practical experience working with community sewing groups from disadvantaged communities and is an expert in sewing training.

What is this research study all about?

This study is about the training materials used when sewing.

It will look at the training materials that is available at the moment, and then design new materials, based on the sewing needs and reading abilities in the group.

The study will be conducted at Holding Hands project units in the Dr Kenneth Kaunda district municipality, within the NWP.
This study will involve a discussion with questions (semi-structured interviews) that will be asked to you with the help of people with experience to ask these questions. These questions will be asked to all the community facilitators and at the Holding Hands project units. It is estimated that there will be one (1) or two (2) community facilitators at each of the two (2) project units. Thereby we will ask these questions to about three (3) people.

In this study we want to find out (objectives of the research):

- Your opinion of an existing facilitators training manual, if you use it.
- What are your practical learning needs?
  - If you think about your sewing challenges.

Why have you been invited to participate?

- You have been asked to help with this research so that you can tell me what you think about the facilitators training manual, (if you use it) and also if there is anything that you want to learn based on sewing challenges. If we see that it is difficult for people to use the existing manual, and to complete sewing tasks, we later want to help people by making the new training material for their needs.
- You have been asked to help with this research because you have experience in this Holding Hands IGP unit, and so you may know the 'facilitators' training manual' we are looking at, and you also know the problems that the other people have at the IGP when sewing the products.
- You will not be able to help with this research if you have not worked as a community facilitator or project leader at a Holding Hands IGP unit, or if you are younger than 18, are not willing to be voice recorded, or cannot speak Afrikaans, English or Tswana.

What the researchers' responsibilities be?

It is the primary responsibility of the researcher to ensure that all participants are adequately protected by the application of appropriate ethical standards. The researcher is also responsible for accurate administration and record keeping of all documentation related to this research. The researcher must ensure that the participants are correctly informed.

What will your responsibilities be?

- I will ask you to have a discussion with me, where I will ask you 5 questions about: your role as community facilitator at this IGP, the use of the training manual, and also specific sewing tasks that you find challenging.
- The discussion will be tape (voice) recorded, because I do not want to miss any of your answers.
- The discussion can take up to one hour, depending on how much you want to talk about the topics, but we will have a break after 30 minutes

Will you benefit from taking part in this research?

- When we are finished with this research, we want to help the people at sewing IGPs by giving them the sewing training materials that they need and want.
- We also want to be able to tell other people who make training materials, how to make it for the people in your community.
- You will not directly or immediately benefit from taking part in the interviews.

Are there risks involved in your taking part in this research?

- You may experience increased tiredness while busy with the interviews. We will ensure that you take a break.)
- You may experience levels of emotional discomfort when answering the interview questions. Remember that there are no right or wrong answers. Your opinions are valued. Your responses will be kept anonymous and confidential. Your name will not be written on any of the papers. In the end, nobody will know which person answered the questions.
- There are no known financial risks, partaking in this research will not cost you any money.

What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- If you feel uncomfortable about some questions, you do not have to answer them.
- If there is specific information that you need to be answered about the study, you may feel free to ask anyone in the research team to provide you with answers.
- Should you feel any tiredness while the discussion is taking place, please inform the researcher so that you can take the necessary break? Please also tell the researcher if you do not want to discuss any further, so that she can end the discussion. You do not need to give a reason for wanting to stop your participation. You will not have to face any negative consequences for stopping your participation.

Who will have access to the data?

- You have the right to privacy. You do not need to give access to private information if you do not want to.
- The researcher and her supervisor, the translator helping with the language when collecting the information, and the person working with the language and transcription will see/hear the answers to the questions.
- You have to right to confidentiality. Your identity will not be revealed. Your name is not written on the paper, only a number (for example #2) will be given to the answers. If any of the answers are given in a paper, or article or at a conference, only a number (#2) will be given. Nobody will know which person gave the answers.
- You can give your cell phone number if you want to phone to withdraw your answers from the research (researcher cell phone number is: 082 378 8202). Only the researcher will have your responses number (#2) and your cell phone number.

- All the papers and all the recordings will be locked away in a cupboard in the office of the researcher. These will be kept for seven (7) years, and then it will be destroyed. All the answers on papers will be read into the computer, but it will be kept secret with a password. After the information on the tapes are typed, it will be deleted from the voice recorder.

What will happen with the data/samples?

- All the answers will be locked away in a cupboard in a locked office, or saved on a computer that is protected with a password.
- After seven years the data will be destroyed.

Will you be paid to take part in this study and are there any costs involved?

You will not be paid to take part in the discussion. The people will come to your IGP, and it will cost you no money to answer the questions. Only refreshments (coffee/ tea and snacks (biscuits and fruits) will be given during break times, as a token of appreciation.

Is there anything else that you should know or do?

- You can contact the researcher, Dry Hanlie van Staden (018 299 2084 / 082 378 8202) if you have any further questions or have any problems about the research.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206; carolien.vanzyl@nwu.ac.za if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

How will you know about the findings?

- The findings will be shared with you during the next time that the researcher visits your project unit.

Declaration by participant

By signing below, I ..... agree to take part in a research study titled: Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects

I declare that:

- I have read/heard this information on the consent form and it is written in a language that I can understand.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been answered well enough.
- I understand that I can decide to take part in this study or not, and that nobody forced me to take part.
- I may choose to no longer take part in the study, and I will not be discriminated against.
- I may be asked to leave the study before it has finished, at any time.

Signed at (*place*) ..... on (*date*) ..... 20.....

....

Signature of participant **Signature of witness**

Declaration by person obtaining consent

I *(name)* ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (*place*) ..... on (*date*) ..... 20.....

....

Signature of person obtaining consent **Signature of witness**

Declaration by researcher

I *(name)* ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (*place*) ..... on (*date*) ..... 20....

....

Signature of researcher **Signature of witness**

Annexure A3: Approved information leaflet and consent form, interviews with IGP community facilitators, translated Setswana

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
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POTCHEFSTROOM CAMPUS

Health Research Ethics Committee
Faculty of Health Sciences
NORTH-WEST University
(Potchefstroom Campus)
2016 -10- 19
HREC Stamp

PAMPITSHANA YA TSHEDIMOSETSO YA MOTSAYAKAROLO LE FOROMO YA GO DIRA TUMELELO YA DIPOTSOLOTSO TSA BATHO KA BONGWE TSE DI DIRWANG KE BATLHATLHELEDI BA BAAGI BA IGPS YA GO ROKA YA HOLDING HANDS

SETLHOGO SA POROJEKE YA PATLISISO: Go dirisa didirisiwa tse di thamilweng tsa go katisetsa batho tiro ya go roka e e leng kgatotharabololo ya mathata a batsayakarolo ba ba nang le kgono e e kwa tlase ya go buisa le go kwala, ba diporojeke tsa metse -selegae tse di tsenyang lotseno

DINOMORE-TSHUPETSO: NWU-00043-16-S1

MMATLISISI-MOGOLO: Ngaka Hanlie van Staden / Moh Nicolene Coetzee

ATERESE: Kago ya F15
Yunibesiti ya Bokone-Bophirima
Private Bag X6001
Potchefstroom

NOMORE YA GO IKGOLAGAYA LE ENE: 018 299 2084 / 082 378 8202

O kopiwa go tsaya karolo mo porojekeng ya patlisiso e e leng karolo ya dikiri ya me ya PhD ka didirisiwa tsa katiso ya go roka tse di dirisiwang mo diporojekeng tse di tsenyang lotseno

(income-generating projects [IGPs]) tsa go rokatsa tsa Holding Hands. Tsweetswee iphe nako ya go buisa tshedimosetso e e kwadilweng fano (kgotsa mongwe a ka go buisetsa yone), e e tla thalosang dintlha tsotlhe tsa porojeke eno. O ka botsa motsereganyi wa porojeke sengwe le sengwe ka porojeke eno se o sa se tlhaloganyeng ka botlalo. Go botlhokwa thata gore o itse ka fa o ka thusang patlisiso eno ka gone, le gore o kgotsofaletse sengwe le sengwe ka patlisiso eno, le gore o tlhaloganya sengwe le sengwe. O ka nna wa itirela tshwe tso ka bowena ya gore a o batla go tsaya karolo mo patlisisong eno e bile ga o kitla o pateledilwa go tsaya karolo fa o sa batle go dira jalo. Fa o ka gana go tsaya karolo mo go yone, seno ga se kitla se go ama ka tsela epe e e sa siamang. Mme fa o dumela g ot tsaya karolo, o ka emisa ka nako epe fela fa o sa tlhole o batla go tsaya karolo

Komiti ya Maitshwaro a a Siameng ya Patlisiso ka Pholo Health Research Ethics Committee (HREC) ya Legoro la Disaense tsa Pholo ya Yunibesiti ya Bokone-Bophirima (YBB) e re rebotse go ka dira patlisiso eno. Patlisiso e tla dirwa go ya ka dikaelo tsa maitshwaro a a siameng a Lekgotla la Bosetšhaba la Maitshwaro la Patlisiso ka Pholo. Go ka nna ga tlhokega gore maloko a komiti ya maitshwaro a a siameng ya patlisiso a tlhatlh obe direkoto tsa patlisiso. Go na le babatlisisi ba le bararo ba ba nang le seabe mo patlisisong eno Ngaka J. van Staden, yo o nang le kitso ka tsa patlisiso, kgono e e kwa tlase ya go buisa le go kwala le go dira diaparo. Mop. W.H. Oldewage -Theron, yo o nang le maitemogelo a nako e e fetileng a go kaela patlisiso le a botsamaisi jwa porojeke ya patlisiso ya dikgatotharabololo, segolobogolo mo baaging ba ba dikobo-di-magetleng, le Moh N. Coetzee, yo o nang le maitemogelo a a mosola a go dira le ditlhopha tsa go roka mo baaging ba ba humanegileng e bile ke mankge wa katiso ya go roka.

Thutopatlisiso eno e ka ga eng?

Patlisiso eno e ka ga didirisiwa tsa katiso tse di dirisiwang mo tirong ya go roka.

E tla tlotka ka didirisiwa tsa katiso tse di leng teng gone jaanong, morago ga moo e tla tlhama didirisiwa tse di ntšha, tse di ikaegileng ka ditlhoko le dikgono tsa go buisa tsa setlhopha.

