Generalizations from an interpretive study: The case of a South African community-based health information system

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ABSTRACT

This paper explores the making of generalizations from interpretive research by examining the process of developing a community-based information system (IS) in a rural area in South Africa. Lee and Baskerville's [1] framework of four categories, and Walsham's four types, of generalizations form a framework that is used in this case study. Using the concept of the *Ideal Speech Situation* two empirical to theoretical generalizations are made: the reconceptualization of participation and the need to generate common ground in which free and open dialogue between those who use, and those who are affected by the IS, is made possible. The main argument of this paper, using the generalizations made from this single case study, is that generalizations from interpretive research can be made and that much valuable contribution in the IS field is lost because IS researchers fail to make these generalizations.

KEYWORDS: generalizations, interpretive research, health information systems, South Africa

1 INTRODUCTION

Information Systems (IS) researchers have identified generalizations of results from interpretive case studies to be a significant challenge [1, 2]. The challenge of generalizations concerns how results from a particular case study, whether in terms of methodologies adopted or theoretical insights generated, can be abstracted, and applied to, other settings. Unlike positivist studies which rely on statistical generalizations [3], interpretive research poses different sets of challenges around generalizations, especially relating to what can be generalized, how and to what extent. This paper seeks to address some of these questions in the context of an empirical analysis of the design, development and implementation of a community-based health IS in one health district of South Africa. The research challenge concerns analyzing what aspects of the research process and outputs can be generalized to other health districts of South Africa (and other countries) and also to other IS related research settings. Implications are also developed around human resource issues, specifically with respect to how capacity can be enhanced to conduct similar research and to develop generalizations in other settings.

One of the reasons as to why generalizations are often not explicitly made from interpretive research is that the notion of generalizations tends to be confined to a positivist view of research. Positivist studies generally adopt statistical-based approaches to develop mathematical relationships between independent and dependent variables, and extrapolate the results from the sample studied to the larger population within specified statistical confidence intervals [3]. Interpretive research has been criticized for its results being "non-generalizable" to larger populations because of its single case study focus [4, p. 3]. The aim of this paper is to argue that both empirical and theoretical generalizations from interpretive case studies are both necessary and possible, but require approaches different from those used in positivist studies.

The paper is accordingly structured in the following manner. In the next section, a perspective on generalization, and its application to the IS field is discussed. We illustrate the argument for development of generalizations from single interpretive case studies through an example from South Africa. The next section describes the research process involved in the development of this case study. In the following section, the discussion focuses on the specific generalizations that can be made from that case study. In conclusion, we discuss other circumstances in which the generalizations should hold.

2 GENERALIZATIONS AND INTERPRETIVE IS RESEARCH

Various debates exist over the question of the development of generalizations from interpretive research. These vary from "If there is a 'true' generalization, it is that there can be no generalization" [5, p. 110], to Baskerville and Lee's call for interpretive researchers to acknowledge the generalities of their work [4]. Much of this debate stems from the definition of general-

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izations used and varies with the epistemological approach of the researcher. Lincoln and Guba describe generalizations as "...assertions of enduring value that are context-free. Their value lies in their ability to modulate efforts at prediction and control." [5, p. 111] While not completely agreeing to the appropriateness of making generalizations from interpretive/qualitative case studies, they argue however about the need to develop "working hypothesis" which represent tentative assertions of the situation, which are uncovered and tentatively applicable to other situations. The transferability, however, depends on the similarities between the contexts referred to by Lincoln and Guba as 'fittingness'. The concept of "working hypothesis" resonates with Geertz's notion of "thick descriptions" of a particular phenomenon within a specific context [6]. Another researcher who in reading the "thick description" can interpret similarities and differences between different contexts, and the level at which abstractions can be made before applying generalized learning from one context to another.

Lee and Baskerville [1] provide a comprehensive review of research on generalizations in IS, and strengthen ongoing arguments of other IS researchers who advocate the need to develop generalizations from interpretive case studies [2, 7, 8]. After exploring the philosophical foundations of different forms of generalizations, namely the positivist and interpretivist schools, Lee and Baskerville develop a framework of four different types of generalizations. They distinguish between the base from which the generalization is being made, either empirical or theoretical, and the base to which the generalization is being applied, again either empirical or theoretical. The four types of generalizations are thus empirical to empirical; empirical to theoretical; theoretical to empirical, and; theoretical to theoretical [1] as shown in Table 1.

