DEVELOPING A MEASURE TO ASSESS PARTICIPATORY METHODS: TESTING FOR PERCEPTIONS OF EMPOWERMENT

By

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TABLE OF CONTENTS

page

LIST OF TABLES 8

LIST OF FIGURES 9

LIST OF ABBREVIATIONS 10

ABSTRACT 11

CHAPTER

1 INTRODUCTION 12

Participatory Methods within the Landscape Architecture Discipline 13
Participatory Video 14
Photovoice 15
Community Mapping 15
The Research Problem: Shortcomings of Participation 16
The Research Question: The Effectiveness of Knowledge-Based Participatory Methods 17
Research Focus 18
Organization of this Thesis 18

2 LITERATURE REVIEW 20

Evolution of Participatory Research Methods 20
Participatory Action Research 20
Community-Based Participatory Research 22
Emerging Participatory Methods 23
Photovoice 23
Participatory Video 25
Community Mapping 27
Multimedia, Film and Storytelling Applied to Community Visioning 28
Participation: A Theoretical Overview 29
Class and Gender 30
Critical Theory - Habermas 31
Constructivist Structuralism – Bourdieu 35
Theoretical Construct: Empowerment Theory 38
Examining Empowerment 42
Hypothesis 46

3 METHODOLOGY 48

Overview 48
Research Design 49

Instrumentation 50
Index Development 50
Interview Question Development 54
Internal and External Validity 57
Data Collection Procedure 60
Data Analysis 61
Controls 62
Challenges 62

4 RESULTS 70

Sample Characteristics 70
Intervention Effects 70
Exploratory Analysis 71
Junior High School Participants 71
Junior High School Non-Participants 71
Interviews 72
Collective Action 72
Interpersonal Relationships 72
Policy Control 73
Food Security, Economic and Environmental Observations 74
Development pressure 74

5 DISCUSSION 82

Overview 82
Interactional Empowerment 83
Intrapersonal Empowerment 85
Community Action Activities 89
Variable Correlations 90
Beyond Empowerment 91
Refining the Intervention 93

6 CONCLUSIONS 96

Overview 96
Research Implications 97
Application to Landscape Architecture Practice 99

APPENDIX: INDICES AND INTERVIEW QUESTIONS 101

Initial Test Index 101
Final Index in English 105
Final Index in Bahasa Indonesia 110
Initial Interview Questions: 116
Final Interview Questions in English 116
Final Interview Questions in Bahasa 117

LIST OF REFERENCES 123

BIOGRAPHICAL SKETCH 130

LIST OF TABLES

Table		page
3-1	Empowerment Theory Constructs, Definitions and Variables	69
4-1	Junior High School Students Mann-Whitney U Test by variable group. Marked tests are significant at p <.05000	76
4-2	Junior high school students/ Group 1/ Participants Kendall tau-b correlation coefficients. Marked correlations are significant at p < .05000	81
4-3	Junior high school students/ Group 2/ Non-Participants; Kendall tau-b correlation coefficients. Marked correlations are significant at p < .05000	81
5-1	MapPack Summary	95

LIST OF FIGURES

Figure page

3-1 MapPack Activity Modules: Landscape Mapping, Oral Narratives, Landscape Sound, Journaling and Sketching, GPS Photos, Video. Photos courtesy of Hannah Plate. 64

3-2 Students Participating in MapPack Activities: Oral Narratives, Sound Recording and Sketch Mapping. Photos courtesy of Hannah Plate. 65

3-3 Rice Terrace Views and Student Participants, MapPack. Photos courtesy of Christina Lathrop and Hannah Plate..... 66

3-4 MapPack Website Home Page..... 67

3-5 MapPack Website Page: Landscape Sound. 68

4-1 Junior High School Students Mann-Whitney U Test Box Plots Overall Empowerment 77

4-2 Junior High School Students Mann-Whitney U Test Box Plots Interpersonal Relationships 78

4-3 Junior High School Students Mann-Whitney U Test Box Plots Interpersonal Relationships 79

4-4 Junior High School Students Mann-Whitney U Test Box Plots Interpersonal Relationships 80

LIST OF ABBREVIATIONS

CBPR	Community Based Participatory Research
PAR	Participatory Action Research
PV	Participatory Video

Abstract of Thesis Presented to the Graduate School
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DEVELOPING A MEASURE TO ASSESS PARTICIPATORY METHODS:
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Participatory approaches have historically been used in design and planning practice to generate and encourage greater citizen involvement and input for planning and community visioning. Varying methods have been developed to engage the community, including focus groups, visual preference surveys, design charrettes, community mapping and participatory video. The successes of these methods vary and are difficult to quantify as the assessment of the result of these processes is rarely done. This study investigates the success of one particular method used to empower voice and build capacity in planning for future community sustainability. An index and interview method was developed to measure increases in perceived empowerment and tested on a sample population that took part in a participatory landscape mapping exercise. The results from the assessment are shared and implications for future research and measure development are considered.

CHAPTER 1
INTRODUCTION

> When I prepared to go to the subak (rice terraces), I think why must we go to the subak. It's very hot in the subak. But, while I am in the subak I realize that it's amazing! So many rice plants there! Then I started to do the project with my friend and now I know why the subak is important to us. Thanks for the project you gave to me. Now I realize we must protect the subak for the next generation
>
> —Rani, MapPack participant

Community participation's original intent was to empower disenfranchised populations (Jones, 1999, p. 66). In the U.S., citizen participation is central to community support for place making and is rooted in the principles on which the nation was founded, including freedom of speech and right to assembly. In order to solve problems, Americans have traditionally approached this effort by forming associations (Hester, 1999, p. 12 -14).

Based in the civil rights movement and with the goal of providing a voice for underserved populations, advocacy planners of the 1960s brought public participation to design and planning, re-invigorated participatory democracy and heavily-influencing civic design (Hester, 1999, p. 16). Community development legislation was established during this period to require citizen participation at the local level (Hester, 1999, p.17).

The civil rights movement, however, had a negative impact on participation as it caused distrust of power and authority and the motivations behind decisions that might provide economic gain to those influencing the development process (Hester, 1999, p. 17). Since then, there have been innovations and improvements in participation resulting in the refinement and development of participatory methods.

The general aim of participatory approaches is to provide the opportunity for people to be “central to development by encouraging beneficiary involvement in interventions that affect them and over which they previously had limited control or influence” (Cooke & Kothari, 2001, p. 5). Participation is seen as a process through which the key stakeholders have influence and control over initiatives that will affect their lives (Cooke & Kothari, 2001, p. 5). Participatory methods aim to engage citizens such that they have the ability to influence and facilitate change.

Currently, technology allows for new forms and practices of participation that can potentially elevate public discourse and is used to provide an interactive environment for decision making. Techniques include computer-generated design alternatives, fly-through simulations and refined group participatory techniques (Evans–Crowley & Hollander, 2010), (Hester, 1999, p. 21). Participatory video, community mapping and participant photography are specific participation methods that were developed to involve residents in the decision-making process (Elmendorf and Rios, 2008), (Fahy & O’Cinneide, 2009).

Participatory Methods within the Landscape Architecture Discipline

The civil rights movement of the 1960s and its ideals inspired landscape architect Lawrence Halprin to use community workshops throughout the 1960s and 1970s as a publically-oriented design process (Merriman, 2010, p. 439). The development of the charrette community engagement process in the 1990s and its integration into New Urbanist planning initiatives (Bond and Thompson-Fawcett, 2007) and community design and planning initiatives (Sutton and Kemp 2006), (Anderson, Fiebe, Johnson and Sabia, 2010) have become common practice in many landscape architecture and planning initiatives. Hester (1999) challenged the design community to approach

participation with consideration of the various vested interests, “their content, personality and power” (p. 21), creating opportunities and connection that potentially result in the creation of places that are inspired by the input of the community and are the result of participation that is inclusive. More recently, participatory methods are emerging as an integrated approach to guiding, building and evaluating community-based projects (Elmendorf & Rios, 2008, p. 82) (Sandercock & Atilli, 2010). By integrating increasingly effective engagement tools and participatory methods as a part of the community visioning process, researchers, landscape architects and design and planning professionals are working to solve problems and mobilize social forces to build consensus and community action.

Some of these methods are seemingly more impactful than others. Emerging participatory methods are used in landscape architecture, community visioning and planning initiatives, including participatory video (Lunch and Lunch, 2006), (Flower & McConville, 2009), (Evans & Foster, 2009), (Harris, 2009), (Frantz, 2007), photovoice (Wang, 1999), (Nykiforuk, Vallianatos & Nieuwendyk, 2011), and community mapping (Lydon 2003), (Fahy & OCinneide, 2009). Each of these methods may result in a product that can be shared through media platforms such as video and web based interfaces. These have the potential of allowing for a greater level of interaction and reaction to the project goals, objectives and vision.

Participatory Video

Participatory video, (a participatory method in which the participants learn to shoot and edit their own video to communicate a community vision or issue), is adaptable to landscape-oriented participatory projects. After all, place and landscape are a “terrain of personal biography and community history” and “people read the landscape for its

social as well as its natural stories" (Tsing, 2005, p. xi). Film, as a medium, has impact. Sound and movement convey the sense of place and leave strong messages and visual impressions. A participatory video approach enables participants to articulate their own concerns and vision through the process. Participatory video can have a real and positive effect by "helping to amplify voices of the softly spoken or seldom heard" (Thompson, personal communication, 2012); teaching them the video production process and in turn, letting them tell their story in a way that can be easily and democratically disseminated through new media networks such as the internet, or via smart phone technology (Thompson, 2005).

Photovoice

Participant photography, or photovoice, is a "process by which people can identify, represent and enhance their community through a specific photographic technique" (Wang, 1999, p. 185). Photovoice is also defined as a "research strategy that permits participants to speak directly and thus be empowered to influence their community as well as decision and policy makers" (Mathison, 2009, p. 187). Its potential benefits include enabling participants to capture images of elements that are important to them, to promote knowledge and communication regarding personal and community strengths and concerns, and to communicate both vertically and horizontally in the community setting" (Wang, 1999, p. 185).

Community Mapping

Community mapping results in collective representations of local geography and landscape, and the process enables a community to determine what they treasure and value. Community mapping has the potential to reflect a community's assets, values and vision for the future; "it is not so much of the community, but by the community"

(Fahy & O'Cinneide, 2009, p. 168). The community mapping method facilitates meaningful contributions by providing a conduit for recording what is important to the participants. (Fahy & O'Cinneide, 2009, p. 167).

Each of these methods presents an alternative to traditional community engagement in landscape architecture practice. In addition, recent landscape architecture-focused research initiatives have centered on using participatory video as a community engagement and visioning tool (Thompson & Widmer, 2010) and the integration of oral narratives into a community-visioning project facilitated by the University of Florida Department of Landscape Architecture for the City of White Springs, Florida (Thompson & Lathrop 2011). As promising as new and adapted methods may be, challenges remain.

The Research Problem: Shortcomings of Participation

Practitioners and academics note that the challenges to effective participation are numerous and that while inclusive and equitable processes are thought to be ideal, they are difficult to realize in a complex civil society (Bond & Thompson-Fawcett, 2007 p. 449), (Hester, 1999, p. 17). Some view the participatory process as becoming so institutionalized that it doesn't meet its original goals as inclusive and equitable (Hester, 1999, p. 12). For example, the New Urbanist charrette is intended to be a citizen-based participatory planning and design process, however, the charrette planner or facilitator may be perceived as having too much allegiance to the New Urban agenda (Bond, Thompson-Fawcett, 2007. P. 449). Integrating participation is seen as a way to hide power inequities and enable special interests to pursue their own agendas (Eversol, 2010, p. 30), (Cook and Kothari, 2001). In my own professional experience, I have observed a tendency for clients to use consultants as a way to legitimize decisions that

have already been made. Academics and practitioners are recognizing the power that planners have in creating a process with the potential to exclude certain groups. Even if one believes that participation increases the power of poor and underprivileged participants, participation does not necessarily translate to equality (Bond, Thompson-Fawcett, 2007), (Albrechts, 2003), (Forester, 1982). While there have been improvements in citizen participation, many are failing because they continually exclude and marginalize certain groups in the process (Forester, 1982), (Bond and Thompson-Fawcett 2007).

The Research Question: The Effectiveness of Knowledge-Based Participatory Methods

Inclusive and equitable methods are ideal in the citizen participation process. Knowledge-based participatory methods, such as participatory video, photovoice and community mapping (methods that are based in community participatory research and practice) have been explored as strategies that appear to be inclusive and empowering activities for the individuals who participate in them (Lunch and Lunch, 2006), (Mathison, 2009), (Wang, 1999), (Fahy & O'Cinneide, 2009). A successful participatory process can be measured by the change in action and community attitudes that result from an intervention. Community mapping, for example, which has centered on Native American and indigenous groups identifying and laying claim to ancestral lands has resulted in reclamation of traditional territories (Lydon, 2000). Participatory video has enabled greater participation in development projects by engaging hard to reach groups, such as the elderly, youth and minority groups in the process (Lunch & Lunch, 2006). Participatory video "works with a deeper level of individual or collective knowledge than comparable participatory methods" (K. Thompson, personal

conversation, 2012), and thereby potentially raises the level of empowerment for the participants. The effectiveness of participatory methods has been qualitatively observed, with the facilitators feeling that the interventions make a difference. It has not been quantitatively measured, however. The research question this study seeks to examine is whether knowledge based participatory approaches lead to an increased perception of empowerment?

Research Focus

Participatory video, community mapping, and photovoice are examples of effective participatory methods (Lunch and Lunch, 2006), (Mathison, 2009), (Wang, 1999), (Fahy & O'Cinneide, 2009), (Lydon, 2000). The central focus of this thesis is to develop a method to examine the effectiveness of participatory methods. Participatory methods seek to increase knowledge, build capacity and perceived empowerment for the participants. This can change participant attitudes about their ability to affect change, potentially promoting long-term community action. The value of the knowledge associated with participatory practice and community theory can strengthen the effectiveness of methods and approaches currently used by landscape architects and planners (Sandercock, 2000, p. 135). This study tests a method for measuring the effectiveness of a knowledge-based participatory process and its activities towards the goal of increasing participant perceptions of empowerment.

Organization of this Thesis

This thesis suggests the need for creating and testing differences in empowerment resulting from participation in a knowledge-based participatory process. Chapter 1 provided an introduction to participation and participatory methods, defined the shortcomings of participation, identified the research question and the focus of this

study. Chapter 2 reviews the body of literature dealing with participation, social science, landscape architecture and planning to examine the origins and evolution of participatory methods, the theoretical basis for participatory methods and the theoretical framework for this study. Chapter 3 presents the research methodology. Chapter 4 analyzes the research results. Chapter 5 is a discussion of the interpretation and explanation of the results, examining what the results imply. Chapter 6 draws research conclusions and explores future research opportunities.

CHAPTER 2
LITERATURE REVIEW

> I am so glad that I did this activity, because I never did this before and it made me realize that the rice fields are important for the next generation. I hope I can make other people think the same as me. I want to tell other people that we should take care of our rice fields
>
> —Putrii, MapPack participant

Evolution of Participatory Research Methods

In order to develop a measure of effectiveness for participatory methods, this research draws from the body of literature in the areas of community organization theory, participatory practice and community engagement. Chapter 2 concludes with the description of the research hypothesis.

Participatory Action Research

> The value of a strong theoretical framework lies in the ways in which it can inform interpretations and evaluations of the areas under study, thus furthering conceptual development. (Sim, Armstrong, Osborne, & Hart, 2001 p. viii)

Participatory methods emerged in the 60s and were heavily influenced by the writings of Paulo Freire. Freire emphasized education and communication as a mutually beneficial activity demanding mutual respect through informed action. Friere wrote, “Hope, as an ontological need, demands an anchoring in practice. As an ontological need, hope needs practice in order to become historical concreteness.” (Freire & Freire, 1994, p. 2) Freire’s ideas were centered in an action-based paradigm and with roots based in Marxist theory. The premise of his work was that through education and communication, the marginalized gain a voice and build the capacity that enables them to facilitate change in their communities. Through dialogue between educators and community members, mutual understanding is achieved (Friere and Friere, 1994, p. 39).

It was these writings that inspired Fals-Borda (1987) to develop a research methodology that emphasized empowerment and became the foundations for what is today known as Participatory Action Research (PAR). PAR is a "research methodology that combines theory, action and participation committed to further the interest of exploited groups and classes" (Fals-Borda, 1987, p. 329). PAR seeks to build on academic knowledge within social science while facilitating change through an emphasis on empowerment and the "awareness-building process" (Fals-Borda, 1987, p. 329). PAR derives from "phenomenological and Marxist trends adjusted to regional realities and factors" (Fals-Borda, 1987, p. 329).

Participatory methods, such as video, photovoice, community mapping and other emerging approaches are based on the underlying principles of PAR, while much of the work being undertaken to examine these methods uses Fals-Borda's methodology. Such research includes identifying the issues, defining a research focus (one that results in direct and positive benefits to those involved), and a "systematic creation of knowledge" (Hall, 1984, p. 291). When produced collectively, knowledge is deepened and enriched and the research facilitates the social, cooperative or collective production of knowledge. "Research, learning, and knowledge production are often aspects of the same intellectual processes in the context of action" (Hall, 1984, p. 292). The goal is to democratize the research and participatory process while integrating learning by engaging members of the community.

Wulfhorst, Eisenhauer, Gripne & Ward (2008, p. 23) define community-centered participatory research as "by and with a community rather than simply for or about a community". As a research model, "participatory approaches provide those affected

with the opportunity to help guide what issues the research should focus on," assist and be involved in defining the research question, and conduct the research with the intent of applying the results in the community (Wulfhorst, et al 2008, p. 25). There is some debate that participatory research and PAR differ; however, they share the premise that to conduct meaningful research, community members are not scrutinized by outside experts and that the validity of the participatory approach is based on a process that facilitates community members' involvement. PAR is further defined as "achieving the goals of the community being researched through the participants' involvement" (Wulfhorst, et al, 2008, p. 26). The challenge of a PAR process involves social dynamics, negotiations, uncertainty and risk. These dynamics will enable or prevent a successful PAR approach. The results of the process for the community are as important as the results for the research information that is collected. "Tangible changes can include the acquisition of research skills and empowerment that enables the community to design and approach in order to address future problems" (Wulfhorst, et al, 2008, p. 27). The PAR process can be integral to community development and capacity building and the use of various participatory methods can help facilitate this process.