Patlisiso e tla tshwarelwa kwa diyuniting tsa porojeke ya Holding Hands kwa mmasepaleng wa kgaolo wa Dr Kenneth Kaunda kwa NWP.
Patlisiso eno e tla nna le motlotlo o o nang le dipotso (seka -potsolotso) tse o tla di botswang ka thusa ya batho ba ba nang le maitemogelo a go tshwara dipotsolotso tseno. Dipotso

tseno di tla bodiwa batlhatlheledi botlhe ba baagi le diyuniti tsa por ojeke ya Holding Hands . Go fopholediwa gore go tla nna le motho a le mongwe (1) kgotsa ba babedi (2) ba ba tlhatlhelelang baagi kwa go nngwe le nngwe ya diyuniti tse pedi (2) tsa porojeke. Ka jalo re tla botsa batho ba ka nna bararo (3) dipotso tseno.

Mo patlisisong eno re batla go batlisisa (maikaelelo a patlisiso):

- Maikutlo a gago ka mmanuale wa katiso o o leng teng wa batlhatlheledi, fa e le gore o a o dirisa.
- Ditlhoko tsa gago tsa go ithuta tse di mosola ke dife?
  - Fa o akanya ka mathata a gago a go r oka.

Ke ka ntlha yang fa o laleditswe gore o tseye karolo?

- O kopilwe gore o thuse ka patlisiso eno gore o kgone go mpolelela gore o akanyang ka mmanuale wa katiso wa batlhatlheledi, (fa e le gore o a o dirisa) gape fa e le gore go na le sengwe se o batlan g go se ithuta se se malebana le dikgwetlho tsa go roka. Fa re fitlhela go le thata gore batho ba dirise mmanuale o o leng teng, le go wetsa ditiro tsa go roka, re batla gore moragonyana re thuse batho ka go dira didirisiwa tse di ntšha tsa katiso gore re ba neye se ba se tlhokang.
- O kopilwe gore o thuse ka patlisiso eno ka gonne o na le maitemogelo mo yuniting eno ya IGP ya Holding Hands, le gore o itse mmanuale wa 'batlhatlheledi' wa katiso o re buang ka one, gape o itse mathata a batho ba bangwe ba nang le one kwa IGP fa ba roka sengwe.
- Ga o kitla o kgona go thusa ka patlisiso eno fa o ise o nne motlhatlheledi wa baagi kgotsa moeteledipele wa porojeke kwa yuniting ya IGP ya Holding Hands, kgotsa fa o le ka fa tlase ga dingwaga di le 18, fa o sa batle gor e lentswe la gago le gatisiwe, kgotsa fa o sa kgone go bua Seaforikanse, Seesemane kgotsa Setswana.

Maikarabelo a babatlisisi ke afe?

Mmatlisisi o na le boikarabelo jo bo botlhokwa jwa go tlhomamisa gore go dirisiwa ga ditekanyetso tse di tshwanetseng tsa maitshwaro a a siameng go sireletsa batsayakarolo botlhe ka mo go lekaneng.. Gape boikarabelo jwa mmatlisisi ke go nna le tsamaiso e e nepagetseng le go boloka direkoto tsa ditokomane tsotlhe tsa patlisiso eno. Mmatlisisi o tshwanetse go tlhomamisa gore batsayakarolo ba newa tshedimosetso ka tsela e e tshwanetseng.

Maikarabelo a gago e tla nna afe?

- Ke tla go kopa go tlotla le nna, mme ke tla go botsa dipotso di le 5 ka: seabe sa gago jaaka motlhatlheledi wa baagi kwa IGP eno, go dirisa ga gago mmanuale wa katiso, le ditiro tse di rileng tsa go roka tse o di fitlhelang di le thata.
- Motlotlo o tla gatisiwa (lentswe), ka gonne ga ke batle go foswa ke dikarabo dipe tsa gago.
- Motlotlo o ka tsaya mo e ka nnang ura, go ikaegile ka gore o batla go bua go le go kan a kang ka dikgang tseno, mme re tla ikhutsa morago ga metsotso e le 30.

A o tla solegelwa molemo ke go tsaya karolo mo patlisisong eno?

- Fa re feditse ka patlisiso eno, re batla go thusa batho ba ba rokang kwa di IGP ka go ba naya didirisiwa tsa go ba kati setsa go roka tse ba di tlhokang le tse ba di batlang.
- Gape re batla gore re kgone go bolelela batho ba bangwe ba ba dirang didirisiwa tsa katiso tse di tla dirisiwang ke batho ba ba mo tikologong ya lona gore ba di dire jang.
- Ga o kitla o solegelwa molemo ka tlhamalalo kgotsa ka bonako ke go tsaya karolo mo patlisisong eno.

A go tsaya karolo mo patlisisong eno go na le ditlamorago dipe tse di sa siamang?

- O ka nna wa ikutlwa o lapa thata fa o tshwaregile ka dipotsolotso. Re tla tlhomamisa gore o a ikhutsa.)
- O ka nna wa ikutlwa o sa phuthologa mo maikutlong fa o araba dipotso tsa patlisiso. Gakologelwa gore ga go na dikarabo tse di siameng le tse di sa siamang. Dikgopolo tsa gago di botlhokwa. Dikarabo tsa gago di tla bolokwa di sena leina la mong wa tsone e bile e le khupamarama. Leina la gago ga le tle go kwalwa mo go epe ya dipampiri. Kwa bokhutlong, ga go ope yo o tla itseng gore ke motho ofe yo o arabileng dipotso.
- Ga go na ditatlhegelo dipe tsa madi tse go itsiweng ka tsone, go tsaya karolo mo patlisisong eno ga go kitla go go ja madi ape.

Go tla diregang fa go ka direga gore o ikutlwe o sa phuthologa ka tsela nngwe ka ntlha ya go tsaya karolo mo patlisisong eno?

- Fa o ikutlwa o sa phuthologa go araba dipotso dingwe, ga o tlhoke go di araba.
- Fa go na le tshedimosetso e e kgethegileng e o batlang gore e arabiwe ka patlisiso, o se ka wa tshaba go kopa ope mo setlhopheng sa patlisiso gore a go neye dikarabo.

- Fa o ka ikutlwa o lapile motlotlo o ntse o tsweletse, tsweetswee bolelela mmatlisisi gore o letlwe g o ikhutsa ka tsela e e tlhokegang? Tsweetswee gape bolelela mmatlisisi fa o sa batle go tswelela ka motlotlo, gore a fedise motlotlo. Ga o tlhoke go ntsha lebaka la go bo o batla go emisa go tsaya karolo ga gago. Ga o kitla o tshwanelwa ke go lebana le ditlamorago dipe tse di sa siamang ka ntlha ya go emisa go tsaya karolo ga gago.

Tshedimosetso e tlile go bonwa ke bomang?

- O na le tshwanelo ya go boloka tshedimosetso ya gago ya poraefete. Ga o patelesege go tsaya karolo mo go yone fa o sa batle go dira jal o.
- Mmatlisisi le mookamedi wa gagwe, moranodi yo o thusang ka puo fa a kokoanya tshedimosetso, le motho yo o dirang ka puo le go tlanya mafoko a a gatisitsweng ka segatisa-mantswe o tla bona/utlwa dikarabo tsa dipotso.
- O na le tshwanelo ya go boloka tshe dimosetso ya gago ya sephiri. Ga o kitla o senolwa ka leina. Leina la gago ga le kwalwe mo pampiring, mme dikarabo di tla newa nomore fela (ka sekai #2) Fa go na le dikarabo tse di kwadilweng mo pampiring, kgotsa mo athikeleng kgotsa kwa khonferenseng, di tla newa nomore (#2) fela. Ga go ope yo o tla itseng gore ke motho ofe yo o arabileng dipotso.
- Re tla go naya nomore ya sele fa o batla go letsa gore o tlose dikarabo tsa gago mo patlisisong (nomore ya sele ya mmatlisisi ke: 082 378 8202). Mmatlisisi ke e ne fela a tla nnang le nomore (#2) ya dikarabo tsa gago le nomore ya gago ya sele.
- Dipampiri tsotlhe le dikgatiso -mantswe tsotlhe di tla notlelelwa mo khabotong mo ofising ya mmatlisisi. Di tla bolokwa dingwaga di le supa (7), mme morago ga moo di tla senngwa. Dikarabo tsotlhe mo dipampiring di tla buisediwa mo khomphiutheng, mme di tla bolokwa di le sephiri di na le khunololamoraba (*password*.) Fa tshedimosetso e e mo ditheiping e sena go gatisiwa, e tla phimolwa mo digatisamantsweng.

Go tla direga eng ka tshedimosetso/disampole?

- Dikarabo tsotlhe di tla notlelelwa mo khabotong mo ofising e e notletsweng, kgotsa di tla bolokwa mo khomphiutheng e e sireleditsweng ka khunololamoraba.
- Morago ga dingwaga di le supa, tshedimosetso e tla senngwa.

A o tla duelelwa go nna le seabe mo patlisisong eno mme a o tla nna le ditshenyegelo dipe?

Ga o kitla o duelelwa go tsaya karolo mo motlotlong. Batho ba tla tla kwa IGP ya gago, mme go araba dipotso ga go kitla go go ja madi ape. Go tla abiwa dijo tse di motlhoswana fel a (kofi/tee le diseneke (dibisikiti le maungo) ka dinako tsa go ikhutsa, e le sesupo sa tebogo.

A go na le sepe se sengwe se o tshwanetseng go se itse kgotsa go se dira?

- O ka ikgolaganya le mmatlisisi, Dry Hanlie van Staden (018 299 2084 / 082 378 8202) fa o na le dipotso go ya pele kgotsa fa o na le mathata ape ka patlisiso.
- Gape o ka nna wa ikgolaganya le Komiti ya Maitshwaro a a Siameng ya Patlisiso ka Moh Carolien van Zyl mo nomoreng ya 018 299 1206; carolien.vanzyl@nwu.ac.za fa o na le matshwenyego a pe kgotsa dingongorego tse mmatlisisi a sa di rarabololang ka tsela e e lekaneng.
- O tlile go amogela khopi ya tshedimosetso eno le ya foromo ya go dira tumelelo gore o di boloke mo direkotong tsa gago.

O tla itse jang ka diphitlhelelo?

- O tla bolelelwa di phitlhelelo mo nakong e e tlang fa mmatlisisi a etela yuniti ya lona ya porojeke.