Drawing from Bhaskar's concept of generative mechanisms [9], Walsham extends the notion of generalizations from interpretive case studies by arguing that generalizations can be viewed as 'tendencies' and are best "...seen as explanations of particular phenomena derived from empirical interpretive research in specific IS settings, which may be valuable in the future in other organizations and contexts." [2, p. 79]. As such generalizations can be seen as theoretical contributions. This is in agreement with Bhaskar's exposition of generative mechanisms or 'tendencies'. One of the implications of deriving these theoretical generalizations is also the exposition of the independent 'causal power' or tendency at work - that is, what is the 'generative mechanism' that enables such a generalization to occur [9]. In this case, theory can be viewed as being the abstraction of ideas from reality to be used to explain the world. Walsham outlines four types of generalizations from interpretive case studies: the development of concepts, the drawing of specific implications, the contribution of rich insight and the generation of theory. These are summarized as follows:

development of concepts: Walsham gives the example of 'informate' from Zuboffs' work, which implies how through the use of computer-based IS certain processes or new activities can become visible, which in earlier paper-based systems were hidden.

drawing specific implications in particular domains of action: An example given by Walsham of this type of generalization is an in-depth case study of IS development in a financial services company [2, p. 80]. The implication, in this study, concerns the relationship between the design and development process and business strategy. An ad hoc methodological approach to computer-based IS development, with a clear business focus can result in rapid systems development, but can also lead to lack of integration and inflexibility, whereas, drawing heavily on formalized methods can be slow and time bound when the business vision and related IS strategy is unclear. The implication is a good description of what Walsham terms a 'generative mechanism', which could be used in other organizations and contexts.

developing 'rich insight': Giving the example of Suchmans' concepts of 'plans' and 'situated action', her various theories regarding human-machine interaction and specific implications, her contribution is described in this broader category of rich-insight [2, p. 80]. This type of generalization is used to capture those contributions that cannot be easily described as concepts, theories or social implications.

generating theory: This involves the generalizability of measurements, observations, or other descriptions to theory, and the generalizability of the resulting theory beyond the domain that the researcher observes. Walsham gives an example from Orlikowski and Robey's [10] work in IS to construct a theoretical framework concerned with the organizational consequences of information technology. They suggested that this framework could be used in systems development and organizational consequences of using IT.

In this paper we integrate the category of empirical to theoretical generalization of Lee and Baskerville and Walsham's [2] four types of generalizations to illustrate how generalizations from an interpretive case study can be made. Walsham's types of generalizations could also be applied to other categories of generalizations, such as theoretical to theoretical. This is summarized in Table 2.

To illustrate how some of the above types of generalizations can be made, we describe as an example an interpretive case study from South Africa concerning the design and development of a community-based health IS.

	GENERALIZING TO EMPIRICAL STATEMENTS	GENERALIZING TO THEORETICAL STATEMENTS
GENERALIZING FROM EMPIRICAL STATEMENTS	**EE** GENERALIZING FROM DATA TO DESCRIPTION This involves generalizing data to a measurement, observation, or other description. How may Type EE generalizability be established?	**ET** GENERALIZING FROM DESCRIPTION TO THEORY This involves generalizing measurement,observation or other description to a theory. How may Type ET generalizability be established?
GENERALIZING FROM THEORETICAL STATEMENTS	**TE** GENERALIZING FROM THEORY TO DESCRIPTION This involves generalizing a theory, confirmed in one setting, to descriptions of other settings. How may Type TE generalizability be established?	**TT** GENERALIZING FROM CONCEPTS TO THEORY This involves generalising a variable, construct, or other concept to a theory. How may Type TT generalizability be established?

Table 1: A Generalizability framework: Four Types of Generalizing and Generalizability (Source: Lee and Baskerville, 2003, p233, Figure 5 [1])

Types of generalizations	**Category of generalization: Empirical to theoretical**
Developing concepts	Developing single concepts or concepts as part of a broader network.
Drawing specific implications	Drawing specific implications from particular case studies or research settings.
Contributing rich insight	Insights that are neither concepts nor specific implications of theories.
Generating theory	Generalizability of measurements, observations, concepts or other descriptions to theory.

Table 2: Category and types of generalizations

3 CASE STUDY

After 1994, the South African government gave top priority to using the Primary Health Care (PHC) approach in the delivery of health services. The PHC approach emphasizes the need to serve the community and recognizes the importance of community participation in the delivery of those services. The UThukela District Child Survival Project (TDCSP) was selected by the National Department of Health as one of three learning sites for the development of a community component to child health in 1999, including the design of a community-based child health IS. TDCSP is a non-governmental organization, which operated initially in the OKhahlamba municipality from 1995 to 1999 and expanded to the rest of the district from 1999 to 2003. Through a partnership with the community and Department of Health, TDCSP's mission, during the eight years of the programme, was to create a well-being context through child health, maternal health and HIV/AIDS interventions. These interventions were to be co-designed and implemented in a holistic, integrated and sustainable manner.

