Changing Shared Work Practice: Developing Faculty and Administration Voices in Institutional Educational Technology Policy in South Korea

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Abstract

Institutional educational technology policies in HEIs can help or hinder the objectives of faculty and administration staff. In many national contexts, these policies typically result from a top-down unilateral canonical decision-making process and/or retroactive heuristic models of investigation. In the context of historically top-down institutional settings, research utilizing and advocating multilateral non-canonical approaches and more sociocultural models of investigation in institutional educational technology policy decision-making are novel.

The aim of this thesis was to challenge the status quo and overcome tensions in institutional educational technology policy and practice concerning research and pedagogy object-oriented activity. To achieve this, five Korean faculty, seven international faculty and five administration staff from one university in South Korea participated in a 7-month long formative Change Laboratory research intervention supported by the theoretical framework of Cultural Historical Activity Theory. Data were collected from the actual-empirical, historical, and modelling actions of the intervention.

Findings show that the project allowed participants to both analyse existing practice and its contradictions, and to propose new models that might overcome the contradictions they had identified. Current institutional educational technology policy has created barriers of complexity, exclusion, impotence, obfuscation, division, disconnect, limitation, and incognizance in research and pedagogy object-oriented activity. For example, Research policy findings show problems concerning research activity information, horizontal support, vertical hierarchy, community, and collaboration. Pedagogy policy findings show problems of syllabi input, bi-lingual training, documentation, professional development, indoctrination, national mandated training videos, grading pages, and difficulties contacting international students. To resolve these barriers, intervention participants proposed 25 new institutional educational technology policies (13 for Research, 12 for Pedagogy), a new Research Homepage and a new International Faculty Portal which would lead to sustentation, support, inclusion, collaboration, community building, accommodation, and awareness. Findings further show that allowing a group of people to successfully redesign and co-construct their work practice leads to a stronger inter-cultural community, the realization of shared problems, empathy of others' activity and commitment to practical change.

Reflecting on the process and experience, this thesis argues that this bottom-up multilateral non-canonical approach offers a more appropriate toolkit, systematic steps, and a safe democratic environment for change, resulting in new policies and practices which are more relational, democratic, practical, and meaningful. Along with the values of the intervention, concept development, participant empowerment, and institutional change, several challenging aspects such as participant recruitment, engagement, and process are discussed. While the findings are reflective of one particular context and may not be wholly transferable, the values and issues discussed contribute to literature on policy, decision making and governance in HE, ICT and change in HE, and the use of Change Laboratory interventions in HE research.

Dedication

To my wife Youngjin, and my daughter Cadhla.

Thank you for the love, space, and support over the years.

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List of Abbreviations

AS: Administration Staff (ranked 6-9)

CHAT: Cultural Historical Activity Theory

CMS: Content Management System

CTL: Center for Teaching and Learning

EP: Edward Portal

HE: Higher Education

HEI: Higher Education Institutions

IACF: Research-Industry Academic Cooperation Foundation

ICT: Information Communication Technology

IF: International Faculty

IS: International Students

KF: Korean Faculty

KS: Korean Students

LMS: Learning Management System

1 Introduction

Policymaking and its implementation in Higher Education (HE) is a minefield for policymakers, institutional managers, and those charged with bringing about change, often resulting in unintended consequences, with mismatches between the intended outcomes of policymakers and those putting policy into practice commonplace (Trowler, 2002). This thesis argues that such mismatches are a direct result of top-down unilateral, canonical policy decision-making practices, and that this 'out-of-touch' policymaking would be better informed by a more multilateral, non-canonical approach.

Two approaches to institutional educational technology policymaking in Higher Education institutions (HEIs) this thesis considers are a top-down approach to policymaking and a bottom-up approach to policymaking.