Maikano a motsayakarolo

Ka go saena fa tlase fano, nna ..... ke dumela go tsaya karolo mo thutopatlisisong eno ya setlhogo se se reng: Go dirisa didirisiwa tse di tlhamilweng tsa go katisetsa batho tiro ya go roka e e leng kgatotharabololo ya mathata a batsayakarolo ba ba nang le kgono e e kwa tlase ya go buisa le go kwala, ba diporojeke tsa metse-selegae tse di tsenyang lotseno

Ke netefatsa gore:

- Ke buisitse/utlwile tshedimosetso eno le foromo ya go dira tumelelo mme e kwadilwe ka puo e ke kgonang go e tlhaloganya.
- Ke nnile le tšhono ya go botsa motho yo o amogelang tumelelo le mmatlisisi dipotso mme dipotso tsotlhe tsa me di arabilwe ka tsela e e lekaneng.
- Ke a tlhaloganya gore ke ka dira tshwetso ya go tsaya karolo mo patlisisong kgotsa ke ka gana go dira jalo, le gore ga go ope yo o mpateleditseng go tsaya karolo.
- Ke ka nna ka tlhopha go se tlhole ke tsaya karolo mo patlisisong, e bile ga ke kitla ke kget hololwa ka ntlha ya seo.
- Ke ka nna ka kopiwa go tlogela patlisiso pele e fela, ka nako epe fela.

E saenilwe kwa (*lefelo*) ..... ka (*date*) ..... 20.....

....

Mosaeno wa motsayakarolo **Mosaeno wa mosupi**

Maikano ka motho yo o amogelang tumelelo

Nna *(leina)* ..... ke netefatsa fano gore:

- Ke tlhaloseditse ..... tshedimosetso eno.
- Ke ile ka mo rotloetsa gore a botse dipotso mme ka tsaya nako e ntsi ka mo go lekaneng go di araba.
- Ke kgotsofaletse gore o tlhalogantse ka botlalo dikarolo tsotlhe tsa patlisiso eno, jaaka go tlotlilwe fa godimo
- Ke dirisitse motoloki/ga ke a dirisa motoloki.

E saenilwe kwa (*lefelo*) ..... ka (*date*) ..... 20.....

....

Mosaeno wa motho yo o amogelang tumelelo **Mosaeno wa mosupi**

Maikano ka mmatlisisi

Nna *(leina)* ..... ke netefatsa fano gore:

- Ke tlhaloseditse ..... tshedimosetso eno.
- Ke ile ka mo rotloetsa gore a botse dipotso mme ka tsaya nako e ntsi ka mo go lekaneng go di araba.
- Ke kgotsofaletse gore o tlhalogantse ka botlalo dikarolo tsotlhe tsa patlisiso eno, jaaka go tiotlilwe fa godimo
- Ke dirisitse motoloki/ga ke a dirisa motoloki.

E saenilwe kwa (*lefelo*) ..... ka (*date*) ..... 20....

....

Mosaeno wa mmatlisisi **Mosaeno wa mosupi**

9 Information leaflet and consent form for interviews with IGP community facilitators

Annexure A4: Approved information leaflet and consent form, pre-test post-tests in an intervention

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

Health Research Ethics Committee
Faculty of Health Sciences
NORTH-WEST University
(Potchefstroom Campus)
2016 -08- 15
HREC Stamp

PARTICIPANT INFORMATION LEAFLET AND CONSENT FORM FOR HOLDING HANDS SEWING IGP PARTICIPANSTO PARTICIPATE IN INTERVENTION SEWING TASKS AND A SATISFACTION QUESTIONNAIRE

TITLE OF THE RESEARCH PROJECT: Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects

REFERENCE NUMBERS: NWU-00043-16-S1

PRINCIPAL INVESTIGATOR: Dr Hanlie van Staden / Ms Nicolene Coetzee

ADDRESS: Building F15

North-West University

Private Bag X6001

Potchefstroom

CONTACT NUMBER: 018 299 2084 / 082 378 8202

You are being invited to take part in a research project that forms part of my PhD degree about sewing training materials for use in Holding Hands sewing income-generating projects (IGPs). Please take some time to read the information presented here (or somebody can read it to you), which will explain the details of this project. You can ask the mediator or the researcher anything about this project that you do not fully understand. It is very important that you know how you can help this research, and that you are happy with everything about this research, and that you understand everything. You can decide for yourself if you want to take part in this research and it is your free will if you do not want to take part. If you say no, this will not harm you in any way. If you say yes to participate, you can stop at any time if you do not want to take part any longer.

The Health Research Ethics Committee (HREC) of the Faculty of Health Sciences of the North-West University (NWU) approved that we can do this study. The study will be done according to the ethical guidelines of the National Health Research Ethics Council. It might be necessary for the research ethics committee members to inspect the research records. There are three researchers involved in this study. Dr. J. van Staden, who has knowledge in the fields of research, low-literacy and clothing construction. Prof. W.H. Oldewage-Theron, who has previous experience in study guidance and research project management, especially in subsistence communities, and Mrs N. Coetzee, who has practical experience working with community sewing groups from disadvantaged communities and is an expert in sewing training.

What is this research study all about?

This study is about the training materials used when sewing.

It will look at the training materials that is available, and then design new materials, based on your sewing needs and reading level.

The study will be conducted at Holding Hands project units in the Dr Kenneth Kaunda district municipality, within the North West Province (NWP).

You will be asked to complete a practical task. This will take one hour. On the next day, we will give you information about that task (like a pamphlet), and ask you to look over it. This will take no more than an hour. On the next day, you will be asked to complete the same task as before. This will take no more than an hour. After that, you will also be asked to answer a lists of questions about your satisfaction with the informational pamphlet. People with experience to ask these questions will help you. These questions will be asked to all the people at Holding Hands project units in NWP.

In this study we want to find out (objectives of the research):

- If the information about the task helped you to complete the task.
- How satisfied you are with the new training material.
- If we can improve the new training material, and how to improve it.

Why have you been invited to participate?

- You have been asked to help with this research so that we can see if the new sewing training material helps people when they have to complete sewing tasks. You have also been asked so that you can tell me what you liked and didn't like about the new training materials, and also if there is anything else that we can do to improve it. If we see that people don't like the training materials, or if we see that it doesn't help then with sewing, we will change it so that they have better training materials in future.
- You have been asked to help with this research because you have experience with sewing and making products in the Holding Hands IGP unit.
- You will not be able to help with this research if you have not worked at a Holding Hands IGP unit, or if you are younger than 18 or cannot speak Afrikaans, English or Tswana.

What the researchers' responsibilities be?

It is the responsibility of the researcher to ensure that all participants are protected by appropriate ethical standards. The researcher is also responsible for accurate administration and record keeping of all documents related to this research. The researcher must ensure that the participants are correctly informed.

What will your responsibilities be?

- First we will ask you to complete a sewing task. Then we will ask you to look at the information pamphlet. Lastly we will ask that you complete a similar sewing task. It will take no more than 1 hour, on each of the three days.
- We will also ask you to answer all the questions on the list about your opinion of the material. It will take no more than an hour of your time.

Will you benefit from taking part in this research?

- When we are finished with this research, we want to help the people at sewing IGPs by giving them the sewing training materials that they need and want.
- We also want to be able to tell other people who make training materials, how to make it for the people in your community.
- The researchers will show you the correct way if performing the intervention tasks, if you want to see it.

Are there risks involved in your taking part in this research?

- You may experience tiredness while busy with the tasks or completing the questions. We will ensure that these sessions are kept short (no more than an hour at a time).
- You may experience levels of discomfort when completing the tasks or answering the questionnaires. Remember that there are no right or wrong answers. Your opinions are valued. Your responses will be kept anonymous and confidential. Your name will not be written on any of the papers. In the end, nobody will know which person answered the questions.
- There are no known financial risks, partaking in this research will not cost you any money.

What will happen in the unlikely event of some form of discomfort occurring as a direct result of your taking part in this research study?

- If you feel uncomfortable completing the sewing tasks, you do not have to complete them.
- If you feel uncomfortable about some questions, you do not have to answer them.
- If you are uncomfortable completing the tasks in the group, we can make arrangements for you to complete alone.
- If there is specific information that you need to be answered about the study, you may feel free to ask anyone in the research team to provide you with answers.
- Should you feel any tiredness while the procedure is taking place, please inform the researcher so that you can take the necessary break.
  Please also tell the researcher if you do not want to take part any further, so that she can end your participation. You do not need to give a reason for wanting to stop your participation. You will not have to face any negative consequences for stopping your participation.

Who will have access to the data?

- You have the right to privacy. You do not need to give private information if you don't want to.
- You have to right to confidentiality. Your identity will not be revealed. Your name will not be written on any of the papers. A number (for example 12) will be used. If any of the results or answers are given in a paper, or at a conference, only a number will be given. Nobody will know which person did which tasks or gave which answers.
- You can give your cell phone number if you want to phone to withdraw your task results or answers from the research. The researchers cell phone number is: 082 378 8202. Only the researcher will have your task response number and your cell phone number.

- The researcher and her supervisor, the task assessor and the person working with the statistics will see the results of the tasks and the answers to the questions.
- All the papers with task results and answers will be locked away in a cupboard in the office of the researcher. These will be kept for seven (7) years, and then it will be destroyed. All the answers on papers will be read into the computer, but it will be kept secret with a password.

What will happen with the data/samples?

- All the answers will be kept confidential. It will only be seen by researchers and other professional persons. They will sign confidentiality contracts to ensure your answers are kept safe.
- All the answers will be locked away in a cupboard in a locked office, or saved on a computer that is protected with a password.

Will you be paid to take part in this study and are there any costs involved?

You will not be paid to take part in the research. The people will come to your IGP, and provide you with the materials necessary to complete the sewing task. It will cost you no money to complete the sewing task or answer the questions. Only refreshments (coffee/ tea and biscuits and fruits) will be given during the break time, as a token of appreciation.

Is there anything else that you should know or do?

- You can contact the researcher, Dr Hanlie van Staden (018 299 2084 / 082 378 8202) if you have any further questions or have any problems about the research.
- You can also contact the Health Research Ethics Committee via Mrs Carolien van Zyl at 018 299 1206; carolien.vanzyl@nwu.ac.za if you have any concerns or complaints that have not been adequately addressed by the researcher.
- You will receive a copy of this information and consent form for your own records.

How will you know about the findings?

- The findings will be shared with you when you receive your new sewing training material, during the next time that the researcher visits your project unit.

Declaration by participant

By signing below, I ..... agree to take part in a research study titled: Employing developed sewing training material in an intervention for low-literate participants of rural income generating projects

I declare that:

- I have read/heard this information on the consent form and it is written in a language that I can understand.
- I have had a chance to ask questions to both the person obtaining consent, as well as the researcher and all my questions have been answered well enough.
- I understand that I can decide to take part in this study or not, and that nobody forced me to take part.
- I may choose to no longer take part in the study, and I will not be discriminated against.
- I may be asked to leave the study before it has finished, at any time.

Signed at (*place*) ..... on (*date*) ..... 20....

....

Signature of participant Signature of witness

Declaration by person obtaining consent

I *(name)* ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (*place*) ..... on (*date*) ..... 20.....