An action research framework was adopted, as our aim was not just to study and describe an existing situation, but to change it through specific interventions. The action research approach was informed by Elden and Levin's [11, p. 130] action research model and incorporated the familiar five phase cyclical process, namely diagnosing, action planning, action taking, evaluating and specifying learning [12, p. 588]. The cyclical approach to implementing, analyzing and evaluating the changes in the IS, involved both the researchers and participants and is illustrated in Figure 1.

Given the joint nature of the participatory research approach, a research team was established at the outset. Participants for the research team were selected by the Project and based on the positions they held within the district, the networks they were

in, the skills and expertise they possessed, as well as their willingness to participate. For example, the community field facilitators had strong links with local government structures, whereas the community health workers had links with the household and the health facilities. One of the authors of this paper was engaged with the Project since 1997. This engagement involved the facilitation of meetings to develop a common understanding of the role of IS, training on data collection techniques and instrument design, conducting field work, facilitating group data analysis sessions, writing reports and facilitating feedback sessions and training on the use of new tools. The roles and responsibilities of all parties were not only agreed to and documented for clarification purposes, but also to avoid potential confusion or misunderstandings.

After agreement on the roles and responsibilities of the various parties was reached, the next step was the development of a common vision for the role of IS in supporting the attainment of the community's vision for child health. A co-determined vision for child health (*To achieve optimal health, growth, development and well-being of children in the UThukela Health District*) was achieved through community and district meetings and participatory exercises with different community groups.

A participatory situation assessment was then conducted to understand what IS were already in place and how they were designed, along with an assessment of the health-care and health-seeking practices and status around children. Resources available (human, financial and institutional) were also mapped. Issues around participation, communication and capacity formed major themes in the assessment. The participatory situation assessment and the reviews and evaluations of the health IS enabled the various role players to understand the existing IS and to review it in terms of their needs [13, 14, 15]. Additional surveys and reports from the project [16, 17, 18] provided a broader understanding of the area, as well as giving accounts of the local knowledge and practices with respect to child health. From this research the main people responsible for child health in the community were identified. These included: community health workers, clinic health committees, traditional leaders, councillors, social workers, early childhood practitioners, mothers (including teenagers), fathers, grandmothers and Project staff.

Additional research on developing a child-health community-based IS was then conducted to understand the information needs, who should be involved in the development of the IS and the formats in which the information should be communicated. A total of 10 interviews, 15 focus group discussions and 1 meeting took place between July and September 2002 (one additional FGD with children was conducted in May 2003). Different viewpoints expressed by community members facilitated a greater understanding around the meaning of 'well-being' and 'at-risk' for a child, what actors/practices contribute to these situations, how the situations can be measured and, based on what action needs to be taken, who the information should go to and in what format.

The results of this research, along with the situational assessment, led to recommendations for a revision of the health IS to incorporate a child-health community-based IS. After implementation, an evaluation of the system resulted in reflection and recommendations for further changes in the system. The evaluation of the project, which included an evaluation of all the interventions, was conducted in November 2003. Identifiable benefits to date are largely process-oriented: in other words, improving the processes by which the health IS operates rather than the impact the IS had on child health. More broadly, the community-based IS has helped to emphasize the importance of information at community level within a district health IS, making it clearer where information should flow based on who can take action, and highlighting the importance of feedback of information to the community-level partners in child health

The National Department of Health and UNICEF requested work, on the development of a child health community-based IS, to be carried out in two other provinces based on reports and feedback received from this case study. Though we cannot replicate in total what has happened in one area to other areas as the situations and contexts faced in different districts and provinces vary considerably, we were able to learn and apply lessons from the uThukela experience to these new settings. Given the resources required to conduct such an intensive study in the other provinces, we focused on what generalizations could be made, on a practical and theoretical level, based on the work in the UThukela District. Despite the need for situated approaches, we argue that the need to consider generalizations strategies stems in this case from the similarities in the problem of vulnerability, standardizing the complex health care structures, and issues of costs. The particular aspects of that research approach, process and output is now described.

3.1 Research approach and process

The research strategy adopted in developing the community-based child health IS is characterized by three key features: action research, longitudinal design, and interpretive. These are now described.