The top-down approach is a rational-purposive account of policymaking where the policy agenda (Ozga, 2004:1) is set by the leaders at the top of the organization, who "by pulling the right levers, secure their staff's commitments to them" (Trowler, 2003:124), these levers being akin to rewards, punishments, sanctions, and a joint understanding of the organization's goals and culture. This managerial, top-down approach "frequently informs the thinking of institutional managers and others charged with bringing about change" (Trowler, 2002:2). Rational-purpose policymaking is top-down, unilateral, and canonical. The "values, attitude and beliefs of those lower down" who are "doing the donkey work of putting policy into practice" (Trowler, 2003:128) are excluded, resulting in polices which may not reflect nor address the messiness of contexts on the ground.

The bottom-up approach sees policymaking as a "complex and socially mediated affair' (Trowler, 2002:20), an approach that involves "mutual understanding and readiness to compromise (or mutual adaptation), by both those propagating the policy and those

implementing it" (Trowler, 2003:146). This approach advocates the "need to follow the paths of individuals as they move across the landscape and to be aware of the nature of the landscape too" ((Trowler, 2003, 146). It is an approach that asks for and includes other voices and agendas in policymaking, namely those outside the 'power blocks' (Prichard, 2000), resulting in policies that may better reflect the complexity and movement of components and contexts on the ground, allowing people to successfully design, redesign and co-construct their work practice.

In HEIs, some institutions will see policymaking purely as a managerial concern, allowing for unimpeded decision making and "forced organizational change" (Van den Hoven & Litz, 2016:45). Others will approach policymaking and implementation through collective bargaining, actively supporting "shared meaning" in "enacting change initiatives", and "empowering employees to think and talk about change" (Van den Hoven & Litz, 2016:48). This approach recognizes and develops the "critical role of practitioners in the process of knowledge transfer in education needs" (Ozga, 2004:1). How an institution views policymaking is dependent on its organizational culture and type of governance.

It is argued in this thesis that a managerial/top-down approach, a rational-purposive account of policymaking is commonplace in HEIs. It is further argued that the university in which this study takes place has a managerialism style of institutional governance, a classical bureaucratic approach to decision making, steeped in Confucian thought, a governance which favors top-down, unilateral, canonical policymaking in institutional change practices. As such polices concerning institutional educational technology policy within the institution are seen to be hindering rather than helping faculty and administration realize their pedagogy and research objectives. To challenge the status quo of this managerial approach, a more bottom-up approach to policymaking in the form of a formative Change Laboratory intervention was

undertaken. This thesis describes the process of the intervention and critically reflects upon the experience. This thesis looks at how the process and principles of the intervention can develop new concepts, empower participants, and change institutional educational technology policy and practice concerning research and pedagogy object-oriented activity in the context of a historically top-down institutional setting.

In HE research the use of a formative Change Laboratory intervention is "embryonic but promising" (Bligh & Flood, 2015:142), the intervention more commonly has been "applied successfully to a variety of real-world contexts" (Hasted, 2019:1). In the context of institutional educational technology policymaking in HE, this approach is novel. I chose this methodology as it provides a systematic way to unearth and address systemic problems in institutional educational technology policy and practice, it enables intervention participants to collectively view and address the complexity of past, present, and future sociocultural landscapes, with a focus on institutional change through the development of new concepts and the empowerment of people.

The aim of this intervention was to unearth contradictions, develop new institutional educational technology concepts/models/policies, empower other voices and affect institutional change.

This is achieved by presenting, analyzing, and discussing data resulting from a formative Change Laboratory intervention composed of Korean faculty, international faculty, and Korean administration staff at one private regional university in South Korea.

The thesis reveals what institutional educational technology policy/practice contradictions concerning research and pedagogy activity were found in the actual-empirical and historical actions of the intervention, asking how they came to be, and to what extent did participants see these problems inhibiting the realization of their objectives. The thesis reveals what

institutional educational technology policy/practice changes to research and pedagogy activity were suggested and implemented in the future modelling actions of the intervention, what resistance was foreseen, and how participants saw these changes advancing the realization of their objectives.

In the discussion chapter I take a step back from the data to reengage with the two research questions of this thesis, and to provide a critical personal reflection on challenging aspects of the intervention. The chapter will offer a reflection on the intervention's enabling promise for stakeholders, institutions, and the more challenging aspects I faced across this intervention: participant recruitment, engagement, and the intervention process. To achieve the aims of this thesis, the following research questions are asked.