....

Signature of person obtaining consent Signature of witness

Declaration by researcher

I *(name)* ..... declare that:

- I explained the information in this document to .....
- I encouraged him/her to ask questions and took adequate time to answer them.
- I am satisfied that he/she adequately understands all aspects of the research, as discussed above
- I did/did not use an interpreter.

Signed at (*place*) ..... on (*date*) ..... 20.....

....

Signature of researcher **Signature of witness**

Annexure A5: Approved information leaflet and consent form, pre-test post-tests in an intervention, Setswana

Health Research Ethics Committee
Faculty of Health Sciences
NORTH-WEST University
(Potchefstroom Campus)
2016 -10- 19
HREC Stamp

NORTH-WEST UNIVERSITY
YUNIBESITI YA BOKONE-BOPHIRIMA
NOORDWES-UNIVERSITEIT
POTCHEFSTROOM CAMPUS

PAMPITSHANA YA TSHEDIMOSETSO YA MOTSAYAKAROLO LE FOROMO YA GO DIRA TUMELELO YA BATSAYAKAROLO BA IGP YA GO ROKA YA HOLDING HANDS YA GO TSAYA KAROLO MO DIKGATOTHARABOLOLONG TSA DITIRO TSA GO ROKA LE GO TLATSA PAMPIRI YA DIPOTSO TSA PATLI SISO YA KGOTSOFALO

SETLHOGO SA POROJEKE YA PATLISISO : Go dirisa didirisiwa tse di tlhamilweng tsa go katisetsa batho tiro ya go roka e e leng kgatotharabololo ya mathata a batsayakarolo ba ba nang le kgono e e kwa tlase ya go buisa le go kwala, ba diporoj eke tsa metse -selegae tse di tsenyang lotseno

DINOMORE-TSHUPETSO: NWU-00043-16-S1

MMATLISISI-MOGOLO: Ngaka Hanlie van Staden / Moh Nicolene Coetzee

ATERESE Kago ya F15

Yunibesiti ya Bokone -Bophirima

Private Bag X6001

Potchefstroom

NOMORE YA GO IKGOLAGAYA LE ENE: 018 299 2084 / 082 378 8202

O kopiwa go tsaya karolo mo porojekeng ya patlisiso e e leng karolo ya dikiri ya me ya PhD ka didirisiwa tsa katiso ya go roka tse di dirisiwang mo di porojekeng tse di tsenyang lotseno (income-generating projects [IGPs]) tsa go rokatsa tsa Holding Hands. Tsweetswee iphe

nako ya go buisa tshedimosetso e e kwadilweng fano (kgotsa mongwe a ka go buisetsa yone), e e tla tlhalosang dintlha tsotlhe tsa porojeke eno. O ka botsa motsereganyi wa porojeke sengwe le sengwe ka porojeke eno se o sa se tlhaloganyeng ka botlalo. Go botlhokwa thata gore o itse ka fa o ka thusang patlisiso eno ka gone, le gore o kgotsofaletse sengwe le sengwe ka patlisiso eno, le gore o tlhaloganya sengwe le sengwe. O ka nna wa itirela tshwetso ka bowena ya gore a o batla go tsaya karolo mo patlisisong eno e bile ga o kitla o patelediwa go tsaya karolo fa o sa batle go dira jalo. Fa o ka gana go tsaya karolo mo go yone, seno ga se kitla s e go ama ka tsela epe e e sa siamang. Mme fa o dumela got tsaya karolo, o ka emisa ka nako epe fela fa o sa tlhole o batla go tsaya karolo.

Komiti ya Maitshwaro a a Siameng ya Patlisiso ka Pholo Health Research Ethics Committee (HREC) ya Legoro la Disaense tsa Pholo ya Yunibesiti ya Bokone-Bophirima (YBB) e re rebotse go ka dira patlisiso eno. Patlisiso e tla-dirwa go ya ka dikaelo tsa maitshwaro a a siameng a Lekgotla la Bosetšhaba la Maitshwaro la Patlisiso ka Pholo. Go ka nna ga tlhokega gore maloko a k omiti ya maitshwaro a a siameng ya patlisiso a tlhathobe direkoto tsa patlisiso. Go na le babatlisisi ba le bararo ba ba nang le seabe mo patlisisong eno. Ngaka J. van Staden, yo o nang le kitso ka tsa patlisiso, kgono e e kwa tlase ya go buisa le go kwala le go dira diaparo. Mop. W.H. Oldewage -Theron, yo o nang le maitemogelo a nako e e fetileng a go kaela patlisiso le a botsamaisi jwa porojeke ya patlisiso, segolobogolo mo baaging ba ba dikobo-di-magetleng, le Moh. N. Coetzee, yo o nang le maitemogelo a a mosola a go dira le ditlhopha tsa go roka mo baaging ba ba humanegileng e bile ke mankge wa katiso ya go roka.

Thutopatlisiso eno e ka ga eng?

Patlisiso eno e ka ga didirisiwa tsa katiso tse di dirisiwang mo tirong ya go roka.

E tla tlotla ka didirisiwa tsa katiso tse di leng teng, morago ga moo e tla tlhama didirisiwa tse di ntšha, tse di ikaegileng ka ditlhoko tsa gago le kgono ya go buisa.

Patlisiso e tla tshwarelwa kwa diyuniting tsa porojeke ya Holding Hands kwa mmasepaleng wa kgaolo wa Dr Kenneth K aunda kwa Porofenseng ya Bokone Bophirima (NWP).

O tla kopiwa go dira tiro nngwe e e mosola. E tla go tsaya ura e le nngwe. Mo letsatsing le le latelang, re tla go naya tshedimosetso ka tiro eo (phamfolete) re bo re go kopa go e buisa. Seno ga se kitla se tsaya sebaka se se fetang ura. Mo letsatsing le le latelang, o tla kopiwa go dira tiro e e tshwanang le e o e dirileng maloba. Seno ga se kitla se tsaya sebaka se se fetang ura. Morago ga moo, o tla kopiwa gore o arabe lenaane la dipotso ka ga go

kgotsofala ga gago ka phamfolete ya tshedimosetso. Batho ba ba nang le maitemogelo a go botsa dipotso tseno ba tla go thusa. Dipotso tseno di tla bodiwa batho botlhe kwa diyuniting tsa porojeke ya Holding Hands kwa NWP.

Mo patlisisong eno re batla go batlisisa (m aikaelelo a patlisiso):

- Fa e le gore tshedimosetso ka tiro eno e go thusitse go dira tiro eno.
- O kgotsofaletse didirisiwa tse di ntšha go le go kae.
- Gore a re ka ka tokafatsa didirisiwa tse di ntšha tsa katiso, le gore re ka di tokafatsa jang.

Ke ka ntlha yang fa o laleditswe gore o tseye karolo?

- O kopilwe go thusa ka patlisiso eno go bona gore a didirisiwa tse di ntšha tsa katiso ya go roka di thusa batho fa ba tshwanelwa ke go dira ditiro tsa go roka. Gape o bodiwa potso eno gore o mpolelele gore o ratil e eng le gore ga o a rata eng ka didirisiwa tse di ntšha tsa go roka, le gore a go na le sepe se sengwe se re ka se dirang go di tokafatsa. Fa re bona gore batho ga ba rate didirisiwa tsa katiso, kgotsa fa re bona gore ga di thuse ka tiro ya go roka, re tl a di fetola gore ba nne le didirisiwa tse di botoka tsa katiso mo isagweng.
- O kopilwe go thusa ka patlisiso eno ka gonne o na le maitemogelo ka go roka le go dira dilo mo yuniting ya IGP ya Holding Hands.
- Ga o kitla o kgona go thusa ka patlisiso eno fa o ise o dire kwa yuniting ya IGP ya Holding Hands, kgotsa fa o le ka fa tlase ga dingwaga di le 18, kgotsa fa o sa kgone go bua Seaforikanse, Seesemane kgotsa Setswana.

Maikarabelo a babatlisisi ke afe?

Mmatlisisi o na le boikarabelo jwa go tlhomamisa gore go dirisiwa ga ditekanyetso tse di tshwanetseng tsa maitshwaro a a siameng go sireletsa batsayakarolo botlhe. Gape boikarabelo jwa mmatlisisi ke go nna le tsamaiso e e nepagetseng le go boloka direkoto tsa ditokomane tsotlhe tse di amanang le patlisiso eno . Mmatlisisi o tshwanetse go tlhomamisa gore batsayakarolo ba newa tshedimosetso ka tsela e e tshwanetseng.

Maikarabelo a gago e tla nna afe?

- Sa ntlha re tla go kopa go dira tiro ya go roka. Morago ga moo re tla go kopa go buisa phamfolete ya tshedimoset so. Sa bofelo re tla go kopa go dira tiro e e tshwanang ya go roka. Ga e kitla e tsaya sebaka se se fetang ura e le 1, mo go lengwe le lengwe la malatsi a mararo.
- Gape re tla go kopa go araba dipotso tsotlhe tse tharo mo lenaaneng ka maikutlo a gago ka did irisiwa tseno. Seno ga se kitla se tsaya sebaka se se fetang ura ya nako ya gago.

A o tla solegelwa molemo ke go tsaya karolo mo patlisisong eno?

- Fa re feditse ka patlisiso eno, re batla go thusa batho ba ba rokang kwa di IGP ka go ba naya didirisiwa tsa go ba katisetsa go roka tse ba di tlhokang le tse ba di batlang.
- Gape re batla gore re kgone go bolelela batho ba bangwe ba ba dirang didirisiwa tsa katiso tse di tla dirisiwang ke batho ba ba mo tikologong ya lona gore ba di dire jang.
- Babatlisisi ba tla go supetsa tsela e e siameng fa o dira ditiro tsa dikgatotharabololo, fa o batla go e bona.

A go tsaya karolo mo patlisisong eno go na le ditlamorago dipe tse di sa siamang?

- O ka nna wa ikutlwa o lapile fa o ntse o tshwaregile ka ditiro kgotsa fa o araba dipotso Re tla tlhomamisa gore ditiro tseno di bolokwa di le dikhutshwane (gore nngwe le nngwe ya tsone ga e fete ura).
- O ka nna wa ikutlwa o sa phuthologa fa o dira ditiro tseno kgotsa o araba dipotso. Gakologelwa gore ga go na dikarabo tse di siameng le tse di sa siamang. Dikgopolo tsa gago di botlhokwa. Dikarabo tsa gago di tla bolokwa di sena leina la mong wa tsone e bile e le khupamarama. Leina la gago ga le tle go kwalwa mo go epe ya dipampiri. Kwa bokhutlong, ga go ope yo o tla itseng gore ke motho ofe yo o arabileng dipotso.
- Ga go na ditatlhegelo dipe tsa madi tse go itsiweng ka tsone, go tsaya karolo mo patlisisong eno ga go kitla go go ja madi ape.