3.1.1 Participatory action research

The creation of partnerships from the outset in terms of defining roles and responsibilities and in determining a co-generated vision within the district was a crucial first step. The partnership between the community, the Department of Health and the Project, was based on the underlying principles of fostering a genuine community development approach where health is seen in the context of broader human development. The adoption of small incremental steps and a flexible approach was needed to fit the research efforts with a busy community life. For example, field work and participatory discussions were conducted after the

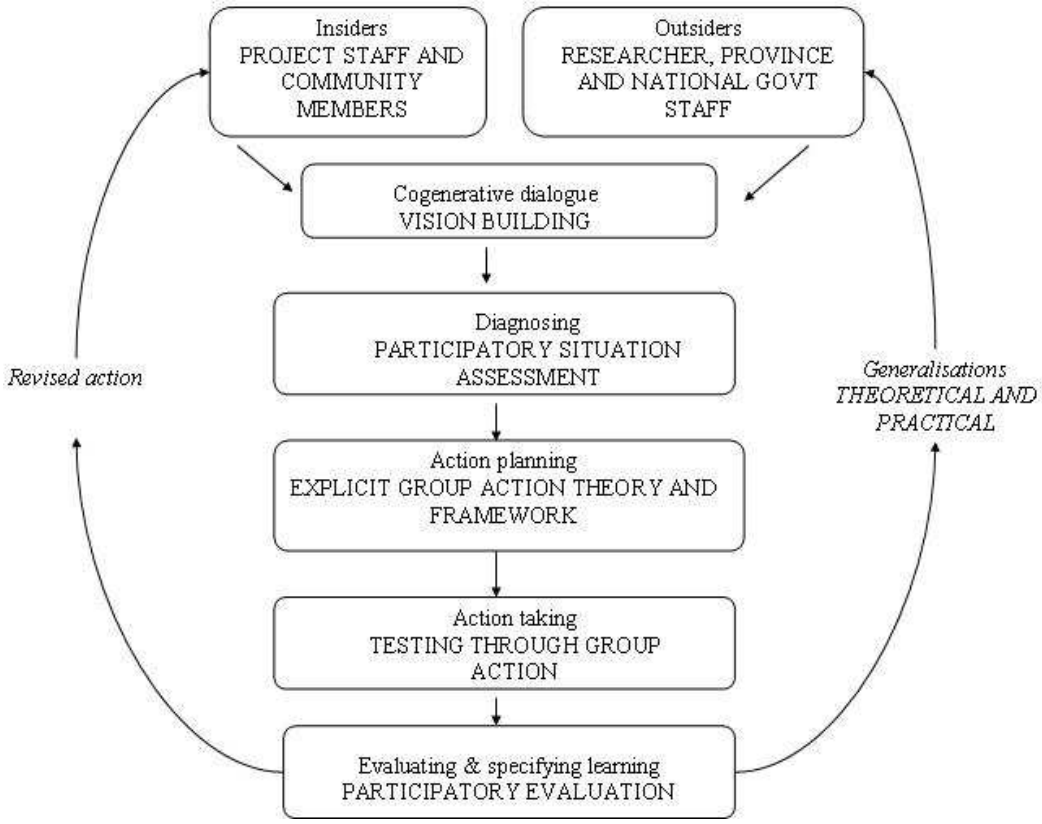

Figure 1: Participatory action research model used in the case study

crops had been harvested, postponed for important meetings and festivities, and conducted as near to the participants' home or place of work.

3.1.2 Longitudinal

Since changes are to be made in small incremental steps, a longitudinal approach is necessary. The process of specifically developing and designing the community-based IS commenced in 2002 and the implementation of the revised system commenced in the first half of 2003. However, the work built on the IS development which had taken place since 1995. Fundamental to this longitudinal approach was the desire to operate within existing structures and institutions and to build on activities already in place. Furthermore, to ensure effective participation there is the need for capacity development at all levels and this cannot take place within a timeframe imposed by outsiders. Time is needed to understand the context and to build a trusting and caring relationship between all members of the partnership. For example, the involvement of one of the authors with the community over a period of several years contributed to developing trust, and removing some of the distinctions between the "insiders" and "outsiders".

3.1.3 Interpretive

Interpretive studies attempt to understand phenomena by exploring the meanings people assign to them and the context in which that person acts [19, 20, 2]. An interpretive approach is based on the assumption that data is socially constructed and value laden. Data collected is only transformed into information, and then knowledge, through the interpretation and meaning people assign to it, which influences knowledge and actions. These very actions influence the use and interpretation of the IS and consequently, its development. Community-based IS development requires an understanding of people and the social and cultural contexts in which they live. In our case it was important to understand the social meanings community members ascribe to vulnerability of children, and how these meanings could be translated to indicators that can be effectively monitored by the IS.

As the members of the community who were responsible for child health were identified through the participatory situation assessment exercise. One of the main tasks was to develop an understanding of what the community meant by 'well-being' as the vision for that district was the attainment of 'well-being' for all children. The indicators developed, and subsequently incorporated into the community-based health IS, were based on the meanings of 'well-being' and 'at-risk' obtained through the interviews and focus group discussions. Traditional forms of communication, such as song, dance and drama, provided the means through which the community members expressed their views in a manner in which they were comfortable. Additionally, these forms of communication were then incorporated into the health IS. For example, feedback to the community members was provided at the village health days using familiar dances and songs.