Community-Based Participatory Research

Community-based participatory research (CBPR) evolved from PAR and is directly associated with participatory methods. The CBPR label is used to "emphasize the participation, influence and control by non-academic researchers in the process of creating knowledge and change". It is a partnership approach that involves conducting research with the active engagement and influence of community members in all aspects of the research process (Israel, Schulz, Parker, & Becker, 2001, p. 184).

Emerging Participatory Methods

Photovoice, participatory video and community mapping are emerging participatory methods that seek to meet the foundational goals of participatory action research and effective community engagement that results in meaningful, inclusive research and fosters community development and capacity building.

Photovoice

Photovoice, a research method that blends narrative with photography to explore community issues (Wang and Burris, 1994) was built on a historical foundation of individuals and community populations using images and words to examine and express culture identity, history, issues and vision. Photovoice blends narrative with photography to examine community issues (Nykiforuk, Vallianatos, & Nieuwendyk, 2011, p. 104). The method is based on anthropological methods developed by John Collier, who was an early advocate of a visual anthropological approach. The visual anthropology method uses photographs to aid in cultural inventory "for both information for immediate use and as a baseline record for later comparative evaluation of the impact" of a project (Collier, 2007, p. 35). Collier used landscape-oriented photographs to analyze land use and to derive social and emotional insight from residents (Collier, M., 2007. p. 33). The visual anthropology research method had long-term goals, including the political and social empowerment and cultural vitality of the community (Collier, M., 2007, p. 42. 49).

Visual anthropology influenced and inspired participatory methods such as photovoice and participatory video. For example, a visual ethnography project in Gambia, Africa focused on eliminating poverty. The project facilitators worked with local business organizations, fostered participant engagement, and dealt with tourism

development issues and cultural and economic impacts. The process resulted in a documentary that was aired on the local station for community commentary. “Visual ethnography offers enormous potential to collect and disseminate information, which can effect beneficial change” (Stadhams, 2007, p. 138).

Building on visual anthropology methods, Wang and Burris used photovoice as a method that “enabled Chinese village women to photograph their everyday health and work realities” (Wang, 1999, p. 185). Photovoice combines documentary photography and education, putting the camera in the control of participants who might not typically have a voice in the decision-making process. Photovoice enables the participants to capture their voices and visions about their lives, their community and their concerns. Participants share their stories about the images with their peers, the broader public and policy makers and discuss the meanings of the photos and stories. Photovoice has gained popularity as a method that enables researchers from various disciplines to help participants visualize their perceptions about their lives. Examples include a project that engaged community youth and adults to improve education and economic outcomes (Foster-Fishman, Nowell, Deacon, Nievar, & McCann, 2005), examine the essence of play experience to children (Berinstein & Magalhaes, 2009) and assist residents to examine assets they appreciated and issues they wanted to address (Carlson, Engebretson, Chamberlain, 2006). Photovoice has commonly been used to explore community health and social issues. Researchers recognizing its potential for examining the built environment and its effects on community health have also used the photovoice method (Nykiforuk et. al, 2011, p. 104).

Participatory Video

Participatory video is another participatory research method based in visual anthropology. Participatory video evolved out of Don Snowden's work, who is considered to be the pioneer of the use of video in facilitating a people-centered community development approach. The process was developed in 1967 during his work with a small fishing community on the Fogo Islands, Newfoundland. There, Snowdon facilitated a participant-centered community development approach in which community members used film to document their ideas, issues and concerns. By watching each other's films, the villagers realized that they had common concerns and that by working together they could solve them (Lunch & Lunch, 2006). Films resulting from the process were shared with different villagers on the island, making it clear that all Fogo villages were faced with similar issues and shared similar viewpoints. The films were also shared with policy makers unable to visit the island and resulted in several changes in policies relating to the governance of the island. These techniques were applied on projects Snowdon worked on until his death in 1984. Snowden wrote a paper to accompany the documentary, "Eyes See, Eyes Hear" that describes how using video improves communications in a project in India. The work helped to improve economic conditions, intra-village communications, and village health. Snowden outlines the role of the community worker and the horizontal learning, exchange learning and vertical communication that accompanies video use in a marginalized community (Snowden, 1984).

Building on Snowden's work, Lunch & Lunch (2006) further refined participatory video (PV) methods. PV is a set of techniques that enables a group or community to create their own film. The film can then be shared with peers and policy makers. Video

is easy and accessible and is a great way to bring people together to explore issues, voice concerns or simply to be creative by telling stories. This process can be empowering, enabling a group or community to take action to solve their own problems and also to communicate their needs and ideas to decision-makers and other groups and communities. As such, PV can be a “highly effective tool to engage and mobilize marginalized people and help them implement their own forms of sustainable development based on local needs” (Lunch & Lunch, 2006, p. 10).

Evans and Forster (2009), working on two projects in Métis, British Columbia, define PV as an extension of participatory action research that is “characterized by some form of commitment to the direct involvement of the research community in developing the directions and character of the research itself” (p. 89). PAR strives to effect change in the community that is being engaged. “Participatory research is fundamentally about transforming communities from passive subjects, objects, or victims of the research gaze, into agents.” (Evans & Foster, 2009, p. 105). Participatory video has the same premise and is an extension of the ideas at the foundation of participatory action research. The video component complicates things technically as it requires formatting and editing; however, it has also become ubiquitous and increasingly accessible, especially to the viewers (Evans & Foster, 2009, p. 89). The quality of the video, because it is a participant-produced product, can be a challenge as it affects the communication with the viewer. However, PV has the ability to reach a wide audience via web-based communication (Evans & Forster, 2009, p. 105).

In landscape architecture research and practice, PV has been used to communicate community input for the design of a proposed urban greenway that had

impact on a disadvantaged neighborhood in Vancouver, B.C. (Frantz, 2007) and to engage a community in the exploration of connections and associations with cultural heritage landscapes, the rice terraces of Bali, Indonesia (Thompson & Widmer, 2009). Participatory video continues to evolve as a PAR methodology (Sandercock and Atilli, 2010, p. 24).

Community Mapping

Community mapping is a participatory method that has been used since the 1960s and 1970s, primarily as a tool to assist indigenous communities to defend and claim ancestral lands and associated resources (Chapin, Lamb & Threlkeld, 2005, p. 629). Community mapping is a process that has grown into "a worldwide movement of participatory learning, community empowerment and sustainable planning" (Lydon, 2003, p. 1). Community mapping is a learning process that can also enable participants to identify those elements they value.

> The maps are collective representations of local geography and landscape. The process enables a community to reflect on what they treasure in their communities. The mapping is not so much of the community, but by the community, in a manner that reflects their assets, values and vision for the future (Fahy & O'Cinneide, 2009, p. 168).

Community mapping has grown to include online interactive mapping (such as Open Green Map (http://www.greenmap.org/)). Open Green Map is designed as an online interactive mapmaking system, using Google Maps as the platform enabling individuals worldwide to map their community's sustainable sites, routes and resources. This particular method provides the opportunity for instant publishing and map updating. The platform eliminates traditional map-making barriers. Historically, maps (as a contract and the illustration of boundaries that defined property) were powerful to those who drew and owned them" (Lydon, 2000, p. 27). Open Green Map encourages community

participation, as it is broadly accessible via the web. Outreach programs include corporate, university, youth and government agency mapping initiatives. As of 2004, 150 community-based grass roots maps have been developed around the world through the Open Green Map system (Tulloch, 2004).

Traditionally, maps were "possessions and instruments of military, cultural and economic power, and increasingly in the hands of those with colonial and commercial interests (Lydon, 2003, p. 8). Historically, maps helped "colonial powers overrun peasants and indigenous peoples and subjugated their cultures" (Lydon, 2000, p. 27). Community mapping is designed to give the power of mapping to all sectors of society.

Multimedia, Film and Storytelling Applied to Community Visioning

Furthering the work in participatory methods using multimedia, Asantha (2010) describes, "an education project designed to enable democratic access to information and communication technologies among poor young people in India" referred to as Cybermoholla (cyber-neighborhood). The participants' process of learning how to write and express themselves through multimedia is giving them "a greater sense of participation and involvement with their community and neighborhoods" (p. 18). The participants address basic things within the cyber-neighborhood framework, including social justice and issues with the state providing basic services such as education, health facilities and educational opportunities (p. 19). Participant commentary includes observations regarding public spaces, such as the lack of pedestrian facilities, lack of street lighting, traffic issues and inaccessibility for the elderly and disabled. This project provided the participants the opportunity for "commentary, critique and dialogue" (p. 21). This project is an example of the education and learning emboldened in the participatory process. Asantha (2010) notes that the participants learn through content

creation and that media educators play a role in facilitating learning and education through collaboration (p. 25). This application of a multi-media approach broadens the opportunities for engagement, social involvement, commentary, discourse and learning that is possible using participatory methods.

Sandercock and Attili (2010) further explore multimedia applications in participation through a method they call “digital ethnography” by using film as a “mode of inquiry, as a form of meaning-making and as a tool of community engagement and as a catalyst for public policy dialogues” (p. 25). Building on a foundation of the use of film in visual anthropology and in planning, Sandercock and Attili (2010) explore the relationship between local knowledge, narratives, storytelling and planning, examining ways in which communication is central to planning practice and the ways that multimedia can cultivate community engagement and community development. (p. 26).

Thompson and Lathrop (2012) further the exploration of local knowledge, narrative, storytelling and its relationship to community visioning by incorporating an oral narrative component into the participatory process. This allows the voice of elders to be directly incorporated into community visioning, providing the opportunity for the tradition of oral history to inform a forward-looking participatory endeavor.

Participation: A Theoretical Overview

The focus of this research is to develop a measure to effectively examine the effectiveness of emerging participatory methods. Ideally, the process results in change that provides direct benefits to community development by providing those with a limited voice an opportunity to be heard. As a result of the participatory process, community attitudes are modified to support the change. To understand the basis of participation and establish a foundation for this research, the following is an examination of the

relevant theoretical perspectives noted in the participation literature, focusing on critical theory and social capital, and touching on structuration, conflict theory and gender.

Class and Gender

A common theme in successful participatory development approaches is that it takes time and a lot of effort to get to know the community. Success comes when the community determines its own vision and agenda and the development agent is no longer needed to nurture the process (Connell, 1997, p. 258). Putting people first by integrating class and gender planning into a participatory methodology "yields an approach that puts people first; that does not isolate or privilege particular sectors for special, and often separate, remedial attention"; as a result, society is reconfigured "to the benefit of the majority of its members, while empowering them to develop themselves as they see fit" (Connell, 1997, p. 248). Class and gender inequalities are issues that can prevent a fully equitable and representative participatory process. Adding to the complexity of successful participatory methodology, it takes a tremendous amount of time and effort to properly get to know the ins and outs of the community. Class and gender need to be considered within the methodology so that particular sectors are not privileged in the process (Connell, 1997). Gender is a direct construct that has a relationship with the components of social cohesion and empowerment that is often developed through community participation (Peterson, Lowe and Aquilino, 2005 p. 233). Kapoor (2001) references political economy and gender as theoretical perspectives to consider in the participatory process.

Participatory processes, if not developed correctly, can be manipulative and in fact harm those who are supposed to be empowered (Cooke and Kothari 2001). Increased power for the marginalized resulting from the intervention is seen as a measure of

success. Conflict theorists posit that power is the central feature of society as "the culture of any society reflects the interest of the powerful elite and not the political interest of the middle or lower classes" (Allan, 2011, p. 245). Understanding determinates of social change and power structure is elemental to successful participatory approaches (Cleaver, 2001, p. 38). Issues of politics and power are commonly not addressed with participatory approaches to development. By applying Giddens's (1984) theory of structuration, Sinwell (2008) suggests that "even what may seem to be the most domesticating practices by leaders, to achieve their interest-based objectives, can lead to the liberation of those affected" (p. 245).

Critical theory and constructivist structuralism (of which social capital is a construct), are both based in Marxist theory. Critical theory is indebted to Marx and "focused on the ways in which human consciousness is formed and influenced" (Allan, 2011, p. 68). Critical theory looks to the production of knowledge. Participatory methods are based on building knowledge and awareness and increasing social capital through expanded social networks. Promoting communicative action through an emphasis on equality and social capital using participatory methodology in community development is based in Marxist theory, as "economy and class are two of the most important structures of society" (Allan, 2011, p. 417). Examining critical theory and constructivist structuralism provides the foundation of the theoretical basis for a measure of the effectiveness of a participatory intervention.

Critical Theory - Habermas

Critical theory, defined by Jurgen Habermas, is an underpinning in participatory research. In the form of methodology such as participatory video, photovoice and community mapping, a vehicle is created for horizontal and vertical communication,

potentially influencing community policy. One of the foundations of critical theory is that "the process of communication itself gives us warrant to believe it is possible to reach consensus and rationally guide our collective lives" (Allan, 2011, p. 382). Participatory methods strive to alleviate the power experts and those in control from having a stronger say than the layperson in the participatory process (Healy, 2008). Participatory video, for example, is designed to be a voice for the marginalized as the video that results from the process is produced by the lay participants. This methodology solves some of the issues raised by Cooke and Kothari (2001), who challenge the status quo in participation with a focus on conflict theory and the point that "tyranny is the illegitimate and/or unjust exercise of power" (p. 4) and that participatory processes are simply not being truly effective.

A primary vehicle for social change is participatory democracy. Participatory methodology is based on this premise; the intent of social democracy is the intellectual and practical involvement of all of its citizens (Allan, 2011, p. 384). This is a strong argument for critical theory to be the most useful perspective for examining participatory methodology. The goal of participatory methodologies is based in communicative action, emphasizing communication, education and equality. The process of communication can facilitate mutual consensus and thus rationally guide our lives (Allan, 2011, p. 382). Participatory methodology that is visual and designed to result in a communication method, such as video, photostory and community mapping facilitates this goal. Habermas' ideas are optimistic and forward thinking. They give hope to the possibility that a well-designed participatory process can foster a healthy and robust civil society by facilitating communicative action that promotes equality and social progress

(Allan, 2011, p. 382). Participatory methodology can result in a stronger civil society and a revitalized public sphere (Allan 2011, 379). In addition, it may be possible for equality to be facilitated through communicative action as individuals are seen as equals and money, power and status do not weigh in the decision making process. The critical theory approach to public participation is flawed when the scientific knowledge of the experts outweighs the voice and input of the participants.

> Habermasian communicative ethics center upon the notion that fair, free and open forms of debate and communication ensure that no one form of reasoning and/or knowledge dominates others, and so commonly frame attempts to facilitate public participation in technical decision-making (Healy, 2009, p. 1645).

The process needs to incorporate the knowledge that is constructed through the participatory methodology to avoid the common pitfall of "participation": that the experts really guide the process, rather than the participants ultimately truly having a say. "Habermas' advocacy of 'the power of the better argument' (1984) supports adversarial debate and favors conventionally validated (i.e. scientific) forms of knowledge over others" and "the implications of this emphasis on processes, rather than on the sources of and formal characteristics of knowledge," (Healy, p. 1645) should be examined for public participation. One of the biggest challenges of participation is that lay and expert perspectives are dealt with equitably. The participatory process needs to combine different perspectives so that there is a resolution of "asymmetries in power, resources and trust between stakeholders." (Healy, 2008, p. 1653)

Whether the approach is PV, photovoice or community mapping, these methods work within Habermas' theory that communicative action occurs through full equality and each person is regarded as an equal source of legitimate statements (Allan, 2011, p. 382). Communicative action is facilitated by participatory methods that are visual and

designed to result in a communication tool. Participatory methods are based on critical theory and social democracy, promoting the intellectual and practical involvement of citizens. The visual participatory methodology has the ability to develop a greater level of communication and shared ideas between participants and provides the opportunity to share the information in the public realm (Lunch and Lunch, 2006, p. 13). Ideally, the process works within the social norms of a community and enables a community to take action to solve its own problems and to communicate its needs and ideas to decision makers. Learning is also an integral component to the visual participatory process as the goal of visual participatory methods is to aid in the creation of a civil society that emphasizes education, communication and equality (Allan 2011 p. 382).

Kapoor (2001) reinforces grounding participatory methodology in critical theory and is concerned with the overall idea that in some participatory work, there is too much of an emphasis on what seems to work in the field, and not a true understanding of the theoretical basis for why it works; and if it does not work, a change is not necessarily based in theory. In looking at the practice orientation of Robert Chambers' work on Participatory Rural Appraisal, Kapoor (2002) proposes that effective participatory work should be grounded in theory. Something that seems to work is not enough, and just and equitable outcomes should be produced. Habermas' approach is a "dialogical, 'communicative' rationality" where citizens deliberate together, engaging in discussions, arguments and counter-arguments. A consensus is reached only through the (unforced) "force of the better argument" (Kapoor, 2002, p. 107). If the process is deliberate, it is more likely that the final outcome will meet the consensus of all involved. Kapoor (2002) is also concerned that Chamber's narrow view on power does not adequately

deal with political economy and gender issues, and references Foucault's insights into power and knowledge that would provide greater insights into the power dimensions of the process (p. 103).

Critical theory is the foundation for the optimism of the potential success of participatory methodology. Through promoting communicative action, providing a forum within which citizens can determine their own vision and promote their own agenda, working toward a society that is educated and rational and communicates freely and equally. One way in which basing participatory methods on critical theory helps to provide a strong foundation is that there is an emphasis on "the relationship between history and society on the one hand and social position and knowledge on the other. To understand any society, one must first understand its historical path and the structural arrangements within it" (Allan, 2011, p. 383).