Go tla diregang fa go ka direga gore o ikutlwe o sa phuthologa ka tsela nngwe ka ntlha ya go tsaya k arolo mo patlisisong eno?

- Fa o ikutlwa o sa phuthologa go araba dipotso tsa go roka, ga o tlhoke go di araba.
- Fa o ikutlwa o sa phuthologa go araba dipotso dingwe, ga o tlhoke go di araba.

- Fa o ikutlwa o sa phuthologa go dira ditiro mo setlhopheng, re tla dira dithulaganyo tsa gore o dire jalo o le nosi.
- Fa go na le tshedimosetso e e kgathegileng e o batlang gore e arabiwe ka patlisiso, o se ka wa tshaba go kopa ope mo setlhopheng sa patlisiso gore a go neye dikarabo.
- Fa o ka ikutlwa o lapile fa thulaganyo e ntse e tsweletse, tsweetswee bolelela mmatlisisi gore o letlwe go ikhutsa ka tsela e e tlhokegang?

Tsweetswee gape bolelela mmatlisisi fa o sa tlhole o batla go tswelela ka go tsaya karolo, gore a emise go tsaya karolo ga gago.. Ga o tlhoke go ntsha leb aka la go bo o batla go emisa go tsaya karolo ga gago. Ga o kitla o tshwanelwa ke go lebana le ditlamorago dipe tse di sa siamang ka ntlha ya go emisa go tsaya karolo ga gago.

Tshedimosetso e tlile go bonwa ke bomang?

- O na le tshwanelo ya go boloka tshedi mosetso ya gago ya poraefete. Ga o tlhoke go ntsha tshedimosetso ya gago ya poraefete fa o sa batle go dira jalo.
- O na le tshwanelo ya go boloka tshedimosetso ya gago ya sephiri. Ga o kitla o senolwa ka leina. Leina la gago ga le tle go kwalwa mo go epe ya dipampiri. Go tla dirisiwa nomore (ka sekai 12). Fa go na le dipholo kgotsa dikarabo tse di kwadilweng mo pampiring, kgotsa kwa khonferenseng, go tla newa nomore fela. Ga go ope yo o tla itseng gore ke motho ofe yo o arabileng dipotso.
- Re tla go naya nom ore ya sele fa o batla go letsa gore o tlose dipholo tsa tiro ya gago kgotsa dikarabo tsa gago mo patlisisong. Nomore ya mmatlisisi ya sele ke: 082 378 8202. Mmatlisisi ke ene fela a tla nnang le nomore ya dikarabo tsa tiro ya gago le nomore ya gago ya sel e.
- Mmatlisisi le mookamedi wa gagwe, molekodi wa tiro le motho yo o dirang ka dipalopalo o tla bona dipholo tsa tiro le dikarabo tsa dipotso.
- Dipampiri tsotlhe le dipholo tsa tiro le dikarabo di tla notlelelwa mo khabotong mo ofising ya mmatlisisi. Di tla bolokwa dingwaga di le supa (7), mme morago ga moo di tla senngwa. Dikarabo tsotlhe mo dipampiring di tla buisediwa mo khomphiutheng, mme di tla bolokwa di le sephiri di na le khunololamoraba (*password* .)

Go tla direga eng ka tshedimosetso/disampole?

- Dikarabo tsotlhe di tla bolokwa e le khupamarama. Di tla bonwa fela ke babatlisisi le ke baporofešenale ba bangwe. Ba tla saena dikonteraka tsa khupamarama go tlhomamisa gore dikarabo tsa gago ga di bonwe ke ope.

- Dikarabo tsotlhe di tla notlelelwa mo khabot ong mo ofising e e notletsweng, kgotsa di tla bolokwa mo khomphiutheng e e sireleditsweng ka khunololamoraba (password).

A o tla duelelwa go nna le seabe mo patlisisong eno mme a o tla nna le ditshenyegelo dipe?

Ga o kitla o duelelwa go tsaya karolo mo pa tlisisong. Batho ba tla tla mo IGP ya gago, go tla go go naya didirisiwa tse di tlhokegang gore o kgone go dira tiro ya gago ya go roka. Go fetsa tiro ya go roka kgotsa go araba dipotso ga go kitla go go ja madi ape. Go tla abiwa dijo tse di motlhoswana fela (kofi/tee le dibisikiti le maungo) ka dinako tsa go ikhutsa, e le sesupo sa tebogo.

A go na le sepe se sengwe se o tshwanetseng go se itse kgotsa go se dira?

- O ka ikgolaganya le mmatlisisi, Ngaka Hanlie van Staden (018 299 2084 / 082 378 8202) fa o na le dipotso go ya pele kgotsa fa o na le mathata ape ka patlisiso.
- Gape o ka nna wa ikgolaganya le Komiti ya Maitshwaro a a Siameng ya Patlisiso ka Moh Carolien van Zyl mo nomoreng ya 018 299 1206; carolien.vanzyl@nwu.ac.za fa o na le matshwenyego ape kgot sa dingongorego tse mmatlisisi a sa di rarabololang ka tsela e e lekaneng.
- O tlile go amogela khopi ya tshedimosetso eno le ya foromo ya go dira tumelelo gore o di boloke mo direkotong tsa gago.

O tla itse jang ka diphitlhelelo?

- O tla bolelelwa diphitlhe lelo fa o newa didirisiwa tsa gago tse di ntšha tsa go roka, mo nakong e e tlang fa mmatlisisi a etela yuniti ya lona ya porojeke.

Maikano a motsayakarolo

Ka go saena fa tlase fano, nna ..... ke dumela go tsaya karolo mo thutopatlisisong e no ya setlhogo se se reng: Go dirisa didiriswa tse di tlhamilweng tsa go katisetsa batho tiro ya go roka e e leng kgatotharabololo ya mathata a batsayakarolo ba ba nang le kgono e e kwa tlase ya go buisa le go kwala, ba diporojeke tsa metse-selegae tse di tsenyang lotseno

Ke netefatsa gore:

- Ke buisitse/utlwile tshedimosetso eno le foromo ya go dira tumelelo mme e kwadilwe ka puo e ke kgonang go e tlhaloganya.
- Ke nnile le tšhono ya go botsa motho yo o amogelang tumelelo le mmatlisisi dipotso mme dipotso tsotlhe tsa me di arabilwe ka tsela e e lekaneng.
- Ke a tlhaloganya gore ke ka dira tshwetso ya go tsaya karolo mo patlisisong kgotsa ke ka gana go dira jalo, le gore ga go ope yo o mpateleditseng go tsaya karolo.
- Ke ka nna ka tlhopha go se tlhole ke tsaya karolo mo patlisisong, e bile ga ke kitla ke kgethololwa ka ntlha ya seo.
- Ke ka nna ka kopiwa go tlogela patlisiso pele e fela, ka nako epe fela.

E saenilwe kwa (*lefelo*) ..... ka (*date*) ..... 20....

....

Mosaeno wa motsayakarolo Mosaeno wa mosupi

Maikano ka motho yo o amogelang tumelelo

Nna *(leina)* ..... ka netefatsa fano gore:

- Ke tlhaloseditse ..... tshedimosetso eno.
- Ke ile ka mo rotloetsa gore a botse dipotso mme ka tsaya nako e nts i ka mo go lekaneng go di araba.
- Ke kgotsofaletse gore o tlhalogantse ka botlalo dikarolo tsotlhe tsa patlisiso eno, jaaka go tlotlilwe fa godimo
- Ke dirisitse motoloki/ga ke a dirisá motoloki.

E saenilwe kwa (*lefelo*) ..... , ka (*date*) ..... 20.....

....

Mosaeno wa motho yo o amogelang tumelelo Mosaeno wa mosupi

Maikano ka mmatlisisi

Nna *(leina)* ..... ke netefatsa fano gore:

- Ke tlhaloseditse ..... tshedimosetso eno.
- Ke ile ka mo r otloetsa gore a botse dipotso mme ka tsaya nako e ntsi ka mo go lekaneng go di araba.
- Ke kgotsofaletse gore o tlhalogantse ka botlalo dikarolo tsotlhe tsa patlisiso eno, jaaka go tlotliwe fa godimo
- Ke dirisitse motoloki/ga ke a dirisa motoloki.

E saenilwe kwa *(lefelo)* ..... ka *(date)* ..... 20.....

....

Mosaeno wa mmatlisisi **Mosaeno wa mosupi**

9 Information leaflet and consent form for pre -tests post-test in intervention with IGP participants

ANNEXURE B:

Participant satisfaction questionnaires

Annexure B1: **Participant satisfaction questionnaire, the body measuring pamphlet**

Annexure B2: **Participant satisfaction questionnaire, the pattern layout pamphlet**

Annexure B1: Participant satisfaction questionnaire, the body measuring pamphlet

Participant #	
Project unit	

SECTION A: Demographic information

A1	**What is your age?**		
	18-29		1
	30-39		2
	40-49		3
	50-59		4
	60 year +		5
A2	**What is your highest level in school that you passed?**		
	No formal schooling		1
	Grade 1/ Sub A		2
	Grade 2/Sub B		3
	Grade 3 / Standard 1		4
	Grade 4 / Standard 2		5
	Grade 5 / Standard 3		6
	Grade 6 / Standard 4		7
	Grade 7 / Standard 5		8
	Grade 8 / Standard 6		9
	Grade 9 /Standard 7		10
	Grade 10 / Standard 8		11
	Grade 11 /Standard 9		12
	Grade 12 / Standard 10		13
A3	**What is your home language?**		
	Setswana		1
	Afrikaans		2
	English		3
	Other		4

1

SECTION B: Satisfaction with the pamphlet

Please answer the following about the pamphlet by marking with an 'X'

				
		Yes (1)	**No (2)**	**I don't know (3)**
B1	It is easy to read the pamphlet			
B2	It is easy to understand the pamphlet			

			
		Yes (1)	**No (2)**
B2.1	I could understand all the words		
B2.2	I could understand all the pictures		

If No, can you tell me which words/pictures you did not understand?