3.2 Research outputs

Based on the results of this research five main changes to the district health IS were made. These included:

Determining community's own indicators: In line with these views of holistic health, new indicators were included into the community-based IS, including those to describe the context in which the child lived, as well as other indicators that extended beyond the physical health of the child. The new indicators included information on communication and relationships within the household, deaths within the family, employment and access to education and social services. Discussions were held subsequently between different members of the community and district staff, so that a common understanding on what the indicators meant could be reached.

Formulating changes in data collection forms: In order for the new data items to be collected there was the need to revise the data collection forms. However, one of the tools, the community health worker observation tool, is not simply a revision of the old data collection forms, but is used to facilitate dialogue with the household.

Creating forums for analysis and reflection: To stimulate reflection and use of the community-based data, different discussion forums were enhanced. For example, the monthly meetings among the community health workers now include individual reflection as well as group reflection on the data. The village health days were enhanced to include a process of assessment, analysis and formulation of action based on data presented, through the medium of song, dance, poetry and histograms.

Implementing changes in the information flows for improved feedback: One of the outcomes of the review of the existing health IS was that there was useful information being generated by that system, for example, indicators around child growth and immunization, but the key role players and duty bearers were not receiving this information. Many of the role players felt that if they had access to the right information they would be able to act based on it. Emphasis was placed on providing appropriate feedback of useful data for different levels. This was particularly important given that different role players had become key to the health system since the original district health IS was designed. This involved the introduction of community health workers in the district and the establishment of the local government community-based structures. Households receive feedback immediately from the community health workers during their visits, while communities receive feedback on the information at the village health days, and the health facility staff receive information from the district information officer.

Increasing visibility of conflicting territorial/geographical boundaries: After the data had been collected by the community health workers and submitted to the district office it became evident that the area in which the community health worker was working and collecting data did not correspond to the official catchment areas of the health facilities. This caused problems in the integration of the data sets being collected and its reporting by the health worker. This mismatch became visible only when we discussed the issue of scaling the system from one municipality to the complete district.

4 DEVELOPING GENERALIZATIONS: RESEARCH PROCESS AND OUTPUT

We now discuss some specific generalizations that can be made from this study, with respect to both the research process and output. In this section two examples of empirical to theoretical generalizations, from the above case study, are explored through the extension of Habermas' concept of the *Ideal Speech Situation* [21]. Habermas posits that public opinion is formed through discussion. In the same way, IS design and development requires the development of a common ground that can facilitate and encourage a relatively free and open dialogue between the developers, designers, users of the system, and the community who are impacted through the use of the system. The empirical work focused significantly on the development of enabling conditions within which different relevant members could express their views and participate in the system development. Concepts from Habermas' public sphere and the ideal speech situation [21], helped to analyze the changes made to the health IS. Habermas' emphasis on the importance of communication in the attainment of an enabling environment, sensitized us to focus on how enabling conditions to support open communication could be attained.

Relying on the historical movement in the 17th and 18th centuries of coffee houses, societies and salons becoming central places of public debate and discussion of political concerns, Habermas developed his idealized notion of the public sphere, founded on the assumptions of rational-critical discourse, where everyone was an equal participant, and the supreme communication skill was the power of argument, and the process of debate itself [22].

> A legitimate decision does not represent the will of all, but is one that results from the deliberation of all. It is the process by which everyone's will is formed that confers it legitimacy on the outcome, rather than the sum of already formed wills [21, p. 446].

Through the notion of the "ideal," Habermas emphasized how various conditions served as distortions to the creation of this sphere, including corporate interests, media and money. Habermas argues that over time corporate interests colonized the sphere of the mass media, and that major powers in society such as the market, the state and organizations took over the public sphere. So rather than the public sphere being a sphere of communicative rationality, it became a forum of instrumental rationality. Motivated by these concerns, Habermas argues that as the public sphere expands, the quality of discourse declines [23].

However, Habermas believed that striving for an 'ideal speech situation' could address the problem of instrumental rationality. The conditions for the creation of an 'ideal speech situation' may be summarised as:

- the extent of access (as close to universal as possible),
- the degree of autonomy (the citizens must be free of coercion and be allowed to question and introduce any assertion),
- the rejection of hierarchy (each person should participate and express her or his attitudes, desires and needs, on an equal footing),
- the rule of law (particularly the subordination of the state), and
- the quality of participation (the common commitment to the ways of logic as well as the competence to speak) [24].