In designing a particular participatory methodology, an understanding of these relationships and the community that the facilitator is working in is paramount. Participatory methods also serve to increase knowledge and equality, also a tenet of critical theory, and the "vehicle for social change is participatory democracy guided by critical theory and thought"; the intent of true social democracy is the "intellectual and practical involvement of all its citizens". (Allan, 2011, p 383-384) Participatory methods strive to build knowledge and active involvement through teaching skills that increase knowledge and designing activities that are meaningful and engaging.

Constructivist Structuralism – Bourdieu

Bourdieu's theory can be described through a game analogy; that if we know the rules of the game and the field of play, we can function in society without thinking, just like an athlete who is "in the zone". Bourdieu's work is founded in Marxist theory and

begins with class. Class is structured in the body through cultural capital and is made up of tastes, habits, social and linguistic skills, etc. (Allan, 2011, p. 417). People display their class position in the way they sit, walk and talk. What happens is that in social situations where a person is out of place, they will most likely feel uncomfortable and participate poorly. Bourdieu refers to social capital as the social network a person is set within. Social capital is associated with class, as in "it isn't what you know it's whom you know" (Allan, 2011, p. 419). Participatory methods are often designed to build social capital. Social capital is one of the components necessary for a successful participatory methodology (Okazaki, 2008, p. 516). Bourdieu identifies four types of capital, including social, economic, cultural and symbolic (Allan, 2011, p. 431). Within structuralist constructivism, full weight is given to both structure and personal agency. Participatory methods work to modify both the structure and the level of personal agency.

Hickey and Mohan (2004) envision a positive future for participatory development, while expressing concerns regarding the effectiveness of participation, and suggest that "greater conceptual and theoretic coherence on participation" is necessary (p. 21) as well as proper methods of participation that develop social capital and transform the structure that causes social exclusion (p. 13). People in developing countries continue to "devise new and innovative strategies for expressing their agency in development arenas" (Hickey & Mohan, p. 3). Existing policy is based on the ability of people to be active agents in the development process and "participatory development has often failed to engage with issue of power and politics" (Hickey & Mohan, 2004, p. 4). Many of the problems of participation come from a "narrow focus on development

interventions and experts" (Hickey & Mohan, 2004, p. 11). The approach "tends towards a methodological individualism, obscuring an analysis of what makes participation difficult for marginal groups in the first place. The proper method of participation is to transform the structure that causes social exclusion (structuration). However, it is unrealistic to expect that "participatory projects transform existing patterns of power relations" (Hickey & Mohan, 2004, p. 13).

In addition to social capital, Bourdieu also addresses economic, symbolic and cultural capital, all of which Bourdieu identifies as being used in the production of class (Allan, 2011, p. 419). The roots of community development are founded in commitment to further the interests of oppressed, marginalized and exploited groups and classes. The structure of participatory methods facilitates communication within a community structure, thus broadening the social network of those participating. "We can build our social networks intentionally, or sometimes thorough happenstance" (Allan, 2011, p. 419). Symbolic capital is potentially specifically influenced as new participatory methods use media platforms to share the product of participatory projects. Blackshaw (2010) notes: "the ideal community development practitioner is a facilitator or enabler rather than an expert, whose role it is to build community capacity, social capital and collective organization." (p. 165). The goal of participatory methods is to do just that.

Social capital describes "those social networks and relationships associated with civic virtue and social responsibility" (Blackshaw, 2010, p. 209). Participatory methodologies are designed to have people work together for a common goal and message within the context of the issue or problem the intervention is working to address. In this way, social networks are expanded and therefore potentially social

capital. Through strong social capital, “the problems of civil society are resolved more easily” (Blackshaw, 2010, p. 211). Social capital is seen as functional in that people operate more effectively when they operate collectively. As an interesting counterpoint, social capital is a resource to be exploited and it is the exclusivity of a particular social network that works because it excludes others. On one hand, social capital is a positive resource that has advantages through expanded social networks; on the other hand, it works to hide networks of power (Blackshaw, 2010, p. 214). Whether or not participatory methods result in a lasting expansion of social capital is questionable. Per Okazaki, (2008) social capital is just one construct in a methodology for a model of participatory development and cannot stand-alone. It is, however, a critical component of a fruitful participatory process. Hickey and Mohan (2004) also see social capital as a primary theory in participation methodology.

Constructivist structuralism is a foundational theory that helps to address the effectiveness of participatory methods, specifically within the construct of the development of social capital. A primary vehicle for social change is participatory democracy; participatory methodology is based on this premise and the intent of social democracy is the intellectual and practical involvement of all of its citizens (Allan, 2011, p. 384). This forms a strong argument for constructivist structuralism to be a useful theoretical basis for participatory methodology.

Theoretical Construct: Empowerment Theory

Critical theory and constructivist structuralism form the theoretical basis of participatory methodology and provide the foundation for empowerment, which is a component of what successful participation achieves.

> Empowerment is a social action process through which people gain control, efficacy and social justice. One way to develop empowerment is through active, meaningful participation in community groups and activities. Social cohesion is an emerging construct that expands the notion of community participation to include elements such as shared emotional commitment and reciprocity (Peterson, et. al 2005, p. 234).

There is also a potential relationship with gender relative to social cohesion and the interactional and intrapersonal components of psychological empowerment (Peterson, et al, 2005, p. 234). Empowerment has been defined as the way that people gain greater control over their life, critical awareness of the sociopolitical environment and democratic participation in communities (Perkins and Zimmerman, 1995). In the process of developing the theoretical framework for this research, a common thread in the participatory method literature is that participatory methods are meant to be empowering, or that participation in a participatory process results in empowerment. This has been observed and noted using qualitative measures, but not quantitative.

The development of power lies in the capacity of grassroots groups (commonly exploited socially and economically) to use the knowledge gained in a way that enables them to become active in the advancement of their own society and interests. The goal of creating knowledge and power is to "enable oppressed groups and classes to acquire sufficient creative and transforming leverage as expressed in specific projects, acts and struggles and to produce and develop socio-political thought processes with which popular bases can identify" (Allan, p. 330). "The vehicle for social change is participatory democracy guided by critical theory and thought "(Allan 384). A civil society will grow out of a liberal-political culture that emphasizes education, communication and equality.

Participatory video as a methodology is founded on these principles, as participants learn how to create a video to share their viewpoint that potentially empowers communities (Flower & McConville, 2005), (Evans and Foster, 2009). Lunch and Lunch note that PV is "a tool for positive social change" and a "means for empowerment for the marginalized" and a "process that encourages individuals and communities to take control of their destinies" (2006 p. 5). PV is a tool to record a narrative and voice, to elicit greater participation, and to have a concrete conclusion (the resulting video). This potentially avoids the "frustration, disappointment and burnout that are so prevalent among active participants and leaders" (Perkins, D. 1995 p. 769) in the community visioning process.

Lunch (2007) defines PV as a tool for empowering individuals and communities and outcomes are described as "opening communication channels locally, promoting dialogue and discussion, and setting in motion a dynamic exchange of ideas and solutions" (p. 28). The community decides on the stories they consider most significant. This process is hypothesized to "contribute to local empowerment as the people can see where their films and stories have traveled and the impact they have had at the different levels" (Lunch, 2007, p. 31). The relative ease of sharing video provides the opportunity to share the recorded thoughts and ideas with peers and community leaders.

Participatory video has had a long association with concepts of community empowerment and social reform through its participatory process (Harris, 2009, p. 541). "The process of production becomes a dynamic site for community building and reconciliation" (Harris, 2009, p. 542). What seems to matter most in the

participatory process is the learning that occurs as a part of the process. It is also seen as a step toward empowerment. “PV is a set of techniques to involve a group or community in shaping and creating their own film” (Lunch & Lunch 2006 p. 8). This process can be empowering as it enables a group or community to take action in solving an issue or problem and it also enables them to communicate their needs to higher-level decision makers. The PV process also equips people with skills and positive attitudes including video technical skills, group working skills, listening skills and better awareness of community, identity and place. Participatory video further works to provide an active role for participants (Lunch & Lunch, 2006, p. 14). As PV puts the video in the hands of the participants, the process and resulting film or video facilitates empowerment.

What matters the most in an effective participatory process is the learning that can occur for people who are part of the process. The learning process is a meaningful step toward increasing levels of empowerment amongst the participants involved (Lunch & Lunch, 2006, p. 8). Lunch & Lunch state that the effectiveness of video in the community development process can:

> thus enhance the capacity of people to share their local knowledge and innovations across distances and to stimulate locally-led development in other countries. The films can be used to communicate the situation and ideas of local people to development workers and formal researchers and to decision makers and policymakers, for example, those concerned with land issues, marketing, education, research and rural extension (206, p. 12)

Fundamentally, Marxism, social capital, critical theory and empowerment are also at the base of community mapping. Fahy and O’ Cinneide (2009, p. 167) describe community mapping as:

> a relatively new tool with considerable potential in giving practical effect at the local level to sustainable development rhetoric. As a repository of

> socially constructed knowledge, it has considerable value in democratizing information both in terms of what is recorded and public access to it, in a manner that facilitates more meaningful participation of non-experts in planning and advocacy processes.

Community mapping is based on empowerment theory as it works to put power, through mapping, in the hands of the participants, enabling them to define those community elements that are important to them. For example, by facilitating increased technology, communications and ecological literacy, the goal of Open Green Map (an interactive mapmaking system designed to enable individuals worldwide to map their community's sustainable sites, routes and resources) is to develop competence, efficacy, and mastery of mapping skills for the participants. These are the key components of the intrapersonal constructs of empowerment, as well as increased knowledge of the socio-political structure, the key component of the interactional construct of empowerment. The goal of Open Green Map is to enable participants to communicate both vertically and horizontally by facilitating place-based planning and visioning, voice assessment of current issues and innovations, and orientation to community assets and challenges. Like PV, it is also based in experiential learning theory, as mapping skills are gained in the process. Kolb describes experiential learning as a process that is developed by going through cycles, an active process that results in a transformative experience (Kolb, 1984).

Examining Empowerment

The goal of emerging participatory methods is to facilitate community development and capacity building and to facilitate empowerment. Perkins and Zimmerman (1995) state that "empowerment theory, research and intervention link individual well-being with the larger social and political environment" (p. 569).

Perkins and Zimmerman (1995) believe that empowerment-oriented interventions "provide opportunities for participants to develop knowledge and skills, and engage professionals as collaborators instead of authoritative experts" (p. 570).

The constructs that make up empowerment include self-perceptions of efficacy, mastery and awareness and understanding of the sociopolitical environment (Speer, 2000, p. 52). The independent or predicator variables within the theory that relate to potential benefits from participatory processes are leadership competence, self-perception of policy control in the community, knowledge that power is accessed by working through organizations, and knowledge that power requires strong relationships with others. These are based on the work of Speer (2000, p. 54) that used these variables to measure interactional and intrapersonal empowerment. It would be "expected that conditions which develop communion or cooperation (interactional empowerment) would be associated with communal values such as those expressed in organizational participation and sense of community while conditions which develop mastery or control (intrapersonal empowerment) would be unrelated to organizational participation and sense of community" (Speer, 2000, p. 54). The elements in participatory methods (gaining working technical knowledge, team skills, listening skills, the ability to share a product that can be shown to higher levels of authority, and leadership skills resulting from taking charge of a group effort) are hypothesized to have influence on both constructs of empowerment. In this regard, it appears that the theory of empowerment would be applicable in studying the effectiveness of participatory processes.

Speer's (2000) work studying empowerment defined a measure of interactional empowerment (intellectual understanding of power and social change) and intrapersonal empowerment (personal sense of control and efficacy); in studying both constructs he found that people with higher levels of both constructs participated in community and organizational activities with greater frequency than those with lower levels. This could imply that those that participate in a participatory process may already have higher perceptions of empowerment; it also implies that participation in a process that increases these measures may result in an individual that may become more involved in community action activities.

Peterson et al (2005, p. 240), expanded empowerment research by "examining the relationships among social cohesion, gender and the intrapersonal and interaction components" of empowerment. They found a strong correlation between community participation and intrapersonal empowerment; however, their study found no relationship between community participation and any measure of interactional empowerment. They identified variables within their study that may affect empowerment: gender and environment (i.e. rural vs. urban).

Peterson, Lowe, Hughey, Reid, Zimmerman & Speer (2006) tested a widely used measure of intrapersonal empowerment, the Sociopolitical Control Scale (SPCS). Sociopolitical control refers to individuals' beliefs about their capabilities in social and political systems and involves self-perceptions of an individual's ability to organize a group of people as well as influence local community policy decisions They found that the subscales were reliable and related "in expected ways with measures of community involvement" (p. 287).

Hur produced an interrelated theoretical framework for empowerment by examining conceptual interrelations existing in the theory. In doing so, Hur defines the process of empowerment in various disciplines (i.e. political science, social welfare, education and women's studies, community psychology, management and health studies). This is useful, as it helps further define the constructs and variables that influence the theory.

Empowerment has been defined as the mechanism by which people, organizations, and communities gain mastery over their lives (Speer, 2000, p. 52), and further, by which they gain a critical awareness of the sociopolitical environment, and an understanding of the relevancy of democratic participation in communities (Peterson, et al 2005, p. 234). "Empowerment is seen as a social action process through which people gain greater control, efficacy and justice" (Peterson, et al, 2005 p. 233). Actions, activities or structures may be empowering and the outcome of the process may result in a level of being empowered (Perkins & Zimmerman, 1995, p. 570). It is also thought that smaller, locally organized participatory activities are more effective approaches to empowerment. Empowerment theory also provides a guide for the development of participatory processes in which the participants feel they have an important stake (Perkins & Zimmerman, 1995, pl 577).

The goal of academic research is to test hypotheses, answer questions, and to gain greater understandings of people, places and processes. Much of the time, it is the researcher asking "why" and not the community. Often, the researcher is outside the community. Therefore, the ownership of the process and product is not

the community, and research may be seen as arrogant. Applied research, which is being observed within the context of this study, seeks to find solutions for real-world problems through community building and engagement and shared knowledge. Participatory research aims to share power and act with humility, and to do research in an effective manner (Campbell, 2008, p. ix). At its best, participatory research results in community-driven follow-through wherein the agreed-upon community vision is implemented. In addition, participatory research is empowering, allowing the "community to use the tools of the powerful and speak with an externally acceptable voice" (Campbell, 2008, p. xx).

Hypothesis

Individual capacity building and empowerment is a significant goal of social work interventions. One way to gain capacity is through active, meaningful participation community groups and activities. "Empowerment is a process of increasing personal, interpersonal, or political power so that individuals can take action to improve their life situations." Further, the "process of empowerment occurs on the individual, interpersonal, and institutional levels" where a sense of personal power, an ability to affect others and the ability to work with others to effect change is developed (Gutierrez, 1990, p. 149- 150). Participatory methods are seen as a process through which social change can occur and can be used as a tool to encourage individuals and communities to formulate a vision and to take control of their future.

The hypothesis this research seeks to examine is that involvement in a community participatory process results in a measurable difference in perceived empowerment for the participants, tested statistically. If designers of participatory community engagement approaches have a better understanding of how participatory methods shape

perceptions of empowerment, they might then be able to refine such methods, thereby building the capacity of citizens to become a voice in or even lead efforts in long-term community action. In addition to the statistical analysis to test the formal hypothesis, participants are also interviewed to gain further insight into the participatory process. It is anticipated that the participants will display indications of increased perceived empowerment as well as increased awareness of the rapid land use change occurring in the rice terrace landscapes that are the focus of the study.

CHAPTER 3
METHODOLOGY

> I am really happy to do the activities because by doing these activities I realize that the rice field is so important for our life. I will take care of our rice field forever
>
> —Sita, MapPack participant

Overview

In the summer of 2011 the University of Florida's Bali Field School embarked on a continuation of a community heritage landscape focused participatory process that started in Ubud, Bali in 2009 (K. Thompson, personal conversation, 2010). Building on the foundation of that initial program (which was composed of a participatory video process), the 2011 program used participatory methods to map and catalogue community landscapes in and around Bangli, Bali, Indonesia. The participatory process, (called MapPack), was designed to be a multi-faceted CBPR process with a landscape mapping emphasis. The project focused on the community heritage landscapes surrounding the village of Bangli, Bali, Indonesia; specifically, the rice terrace landscapes currently under pressure from rapid urbanization. The participatory program integrated sketch mapping, sketch journaling, video, oral narratives, soundscape and GIS photo mapping. The mapping activity modules were designed to immerse the students in the landscape through activities that encouraged them to observe and become familiar with the land through active, engaged learning. The program worked with junior high school students from Bangli. A University of Florida undergraduate student stayed in Bangli to facilitate the program over a seven-week period. The community mapping activities resulted in a website that was developed to showcase the

content that the students developed and provided a platform from which they could share their work with peers and community elders (K. Thompson, personal conversation, 2011). Figures 3-1, 3-2 and 3-3 Illustrate students participating in the mapping activities, and Figures 3-4 and 3-5 illustrate several MapPack website pages.

This research is a component of this initiative: an effort to develop a tool that effectively measures one of the potential outcomes of participation in a community participatory process, perceived empowerment resulting from participant involvement in the MapPack activity. The research examines the differing levels in perceived empowerment between the students that participated vs. those that did not participate, using a test index and an interview process.

Participatory project facilitators working with methods such as participatory video, community mapping and photovoice note that participants come away with a sense of empowerment; rather than being passive subjects, the participants become agents. (Lunch and Lunch, 2006, P. 10), (Evans and Foster, 2009), (Flower & McConville, 2009), (Fahy & O'Cinneide, 2009) (Foster-Fishman, Nowell, Deacon, Nievar & McCann, 2005). However, such conclusions have not been measured quantitatively. The purpose of this study is to see if participation in the Bangli mapping-making activities results in a measureable level of empowerment.

Research Design

A cross-sectional design, which serves to measure differences between groups, was used for this study (de Vaus, 2001, p. 170). The differences (level of perceived empowerment hypothesized to be different between the groups) were measured following participation in the Bangli mapmaking activity.