1.1 Research Questions

1 How can a formative Change Laboratory intervention enable stakeholders to analyse, critique and transform their own activity systems of educational technology policy and practice?

2 How can a formative Change Laboratory intervention enable stakeholders and institutions to reimagine policy, decision making and governance in HEIs?

1.2 The Research Context

1.2.1 The University

This research took place at a private regional university in South Korea. The organizational culture of the university is akin to Lee's description of Korean higher education as being "a mechanical bureaucratic organization", characterized by "formal authoritarianism and traditional collectivism, based on Confucian values", a culture where sharing power with subordinates is uncommon, and attempts at creating a "democratic climate" and introducing" participative forms of leadership" are rarely sought (Lee, 1999:17) With this authoritarian leadership, there is "little discourse between staff of the institutions regarding policy or important matters" (Walsh, 2009:1), faculty, and low-level administration do not participate

“in the process of innovation as change agents or change agent-aides, rather the “formalized old order” is emphasized (Lee, 1999:17). Indeed, communication channels between upper management and faculty are “rarely open” (Lee, 1999:17), with faculty “becoming a functional part of the university rather than an active stakeholder” (Shin, 2011:172).

The university operates under such a managerialism style governance, with top-down decisions ultimately emanating from the office of the president - most faculty do not participate in institutional-level decision-making, “only deans and other managers participate” (Weidman & Park, 2000:67), and lower-level administration staff rarely (if ever) have a say in policymaking.

1.2.2 Institutional Educational Technology Policy and Practice

Since the mid-1990s, successive South Korean governments have pushed for Information Communication Technologies (ICT) policies and practices in HEIs to enhance “the qualitative level of university education services”, with the goal of securing HE “international competitiveness” (Keris, 2015:108).

The university, although private, utilizes ICT services for the same needs, albeit now, with future competitiveness as an additional goal. In this study, ICT is seen as institutional educational technology; online university tools which help faculty and administration staff achieve objectives in research and pedagogy activity.

In this research intervention, the university ICT tools helping faculty and administration realize their objectives are the Centre for Teaching and Learning Homepage and Learning Management System (CTL), the Research-Industry Academic Cooperation Foundation homepage (IACF), and the Edward Portal (EP).

The CTL, focusing on pedagogy activity, houses the university's Learning Management System - the My Classroom, Faculty Support, Learning Support, E-Learning, Reference Room, Notice Board, Community, and About CTL.

The IACF, focusing on research activity, houses information on internal and external research projects, grants, opportunities and information on intellectual property rights, research ethics, journal search, research regulations, and research support etc.

The EP houses the EDWARD system, a space where faculty and administration can view/complete administrative tasks concerning both research and pedagogy activity. For pedagogy, faculty and administration can view/input data concerning records, courses, grades, graduation, scholarships, registration/payment, extra-curricular programs, COMpass-K program, student support, counseling, student portfolio and career services. For research, faculty and administration can view/input data concerning research projects, performance, achievement, industry-academic exchange, and intellectual property.

ICT policy in private HEIs in South Korea are "pursued autonomously" by each university (Keris, 2018:188). In the university, policy is decided by upper management. In relation to pedagogy and research activity, ICT policy is decided by the Directors, Deans, and Office Managers of the CTL and the Research Office, with the final decision coming from the President's office. In the case of decisions which include ICT activity, the online tools helping subjects realize objectives, the Computer Science Department is also involved.

The CTL is developed and run by a third party, a private company off campus. The IACF homepage is run internally on campus by the Research Office. The Edward Portal is run internally on campus by the IT department.