Using some of Habermas' concepts, specifically around participation and communication in striving for the *Ideal Speech Situation*, we illustrate how two empirical to theoretical generalizations can be made from the above interpretive case study. The first generalization concerns the manner in which participation was reconceptualized through this study and how this contributed to more general learnings to other settings. This represents an example of the drawing of specific implications. The second empirical to theoretical generalization relates to the need to generate common ground in which free and open dialogue between those who use, and those who are affected by the IS is made possible. Without this common ground, the role of the IS in serving as a tool for social development and emancipation tends to be limited. Each of these examples are now discussed in detail.

5 EXAMPLE 1: DRAWING SPECIFIC IMPLICATIONS – RECONCEPTUALIZATION OF PARTICIPATION[1]

In this case study, the meaning of participation in IS design was reconceptualized (in relation to traditional ways in which participation is considered in IS research) in at least three ways:

- Going beyond 'end-user' participation;
- Adopting a multi-leveled and multi-sectoral approach, and;
- Developing the capacity to participate.

These are now discussed.

5.1 Going beyond 'end users'

The conventional focus of participatory design studies is on end-users, largely disregarding those people who are affected through the delivery of those services being provided by these end-users. For IS to be used as a tool for social development, the scope of the term 'users' in IS needs to be expanded to include all those affected by its implementation. Korpela et al. argue for the inclusion of the community served by the health facility in IS development along with the computer professionals and health providers [25]. However, those affected by the IS should not be viewed as one homogenous group, a concern also faced in development studies projects. As Puri notes in his work on geographical IS implementation for land management in India, a common error in community development projects is to view communities as a homogenous whole, bereft of differences within [26].

In the case study presented, the role players identified as responsible for children's 'well-being' were involved in the design and development of the community-based IS. The involvement was in the determination of indicators, which allowed for a diversity of perspectives. The context in which a child grows up is important to monitor to prevent a child ending up in 'at-risk' situations. People outside the community do not tend to have access to this information.

5.2 Adopting a multi-level and multi-sectoral approach

Conventional participatory design approaches have typically explored IS design in the context of one organization, and rarely in community based settings [25, 26, 27]. Indicators for holistic child health covered areas concerned with education, infrastructure, social welfare and employment. For example, the identified role players who affected the development of a child represented both multi-sectoral (health, education, welfare and local government) and multi-leveled (household, community and district) groups. Addressing such diverse needs necessarily involved a multi-leveled and multi-sectoral approach, as also argued by Braa et al as follows:

> Since a variety of groups, organisations, and influential individuals comprise the community, an attempt to bring about community change must take this complexity and divergent interests into account. Network development provides a means of thinking about linking various parties to bring about system development. [28, p. 292]

5.3 Development of the capacity to participate

In participatory design approaches inparticipatory design approaches in ISS, capacity to participate is usually assumed, ignoring the need to develop this capacity. An initial position that can be taken is the opening up of spaces for dialogue and the establishment of communication loops between the different levels. In our case study, we discovered that the day-to-day care of the child is primarily the responsibility of the mother of the child, but in terms of traditional beliefs the 'well-being' of the child is, in effect, the responsibility of the family, especially significant is the influence of the father of the child and the paternal

[1] This topic forms the debate in an article by the same authors (E. Byrne and S. Sahay, "Community-based health information systems: implications for participation". *Journal for IT development*, vol. 13, pp. 71–94, 2007.)

grandmother. Thus household visits by the Community Health Worker included discussions with all the main decision-makers and extending the information flows to all family members. Developing forums for discussion at different levels within the IS can assist with improved dialogue between the various responsible parties, and provide an opportunity where genuine reflection on the meaning of the data collected can take place. However, how this opportunity is realized in practice is shaped by both the enabling and constraining role of different structural conditions, such as infrastructure and history. Also shaping this is the capacity or capability of members, as also argued by Sen:

> Responsible adults must be in charge of their own well-being; it is for them to decide how to use their capabilities. But the capabilities that a person does actually have (and not merely theoretically enjoys) depend on the nature of social arrangements, which can be crucial for individual freedoms. And there the state and the society cannot escape responsibility [29, p. 288].

In our case study, we explored capacities to act based on the information that participants wanted to be included in the community-based IS. Key in terms of having the capacity to act, was to have access to information. Becoming part of the current data flow and developing a community level information flow were viewed, by community members, as fundamental for their capacity to act. Arrangements were made to enable people to participate in the design process through use of the local language, having meetings near where they lived or worked, having a facilitator they trusted, and further, having training on data collection methods and analysis, as well as orientation on child health issues. Furthermore, traditional forms of communication, such as song, dance, poetry and drama were all used in the revised information flows. There is the need to recognize the structural conditions which enable and constrain the capacity to participate, by training, mentoring and using local relevant skills and expertise.