The theoretical populations of this study are those who would benefit from a participatory process that potentially increases their level of empowerment. The students that participated in the landscape mapping process were students from Sekolah Menengah Pertama 1 Bangli (junior high school) and the comparative sample, or sampling frame, (Bernard, 2000, p. 147) were students from the same school, matched for age and gender. Cross-sectional designs use a simple random sample of each group. In this case, the first group (those that participated in the mapping activity), is a given. A sample was taken for the control group from the school, matching for those elements that will have a determining factor on the outcome variables (in this case, age and gender).

The MapPack project focused on the youth in the community as the program was integrated into the educational curriculum of the junior high school for the 7-week period while it was underway. Engagement of youth has become more common in participatory-oriented research, and recently "researchers have begun to shift from seeing youth (i.e. children and adolescents) as problems to viewing them as resources for participatory action and research" (Wong & Zimmerman 2010, p. 102).

Instrumentation

Index Development

The index used to measure perceptions of empowerment resulting from participation in the mapmaking project was developed based on empowerment theory. The index was developed using social science methods, operationalizing the indirect construct of interactional empowerment (awareness and understanding of the socio-political environment) and the indirect constructs of intrapersonal empowerment (self-

perceptions of efficacy, self-perceptions of competence and self-perceptions of mastery).

Intrapersonal empowerment has been previously measured by researchers using the Sociopolitical Control Scale developed by Zimmerman & Zahniser (1991, p. 194). The scale measures two variables: leadership competence (self-perception of leadership competence) and policy control (self-perception of policy control in the community).

Interactional empowerment has been measured by researchers studying empowerment using a six-item scale, the Collective Action and Interpersonal Relationship Scale developed by Speer, (2000, p. 54). This scale measures two variables: collective action (knowledge that power is accessed by working through organizations) and interpersonal relationships (knowledge that power requires strong relationships with others) (Speer, 2000, p. 55). Netemeyer, Bearden & Sharma (2003) note that assessing construct validity is an ongoing process. The research assessing intrapersonal and interactional empowerment is robust, with well-established construct validity. Table 3-1 illustrates the indirect constructs of intrapersonal and interactional empowerment.

The elements in MapPack (gaining working mapping skills, journaling, sketching, recording, and video skills, the development of team and listening skills, and the ability to share the information gathered via a website that can be shown to higher levels of authority) are hypothesized to have influence on both constructs of empowerment. The purpose of this study is to examine the measurable levels of intrapersonal and interactional empowerment resulting from engagement in a participatory-mapping

process. As past research has established the validity of leadership competence, policy control, collective action and interpersonal relationships as variables in measuring the empowerment constructs this established the basis for using these variables in this study. These variables were used as the basis for the development of the index testing empowerment.

The items initially tested for each variable are in the Appendix. Questions were drawn from the published literature, based the work of Zimmerman and Zahniser, (1991), Speer, (2000), Speer and Peterson, (2000) that tested these variables to measure interactional and intrapersonal empowerment. The items that were drawn from the literature note the source next to the item. If an item was tested in multiple studies, both sources are listed for the same item. The initial index tested has video and film references and was then expanded to include items that referred specifically to participation in the MapPack activities. Direct reference to the MapPack activity was appropriate as "the indicator is applied to all cases, but is weighted to compensate for contextual differences" (Adcock and Collier, 2001, p. 535).

Following development of the initial index, it was refined through peer review and question and a series of cognitive testing (with youth in the same age range as the Balinese participants) resulting in greater contextual specificity. Adcock and Collier (2001, p. 535), make a point of discussing context specific domains of observation, stating that "the broader polity, economy, or society to which they will apply their concept" needs to be considered relative to the domain to which a systematized concept applies. The focus of the index needed to have much greater contextual specificity as empowerment is often considered a contextually-dependent construct

(Speer & Peterson, 2000, p. 117). Following the cognitive testing, the index was refined again. Using the scores computed from the testing, internal consistency reliability for each variable was calculated by computing Cronbach's Alpha (Netmeyer, et al., 2003, p. 11) for each in order to determine if the test items for each variable were consistent with one another and if they were appropriately measuring the construct (Salkind 2004, p. 284). Cronbach's alpha correlates "the score for each item with the total score for each individual, comparing that to the variability present for all individual items scores" (Salkind, 2004, p. 285). SPSS software was used to run the reliability analysis of the index, looking to determine how well the score of each item was internally consistent with the composite scores from the other items. If the correlation is less than 0.30, indicating a weak correlation for item-analysis purposes (de Vaus, 2004, p. 184), then the item was removed from the index. The refined index resulted in a Cronbach's alpha of 0.677 for collective action, above 0.3 for interpersonal relationships, 0.762 for leadership competence, and 0.725 for policy control.

Following refined development, the index was reviewed and tested in Bali. English language instructors provided peer review and the index was further refined to adjust the language of the questions based on their input. It was also translated into Bahasa Indonesia. The index was then tested using Balinese students and internal consistency reliability was run in SPSS a final time. Following minor adjustments and deletions, the Cronbach's alpha for collective action was 0.728, for interpersonal relationships, 0.716, for leadership competence, .790, and for policy control, 0.747. The index works relative to discriminant validity; the "degree to which two measures designed to measure similar, but conceptually different, constructs are related. A low to moderate correlation is

considered evidence of discriminant validity" (Netemeyer, et al., 2003, p. 13). Testers that were high in leadership competence were not necessarily high in perceptions of policy control, for example.

The SPCS and the CAIRS uses a Likert-like scale from 'strongly disagree' to "strongly agree' (Peterson, Lowe, Hughey, Reid, Zimmerman & Speer, 2006, p. 290), (Speer, 2000). However, as a 'true' formulation of the response better matches the question of how close perceptions come to each statement, the correct dimension is perception of truthfulness (Fowler, 1995 p. 163). The index will use 'completely true', 'somewhat true', 'somewhat untrue', and 'completely untrue', rated from 4 - 1. This will drive the total score of the index; the items/ indicators will form the constructed-index score (Netemeyer, Bearden & Sharma, 2003, p. 5). Note that high scores on each of the dimensions of empowerment would be "associated with higher levels of participatory behaviors rather than low scores on both dimensions of empowerment" (Speer, 2000, p. 54). The final test index is attached, both in Bahasa Indonesia and English (Appendix).

Interview Question Development

Salmen (1987, p. 37) reflects that "qualitative interviews and open discussions would very likely have revealed people's preferences and the political climate far better than did the pre-constructed questionnaire" in advocating qualitative methods for international project evaluation of development efforts. Based on this insight, the approach to evaluating the level of empowerment with the index was accompanied by an interview process. Triangulation, or using several different methods, both quantitative and qualitative, can strengthen a study (Patton 2002 p. 247). In using the index to measure empowerment, and also using an interview process, this should further illuminate the effect of the participatory process on empowerment, thereby

providing cross – data validity checks. The interview process will test for consistency (Patton, 2002, p. 248).

The interview questions will provide further insight into to the MapPack participatory process goal, which in addition to empowerment was to provide an opportunity for the participants to gain insight and a tangible connection into those landscapes and exterior spaces that are under threat and to elevate the participants' understanding of their collective ability to care for and protect these landscapes.

The interview process referenced the content and the website that resulted from the MapPack participatory process, providing further insight into the level of empowerment resulting from the MapPack as well as insight into the participants' thoughts on the landscapes studied. The interview questions focused on the content that the participants created during the MapPack process. This focus helped to determine what the participants felt was being communicated by the content, using a high level of inference in the interpretation (Mathison, 2009, p. 191). The initial interview questions were developed based on photovoice-oriented questions (Wang, 1999, p. 188), and the queries were formatted as probes, using detail-oriented questions (Patton, 2002, p. 372):

The interview questions were designed as opinion, values and feeling questions (Patton, 2002, p. 350). Leading questions were avoided in the initial line of questioning so that the participants' perceived ability to effect change was not influenced (Patton, 2002, p. 370). Following the development of the initial questions, a cognitive testing procedure was done that paralleled the index development. One of the goals of the cognitive testing procedure was to avoid comprehension problems resulting from how

interview questions were structured, making sure the vocabulary was clear. In addition, the testing helped to refine the interview process and ensured that the questions could be answered and that the questions as posed did not create any level of communication difficulty (Collins, 2003, p. 230). Cognitive testing utilized probing and paraphrasing and modifications were made to the questions based on respondents' ideas about how to reword the question and words that they had issues with. (Collins, 2003, p. 235), (Nichols & Childs, 2009, p. 116), (Willis, 2005, p. 48). The cognitive tests were also performed on participants in the same age range as the Balinese participants. The testing assessed how easily respondents were able to retrieve the information required (Collins, 2003, p. 233).

The interview questions also went through peer and expert interviewer (Nichols & Child, 2009) review. This process resulted in the questions being refined to not have specific reference to landscape, in order that this could come out during the interview and not be inferred; also, as the emphasis of the participatory program is on the environmental and development conflicts Bangli is facing, the questions diverged to ensure that the respondent clearly understands the issues at hand: sustainability, economy, food security and a vision for the future; so that the respondent can determine what side of the fence he/she sit on. The questioning process will help to bring the issue more to light so that as citizens in their communities, the participants can decide where their own future lies and what they think is in the best interest of their community.

The questions and resulting answers address the empowerment constructs, although certainly not as systematically as the index. The line of questioning determined if the respondents felt they had the leadership capability to effect change,

whether or not they felt that reaching out to others would help and whether they had any level of policy control. The interview questions were weak on whether the respondents felt working within an organization would be helpful in voicing their opinion or effecting change. The questions were associated with the concept, and convergent (Adcock and Collier, 2001, p. 540). The construct validity was reasonably strong; the questions did measure what they were intended to measure (Netemeyer et al., 2003. p. 11).

Balinese English language instructors who provided translation of the questions to Bahasa Indonesia reviewed the final interview questions. They also confirmed that the questions were contextually specific and appropriate. The initial and final English version of the interview questions and the final Bahasa Indonesia version of the interview questions are attached in the Appendix.

Internal and External Validity

There are several strengths in the research design as it relates to internal validity. Cross sectional designs in general have strength as the common threats to internal validity which include history, maturation, instrument decay, statistical regression, mortality and testing, (de Vaus, 2001, p. 177) exist because other design approaches have a time dimension. In this design, the measurements are taken at a single point in time following participation in the participatory process and the launching of the resulting website. Selection bias can also have an effect on internal validity (Swisher, 2008, p. 5). The study is looking to compare the differences between the participant group and the control group. The control group sample was matched with the participant group to account for those extraneous variables in empowerment research (age, gender) that can affect the outcome (Peterson, et al, 2005, p. 235). A primary goal in the design and analysis of cross sectional studies is to control, through sampling, the possible effects of

confounding variables that can be measured (Rubin, 2006, p. 7). In addition, the independent variables were grouped, as described above, in relationship to high-low measures of empowerment, thereby enabling the like with like to be compared (de Vaus, 2001, p. 177). De Vaus (2001) states that "the use of theories and models as a guide to analysis is an important tool for the personal analyzing cross sectional data" (p. 179). By utilizing the models tested in previous empowerment research, and in using this model to organize the data, causal conclusions can more likely be drawn.

The greatest weakness of the design in terms of internal validity is that the participatory group is a small sample, and even though the control group is being matched for characteristics of age and geographical area, the participatory group has the potential of being unique in some way that isn't controlled for, such as class status. This might directly affect their level of perceived empowerment prior to engagement in the community mapping participatory session. On the other hand, the participants are from a broad cross section (social background), and are not necessarily representative of people that normally have high levels of empowerment, as they are adolescents and students.

External validity is the level to which we can extend our conclusions to other people, places and conditions. For a cross-sectional design to have strong external validity "representative samples are necessary if we are to generalize from the sample to the wider population that the sample is meant to represent" (de Vaus, 2001, p. 184). In this design, the ability of a participatory process to positively affect perceived levels of empowerment for the participants is being tested. The group being tested will have participated in the participatory process, and therefore is a representative sample. The

control group is those that have not been involved in a participatory process, but have similar age and gender characteristics. The control sample matches for these characteristics, and thereby is also representative relative to a reasonable comparison to the participatory group. In addition, the basis for the index and statistical test employed was previously tested in empowerment research (Speer, 2000) as being a successful measure of empowerment. External validity can also be assessed by ensuring theoretical adequacy (Swisher, 2008, p. 7). This strengthens the external validity of the design.

In researching applicable theories to participatory methods, empowerment theory seems to be a good match, as it is measured relative to the very specific items that participatory methods directly relate to: community actions, preventive activities, organizational participation and sense of community. The study also uses the constructs of empowerment theory (intrapersonal empowerment and interactional empowerment) in the research design. In addition, this study and the index generated could be referenced in the examination of the effectiveness of any participatory process with regard to increased levels of perceived empowerment.

With regard to the weakness of the design relative to external validity, sensitization may be an issue. The fact that the participants may respond differently just because they are acutely aware that they are part of a study that is measuring the effects of being involved in a participatory process may affect the way they answer the index. Statistically, there may be things that that are not controlled for that would affect the outcome variables, such as aspects relative to social capital (historic caste, resulting family status) that may also have an effect on external validity.

In participatory research conducted regarding PV, community mapping and photovoice a recurring theme is that the methods result in empowerment. However, a true test of this hypothesis did not emerge in the research. This study strives to test the effectiveness of participatory methods, and to develop a measure of the actual effectiveness of being involved in a participatory process on perceived empowerment. It seems that one of the difficult elements regarding the measuring of empowerment is that research has shown that it is a process that is fluid, unpredictable, and can change over time and place. It can, however, be measured as an outcome (Hur, 2006, p. 524), which is one of the objectives of this design, measuring not only the levels of empowerment, but the corresponding relationship to the dependent variables. This serves to strengthen the explanatory power of this research design.

Data Collection Procedure

The research team returned to Bangli in the spring of 2012 to finalize the MapPack project and to conduct the data collection and interviews of the junior high school participants. The final index had 56 questions, and the interview entailed 13 questions. The respondents answered the perceived empowerment portion of the index using a 4-point, Likert-type response option format ranging from ‘completely true’ to ‘completely untrue’ (Nardi, 2006, p. 92). The community action portion of the index was measured using a four-point scale ranging from ‘not at all’ to ‘4-5 times’. The primary participants (23 junior high school students) completed the index immediately following the completion of the project. The non-participants, matching for the quantity of participants, age and gender, took the index within a day of the participants. Both the participants and non-participants completed the index as a group. The age of the junior high school participants ranged from 14 to15. The groups were comprised of 33 %

males and 67 % females, of Balinese decent. The interview sessions were conducted one-on-one with 11 of the junior high school participants. The junior high school teacher who was familiar with the project helped facilitate the interviews and provided translation assistance as needed.

As per the sampling process described by Barriball & While (1999), a thorough, explanatory, transparent process is necessary to minimize non-response in the control group. Prior to the implementation of the survey and interviews, a notification and permission form was sent out to participants and non-participants and their parents, describing the purpose of the study, providing contact information for any questions and concerns, and acknowledging their right to not participate.

There are many reasons mortality, or attrition, can occur, including refusal to participate (non-response), inability to contact the sample population, or drop out (Swisher, 2008, p. 4). The data collection for both the community mapping participant group and the control group was done at a single point in time, and therefore lacked a time dimension, (de Vaus, 193) which lessens the concern with drop out. We were very fortunate in that all of the participants of MapPack agreed to and were able to participate in the survey and interviews.

Data Analysis

The index included the measurement for perceived empowerment, scored within each construct, and also the community action activities the students had been involved in as a potential variable. Scores represent the mean for each construct of empowerment (collective action, interpersonal relationships, leadership competence and policy control) and the variable, community action activities. As the sample size is small, the data is ordinal (rank order), and the mean is being compared between the

two groups (the participants and non-participants), a nonparametric analysis method for comparing two independent samples was used, the Mann-Whitney U-test (Salkind 2004, p. 270). In addition, Kendall's tau-b correlation coefficients were calculated for comparisons between the variables and to examine the relationship between each (Salkind, 2004, p. 80)

The data from the interviews was transcribed verbatim. A pattern in the responses was sought that may help determine the effectiveness of the participatory methods in increasing empowerment (Patton, 2002, p. 463). Based on the empowerment variables (collective action, interpersonal relationships, leadership competence and policy control), the transcripts were coded. Additional codes were also identified to provide additional insight into the participants' experience. A representative quote was selected for each variable and theme for reporting (Taylor-Ritzler, Balcazar, Suarez-Balcazar, Kilbury, Alvarado, & James, 2010, p. 6).

Controls

In addition to the questions relating specifically to perceived empowerment, community action was also measured as it can have influence on empowerment (Zimmerman & Zahniser, 1991, p. 200). These items were considered in the relationship to the respondent's perceived empowerment and controlled for in the analysis. The participants and non-participants were matched for age range, geographical location and gender for the junior high group.

Challenges

The biggest challenge to the index and interview process was the translation from English to Bahasa Indonesia and back. Fortunately, Ibu Desak Ekaputri, the English language instructor whose students were involved in the project, was available to

provide translation and interpreter assistance during the data collection effort. In addition, the translation assistance by the English language instructors was invaluable.

Prior to the data collection phase, the junior high school students were more available for the final steps in the MapPack project (website review and input) and discussion prior to the index. In addition, 11 students were available for follow up interviews.

Figure 3-1. MapPack Activity Modules: Landscape Mapping, Oral Narratives, Landscape Sound, Journaling and Sketching, GPS Photos, Video. Photos courtesy of Hannah Plate.

Figure 3-2. Students Participating in MapPack Activities: Oral Narratives, Sound Recording and Sketch Mapping. Photos courtesy of Hannah Plate.

Figure 3-3. Rice Terrace Views and Student Participants, MapPack. Photos courtesy of Christina Lathrop and Hannah Plate.

Figure 3-4. MapPack Website Home Page.

Figure 3-5. MapPack Website Page: Landscape Sound.

Table 3-1. Empowerment Theory Constructs, Definitions and Variables

Empowerment Theory			
Direct Constructs	**Indirect Constructs**	**Definition**	**Variables**
Intrapersonal components of empowerment	Self-perceptions of efficacy	Personal sense of capacity to produce an effect	Leadership Competence/ Policy Control
	Self-perceptions of competence	Personal sense of possession of required skill, knowledge, qualification or capacity	
	Self-perceptions of mastery	Personal sense of comprehensive knowledge or skill in a subject or accomplishment	
Interactional components of empowerment	Awareness and understanding of the socio-political environment	Intellectual understanding of power and social change	Interpersonal Relationships/ Collective Action

(Zimmerman & Zahniser, 1991), (Speer, 2000).