B2.1.1	Words	
B2.2.1	Pictures	

				
		I will use it a lot (1)	**I will use it sometimes (2)**	**I will use it a little (3)**
B3	I will use other pamphlets like this one			

				
		I learned a lot from it (1)	**Average (2)**	**I learned a little from it (3)**
B4	I learned from the pamphlet			

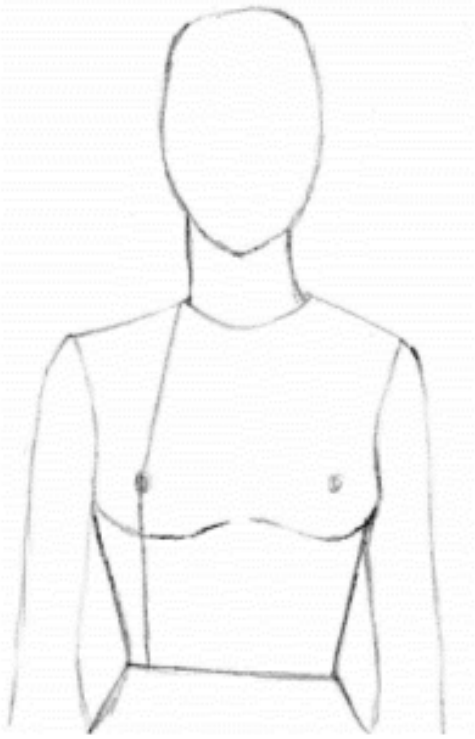
SECTION C: Satisfaction with the pamphlet format

				
		I liked it very much (1)	**Average (2)**	**I liked it a little (3)**
C1	I liked the pamphlet			
C2	I liked having the pictures in the pamphlet			

			
		Yes (1)	**No (2)**
C3	The writing is big enough		
C4	The pictures helped me to understand the instructions		
C5	The pamphlet should be shorter		

Please select your preference by marking with an 'X'

C6: Do you prefer…

	The line drawings	
	The photographs	

C7: In what language must the pamphlet be written?

	Setswana
	Afrikaans
	English
	Other

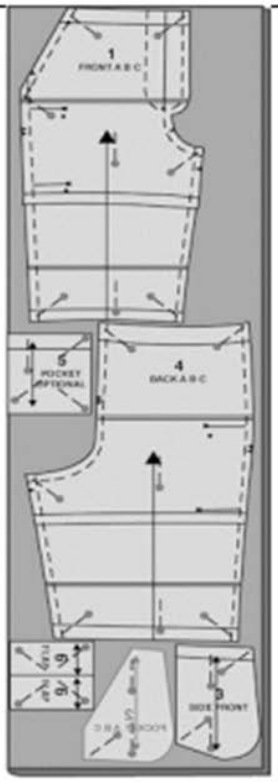
KE A LEBOGA

THANK YOU FOR YOUR PARTICIPATION

Annexure B2: Participant satisfaction questionnaire, the pattern layout pamphlet (page 5 only)

Please select your preference by marking with an 'X'

C6: Do you prefer…

	Line drawing showing pattern layout	
	Photograph showing pattern layout	

5

ANNEXURE C:

Author guidelines

Annexure C1: Author guidelines for the Journal of Consumer Sciences

Annexure C2: Author guidelines for the Design Education Forum of Southern Africa

Annexure C3: Author guidelines for the International Journal of Consumer Studies

Annexure C1: Author guidelines for the Journal of Consumer Sciences

Author Guidelines

Name Change

Authors who have in the past submitted articles to the Journal of Family Ecology and Consumer Sciences are reminded that the name of this journal has changed to the **Journal of Consumer Sciences (JCS)**.

Guidelines for Submission to the *Journal of Consumer Sciences* (JCS)

Contributions to the Journal of Consumer Sciences should be submitted to the Editor Prof Elizabeth Kempen via email at kempeel@unisa.ac.za. Articles submitted for consideration by the journal should be aligned to the new scope of the journal.

- Articles should not exceed 5,000 words.
- An abstract of no less than 200 words is required
- The Journal publishes review articles as well as research related articles. Articles prepared after conference presentations are accepted with the proviso that they have not been published in the Conference Proceedings of that particular conference.
- All articles should report original research that has not been published or submitted for publication elsewhere.
- The Harvard Style of referencing should be used according to the Harvard Reference Style Guide included below.
- The article must be typed and submitted as a Word document.
- Line spacing 1.5 should be used which includes text, referencing, tables and figures of the article.
- Times New Roman, font size 12 for all text in the article, headings, figures and tables.
- All paragraphs to be justified.
- No numbering of paragraphs.
- No numbering of lines.
- No indentation of paragraphs.
- One line space between paragraphs to be used.
- Margins of 2.54cm should be used on all four margins (top, bottom, left and right) of the page.
- Page numbers should be included on each page of the article in the bottom right corner of the page, starting on the first page of the article.
- Headings for all Figures and Tables are required.
- An indication of where Figures and Tables should be inserted should be centered on the page with the instruction Insert Figure 1 here or Insert Table 1 here as per the example below:

Insert Figure 1 here

Reference number issued

The Editor will acknowledge receipt of the article for consideration by the journal within 3 weeks of submission during which a reference number will be issued. After this date authors may follow up with the Editor. In instances where authors have not received any reviewer comments within 8 weeks after submission the authors may contact the Editor and refer to the reference number issued for the particular article.

Submission preparation

The submission should consist of **three separate documents** as follows:

- **Document 1** to include the **Title Page**. This page must indicate the title of the article, authors' names (full first name and surname) and address of the institution academic or other) where the authors reside. Indicate the corresponding author with *, and ensure that the name, full postal address and e-mail address is clearly indicated.
- **Document 2** to include the **Main Document or Article**. Do not include authors' details again in this part of the document. This document should start with the abstract of the article followed by four to six keywords for indexing purposes and an abbreviated title. The abstract is followed by the main article with references concluding the article.
- The main article should be divided into appropriate sections, e.g. Introduction, Methods, Results, Discussion, Conclusions, Acknowledgements and References. Subheadings may be used but should be limited.
- **Document 3** to include **Figures, Tables and photos/images if necessary**. High resolution images should be submitted where photographs are included. The numbers used for tables and figures in the article should correspond with the number used in the text positioning in the main document. Headings of tables should be placed at the top of the table and for figures at the bottom of the figure.

Referencing guidelines

- As indicated the Harvard referencing style should be used when preparing the article.
- Consult the following Harvard Referencing Style Guide for all references: http://openjournals.net/files/Ref/HARVARD2009%20Reference%20guide.pdf
- There should be a corresponding reference in the reference list for each in text citation used.
- Corresponding citations and references must have identical spelling and year.
- The reference list should be in alphabetical order according to the first named author.

Addressing reviewer comments

A blind peer review process is followed during which expert national and international reviewers are approached to review the article. Reviewer comments will be submitted back to the authors, via email from the Editor, in the form of a written report compiled by the reviewer as well as a track changed document should the reviewer deem it necessary. Authors are requested to resubmit the revised article within **two weeks** after receiving the reviewer comments. If this due date cannot be achieved the corresponding author should inform the Editor. Reviewer comments should be addressed in terms of a table in which the authors indicate how and where the changes requested were addressed. All correspondence regarding the review and publication of the article will come from the Editor.

Publication procedures

The final version of the accepted article should be submitted via email to the Editor at kempeel@unisa.ac.za. This version will be submitted to the Copy Editor after which revision to the article might be required. The Journal accepts papers with the understanding that no substantial part of the article has been or will be published elsewhere therefore the final version of the article will be submitted to a plagiarism detection software program after which further amendments to the article may be required to the satisfaction of the editor. Final sign off of the article will be requested from the corresponding author when all technical and editorial processes have been completed. It is the responsibility of the authors to ensure that the correct version of the article to be published is signed off. At this stage correspondence will be received from the Editorial Administrator.

Articles will not be placed in an early view process nor will DOI (Digital object Identifier) references be issued. The article, once published, will be issued with a full volume number and page numbers for referencing purposes. The journal is therefore in the open access domain immediately after publication. An abbreviated title and keywords are also required for publication purposes.

Off prints are not issued as the article can be down loaded in pdf format and distributed by the author immediately when published.

Language editing

Language editing of all articles is the responsibility of the authors. Proof of language editing in the form of a certificate or letter of acknowledgement by the language editor should be submitted to the editor before publication of the article can commence.

Page fees

An invoice will be issued to the corresponding author that will include a fee charged for the publication of each page of the article as well as a handling fee. On receipt of the page fees the article will be released for publication. The invoice will be issued by the Editorial Administrator Mrs Trudie Erasmus.

Author material archive procedure

Please note that unless specifically requested, JCS will dispose of all hardcopy or electronic material submitted 1 year after publication. If you require the return of any material submitted, please inform the Editorial Administrator as soon as possible.

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Privacy Statement

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defsa
Design Education Forum of Southern Africa

14th National Design Education Conference 2017

#Decolonise!

Submission of Abstract

The Abstract submission deadline for the first call for papers is on or before ***4 April 2017***. Your abstract must be no more than 300-500 words. The abstract should be a concise statement of the problem, approach, and conclusions of the work described. It should clearly state the paper's contribution to the field. Typically, three to five Keywords should be taken from your submission.

Full Paper Assessment Criteria

The assessment of final papers is considerably more stringent than for an abstract. Your final paper will be assessed based on a wide range of criteria including the following:

- Does the paper address the conference theme?
- Is the paper academically sound?
- Does the paper contribute to the field of design education?
- Does the paper title reflect its content?
- Is the structure of the paper clear and logical?
- Are the problems, methodology and claims or conclusions clear?
- Does the paper include sufficient relevant related theory and is such knowledge clearly portrayed and correctly cited?
- Are parts of the paper weak or lacking, and how could these be improved?
- Are illustrations or diagrams relevant and correctly captioned, and do they contribute to the understanding of the material?
- Does the paper adhere to the style guidelines including footnotes, referencing, removal of personal references, headings and subheadings, keywords, etc.?
- Is the paper professionally presented: no grammatical or typographical errors, shoddy or poorly chosen wording, incorrect use of terms or other quality issues?

Page Size

Material on each A4 page should be justified, with a 2.54 cm margin right around. It is important to check these margins even if you use this Word template because they might have been overwritten by your local settings.

Important

To be able to see the links to submit a paper, review a paper or see your papers and reviews, you need to REGISTER and LOG IN to the DEFSA website (www.defsa.co.za).

Usernames and passwords are case-sensitive. Please note that your paper is being submitted for blind peer review. All references to the author in the body of the paper should be removed before submission. It is critical that your paper addresses the conference theme.

Acceptance of your abstract is not a guarantee that your paper will also be accepted. If your evaluation showed "needs clarification" in any aspect, please make sure that clarification is provided in your final abstract and paper.
If your evaluation showed "not acceptable" in any aspect, you might need to adjust your research topic and methodology to produce an acceptable paper.

Page numbering, headers and footers
Do NOT include headers, footers or page numbers in your submission. These will be added when the publication is assembled.