In summary, the reconceptualization of participation and the adoption of a participatory action research approach helped to enhance participation and creates more effective possibilities to address real life problems through the linking of theory and practice. For developing a comprehensive district health IS, the diverse and divergent meanings included in the IS need to be recognized based on community involvement. Lastly, a more equitable process requires people to have the capacity to participate and take local actions and decisions.

6 EXAMPLE 2: DEVELOPMENT OF COMMON GROUND FOR FREE AND OPEN DIALOGUE[2]

The creation of the communication loops and infrastructure for the community-based IS were developed in a number of ways. Initially, we explored how an enabling environment for public debate could be facilitated through the creation of a common vision and through exploring the understanding of local terms for childhood illnesses. The principles of attaining the *Ideal Speech Situation* were useful in highlighting communication aspects in creating an enabling environment for communication concerning child health issues. However, rather than aiming for one public sphere, we strived to create a number of subspheres, and furthermore, communication went beyond language to developing mutual understanding of the meaning of health and well-being. Each of the conditions in striving for an 'Ideal Speech Situation', as well as reflecting on possible distortions, were useful in our context. These conditions and possible distortions are now explored in more detail.

6.1 Extent of access

Concern for equal access led to the facilitation of the meetings in the local language, isiZulu. Interviews and discussions were conducted, to the greatest extent possible, as close as possible to the work or living environments of the participants. Existing mediators were relied upon for conducting the interviews and facilitating the discussions so that if there were any issues raised that needed continued support and assistance, then the existing structures could be relied upon to take the issues forward. Participatory techniques were used in the community meetings and discussions, such as mapping, critical incidence analysis and other participatory learning-for-action methods. Training was conducted in data collection and analysis techniques and community members were heavily involved in the various evaluations and research. In a busy community, time frames were flexible and fitted in with harvest time, the weather and community celebrations.

Yet, not all community members were included in the research. Furthermore, women are subject to 'time-poverty', suggesting that many of the women–who possibly could have had very different views and perceptions to those who did participate–may have been excluded *de facto* from the research. Communication went by word-of-mouth about when and where the meetings and discussions were conducted, and therefore if community members were not part of these communication loops, they would not have known about the meetings.

6.2 Degree of autonomy

There was no obligation placed on members of the community to participate and their confidentiality was ensured. The intention of the research team was

[2]This example is further discussed in an article by E. Byrne and J. Gregory, "Co-constructing local meaning for child health indicators in community-based information systems. The uThukela Distrcit Child Survival Project in KwaZulu-Natal". *International Journal of Medical Informatics*, June 765, pp. 578–588, 2007.

to provide forums for the airing of different views, whether in mixed group sessions or in those arranged according to gender or age, such as teenage mothers. However, there may have been social pressures on individuals to participate, or not to participate, of which the research team was unaware.

6.3 Rejection of hierarchy

Given the participatory nature of the discussions a range of different techniques were used – including meetings, interviews, participatory learning-for-action, group and individual discussions and feedback sessions, village health days, presentations and written reports. These different approaches reflected attempts to generate genuine reflection from different viewpoints and suggestions. However, the project cannot change how authority plays out in the community. Even though different viewpoints may have been elicited in the research sessions, the discussion forums cannot be, on their own, the sole conduits for changing social inequalities and hierarchical structures within that society. However, the recognition of these power differences assists in understanding meanings.

6.4 Rule of law

Fortunately, in South Africa, there is a recognized obligation by the State to fulfill the rights of children to good health. There is also legislation that encourages, and also obligates, the participation of the community in local governance structures, for example the obligation of local government to ensure that community health committees are set up. Prior to 1994, the government was run in a very top-down fashion; changes to a genuinely participatory style of governing take time to be realized. On the other hand, traditionally there has always been community involvement in decision-making, although biased towards men's participation. The knowledge of rights and entitlements by members of the community may be incomplete and therefore they do not raise demands for their rights to be realized. One example of this is that, although each child has the right to education, some children are not attending school due to inability to pay school fees or because they do not have a school uniform. Further education and increased awareness of parents, children and other rights holders, as well as those obligated to fulfill these rights, are needed.

In terms of developing common ground for the free and open debate striving for the attainment of the 'Ideal Speech Situation' is useful in that it can:

- highlight and sensitize issues of power;
- enhance the ability to build on existing structures and systems;
- develop capacity and the accessibility of participation, and;
- assist in understanding the important role of communication and how meanings can be shared in IS design and development.

6.5 Quality of participation

In this research, different forums for discussion were organized before bringing the divergent parties–mothers, community leaders, district health staff, health facility staff and researchers–together. Thus 'sub-spheres' were created to facilitate participation and greater debate, rather than attempting to create one large public sphere. However, the same principles for free participation, in terms of access, autonomy, rejection of hierarchy, rule of law and the quality of participation, would still apply to each of these sub-spheres.