CHAPTER 4
RESULTS

> I was very happy to participate in the project. From this project I realized how important the rice field is for our life. Without the rice field we cannot get food and without the rice field we cannot live. We must keep the rice field because it is very important to us
>
> —Sang Ayu, MapPack participant

Sample Characteristics

All of the participants of the project participated in the index. There were 23 junior high school participants. The age of the junior high school participants ranged from 14 to 15. The control groups were matched for number of participants and age range. Both junior high school groups were comprised of 33 % males and 67 % females, of Balinese decent, so they were matched for gender. Eleven of the junior high school students participated in the interviews.

Intervention Effects

A nonparametric analysis method for comparing two independent samples was used, the Mann-Whitney U-test (Salkind 2004, p. 270). A p value < .05 implies a statistically significant finding and the null hypothesis can be rejected (Nardi, 2006. p. 4). The junior high school group students that participated demonstrated an intervention effect for the variables of interactional empowerment (awareness and understanding of the socio political environment), collective action ($p = .0066$) and interpersonal relationships ($p = .0299$). The measure associated with community action activities was also higher for this group ($p = .00059$). In addition, the z value for each of these variables was over 1.96. If the z value exceeds 1.96, then there is evidence to reject the null hypothesis. (Salkind 2004, p. 134). Overall, the empowerment measure also demonstrated an intervention effect ($p = .0292$). The variables of intrapersonal

empowerment (leadership competence and policy control) did not demonstrate a significant intervention effect. Results for all these outcomes are reported in Table 4-1. Box plots illustrating the Mann-Whitney test outcomes that demonstrated an intervention effect for the junior high school students are illustrated in Table 4-2.

Exploratory Analysis

In order to further examine the empowerment constructs, exploratory analysis using a Kendall tau-b correlation was conducted for the participant group. Kendall's tau-b determines bivariate associations between ordinal variables (Salkind, 2004, p. 80), (Nardi, 2006, p. 30). The relationships between each of the variables: collective action, interpersonal relationships, leadership competence, policy control and community action activities were examined.

Junior High School Participants

For the participant junior high school group, moderate relationships measuring between 0.4 and 0.6 (Salkind, 2004, p. 88) were found between leadership competence and collective action; leadership competence and policy control; and policy control and interpersonal relationships. A weak relationship measuring between 0.2 and 0.4 (Salkind, 2004, p. 88) was found between policy control and collective action and leadership competence and interpersonal relationships. The results are reported in Table 4-3.

Junior High School Non-Participants

For the non-participant junior high school group, weak relationships measuring between 0.2 and 0.4 were found between collective action and leadership competence and between leadership competence and interpersonal relationships. The results are reported in Table 4-4.

Interviews

The interviews were structured to determine if the participants displayed empowerment characteristics as they talked through their experiences and observations about their work in the rice terraces. Eleven of the junior high school participants were interviewed individually. Each of the mapping techniques was represented by the participants interviewed to have a good cross section of representation. In addition, the percentage of males to females matched the overall gender percentage. If the participant thought the rice terrace was an important landscape to preserve, whether for environmental, food security or economic reasons, they were asked what they might do to bring attention to the issue.

Collective Action

Each of the eleven participants exhibited characteristics indicative of the interactional empowerment variable "collective action": that it is more effective to work with others and through organizations to facilitate change. In response to "What would you do to keep it from being built on?" one respondent stated, "I would organize with others", and another, "I would talk with other people; friends and farmers in Bangli to work to protect the rice field" and "I want to keep the rice field for my cousins and relatives. I want to buy, create a group to take care of the rice fields." Another suggested working within existing organizational structures: "We have an organization called "young community" (Muda Mudi Sekka Truna Truni). I would work with that organization to save the rice fields."

Interpersonal Relationships

Six of the junior high-school respondents made comments indicative of the interactional empowerment variable interpersonal relationships. They discussed

connecting with others to effect change, an indication of knowledge of the importance of strong relationships with others to have community influence. For example, one respondent noted: "I would talk to my principal (government leader) and his friends. I would also talk with the next generation so they can protect it as well." Another noted, "I would tell someone to look around the rice field. I would take them to the rice fields. I would take my friends so they could realize how good it is to have the rice fields and realize what would happen if they were lost forever. Others will realize how important it is and would help with ideas to save it."

Leadership Competence

Five of the junior high school students indicated characteristics of the intrapersonal empowerment variable "leadership competence," the ability to take a leadership role through organization of action plans and having a comfort level with taking charge. Several discussed taking the lead on organizing efforts to bring attention to the issue, an indication of efficacy and mastery indicative of leadership competence. One junior high school student called it "her project," saying: "I can do it by myself but I want to talk others into joining in with my project. It is more effective if I work with others, because if we work together it is not as hard." Another said, "I would make a group to try to protect the rice terraces and I would get the help of others. I would get farmers, friends. The farmer will lose his profession. I would also talk to the government." The statements also indicate knowledge of collective action and interpersonal relationships.

Policy Control

Six of the junior high school participants made statements that suggested the ability to be involved and affect political and policy decisions, indicative of the

intrapersonal empowerment variable ‘policy control’. They talked about affecting policy by discussing the loss of the rice terrace landscape directly with village and government leadership. Prompted by the leading question ‘whom would you talk to about it?’ one respondent stated: “I would talk to the government, the village leaders; let all of the villages know.” Another suggested starting with the neighborhood leadership: “I would tell everyone about it, starting at a Banjar (neighborhood) meeting and describe how important the rice field is. I would describe the bad effects. If we describe well, we can influence it. So they can decide for themselves whether or not to save it.”

Food Security, Economic and Environmental Observations

The other pattern that came out of the interviews was how the individuals characterized the importance of the rice terrace landscape. Nine of the eleven junior high school respondents noted that they felt that it was an importance food source. One respondent noted: “The rice fields are an important place to grow rice plants, to provide food.” Four of the respondents noted that they felt it was an important ecosystem: “The rice field gives us food, fresh air, and it’s an important ecosystem.” Two noted that it was an important economic component: “The rice fields are a source of food and livelihood. My parents are rice farmers.” One respondent noted the visual quality of the rice terraces:” I very much like the view in the rice fields; it is far from the road.”

Development pressure

One final item that was a repeat comment was that the rice terrace landscape was being lost to development as a result of encroachment. Each of the respondents noted this. One of the junior high school students said, “Before this project, I didn’t care.

Now, every day, I stop for a moment. I am a little worried about the future of the rice fields.”

The Appendix includes a compilation of the interview results, reporting how the response of the interviewee relates to empowerment, their thoughts on the environmental and intrinsic importance of the rice terrace, the participation technique they were involved in, their thoughts on the development pressures and the inferred empowerment variables assigned as a result of their responses.

Table 4-1. Junior High School Students Mann-Whitney U Test by variable group. Marked tests are significant at p <.05000

Variable	Rank Sum Group 1	Rank Sum Group 2	U	Z	p-level	Z adjusted	p-level	Valid N Group 1	Valid N Group 2	2*1 sided exact p
Coll act	647.0	388.0	135.0	***2.679282***	***0.007378***	***2.714928***	***0.006629***	23	22	***0.006755***
Inter rel	624.0	411.0	158.0	***2.157049***	***0.031003***	***2.170604***	***0.029962***	23	22	***0.030926***
Lead comp	564.5	470.5	217.5	0.806055	0.420121	0.807546	0.419353	23	22	0.423931
Pol cont	581.5	453.5	200.5	1.192054	0.233241	1.196317	0.231574	23	22	0.235781
Comm act	679.0	356.0	103.0	3.405867	***0.0006600***	***3.432655***	***0.000598***	23	22	***0.000449***
Empow	625.0	410.0	157.0	0.029276	***0.029276***	***2.179899***	***0.029266***	23	22	***0.029136***

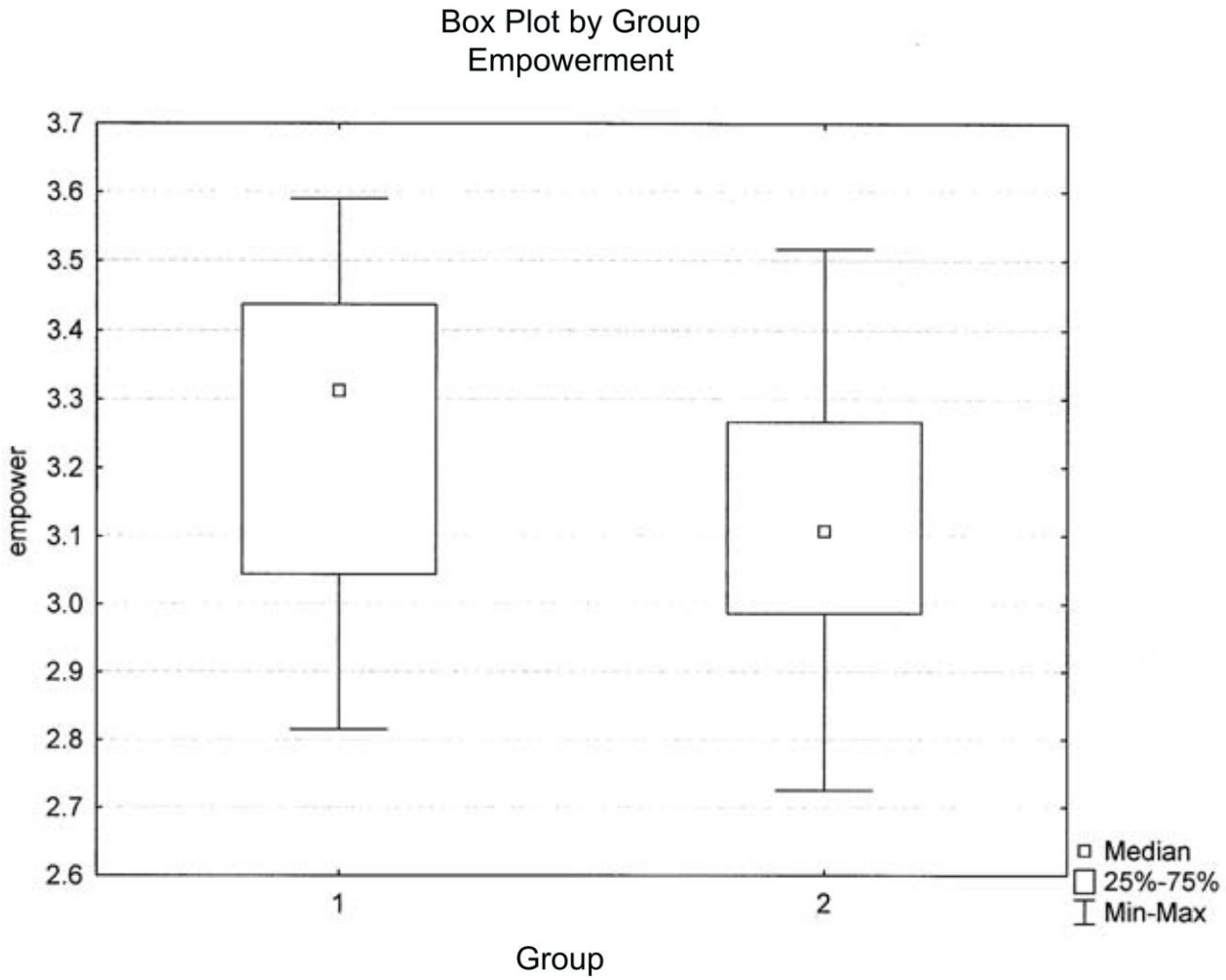

Figure 4-1. Junior High School Students Mann-Whitney U Test Box Plots Overall Empowerment

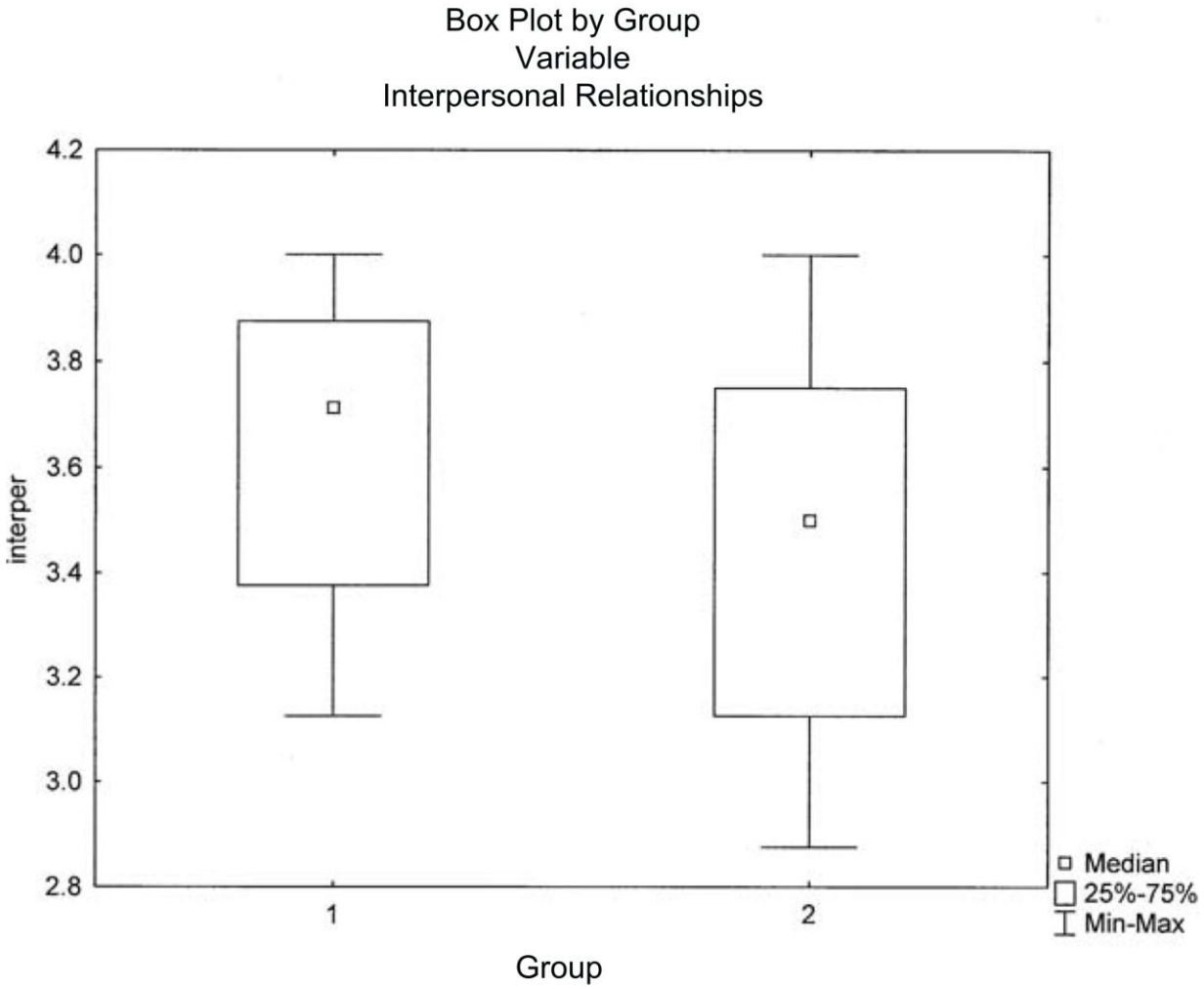

Figure 4-2. Junior High School Students Mann-Whitney U Test Box Plots Interpersonal Relationships

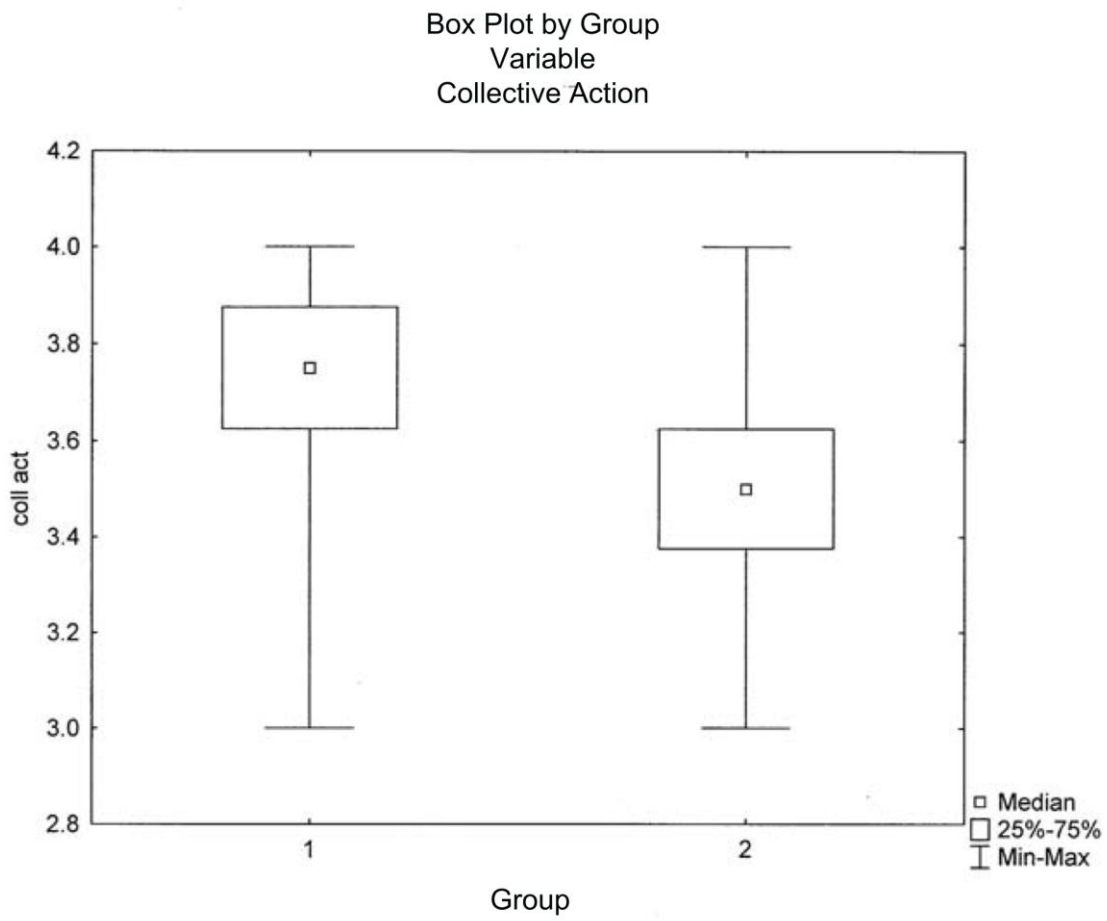

Figure 4-3. Junior High School Students Mann-Whitney U Test Box Plots Interpersonal Relationships