The CTL has a Pedagogy policy with the following goals:

A. To play the role of bridges for smooth communication and interchange between Professor and Professor, Student and Student, and Professor and Student
B. To share the newest information of teaching and learning for professors and students
C. To develop and spread the best teaching and learning model for university
D. To establish educational supporting system to maximize the effect of teaching and learning

The IACF has a Research and Industry policy with the following goals:

A. Nurturing global talent through managing research and development
B. Supporting administration
C. Funding for superb achievements
D. Improving the academic environment including building research infrastructure to maximize results

The Edward Portal has no explicit research and pedagogy policy goals. Having said this, its main function, which is akin to a goal, is to provide a "gateway to services and information" (Tatnall, 2005:1), to help the university's faculty, administration and students realize their objectives.

These stated goals, along with findings from this study will be discussed later in Chapter 8.

1.3 Personal Motivation

This thesis was motivated by a desire to explore problems and affect real positive change in shared work practice at the university, to overcome obstacles hampering object-oriented activity, and to advocate for other voices in decision making affecting shared work practice. My ontological and epistemological stance is influenced by dialectic social constructionism, social constructivism, and interventionism. I believe that learning and development are socially situated activities, and employees or other practitioners collaboratively engaging in maintaining and sustaining their own work activity can transform place, people, policy, and practice for the better. Unfortunately, in a South Korean context (but not limited to), these "collective change efforts" (Haapasarri et al., 2016:232) on the shopfloor are seldom

evidenced in organisations. Decisions are normally handed down by upper management, then pushed down upon employees by middle management (Gee, Hull, & Lankshear, 1996), with the needs of the societal, outweighing the needs of the social or the individual. This one-way-street can result in employees (depending on cultural norms) questioning their status and voice within their workplace. These questions and the systemic problems arising from a unilateral approach to institutional educational technology policies are the reasons why I undertook this research. For Korean faculty, international faculty, and low-rank administration staff in South Korean HE, having a say in institutional educational technology policy and practice is uncommon, if unheard of. However, being on the receiving end of a top-down decision-making process and all that comes with this, is the norm. So, to accommodate their collective needs and address problems in institutional educational technology policy, the multilateral approach of a formative Change Laboratory intervention, supported by Cultural Historical Activity Theory (CHAT) was taken.

1.4 Outline of the Thesis

Chapter 2 identifies existing research to inform, support, justify and position the main research questions of this thesis. The chapter looks at literature on HEIs in relation to policy, decision making and governance, with specific focus being given to South Korea contexts. Following this, the chapter looks specifically at literature on ICT and change in HEIs, with attention being paid to models of research at implementation or intervention stages of inquiry.

Chapter 3 gives an overview of the theoretical framework used in this thesis, Engeström's Cultural Historical Activity Theory (CHAT). The chapter gives a brief historical account of

CHAT. Following this, six core principles of Engeström's CHAT are discussed, followed by my reasons for choosing CHAT, and existing criticisms of the theory are considered.

Chapter 4 sets out the empirical approach of a formative Change Laboratory intervention methodology. The chapter begins with the reasoning behind this chosen methodology and arguments dismissing alternative approaches are set out. This chapter touches upon the theoretical framework of Chapter 2, Engeström's CHAT, followed by an explanation of the chosen methodology and its three main theoretically bound principles: Double Stimulation, Transformative Agency, and Expansive Learning. The design of this Change Laboratory is then presented, looking at eight preparatory steps needed for the approach. Data collection procedures are presented followed by research design strengths and weaknesses. The chapter also highlights ethical considerations and data coding procedures.

Chapter 5 explains how I conducted the research, presenting and discussing each of the twelve change laboratory intervention sessions, aligning them to the seven stages of the expansive learning cycle. At each stage of the expansive learning cycle, this chapter will demonstrate with the aid of the first intervention principle, double stimulation, how participants identified and attempted to transform systemic policy and practice problems in their shared work practice.

Chapter 6 presents the quotes, key themes, and codes (contradictions) from the actual-empirical, historical and modelling actions of the intervention, as these are where contradictions inhibiting object-oriented activity were brought to light, and changes advancing object-oriented activity were suggested. These chosen intervention actions are central to the research questions of this thesis, because they illuminate the individual and

collective transformative agency of participants as they explore and re-design their own activity.