Formatted Text
Please use the template provided. Word styles have been provided to save you time and effort, and ensure consistency.

- Paragraphs: justified (left and right), 13pt spacing, 6pt above and below paragraphs.
- Normal text: Please use 11-point Calibri font.
- Abstract and keywords: italicised.

Section Headings
The headings of sections (or Heading 3) should be in Calibri 14-pt (not bold) using sentence case, i.e. only the initial letters of the first words and proper names capitalised.
Subsections (or Heading 4 on the template)
The headings of subsections should be in Calibri 11-pt bold using sentence case
Sub-subsections
The heading for sub-subsections should be in Calibri 11-pt bold, italic with initial letters capitalised

Figures/Captions
Figures and tables should be inserted at the appropriate point in your text. Each figure should have a figure caption in Calibri 10 point bold font. They should be numbered (e.g., "Table 1" or "Figure 2"), centred and placed beneath the figure or table. Please note that the words "Figure" or "Table" should be spelt out (e.g., "Figure" rather than "Fig.").
Please note that the papers will be printed in black and white. Therefore you should supply the final file with black and white graphics only. You may use coloured figures for the sake of the version on the Web, as long as they translate well into gray-scale.

References
The abbreviated Harvard system of citation should be used. References should be published materials accessible to the public. Internal technical reports may be cited only if they are easily accessible (i.e. you give an Internet address within your citation). Proprietary information may not be cited.
http://www.usq.edu.au/library/referencing/harvard-agps-referencing-guide

Language, style and content
Please make sure that your paper is in clear, readable English. With regard to spelling and punctuation, you may use any dialect of English (e.g., British, Canadian or US), provided this is done consistently. Hyphenation is optional.

To ensure suitability for the international audience of our conference, please pay attention to the following:

- Use simple sentence structure and common vocabulary. Avoid long sentences and complex sentence structures. Use semicolons and punctuation correctly.
- Briefly, define or explain all technical terms.
- Explain acronyms the first time they are used in your text, thereafter they may appear as acronyms e.g. South Africa (SA), thereafter SA.
- Clarify local references.
- Use unambiguous forms for culturally-localized concepts, such as times, dates, currencies and numbers (e.g., "1-5-99" or "5/1/99" may mean January 5th or May 1st.
- Try to minimise the use of gender-specific pronouns (he, she) and other gendered words (chairman, manpower). Use gender-neutral language or try to structure sentences so that gender-specific pronouns are avoided.

Total Word Length
Full papers should be no longer than 5,000 words, including title and references. Longer papers will not be included in the Research Proceedings.

File Name
For your paper to be accepted it must be formatted as a Microsoft Word file (.docx or .doc), of 5Mb or less, including diagrams (if any).
Your file must be named using the same style as your abstract was returned to you to make sure it is easy to identify i.e. **Abstractno_keyword.docx**
To avoid upload problems and make sure that your abstract, please ensure that there are no spaces or punctuation in the filename, and that there are 40 or less characters before the .'docx'.

Conclusion
It is important that you write for a general audience. This guideline is intended to help you achieve a professional presentation. By adhering to the guideline, you ensure that your paper is shown in the conference proceedings exactly as you intended. You also reduce wasted time and effort of rework and ensure an impressive presentation of all conference papers.
We thank you for your cooperation and look forward to receiving your "print-ready" paper.

Acknowledgements
We thank all authors, committee members, and volunteers for their hard work and contributions in providing guidelines, reviewing abstracts and papers, preparing the official proceedings and assisting with numerous tasks to ensure a professional and informative event.

Annexure C3: Author guidelines for the International Journal of Consumer Studies

International Journal of **Consumer Studies**

Author Guidelines

Contents

1. SUBMISSION

Thank you for your interest in the International Journal of Consumer Studies. Note that submission implies that the content has not been published or submitted for publication elsewhere except as a brief abstract in the proceedings of a scientific meeting or symposium.

Once you have prepared your submission in accordance with the Guidelines, manuscripts should be submitted online at http://mc.manuscriptcentral.com/ijc.

The submission system will prompt you to use an ORCID iD (a unique author identifier) to help distinguish your work from that of other researchers. Click here to find out more.

Click here for more details on how to use ScholarOne.

For help with submissions, please contact: ConsumerStudies@wiley.com

We look forward to your submission.

Data Protection

By submitting a manuscript to or reviewing for this publication, your name, email address, and affiliation, and other contact details the publication might require, will be used for the regular operations of the publication, including, when necessary, sharing with the publisher (Wiley) and partners for production and publication. The publication and the publisher recognize the importance of protecting the personal information collected from users in the operation of these services, and have practices in place to ensure that steps are taken to maintain the security, integrity, and privacy of the personal data collected and processed. You can learn more at https://authorservices.wiley.com/statements/data-protection-policy.html.

2. AIMS AND SCOPE

The *International Journal of Consumer Studie*s provides an international forum for academic and research papers with a focus on how consumers can enhance their security and wellbeing. It publishes articles of interest to an international audience and at the leading edge of consumer research throughout the world. The scope of the journal includes:

• Consumer sciences and their application
• Consumer policy
• Consumer education

Topics covered by the journal include:

• Consumer protection: empowerment and entitlement, safety, standards, economic security;
• Consumer behaviour: goods and services, business and marketing practices, retailing, all from the consumer perspective;
• The consumer ecosystem: globalisation, sustainability, technology, ethical consumption, gender issues, citizenship;
• Family and household studies: quality of life, food and nutrition, textiles and clothing, shelter, health and wellbeing.

Publishing 6 times per year from 2005, the *International Journal of Consumer Studies* is now established as one of the leading academic journals on the subject and is subscribed to by institutions and individuals in many countries.

3. MANUSCRIPT CATEGORIES AND REQUIREMENTS

Original Article – a report of new research findings or conceptual analyses that makes a significant contribution to knowledge. Articles will normally not exceed **5,000 words (**including abstract, key words, and main text); articles which exceed 7,500 words will be returned to the author.

All submissions should report original research that has not previously been published or that is currently under consideration for publication elsewhere, in any form other than a simple abstract of 400 words or less. Papers presented at conferences are accepted provided that they have not been published in full in Conference Proceedings.

4. PREPARING YOUR SUBMISSION

Parts of the Manuscript

The manuscript should be submitted in **separate files**: title page; main text file; figures.

Title page

The title page should contain:

(i) a short informative that contains the major key words. The **title** should not contain abbreviations (see Wiley's best practice SEO tips);
(ii) a short **running title** of less than **50 characters**;
(iii) the full names of the **authors**;
(iv) the authors' institutional **affiliations** at which the work was carried out;
(v) full **contact details** of the corresponding author (telephone, postal address, and email);
(vi) Acknowledgements;
(vii) Funding (if relevant);
(ix) Conflicts of Interest (if relevant).

The present address of any author, if different from that where the work was carried out, should be supplied in a footnote.

Authorship

Please refer to the journal's authorship policy in the Editorial Policies and Ethical Considerations section for details on eligibility for author listing.

Conflict of Interest Statement

You will be asked to provide a conflict of interest statement during the submission process. See the section 'Conflict of Interest' in the Editorial Policies and Ethical Considerations for details on what to include in this section. Please ensure you liaise with all co-authors to confirm agreement with the final statement.

Main text

As papers are **double-blind peer reviewed** the main text file should not include any information that might identify the authors.

The main manuscript should be divided into appropriate sections:

(i) title,
(ii) abstract,
(iii) introduction,
(iv) methods,
(v) results,
(vi) discussion,
(vii) conclusions,
(ix) references,
(xi) tables and figures.

Abstract

The main text must be preceded by a short summary of the paper. Please provide an abstract of no more than **300 words**.

This should not contain any abbreviations or references and should include (as appropriate): the study's rationale, aims and objectives; methodological design and justification; ethical issues and approval; research methods; research instruments and/or interventions; outcomes measures; results;

implications; study limitations and conclusions. Please ensure your manuscript uses British (rather than American) English.

Keywords

Please provide up to **10 keywords**.

Main text

• As papers are **double-blind peer reviewed** the main text file should not include any information that might identify the authors.
• Footnotes to the text are not allowed and any such material should be incorporated into the text as parenthetical matter.

Acknowledgments

Contributions from anyone who does not meet the criteria for authorship should be listed, with permission from the contributor, in an Acknowledgments section. Financial and material support should also be mentioned. Thanks to anonymous reviewers are not appropriate.

References

References follow the **Harvard** style, i.e. the author, date system.

• All citations mentioned in the text, tables or figures must be listed in the reference list.
• In the text give the author's name followed by the year in parentheses: Smith (2000).
• If several papers by the same authors and from the same year are cited, a, b, c etc. should be inserted after the year of publication.
• In the reference list, references should be listed in alphabetical order.
• Reference to unpublished data and personal communications should not appear in the list but should be cited in the text only (e.g. Smith A, 2000, unpublished data).
• Authors are responsible for the accuracy of the references.

Submissions are not required to reflect the precise reference formatting of the journal (use of italics, bold etc.), however it is important that all key elements of each reference are included.

Where possible, please provide a DOI (digital object identifier). All reputable online published material should have a DOI; for more information, please see http://www.doi.org/.

Only full articles which have been published or are in press may be included in the reference list. Please see below for examples of reference content requirements.

Journal Article
Benjamin van Rooij B, Stern RE and Fürst K. The authoritarian logic of regulatory pluralism: Understanding China's new environmental actors. Regulation & Governance 10: 3-13. https://doi.org/10.1111/rego.12074

Online Article Not Yet Published in an Issue
An online article that has not yet been published in an issue (therefore has no volume, issue or page numbers) can be cited by its Digital Object Identifier (DOI). The DOI will remain valid and allow an article to be tracked even after its allocation to an issue. Murphy K, Tyler TR, Curtis A (2009) Nurturing regulatory compliance: Is procedural justice effective when people question the legitimacy of the law? Regulation & Governance https://doi.org/0.1111/j.1748-5991.2009.01043.x

Book
Flowers, S. (1996) Software Failure: Management Failure, 3rd edn. John Wiley, Chichester, UK.

Chapter in a Book
Stinchcombe, A. (1965) Social structure and organizations. In: Handbook of Organizations (ed. by J. March), pp. 142-193. Rand McNully, Chicago, IL, USA.

Electronic material
Cancer-Pain.org [homepage on the internet]. New York: Association of Cancer Online Resources, Inc.; c2000–01 [Cited 2015 May 11]. Available from: http://www.cancer-pain.org/.

Tables

Tables should be self-contained and complement, but not duplicate, information contained in the text. They should be supplied as **editable files**, not pasted as images, either on separate sheets within the main document or as separate files. Tables must be numbered using Arabic numerals in order of appearance.