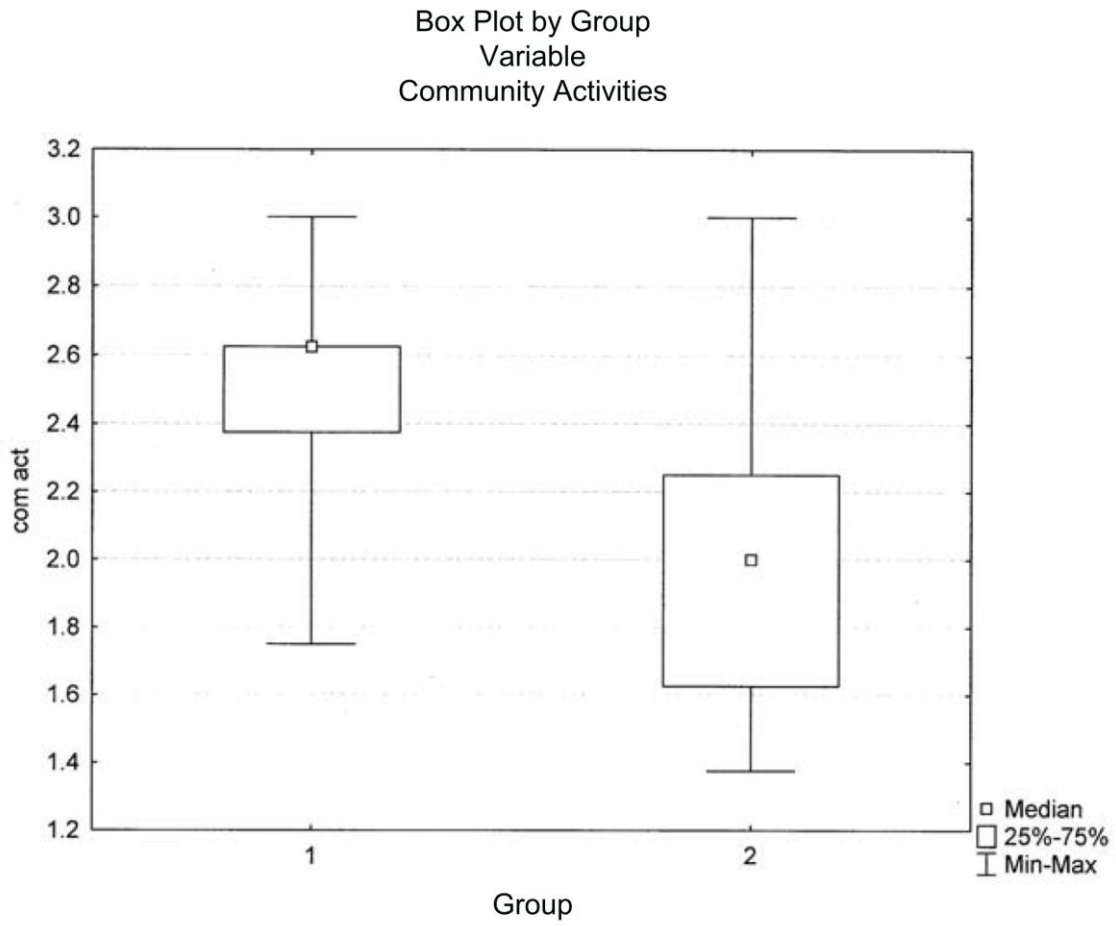

Figure 4-4. Junior High School Students Mann-Whitney U Test Box Plots Interpersonal Relationships

Table 4-2. Junior high school students/ Group 1/ Participants Kendall tau-b correlation coefficients. Marked correlations are significant at p < .05000

Variable	Collective action	Interpersonal relationships	Leadership competence	Policy control	Community action activities
Collective action	1.000000	0.192629	***0.420693***	***0.385102***	-0.123817
Interpersonal relationships	0.192629	1.000000	***0.215806***	***0.416043***	0.116868
Leadership competence	***0.420693***	***0.215806***	1.000000	***0.515647***	-0.221944
Policy control	***0.385102***	***0.416043***	***0.515647***	1.000000	-0.022520
Community action activities	-0.123817	0.116868	-0.221944	-0.022520	1.000000

Table 4-3. Junior high school students/ Group 2/ Non-Participants; Kendall tau-b correlation coefficients. Marked correlations are significant at p < .05000

Variable	Collective action	Interpersonal relationships	Leadership competence	Policy control	Community action activities
Collective action	1.000000	***0.389388***	0.161374	0.130864	0.091129
Interpersonal relationships	***0.389388***	1.000000	***0.315757***	0.105098	0.083342
Leadership competence	0.161374	***0.315757***	1.000000	0.117658	-.0.241487
Policy control	0.130864	0.105098	0.117658	1.000000	0.042367
Community action activities	0.091129	0.083342	-0.241487	0.042367	1.000000

CHAPTER 5
DISCUSSION

> In my opinion, the subak is very important for our lives. When I visited the subak, I felt very happy, because it's the first time I visited the subak for a long time to do the mapping project. If we don't keep the rice field, we will miss the place as the main food source for our life and the famer will miss his profession. There are many elements in the rice field, such as the traditional tools to frighten the birds, and places to pray. For me, it is a very interesting place
>
> —Windi, MapPack participant

Overview

This study involved a trial to measure differences in empowerment resulting from participation in an action research program incorporating participatory methods designed for junior high school youth. The study found that the quantitative results corroborated the hypothesis for the junior high school group: that there was a difference in the participant junior high school students' overall level of perceived empowerment; it was greater among the participants' than among the non-participants.

The qualitative assessment (the interviews) illustrated that the study participants felt it was important to work within organized groups and with others to get things accomplished. They also showed knowledge of the political process and their ability to influence decision-making by presenting and discussing the issue with community leaders. The students discussed taking action at the local community level, demonstrated knowledge of government structure and a preference to form (or join) a group dedicated to raising issues and concerns identified in the mapping project to community leaders.

In addition, the qualitative assessment showed a high-level of concern for the development pressures on the landscape. It also recognized the importance of the rice

terraces as a food source, its environmental importance and its role as a local, economic driver (tourism asset and employment for local farmers). A detailed-analysis of the results shows that participation in the project had the greatest impact on the participants' perception of interactional empowerment.

Interactional Empowerment

The test results showed that the hypothesis was correct overall, but most significantly for the interactional empowerment construct, the awareness and understanding of the socio-political environment. The intellectual understanding of power and social change is measured using the variables of collective action: knowledge that power is accessed by working through organizations and with others, and interpersonal relationships; knowledge that power requires strong relationships with others.

The MapPack participation activities encouraged teamwork and resulted in tangible outcomes. This structure directly affected these measures. The sketches, videos, maps, and recordings were compiled for the website and shared. Each MapPack component encouraged collaboration and was a group effort. The students were taught each of the MapPack skills and were then assigned a team that focused on one type of mapping in the field. Some mapping activities required more teamwork than others. For example, in the oral narrative activity, the team had to decide who was going to conduct the interview, what sorts of questions would be asked, and who would be interviewed. The sketch-mapping activity was done by a group of students that broke out into teams of two, each producing their own version of a rice terrace map. Each MapPack team presented its work to the other teams in the form of a PowerPoint presentation as a part of the activity. Seeing their collective effort showcased on the

website and thus resulting in a tangible outcome could have resulted in the belief that they had accomplished something substantial. The website also served as a vehicle through which they could share their ideas and concerns with friends, family, and community leaders. It is possible that by contributing to the MapPack activities, and sharing their observations as a group, the participants recognized the power and value of collaboration.

By participating in the MapPack activities, students gained the knowledge that influence is achieved by working together and that relationships are an important component of getting things accomplished within a community framework. In addition, the process of mapping and documenting the significance of landscape helped the students understand that their village is dealing with a land use issue: that changing uses are resulting in a loss of landscapes important to their heritage. The mapping activities provided the students an opportunity to connect emotionally and intellectually with the landscape. Sketch mapping compelled them to take note of landscape details and spatial boundaries. Sketching and journaling led to observations of beauty. Recording of oral narratives helped these participants understand the complexities of the heritage landscape issues and the threats imposed by change. Recording landscape sound inspired participants to pause and take notice of the detailed components of rice terrace landscapes. In aggregate, the MapPack activities represent a collective effort to understand the significance of the rice terrace landscape and its importance to village identity and economic vitality. By gathering information and realizing that communication with community leadership is necessary to convey their thoughts on the issue, the study participants gained a heightened level of interactional

empowerment. The junior high school students were engaged in the project and throughout the process remained enthusiastic. Empowerment perspectives that individuals have are perhaps influenced by the context in which they participate (Speer & Peterson, 2000, p. 117).

Another attribute that may have contributed to the positive effect on interactional empowerment for the study participants is age. Youth are positioned to make positive and important contributions to research and to be agents in community development. (Wong, Zimmerman & Parker, 2010, p. 100). Adolescence is the time for strengthening developmental assets such as social skills, social supports and connections (Morton & Montgomery, 20011, p. 417). This could account for the positive shift in the level of perceived interactional empowerment. In addition, youth culture changes so quickly that by the time it catches on with older groups and adults, the youth are already moving on to something new or different (Wong et al., 2010, p. 101). Perhaps this adaptability and openness to new ideas also weighs into the difference in the level of empowerment for the participant group.

Intrapersonal Empowerment

The quantitative results were not measurably different between the participant and non-participant group for the construct intrapersonal empowerment, self-perceptions of efficacy (the capacity to produce an effect), competence (a personal sense of possession of a required skill, knowledge, qualification or capacity), and mastery (the personal sense of comprehensive knowledge or skill in a subject or accomplishment). Empowerment is measured for this construct by how individuals feel about themselves in relation to groups and communities (Speer and Peterson, 2000, p. 111). In this study this construct was measured using the variables of leadership competence (self-

perception of leadership competence), and policy control (self-perception of policy control in the community). The index used to measure these variables was developed based on the Sociopolitical Control Scale (Peterson et al., 2006), refined and modified for the context of the MapPack participatory methodology.

Why did the MapPack process not have an impact on these two variables? Enhancement of self-efficacy is typically a goal of empowerment programs and particularly participatory methods. Methods such as participatory video, photovoice, community mapping and MapPack are designed to integrate the development of competency through the learning a skill or skills that a participant masters by being a part of the process. This skill is then applied to produce a tangible result, such as a video, a map, or a series of relevant photos that are shared with peers, elders and community leaders. Participatory methods are developed specifically to include a component that focuses on learning a skill that enables participants to use this skill to communicate their thoughts, ideas and opinions of the topic at hand. Why was change not measured?

Even though the junior high school students showed significant results for interactional empowerment, the findings of previous studies focusing on empowerment have suggested that, “empowerment is a complex, multivariate phenomenon” (Speer & Peterson, 2000, p. 117). High scores in one domain of empowerment do not necessarily correspond with high scores in other domains. Additionally, an individual’s understanding of how “social power operates in community contexts is not related to emotional” empowerment (Speer & Peterson, 2000, p. 117).

Youth are often disconnected from the possibility of political participation because of their age and the fact that they might not have a developed sense of the political process. In addition, leadership might be considered a personality trait, rather than a variable that can be influenced by a short-term intervention. The null result reinforces the difficulty of affecting statistically detectable changes in intrapersonal empowerment, which has been described as a relatively stable and trait-like construct. It can be difficult to change as a result of a short intervention (Morton and Montgomery, 2011). The qualitative assessment revealed that the individuals with a natural inclination towards leadership were more likely to indicate that they would take charge to organize an effort to bring attention to the pressures on the rice terrace landscape.

In addition, participatory experiences may not be frequent enough or as intense as needed to change general attitudes about personal efficacy and mastery (Morton & Montgomery, 2010). The participants might not imagine that they will continue to map, video, record, sketch and write about their environmental concerns. Perhaps that is why participatory video and media in particular seems to generate the observation that it does increase this component of empowerment. The participants may take it on themselves to use this medium in the future to convey their ideas, especially as the technology is becoming increasingly accessible and the modes of communication, via social media, are becoming increasingly efficient to disseminate.

The design of the intervention was not focused on leadership development or policy control knowledge and navigation. It encouraged interaction and group generated mapping results. In order for an intervention to facilitate modifications in

intrapersonal empowerment specific to leadership competence and policy control the intervention would have to be focused on these variables.

The intrapersonal empowerment measure that the index was based on is especially suited for evaluating interventions that focus on improving community involvement and citizenship and the ability to effect policy (Peterson et al. 2006, p. 294). Certainly, MapPack focused on the goal of enabling the students to effect policy related to the rice terrace landscape and the associated development issues by sharing what the participants had observed and learned through the mapping process and the resulting website. It also encouraged the students to become more aware and active with this issue. As "empowerment is a contextually dependent construct" (Speer and Peterson, 2000, 117), (Zimmerman, 1995) the null result provides an opportunity for future research to refine the measure of the effectiveness of participatory methods on intrapersonal empowerment. Perhaps in a youth-based intervention the measure should be focused more directly on the individual feelings of personal mastery of a skill and competence resulting from participation in the intervention.

Youth participation in action and research wherein youth have the opportunity to be heard by decision makers, provide project input, voice their opinions and recommend solutions is defined as symbolic participation (Wong, Zimmerman & Parker, 2010). MapPack falls within this definition of participation. In formulating opinions, this potentially encourages competence, self-efficacy and mastery for the participants: each of these is seen as key factor in youth development and perceived empowerment. The MapPack program was designed to encourage the participants to experience and gain an appreciation of the rice terrace landscape. This topic was important to the adult

leaders in the process; the junior high school teachers, the Mahasaraswati University research partners and the UF researchers.

An additional consideration for youth-based interventions, if empowerment is more specifically the goal of the intervention (in MapPack's case, empowerment was an objective, however, leadership competence specifically was not) the participatory methodology could be focused on the leadership and policy control aspects of intrapersonal empowerment. The research initiative can still start with the adults, but youth are involved in each step of planning and implementation. The participants' views are more strongly considered and they are involved in program design and decision-making, based on Hart's ladder of youth participation (1992) (Wong et al., 2010, p. 102). A pluralistic role with youth and adults sharing control might result in a greater level of perceived empowerment. Youth empowerment does require adults to be actively involved in creating opportunities for youth to become aware of issues and to develop a critical consciousness. The MapPack project fits this model. The goal of MapPack, while utilizing participatory methodology that has potential benefits of empowerment, primarily had to do with designing activities that encouraged the students to become aware of the rapid land use changes occurring in the rice terrace landscape. Further research could focus on a measure that addresses increased environmental and land use awareness.

Community Action Activities

The levels of community action activities measured higher for the participant junior high school group. Organizations or community experiences that the students are involved in may also influence their level of perceived empowerment. In addition, individuals that report a higher-level of involvement in community activities and

organizations score higher in empowerment measures. Does participation enhance empowerment, or do empowered individuals participate? In this study, the participant and non-participant groups were matched for age and gender and were in the same academic setting and were not a volunteer participant group. This could weigh into the consideration of this variable for its overall impact on the varying levels of participant empowerment measured in this study. In previous research it was found that there is a relationship between community participation and intrapersonal empowerment, but not between community participation and interactional empowerment (Peterson et al 2005). That lends validity to the effects of this intervention. Community action activities, while measuring stronger in the participant group, do not necessarily correlate with the increased level of interactional empowerment resulting from the intervention.

Variable Correlations

As this study seeks to further empowerment research and the effectiveness of participatory methods in increasing an individual's perception of empowerment, the positive measure for the junior high school participants warrants further discussion as the results potentially reveal an understanding of the impact a participatory intervention may have on empowerment overall. Moderate relationships were revealed between leadership competence and collective action, leadership competence and policy control, and policy control and interpersonal relationships. Moderate relationships were not found for any of the variables for the non-participant junior high school group. The positive correlation between leadership competence, collective action and policy control were also revealed in the qualitative assessment. The students with leadership tendencies noted that that it was important to work as a group to accomplish a goal and that they felt comfortable taking charge to organize such an effort. They were also

comfortable addressing the issue directly with community leadership. In addition to the positive correlation between policy control and interpersonal relationships, the variables for the interactional components of empowerment serve to strengthen the relationship of these two variables within the construct. Perhaps simply being involved in the MapPack activity provided those participants that have a tendency to be leaders to realize that they have the ability to affect change by working with and leading others, and that relationships with others strengthen their ability to affect policy.

Beyond Empowerment

MapPack was a participatory-action research project that engaged multiple levels of individuals, ranging from the design and implementation of the project by the UF Landscape Architecture Faculty Researcher, the UF graduate assistant, the support and backing of the Mahasaraswati University partner, the junior high school teachers, the UF student facilitator, the University students and the junior high school youth. On the periphery were the parents of the students, who were aware of the activity. One of MapPack's primary goals was to engage the students in activities that encouraged them to become aware of the rapid land use changes occurring in an important cultural landscape, the rice terraces. Interviews with the students showed that they had developed a strong connection to the rice terrace landscape resulting from the MapPack experience. As some of the students noted, they had never been into the rice terrace landscape before being involved in the project. If they had experienced the rice terraces before this project, they had not thought about the complexities of the economic, social and environmental issues. The participants had a much greater appreciation for the rice terraces as a direct result of the project. Additionally, conversation regarding the MapPack project with the non-participants following the

completion of the questionnaires revealed that while interested in the project, the non-participants did not share the connection with the rice terrace landscape that was evident in the voices and actions of the students that participated.