Given the long history of the project, there are positive relations between project staff and the community. Within the interviews, meetings and discussions at community level and at district level, good quality of participation was reported by the facilitators.

Our empirical work identified various distortions in terms of limitations faced when we had combined meetings, with representatives of the community, project and district staff, on the determination of indicators. The people associated with the community were often reluctant to offer suggestions on how the proposed data could be collected or indicators defined. The initial combination of the different hierarchies in the group impeded full participation from all participants. Another potential distortion is the difficulty faced for many women to participate due to 'time-poverty'- that is, given the excessively long days that women work finding the time to participate in the forums established may not have been possible.

Furthermore, the notion of incorporating distortions within the 'Ideal Speech Situation' concept leads to a communication framework which can be usefully generalized in other settings. The communication framework developed through this case study is summarized in Table 3. For example, in the western world, distortions may arise from the time constraints members have to participate, while in other developing countries settings inadequate knowledge or poor infrastructure could potentially lead to distortions.

The examples of generalizations and 'generative mechanisms' as discussed in Sections 5 and 6 are summarized in Table 4.

7 CONCLUSION

One challenge for generalisation is how can the learnings gained from this study be translated and adapted by researchers conducting similar analysis in other settings. Conducting a study like the one carried out in the UThukela District is a very resource intensive process, requiring significant investments of time. The researcher needs to be competent in various areas to carry out such research, for example on developing research designs, conducting focus group sessions, facilitating communication, understand local level politics, negotiating with the health authorities etc. Such competencies are not just academic in nature, but also require more broader skills of communication, negoti-

Criteria	What was achieved	Potential distortions
Access: (close to universal)	• Local language used. • Close to home or work. • Known facilitator or mediator. • Participatory techniques employed. • Flexible approach.	• 'Time-poverty' of women. • Used existing structures with existing constraints.
Autonomy: (free of coercion, allowed to question, and can introduce any assertion)	• Not obligatory to participate.	• Social pressures and tradition. • Could say what they feel facilitator wants.
Hierarchy: (ability to participate, and free to express attitudes, desires and needs)	• Good participation in smaller groups. • Use of participatory techniques.	• Poor participation in mixed groups. • Influence of social inequalities and hierarchical structures.
Rule of law: (especially lower levels of government)	• Participation endorsed in legislation. • Traditional communal decision-making.	• History of non-participatory government. • Insufficient knowledge of, or capabilities to demand for, rights.
Quality: (common commitment to the ways of logic, and the competence to speak)	• Long history of TDCSP. • Capacity of facilitators and community members developed.	• Less participation in larger groups.

Table 3: Characteristics, achievements and potential distortions in striving for the 'ideal speech situation'

ations, and public relations. As such, there can be no set recipes or methodologies on how such competencies can be developed. More practical generalisations may be useful in developing these competencies. However, the documentation and development of generalizations, and the outlining of 'generative mechanisms', can assist in the development of such competencies. There can be orientation sessions organized for the researchers to develop awareness of the kind of competencies that are required, and what was the experience of researchers in other settings. The documentation and the development of generalisations from interpretive case studies can support this orientation process. Such awareness building can enable processes of critical reflection and lead to improved competencies of researchers to conduct similar studies in other settings.

We cannot replicate in total what has happened in one area to other areas as the situations and contexts faced in different districts and provinces vary considerably. A context specific approach is needed for the design of IS, and community-based IS in particular. This contextual approach is widely discussed in various domains of IS such as computer supported cooperative work [30], and also in arguments for situated action [31, 32, 33]. Despite the need for situated approaches, we have argued that generalizations can and should be made from interpretive case studies. In this case, the reconceptualization of participation and the need to create common ground for free and open dialogue are both applicable to other situations. Furthermore, the development of generalizations can assist in the development of the capacity of IS practitioners to apply learnings from one setting to another. However, there is the need to develop the conceptual skills of IS practitioners and researchers to generalise from interpretive research and for such generalisations to be made explicit in their work. This requires practice, but is an essential part of enhancing the reflexive critical ability of IS researchers. In general much valuable contribution is lost in IS research because generalizations, whether empirical or theoretical, from interpretive case studies are not made.

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Type of generalization	Generalization from case study	Generative mechanism
Drawing of specific implications	Reconceptualization of participation: • Involvement of community • Multi-level and multi-sectoral approach • Developing capacity to participate	Use of participatory action research: • Use of sub-groups rather than one large 'public sphere'. • Development of inter-sectoral committees as part of a 'network of action'. • Training, mentoring and using locally relevant skills and expertise
Generation of theory	Need to strive for the attainment of common ground for open and free dialogue to attain an IS that can impact social development	Use of the communication framework.

Table 4: Generalizations from the UThukela District case study

with TDCSP.

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