Figures

Although we encourage authors to send us the highest-quality figures possible, for peer-review purposes we are happy to accept a wide variety of formats, sizes, and resolutions.

Click here for the basic figure requirements for figures submitted with manuscripts for initial peer review, as well as the more detailed post-acceptance figure requirements.

Figures should be included either on separate sheets within the main document or as separate files.

Colour figures. Figures submitted in colour may be reproduced in colour online free of charge. Please note, however, that it is preferable that line figures (e.g. graphs and charts) are supplied in black and white so that they are legible if printed by a reader in black and white. If you wish to have figures printed in colour in hard copies of the journal, a fee will be charged by the Publisher.

Appendices

Appendices will be published online, after the references. For submission they should be supplied as separate files but referred to in the text. Supporting Information Supporting information is information that is not essential to the article but that provides greater depth and background. It is hosted online, and appears without editing or typesetting. It may include tables, figures, videos, datasets, etc. Click here for Wiley's FAQs on supporting information.

Supporting Information

Supporting information is information that is not essential to the article but that provides greater depth and background. It is hosted online, and appears without editing or typesetting. It may include tables, figures, videos, datasets, etc. Click here for Wiley's FAQs on supporting information.

Note, if data, scripts or other artefacts used to generate the analyses presented in the paper are available via a publicly available data repository, authors should include a reference to the location of the material within their paper.

General Style Points

The following links provide general advice on formatting and style.

• **Abbreviations**: In general, terms should not be abbreviated unless they are used repeatedly and the abbreviation is helpful to the reader. Initially use the word in full, followed by the abbreviation in parentheses. Thereafter use the abbreviation only, e.g. United Nations Food and Agriculture Organisation (FAO).
• **Units of measurement:** Measurements should be given in SI or SI-derived units. Visit the Bureau International des Poids et Mesures (BIPM) website at http://www.bipm.fr for more information about SI units.

Wiley Author Resources

Wiley has a range of resources for authors preparing manuscripts for submission available here. In particular, authors may benefit from referring to Wiley's best practice tips on Writing for Search Engine Optimization.

Editing, Translation and Formatting Support: Wiley Editing Services can greatly improve the chances of your manuscript being accepted. Offering expert help in English language editing, translation, manuscript formatting and figure preparation, Wiley Editing Services ensures that your manuscript is ready for submission. Please also ensure that your manuscript uses British (rather than American) English.

5. EDITORIAL POLICIES AND ETHICAL CONSIDERATIONS

Editorial Review and Acceptance

The acceptance criteria for all papers are the quality and originality of the research and its significance to our readership. Except where otherwise stated, manuscripts are **double-blind peer reviewed**. Papers will only be sent to review if the Editor-in-Chief determines that the paper meets the appropriate quality and relevance requirements.

Wiley's policy on confidentiality of the review process is available here.

Data storage and documentation

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ANNEXURE D:

Data tables

Wilcoxon signed rank tests, Paired samples *t*-tests

The impact of the sewing training pamphlets

- **The body measuring pamphlet intervention**

Table 1: Wilcoxon signed ranked tests for body measurements pamphlet intervention

Post-Pre	Ranks	N	Mean rank	Sum of ranks	Test statistics		Effect size
					Pre-post		
					Z	*p*	
	Negative ranks	1	5.50	5.50	**2.809**	0.005	**0.68**
	Positive ranks	12	7.13	85.50			
	Ties	4					
	Total	**17**					

Table 2: Paired samples statistics for the body measurement pamphlet intervention

		Mean	N	Std. Deviation	Effect size (*d*-value)
Pair 1	Pre	5.00	17	1.87	1.38
	Post	7.58	17	2.67	

Table 3: Paired samples test for the body measurement pamphlet intervention

		Paired differences					*t* value	*Degree of freedom (df)*	*p*
		Mean (M)	Standard Deviation (SD)	Std. Error Mean	95%Confidence interval of the difference				
					Lower	Upper			
Pair 1	Pre-Post	2.584	2.95	0.71	-4.10	-1.06	-3.60	16	0.002

- **The pattern layout pamphlet intervention**

Table 4: Wilcoxon signed ranked tests for the pattern layout pamphlet intervention

Post-Pre	Ranks	N	Mean rank	Sum of ranks	Test statistics		Effect size
					Pre-post		
					Z	*p*	
	Negative ranks	1	1.50	1.50	3.554	0.000	**0.86**
	Positive ranks	16	9.47	151.50			
	Ties	0					
	Total	17					

Table 5: Paired samples statistics for the pattern layout pamphlet intervention

		Mean	N	Std. Deviation	Effect size
Pair 1	Pre	10.52	17	3.04	2.28
	Post	17.47	17	4.63	

Table 6: Paired samples test for the pattern layout pamphlet intervention

		Paired differences							
		Mean (M)	Std. Deviation (SD)	Std. Error Mean	95%Confidence interval of the difference		*t-value*	*Degree of freedom (df)*	*p*
					Lower	Upper			
Pair 1	Pre-Post	6.94	4.66	1.13	-9.34	-4.54	-6.12	16	<0.001

The appropriateness of the pamphlets against the literacy levels of the IGP participants (for low-, medium literacy and Grade 12).

Table 7: Paired samples statistics for four low-literate participants (achieving below Grade 7) for the pamphlet interventions taking body measurements (pair 1) and accurate pattern layout (pair 2)

		Mean *(M)*	N	Std. Deviation *(SD)*	Effect size
Pair 1	Pre body measurement intervention	5.25	4	1.89	1.58
	Post body measurement intervention	8.25	4	3.86	
Pair 2	Pre pattern layout intervention	12.25	4	4.27	1.23
	Post pattern layout intervention	17.50	4	4.43	

Table 8: Paired samples test for four low-literate participants (achieving below Grade 7) for the pamphlet interventions taking body measurement (pair 1) and accurate pattern layout (pair 2)

		Paired differences					*t-value*	*Degree of freedom(df)*	*p*
		Mean *(M)*	Std. Deviation *(SD)*	Std. Error Mean	95%Confidence interval of the difference				
					Lower	Upper			
Pair 1	Pre-Post	-3.00	3.55	1.77	-8.66	2.66	-1.68	3	0.190
Pair 2	Pre-Post	-5.25	6.13	3.06	-15.00	4.50	-1.71	3	0.185

Table 9: Paired samples statistics for eight participants with low-to-medium literacy (achieving between Grades 7 and 11) for the pamphlet interventions taking body measurements (pair 1) and accurate pattern layout (pair 2)

		Mean *(M)*	N	Std. Deviation *(SD)*	Effect size
Pair 1	Pre body measurement intervention	4.50	8	1.41	1.58
	Post body measurement intervention	6.75	8	2.05	
Pair 2	Pre pattern layout intervention	9.12	8	3.05	1.29
	Post pattern layout intervention	15.25	8	4.74	

Table 10: Paired samples test for eight participants (achieving between Grades 7 and 11) for the pamphlet interventions taking body measurements (pair 1) and pattern layout (pair 2)

		Paired differences							
		Mean *(M)*	Std. Deviation *(SD)*	Std. Error Mean	95%Confidence interval of the difference		*t-value*	*Degree of freedom (df)*	*p*
					Lower	Upper			
Pair 1	Pre-Post	-2.25	2.18	0.77	-4.07	-0.42	-2.90	7	0.023

Pair 2	Pre-Post	-6.12	4.64	1.64	-10.00	-2.24	-3.73	7	0.007

Table 11: Paired samples statistics for five literate participants (Grade 12) for the pamphlet interventions taking body measurements (pair 1) and accurate pattern layout (pair 2)

		Mean *(M)*	N	Std. Deviation *(SD)*	Effect size
Pair 1	Pre body measurement intervention	5.60	5	2.60	1.07
	Post body measurement intervention	8.40	5	2.70	
Pair 2	Pre pattern layout intervention	11.40	5	3.91	2.45
	Post pattern layout intervention	21.00	5	2.54	

Table 12: Paired samples test for five literate participants (Grade 12) for the pamphlet interventions taking body measurements (pair 1) and pattern layout (pair 2)

		Paired differences					*t-value*	*Degree of freedom (df)*	*p*
		Mean *(M)*	Std. Deviation *(SD)*	Std. Error Mean	95%Confidence interval of the difference				
					Lower	Upper			
Pair 1	Pre-Post	-2.80	4.08	1.82	-7.87	2.27	-1.53	4	0.200
Pair 2	Pre-Post	-9.60	2.88	1.28	-13.17	-6.02	-7.45	4	0.002

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CHAPTER 1:
CONTEXTUALISING THE STUDY

Introduction

Community engagement has become a prevalent objective in the mission statements of tertiary academic institutions along with its of core activities of teaching, learning, and research. Their role in community engagement is customarily directed towards the improvement of the health and welfare of neighbouring communities. The North-West University (NWU) is involved in such initiatives, and more specifically the Transition and Health during Urbanisation of South Africans (THUSA) study. In the year 2000 the THUSA study identified the rural communities of the North-West Province (NWP) as extremely vulnerable populations, adversely affected by poverty, low levels of education and limited access to income and job opportunities, amongst others (Vorster *et al.*, 2000:505). A comprehensive needs assessment in the broader socio-economic context of this rural area was carried out, with the findings highlighting the need for income-generating opportunities. During 2002, the FLAGH programme (Farm Labour and General Health) was initiated in response to these findings with two income-generating community projects established under the protocol of the Holding Hands projects; a glass recycling project and a sewing project. The sewing project aimed at teaching rural women sewing skills in order to obtain an income or supplement a low income. As part of the broader intervention programmes, these projects are aimed at uplifting, empowering and sustaining vulnerable communities within rural areas.

Recent research pertaining to the Holding Hands community projects indicated that the sustainability of these projects and activities have been hindered by the lack of training resources and that continual practical skills development is necessary (Niesing, 2012:3; Niesing, 2016:74). Additionally, the Africa Unit for Transdisciplinary Health Research (AUTHeR) study also revealed a prevalent need for skills training such as needlework as a means to combat unemployment (Coetzee & Du Toit, 2011:31). As the provision of training is essential to the success of any community-based income generating project (IGP) endeavour (Oldewage-Theron *et al.*, 2005:319; Van Niekerk, 2006b:13), it follows that the training materials used are suitable for its intended use by its intended population. The term 'training materials' refers to a variety of textual (written) materials developed to aid a training process and can take the form of training manuals, instructional guides, textbooks, e-books or work and activity books. This study was concerned with the sewing training materials for use in IGPs in rural communities. The term 'sewing training materials' refers to training materials that focus on sewing and sewing related content.

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