MapPack activities led to different perspectives and reflections on the rice terrace landscape, especially the students that participated in the interviews with the rice terrace farmers. Collectively, these students seemed to come away with a greater understanding of the social, economic and environmental complexities of the impact of encroaching development on the rice terraces. One student noted that the rice farmers' work was hard and that by selling their land the farmers received income from the sale. "Some farmers need to sell because they need the money. The farmers also want to farm and don't want to sell. They tell me that it is a lot of hard work and difficult work to farm" (Student participant, 2011). Students that participated in the sketching and journaling noted that the views were beautiful and discussed the difference in the views between the rice terrace area Subak Mandi (which is less impacted by development), and area known as Subak Aya, (which has been more significantly impacted). Sitting down, taking a moment to sketch resulted in a high level of observation and description of the rice terrace landscape. Students that participated in the sound recording noted they felt they knew so much more about the rice terraces. Perhaps the act of just listening to all of the sounds, from water flowing, to the quack of ducks, to the sound of the noise makers designed to chase away birds, heightened their level of awareness of the intricacies of the landscape. All of the students, regardless of their specific MapPack role, expressed concern about the loss of the rice terrace landscape, the loss of an important food source, livelihood,

and environment. Whether this ultimately translates into community action on their part to affect land use policy can only be reflected in a longitudinal study.

Participatory methods are focused on community development facilitated through cooperation and a tangible outcome that can be shared with others. Using empowerment as the theoretical basis to study the effectiveness of participatory methods is appropriate, as the goal of participatory research and participatory methods, such as MapPack, is to transform participants and communities from passive subjects into agents of change and influence. The quantitative results of this study illustrate the effectiveness of participatory methods in raising levels of perceived empowerment for participants.

Refining the Intervention

In this case, the measure for interactional empowerment was measurably different for the MapPack participants. The measure for intrapersonal empowerment was not significantly different. If intrapersonal empowerment is a goal of a particular participatory intervention, using MapPack as an example, perhaps the intervention design can be refined to create change in the intrapersonal construct. The index measure for intrapersonal empowerment focuses on leadership competence and policy control. The development of leadership competence could be enhanced by designing the program to encourage leadership roles for each participant, potentially resulting in more comfort in this role. For example, when undertaking the oral narrative task, the students would take turns in each of the recording roles, sharing in the interview and recording roles.

Policy control could also be more directly addressed. The policy steps that would be required to influence the nature of the issue of rapid land use change could be a

stronger focus in the discussion. Based on the interviews, the students seemed to have a general idea about the community and government structure. A discussion regarding the steps that could be taken to share the information effectively for serious consideration and debate could be a more integral part of the process. Affecting policy is often a long-term goal of participatory process, however, it was not a primary focus for MapPack.

This study revealed that the effectiveness of a participatory method for one of its goals (to increase perceived levels of empowerment) can be measured effectively by using a statistical analysis and interview process. We can determine if the process is doing what researchers say it is doing, in this case, raising levels of perceived empowerment through a focus on working together to map and catalogue imperiled landscapes. Certain methods, as sensed by facilitators of PAR projects (integrating participatory methods such as participatory video, photovoice, community mapping and multi-media), appear to be more effective at achieving these goals. This had not been statistically measured for the effect of a participatory method prior to this study, however. For landscape architects, social scientists and planners, this study illustrates that we can effectively use the measure to evaluate if one of the goals of participatory methods, (specifically empowerment), was achieved. If the goal of an intervention is to effectively empower, then leadership competence and policy control should have a more significant emphasis within the process. Table 5-1 illustrates the results of MapPack relative to empowerment, including a compilation of the effects it had that were expected and not expected, and additional effects MapPack achieved.

Table 5-1. MapPack Summary

MapPack Objectives	MapPack results	Recommendations for future participatory methods/ assessment	Notes/ implications for empowerment theory
Teaching mapping skills (voice, sketch, plan, video, gps photography, sound recording)	Students became familiar with mapping as a concept, and were able to do each of the MapPack modules.	Measure of assessment could more directly test intrapersonal empowerment based on new skillset rather than leadership competence and policy control	Learning and becoming a master at a new skill potentially fosters intrapersonal empowerment
Foster awareness of development pressure on rice terraces	The students came away with knowledge of the development pressure the rice terraces face.		
Create connection for students to the rice terrace landscape	The students came away with a new found appreciation for the rice terrace landscape		
Foster empowerment	Interactional empowerment was directly affected. Intrapersonal was not.	MapPack was not designed to foster leadership or policy control. These constructs could be a goal of participatory methodology.	MapPack encouraged teamwork, tangible outcome illustrated effect of teamwork. Leadership is potentially a stable construct, not effected by a short intervention
Sharing knowledge	Knowledge was shared between the students, the researchers, and members of the rice terrace community.		Knowledge gained that influence is achieved by working together

CHAPTER 6
CONCLUSIONS

> I am very happy that I was able to join the project, because now I know many things about the rice field and I now know how important the rice field is for us. The panorama of the rice field is very beautiful. In the rice field we learned many things, such as filming, recording sound and mapping. I hope all of the people will take care of the rice field so that it makes our life better
>
> —Laurent, MapPack participant

Overview

Landscape architects are faced with environmental, social and economic challenges and are tasked with developing successful design solutions for a diverse range of clients and client groups. The generally accepted mission of the practice of landscape architecture is to participate in the stewardship, thoughtful planning and artful design of cultural and natural environments (www.asla.org). Historically, landscape architects have worked to integrate participation into the design process but have done so with mixed results. This study establishes one model for quantitatively measuring the effectiveness of participatory methods in an action-research context with the goal of informing future research and providing insight into the development of effective and innovative participatory methods for researchers and practitioners alike.

With heightened insight and deeper understanding, these methods can be used to better serve the individuals and communities that we work with. As participatory approaches are further researched and improved, they can become increasingly inclusive, designed to meet the specific needs of the participants and the goals of the communities in which they are used. By integrating participatory methods into research and practice, landscape architects can inspire and promote active, continued engagement of the participants in their roles as agents who establish both the vision for

the future of their neighborhoods and the landscapes that are important to their communities. This research reinforces the need for effective evaluation of the participatory process in order to enable practitioners and researchers to refine methods and thus achieve greater success toward their goals of empowerment. It also reinforces the notion that in order to design effective methods, it is important to understand the theoretical foundation that the methods are based on. By developing a deeper level of understanding, we can therefore design the methods more effectively to achieve participatory goals.

Research Implications

This study illustrates that the incorporation of participatory methods into the community development process (and specifically a process where a community is facing land-use decisions) can foster collaboration and can bring attention and focus to a land use, an economic and environmental issue. It can also effectively raise the participants' perception of empowerment. One insight gained from the evaluation of the project serving as a test case for this study was that MapPack met the goals of empowerment for the adolescents who participated in its activities. Future research could evaluate the effectiveness of modifying the method of engagement based on the demographics of the population for which the intervention was designed. Older participants may be more effectively engaged in a project with a pluralistic role, sharing control of the process and greater involvement in generating the research or project focus. Future research could also incorporate a longitudinal study where the participants' roles in the community are assessed. Perhaps involvement in a project of this type in the formative junior high school years would result in a greater level of community action. Perhaps it would also influence future career choices.

Additional research could also examine the notion that leadership seems to be a stable construct. A participatory intervention could be designed to more directly address the leadership competence and policy control aspects of empowerment in participants subsequently evaluated for change as a result of the intervention. Although not a goal of the primary study, community building and organizational efforts to bring light and understanding to an issue might be well served by recognizing leadership potential and working to engage those individuals in the process. Individuals who develop leadership skills as a result of a participatory effort might be more inclined to get involved in community action and carry the torch once the researchers or community development team are no longer involved in the initiative.

The participants universally stated that they had a much greater appreciation for the economic, environmental, social and visual aspects of the rice terraces as a direct result of the project. Simply being a part of the project raised their understanding of the impacts of development pressures faced by the rice terraces. Additional research could focus on the aspects of the participatory process that serve to raise environmental awareness.

MapPack was a unique community mapping project as it integrated mapping in a variety of forms, introducing elements of video, photography, sound, sketching, writing, and sketch mapping. Beyond empowerment, insight was gained into the effectiveness of each component to generate awareness of the complexity of the issue. The oral narrative/ landscape voice component of MapPack, in particular, gave the interviewers insight into the stories and the issues the farmers face as they consider continuing to farm, or selling their land to encroaching development. The rice terrace landscape is a

finite resource on the island of Bali. Only a small, rapidly-decreasing area is suitable for rice farming. All of the participants' engagement in the particular module seemed to give them a unique perspective of the landscape and the issue. Future research could study the effectiveness of each module on empowerment, thus elevating environmental and land use awareness. Future research could also examine the compilation of mapping information and effectiveness of the web in generating interest in the information being shared.

Application to Landscape Architecture Practice

A well-conceived participatory process could be applicable in many practice situations. Such a process can be used to help communities articulate visions for their future, give a voice to those that might not otherwise have a platform to speak, and provide a medium through which oral narratives and personal stories can be shared. These stories can have an impact on the direction a group may take to seek community change. The incorporation of participatory methods to increase and better develop the efficacy and inclusiveness of citizen participation in the community visioning process are more effective if they result in collective action. This can result in the ability of community members to feel they have the skills to determine their community's vision and future and lead to an increased citizen involvement and participation regardless of the demographic or project focus.

This study has shown quantitatively that participatory methods can potentially serve to increase levels of perceived empowerment. Participatory methods, if designed to increase empowerment, can have a direct impact on the levels of participant involvement and pro-activity in a community. Landscape architects, planners and community leaders should consider using participatory methods to engage participants

in assisting a community to define a vision for its future. They should also seek to understand the theory behind the methods, so that the participatory process is better structured to meet the goals of the project.

It is often the researcher or practitioner asking “why” and “how,” not the community. More often, the researcher or the practitioner is an agent from outside the community. Research and practice are often perceived as following agendas that may not as directly address the needs of its subjects or clients as well as they could. Participatory methods seek to find solutions for real-world problems through knowledge based, inclusive mutually beneficial participatory methods. The goal of participatory research is to share power, to invigorate, to be humble and to do research in an effective manner. At its best, participatory research includes the follow-up needed to apply solutions for problem solving and community visioning. In addition, it can be empowering for the participants. Landscape architecture practice needs to look to the PAR process and take note. Using a measure to examine and determine what participation actually achieves helps to promote honesty and clarity and provides practitioners and researchers alike with greater theoretical understanding of participation.

APPENDIX
INDICES AND INTERVIEW QUESTIONS

The following lists the initial items tested for each variable, with items drawn from the literature noted with the source next to each:

Initial Test Index

	Items measuring Interactional Empowerment (awareness and understanding of the socio political environment). Variables: collective action and interpersonal relationships		
1	Only by working together can people get power to change my community	Speer, 2000, p. 56	
2	I can have power in my community only by working in an organized way with other people	Speer, 2000, p. 56	Speer and Peterson, 2000, p. 113-114
3	Power is collective, not individual	Speer, 2000, p. 56	Speer and Peterson, 2000, p. 113-114
4	Working together to create the films was better than working alone		
5	Power lies in the relationships between people	Speer, 2000, p. 56	Speer and Peterson, 2000, p. 113-114
6	A person becomes powerful through other people	Speer, 2000, p. 56	Speer and Peterson, 2000, p. 113-114
7	The only way I can have power is by connecting with others	Speer, 2000, p. 56	Speer and Peterson, 2000, p. 113-114
8	Working on the film project helped me connect with my community		
9	I developed important relationships from being a part of the film project		

	Items measuring Intrapersonal Empowerment (self-perceptions of efficacy, mastery and competence) Variables: leadership competence and policy control		
1	I am often a leader in groups	Zimmerman and Zahniser, 1991, p. 194	Speer and Peterson, 2000, p. 113-114
2	I would prefer to be a leader rather than a follower	Zimmerman and Zahniser, 1991, p. 194	Speer and Peterson, 2000, p. 113-114
3	I would rather someone else took over the leadership role when I'm involved in a group project	Zimmerman and Zahniser, 1991, p. 194	Speer and Peterson, 2000, p. 113-114
4	I would rather have a leadership role when I'm involved in a group project	Peterson, et al, 2006 p. 294	
5	I had a leadership role in the film project		
6	I can usually organize people to get things done.	Zimmerman and Zahniser, 1991, p. 194	
7	Other people usually follow my ideas	Zimmerman and Zahniser, 1991, p. 194	
8	I find it very hard to talk in front of a group	Zimmerman and Zahniser, 1991, p. 194	
9	I find it very easy to talk in front of a group	Peterson, et al, 2006 p. 294	
10	I like to wait and see if someone else is going to solve a problem so that I don't have to be bothered by it.	Zimmerman and Zahniser, 1991, p. 194	
11	I like to work on solving a problem myself rather than wait and see if someone else will deal with it	Peterson, et al, 2006 p. 294	
12	I would rather not try something I'm not good at.	Zimmerman and Zahniser, 1991, p. 194	

	Items measuring Intrapersonal Empowerment (self-perceptions of efficacy, mastery and competence) Variables: leadership competence and policy control		
13	I like trying new things that are challenging to me	Peterson, et al, 2006 p. 294	
14	The film project was a new, challenging activity for me		
15	I enjoy political participation because I want to have as much say in running government as possible	Zimmerman and Zahniser, 1991, p. 194	
16	I enjoyed being involved in the film project because it gave me a say in the community		
17	Sometimes politics and government seem so complicated that a person like me can't really understand what's going on	Zimmerman and Zahniser, 1991, p. 194	Speer and Peterson, 2000, p. 113-114
18	A person like me can really understand what's going on with government and politics	Peterson, et al, 2006 p. 294	
19	I feel like I have a pretty good understanding of the important political issues which confront our society	Zimmerman and Zahniser, 1991, p. 194	Speer and Peterson, 2000, p. 113-114
20	Participatory film projects can be a way to help the community make decisions		
21	People like me are generally well qualified to participate in the political activity and decision making in our country	Zimmerman and Zahniser, 1991, p. 194	Speer and Peterson, 2000, p. 113-114
22	It hardly makes any difference who I vote for because whoever gets elected does whatever he wants to do anyway	Zimmerman and Zahniser, 1991, p. 194	
23	There are plenty of ways for people like me to have a say in what our government does	Zimmerman and Zahniser, 1991, p. 194	

	Items measuring Intrapersonal Empowerment (self-perceptions of efficacy, mastery and competence) Variables: leadership competence and policy control		
24	I feel that the film project will help me have a say in my community		
25	So many other people are active in local issues and organizations that is doesn't matter much to me where I participate or not	Zimmerman and Zahniser, 1991, p. 194	
26	Most public officials wouldn't listen to me no matter what I did	Zimmerman and Zahniser, 1991, p. 194	
27	A good many local elections aren't important enough to bother with	Zimmerman and Zahniser, 1991, p. 194	
28	Participating in the film project made me confident in my abilities to communicate my ideas		
29	I feel confident in my ability to communicate my ideas through film or video		

The following are the final indices and questionnaires used in the research, included in English and Bahasa Indonesia; highlight denotes negatively worded questions:

Final Index in English

Please answer the following questions. Mark the box that best describes how tru the statement is to you.

	Interactional Empowerment (awareness and understanding of the socio political environment). Variables: collective action and interpersonal relationships				
	Collective Action	Completely true	Somewhat true	Somewhat untrue	Completely untrue
1	Only by working together can we have the ability to influence decisions in the community				
2	I can have power in my community only by working in an organized way with other people*				
3	Working with others on a community project showed me that together we can change things				
4	Power (to change things) is collective, not individual*				
5	We are stronger working in groups to establish an opinion and voice than working alone.				
6	Working together to establish a community vision is better than working alone				
7	Working together on community betterment makes me feel like I am a part of something important				

	Collective Action	Completely true	Somewhat true	Somewhat untrue	Completely untrue
8	Being involved in a community project with others helps me have influence in the community				
	Interpersonal Relationships	Completely true	Somewhat true	Somewhat untrue	Completely untrue
1	I can create long lasting relationships that increase my community influence as a result of being involved in a community project				
2	The only way I can have influence (power) is by connecting with others*				
3	The only way I can have the power to affect change in my community is by connecting with others				
4	Working on a community project will help me connect with others within my community				
5	I can develop important relationships that will increase my community influence by being a part of a community activities				
6	Power in my community is based on the relationships between people				
7	A person becomes powerful through other people*				
8	The power to influence a community lies in the relationships between people				

*Speer 2000 CAIRS

	Intrapersonal Empowerment (self-perceptions of efficacy, mastery and competence) Variables: leadership competence and policy control				
	Leadership Competence	Completely true	Somewhat true	Somewhat untrue	Completely untrue
1	I am often a leader in groups*				
2	I would prefer to be a leader rather than a follower*				
3	I like to be in charge				
4	I would rather have a leadership role in a school project				
5	I would rather have a leadership role in a community project				
6	I can usually organize people to get things done*				
7	Other people usually follow my ideas*				
8	People usually do what I tell them to do*				
9	I find it very hard to talk in front of a group*				
10	I find it very easy to talk in front of a group**				
11	Being involved in community projects or activities makes it easier for me to talk in front of groups				
12	I like to work on solving a problem myself rather than wait and see if someone else will deal with it**				
13	I believe that I can solve problems				
14	I like trying new things that are challenging to me**				
15	I enjoy new, challenging activities				

	Policy Control	Completely true	Somewhat true	Somewhat untrue	Completely untrue
1	Being involved in a community project gives me a say in the community				
2	I really understand what's going on with government and politics**				
3	I feel like I have a pretty good understanding of the important political issues which confront our community*				
4	Community projects can be a way to help the community make decisions				
5	People like me are qualified to participate in the political activity and decision making in our community*				
6	It makes a difference who I vote for because whoever gets elected will represent my interests**				
7	When I am allowed to vote it won't make a difference who I vote for because whoever gets elected does whatever he wants to do anyway*				
8	There are plenty of ways for people like me to have a say in what our government does*				
9	It is important to me that I actively participate in local issues*				
10	So many other people are active in local issues and organizations that is doesn't matter much to me whether I participate or not*				
11	Most public officials wouldn't listen to me no matter what I did*				
12	Most public officials would listen to me**				
13	A good many local elections are important to vote in**				

	Policy Control	Completely true	Somewhat true	Somewhat untrue	Completely untrue
14	Community leaders listen to me				
15	Community leaders listen to my ideas				

*Peterson, Lowe, Hughey, Reid, Zimmerman, Speer 2006 SPCS
** Peterson, Lowe, Hughey, Reid, Zimmerman, Speer 2006 SPCS positively worded

Please mark the box that best fits the number of times you have engaged in the following community action activities in the past year:

	Community Action Activities	4-5 Times	2-3 Times	Once	Not at All
1	Attended a meeting to push for a policy change in my school or community*				
2	Had an in depth face to face conversation about an issue affecting your community or school*				
3	Organized or arranged an agenda for a community or school meeting*				
4	Attended an event promoting information about community services*				
5	Wrote a letter (to voice my opinion on a community or school issue)*				
6	Attended a meeting promoting a school activity				
7	Attended a community or school meeting to pressure for policy change**				
8	Signed a petition**				
	*Speer Peterson 2000 **Peterson, et al 2006				

Please answer the following questions:

1. **List current community organizations that you are a member of; examples may include school groups, faith based group, civic associations, music groups,**

sports teams, art groups, scouts, PMR (Red Cross Organization), PKS (School Police), etc.*

2. **For the organizations listed about, describe how often you participate in each (times per week, month, year.)***

*Peterson et al 2006

Final Index in Bahasa Indonesia

Silahkan-jawab pertanyaan berikut. Tandai kotak yang paling menggambarkan betapa benar pernyataan ini untuk anda.

	Pemberdayaan Interaksional (kesadaran dan pemahaman tentang lingkungan sosial politik). Variabel: tindakan kolektif dan hubungan interpersonal				
	Aksi Kolektif	Sepenuhnya benar	Agak benar	Agak kurang benar	Sepenuhnya tidak benar
1	Hanya dengan bekerja secara bersama-sama, seseorang bisa mendapatkan kekuatan untuk mengubah komunitas saya *				
2	Saya dapat memperoleh kekuatan dalam komunitas saya, hanya dengan bekerja secara terorganisir dengan orang lain *				
3	Bekerja dengan orang lain pada sebuah proyek komunitas menunjukkan bahwa bersama kita dapat mengubah beberapa hal.				
4	Kekuatan (untuk mengubah beberapa hal) bersifat kolektif, bukan individual *				
5	Kita bekerja lebih kuat dalam kelompok untuk membentuk opini dan suara dibandingkan bekerja sendirian.				
6	Bekerja sama untuk membangun suatu visi komunitas lebih baik daripada bekerja sendirian.				

	Aksi Kolektif	Sepenuhnya benar	Agak benar	Agak kurang benar	Sepenuhnya tidak benar
7	Bekerja sama pada perbaikan komunitas membuat saya merasa, seperti saya merupakan bagian dari sesuatu yang penting.				
8	Terlibat dalam suatu proyek komunitas dengan orang lain membantu saya, memperoleh pengaruh di masyarakat.				
	Hubungan Interpersonal	Sepenuhnya benar	Agak benar	Agak kurang benar	Sepenuhnya tidak benar
1	Saya dapat menciptakan hubungan jangka panjang yang meningkatkan pengaruh komunitas saya sebagai hasil dari keterlibatan dalam proyek masyarakat.				
2	Satu-satunya cara saya untuk memperoleh pengaruh (kekuasaan) adalah berhubungan dengan orang lain *				
3	Satu-satunya cara saya memperoleh kekuasaan untuk mempengaruhi perubahan dalam komunitas saya adalah berhubungan dengan orang lain.				
4	Bekerja pada sebuah proyek komunitas akan membantu saya terhubung dengan orang lain dalam komunitas saya				
5	Saya bisa mengembangkan hubungan penting yang akan meningkatkan pengaruh komunitas saya dengan menjadi bagian dari suatu kegiatan masyarakat.				
6	Kekuatan pada komunitas saya berdasarkan pada hubungan antar sesama.				
7	Seseorang menjadi kuat melalui orang lain *				
8	Kekuatan untuk mempengaruhi suatu komunitas terletak pada hubungan antar sesama individu.				
	*Speer 2000 CAIRS * Speer 2000 CAIRS				

	Pemberdayaan Intrapersonal (persepsi diri sendiri kemanjuran, penguasaan dan kompetensi) Variabel: kompetensi kepemimpinan dan kontrol kebijakan				
	Kompetensi Kepemimpinan	Sepenuhnya benar	Agak benar	Agak kurang benar	Sepenuhnya tidak benar
1	Saya sering menjadi pemimpin dalam kelompok *				
2	Saya lebih suka untuk menjadi seorang pemimpin daripada seorang pengikut *				
3	Saya lebih suka memiliki peran kepemimpinan ketika terlibat dalam sebuah proyek kelompok **				
4	Saya lebih suka memiliki peran kepemimpinan dalam suatu proyek sekolah.				
5	Saya lebih suka memiliki peran kepemimpinan dalam suatu proyek komunitas.				
6	Saya biasanya dapat mengatur orang untuk menyelesaikan sesuatu *				
7	Orang lain biasanya mengikuti ide-ide saya *				
8	Orang biasanya melakukan apa yang saya suruh mereka untuk kerjakan *				
9	Saya merasa sangat sulit untuk berbicara di depan satu kelompok *				
10	Saya merasa sangat mudah untuk berbicara di depan satu kelompok **				
11	Terlibat dalam proyek-proyek masyarakat atau beberapa kegiatan sejenisnya menjadikan saya lebih mudah untuk berbicara di depan kelompok.				
12	Saya suka memecahkan masalah sendirian daripada menunggu dan melihat apakah orang lain akan menyelesaikannya.				
13	Saya percaya bahwa saya bisa menyelesaikan masalah-masalah.				

	Kompetensi Kepemimpinan	Sepenuhnya benar	Agak benar	Agak kurang benar	Sepenuhnya tidak benar
14	Aku suka mencoba hal-hal baru yang menantang bagi saya **				
15	Saya menikmati kegiatan-kegiatan yang baru dan menantang.				
	Kebijakan Pengendalian	Sepenuhnya benar	Agak benar	Agak kurang benar	Sepenuhnya tidak benar
1	Terlibat dalam suatu proyek komunitas memberikan saya sebuah pengakuan untuk diri sendiri dalam masyarakat.				
2	Saya benar-benar memahami apa yang sedang terjadi pada kepemerintahan dan politik **				
3	Saya merasa seperti saya memiliki pemahaman yang cukup baik tentang isu-isu penting politik yang dihadapi oleh komunitas kami *				
4	Proyek-proyek komunitas dapat menjadi satu cara untuk membantu masyarakat membuat keputusan.				
5	Orang-orang seperti saya cocok untuk berpartisipasi dalam kegiatan politik dan pengambilan keputusan dalam komunitas kami *				
6	Akan berbeda, siapa yang saya pilih, karena siapapun nantinya yang terpilih akan mewakili kepentingan-kepentingan saya **				
7	Ketika saya diizinkan untuk memilih, tidak akan timbul perbedaan terhadap siapa yang saya pilih, karena siapapun yang terpilih nantinya akan bertindak semaunya *				
8	Ada banyak cara bagi orang-orang seperti saya untuk memperoleh suatu pengakuan dalam apa yang pemerintah kami hadapi *				
9	Penting bagi saya untuk berpartisipasi aktif dalam isu-isu lokal *				

	Kebijakan Pengendalian	Sepenuhnya benar	Agak benar	Agak kurang benar	Sepenuhnya tidak benar
10	Ada begitu banyak orang yang aktif dalam isu-isu lokal dan organisasi yang sebenarnya tidak terlalu penting bagi saya apakah saya berpartisipasi atau tidak *				
11	Kebanyakan pejabat publik tidak akan mendengarkan saya, tidak peduli apa yang sudah saya lakukan *				
12	Kebanyakan pejabat publik akan mendengarkan saya **				
13	Pemilu-pemilu lokal penting untuk diperhatikan **				
14	Tokoh masyarakat menghargai saya.				
15	Tokoh masyarakat menghargai ide-ide saya.				

*Peterson, Lowe, Hughey, Reid, Zimmerman, Speer 2006 SPCS * Peterson, Lowe, Hughey, Reid, Zimmerman, Speer 2006 SPCs

** Peterson, Lowe, Hughey, Reid, Zimmerman, Speer 2006 SPCS positively worded ** Peterson, Lowe, Hughey, Reid, Zimmerman, Speer 2006 SPCs positif worded

Silahkan tandai kotak yang paling sesuai dengan banyaknya frekwensi keterlibatan anda dalam kegiatan aksi kemasyarakatan berikut ini pada tahun lalu:

	Kegiatan Aksi Kemasyarakatan	4-5 Kali	2-3 Kali	Sesekali	Tidak pernah sama sekali
1	Menghadiri pertemuan untuk mendorong perubahan kebijakan di sekolah saya atau lingkungan masyarakat *				
2	Mengikuti perbincangan mendalam secara tatap muka mengenai suatu isu yang mempengaruhi komunitas anda ataupun sekolah *				
3	Merancang atau mengatur sebuah agenda untuk satu pertemuan komunitas atau sekolah *				

	Kegiatan Aksi Kemasyarakatan	4-5 Kali	2-3 Kali	Sesekali	Tidak pernah sama sekali
4	Menghadiri satu acara untuk mempromosikan informasi tentang pelayanan-pelayanan kemasyarakatan *				
5	Menulis surat (untuk menyuarakan pendapat saya tentang masalah komunitas atau sekolah) *				
6	Menghadiri satu pertemuan untuk mempromosikan suatu kegiatan sekolah.				
7	Menghadiri pertemuan masyarakat atau sekolah untuk mendorong perubahan kebijakan **				
8	Menandatangani petisi **				
	*Speer Peterson 2000 * Speer Peterson 2000 **Peterson, et al 2006 ** Peterson, et al 2006				

Silahkan jawab pertanyaan berikut ini:

1. Sebutkan daftar organisasi kemasyarakatan dimana anda menjadi anggotanya; contoh mungkin termasuk kelompok sekolah, kelompok yang berbasis keagamaan, asosiasi kemasyarakatan, kelompok musik, tim olahraga, kelompok seni, pramuka, PMR (Palang Merah Organisasi), PKS (Polisi Sekolah), dll *

2. Untuk organisasi yang anda sebutkan di atas, jelaskan seberapa sering anda berpartisipasi dalam masing-masing kegiatan * (berapa kali per minggu, bulan, tahun.)

*Peterson et al 2006 * Peterson et al 2006

Silahkan menjawab pertanyaan berikut:

3. Daftar organisasi masyarakat saat ini bahwa Anda adalah anggota; contoh mungkin termasuk kelompok sekolah, kelompok yang berbasis keagamaan, asosiasi kemasyarakatan, kelompok musik, tim olahraga, kelompok seni, pramuka, PMR (Palang Merah Organisasi), PKS (Sekolah Polisi), dll *

4. Untuk organisasi yang terdaftar sekitar, menggambarkan seberapa sering Anda berpartisipasi dalam setiap * (kali per minggu, tahun bulan,.)

*Peterson et al 2006 * Peterson et al 2006

Initial Interview Questions:

1. What is this picture of?

2. What is happening in the picture?

3. How is this landscape important to you?

4. How does this landscape relate to your life?

5. Would it be okay or bother you if this landscape changed into something else, like a house or a store?

The following leading questions will be used if the answer above is affirmative and will focus on the level of influence the participant feels they have on landscape change.

6. If it bothers you, do you think you have the influence to keep it from changing? If so

7. What would you do?

8. Do you think you have the ability to voice your opinion on the importance of this landscape?

9. How would you do that?

Final Interview Questions in English

1. What do you see in this picture?

2. Why did you take this picture?

3. Why are the elements in this picture important?

4. How does this photograph relate to your life?

5. Tell me what you think about the positive and negative impacts of change on this area –

   a. If it's natural beauty vs. the buildings
   b. If it's good or bad for tourism
   c. on the economy

6. Would it be okay or bother you if this area changed into something else, like a house or a store, or a lot of buildings? Why or why not?

The following leading questions will be used if the answer to 6, above is it would bother the participant to see the area change and will focus on the level of influence the participant feels they can have on directing change (thus measuring empowerment).

1. If it would bother you that the area changed into a lot of buildings, would you want to try to save it and how?
2. What would you do to keep it from being built on?
3. Would you try to protect it by yourself, or with the help of others?
4. Who would you talk to about it?
5. Do you feel you could get others to help you save this area and if so, how?
6. Would you want to work with an organization to direct change?
7. Describe how you would voice your opinion about saving this area.

The following leading questions will be used if the answer to 6, above is it would be okay to see the area change and will focus on the level of influence the participant feels they can have on directing change (thus measuring empowerment).

1. If it changed to a built form, what would you like to see?
2. Do you feel you can direct what the change would be? How
3. Would you try to direct change by your self, or with the help of others? Please explain.
4. Would you want to work with an organization to direct change?

Final Interview Questions in Bahasa

1. Apa yang anda lihat dalam gambar ini?
2. Mengapa anda mengambil gambar ini?
3. Mengapa elemen-elemen dalam foto ini penting?
4. Bagaimana foto ini berhubungan dengan hidup anda?

5. Jelaskan pendapat anda mengenai dampak positif dan negative dari perubahan di dearah ini?

   a. Tentang keindahan alam vs bangunan.
   b. Tentang baik atau buruknya bagi pariwisata.
   c. Terhadap perekonomian.

6. Apakah akan baik-baik saja atau mengganggu anda apabila daerah ini berubah menjadi sesuatu yang lain, seperti rumah atau toko, atau banyak bangunan lainnya? Mengapa ya atau mengapa tidak?

Pertanyaan berikut ini akan digunakan apabila jawaban sampai 6, hal tersebut di atas akan mengganggu para peserta untuk melihat daerah berubah dan akan fokus pada tingkatan pengaruh, yang peserta dapat rasakan dalam mengarahkan perubahan (demikian pengukur pemberdayaan).

1. Jika hal itu akan mengganggu anda, dimana daerah tersebut berubah menjadi banyak bangunan, akankah anda ingin mencoba untuk menyelamatkannya dan bagaimana caranya?

2. Apa yang akan anda lakukan untuk menjaga daerah itu dalam keadaan masa pembangunan?

3. Apakah anda akan mencoba untuk melindungi daerah itu sendiri, atau dengan bantuan orang lain?

4. Dengan siapa anda akan membicarakan tentang hal ini?

5. Apakah anda merasa bisa meminta orang lain untuk membantu anda menyelamatkan daerah ini dan jika demikian, bagaimana caranya?

6. Apakah anda ingin bekerja dengan sebuah organisasi untuk mengarahkan perubahan?

7. Jelaskan bagaimana anda akan menyuarakan pendapat anda untuk menyelamatkan daerah ini?

Pertanyaan berikut ini akan digunakan apabila jawaban sampai 6, hal tersebut di atas akan membantu untuk melihat daerah berubah and akan fokus pada tingkatan pengaruh, yang para peserta dapat rasakan dalam mengarahkan perubahan (demikian pengukur pemberdayaan).

1. Jika hal itu diubah ke bentuk yang dibangun, apa yang akan anda ingin lihat?

2. Apakah anda merasa dapat mengubah perubahan itu? Bagaimana caranya?

3. Apakah anda mencoba untuk mengarahkan perubahan dengan diri anda sendiri, atau dengan bantuan orang lain? Tolong jelaskan!

4. Apakah anda ingin bekerja dengan sebuah organisasi untuk mengarahkan perubahan?

Interview Results

(pc: policy control; ca: collective action; ir: interpersonal relationships; lc: leadership control).

Participant	**empowerment approach**	**environmental importance of rice terraces**	**specific importance of rice terraces**	**mapping technique**	**development pressure**	**inferred empowerment variables**
cahya	personally talk to farmer, community, government, work with other people as well	food source	food source	sound	buildings bother me	ca
cintya	personally talk to the community and farmer, also organize with others.	important ecosystems, food source, fresh air	ecosystem, food source	sketching	keep rice terraces, no buildings	ca
desak	ask others for help, share knowledge with friends	food source, ecosystem	ecosystem, food source	mapping	too many buildings	ca, ir
Participant	**empowerment approach**	**environmental importance of rice terraces**	**specific importance of rice terraces**	**mapping technique**	**development pressure**	**inferred empowerment variables**

fera	can do it by herself (leadership competence) but wants to work with others because it is more effective and not as hard; would talk to community leaders, wants to take action now.	food, ecosystem	eco, food source, visual quality	mapping	too many buildings	lc, ca,pc, ir
laurent	talk with other people, work with friends, organizations		ecosystem, food source	oral narrative	bad if it changes to buildings	ca, ir
pasek	work with village leaders. Work with others, would use existing young community organization	effect of pollution, food source, economic (livelihood)	food source, econ	mapping	buildings, pollution	pc,ca,ir, lc
rani	talk with other people, work with friends and others, government leaders, youth	food source	food source	mapping	building around the rice field	pc,ca, ir

Participant	empowerment approach	environmental importance of rice terraces	specific importance of rice terraces	mapping technique	development pressure	inferred empowerment variables
sang ayu	tell people, work with others	food source	food source	oral narrative	disappearing, buildings	ca, ir
viv	needs a team, can't do it by myself	hard work, sell for money	economy	oral narrative	buildings, population growth	ca, lc, pc
wibawa	work with a team	food source, economic, labor	food source	sketching	building	ca, pc, lc,
windi	buffer requirement, group effort, talk to government	food source	food source	mapping	building	ca,pc, lc

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