Chapter 7 takes a step back from the data to reflect on the intervention process and experience, to reengage with the two research questions of this thesis, and to provide a critical personal reflection on challenging aspects of the intervention. The chapter is divided into three sections, a reflection on the intervention's enabling promise for stakeholders, a reflection on the intervention's enabling promise for institutions, and third, a reflection on the more challenging issues of the intervention.

Chapter 8 concludes the thesis by discussing the implications of insights gained from the intervention for policy, practice, and future research. The chapter also highlights strengths and limitations concerning the execution and outcomes of this project, contributions to scholarship, and final reflections.

2 Literature Review

2.1 Introduction

This thesis uses a formative Change Laboratory intervention supported by CHAT to expose, examine, and affect change in institutional educational technology policy and practice. This chapter identifies existing research to inform, support, justify and position the research intervention of this thesis.

The chapter looks at organisations, in particular HEIs in relation to policy, decision making and governance, with analysis of governance in South Korea HEIs, the influence of Confucian thought, the aspiration of certain education reforms, and the rise of managerialism taking much importance. Following this, the chapter looks at literature on ICT and change in HEIs, with attention being paid to traditional and alternative models of research at implementation or intervention stages of enquiry.

This thesis lies at the intersection of these two elements. This thesis aims to contribute to the body of literature on institutional change practices, approaches to ICT and change in HEIs, and the use of Change Laboratory interventions in HE research.

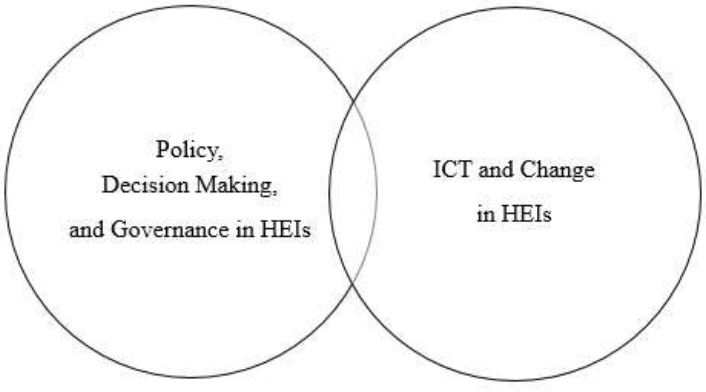


Figure 1 Venn diagram of intersecting elements of the literature review

2.2 Policy, Decision Making and Governance in HEIs

2.2.1 Policy

HEIs, like all organisations are goal oriented, and as such, when implementing policy goals to affect change, it is not as straightforward as input equals output: commonalities, contexts and consequences need due consideration. Cohen & March (1974) see HEIs as irrational hierarchical organisations, calling them 'organized anarchies', a reflection of their inherent problematic policy goals, unclear technology (work practices) and fluid participation.

In HEI settings, policy goals on paper usually take the form of a pragmatic, rational list of "current actions or preferred actions undertaken in pursuit of a stated objective" (Trowler, 2002:8). As shown in the Introduction chapter (Section 1.2.6), similar pragmatic lists are also evident on the CTL and IACF homepages. These top down rational-purpose models of policy are seldom useful, and realistically inadequate when it comes to the complexity and movement of components and contexts on the ground. This argument is reinforced by the literature review of top-down ICT policy in HE by Toro & Joshi (2012:20) who highlighted the need for decision makers to collaborate with users, so that "key issues of access, equity, management, efficiency, pedagogy and quality" are addressed. In a more bottom-up approach to policy, they, in a literature review spanning several international HEIs over a period of seven years (2004-2011), compiled a set of ICT policy goals more reflective of the needs on the ground:

1. Content/Digital Resources
2. Capacity Building
3. Monitoring and Evaluation Framework
4. ICT for Education Management
5. Implementation Plans
6. Financial Allocations
7. Political and Administrative support
8. Community Demand for ICT
9. Adapting a change in learning Processes

10. Staff Development and Training Programmes

Toro & Joshi (2012:22)

Implementing policy is a complex minefield for HEIs. Outcomes are "contextually contingent", there are "unanticipated consequences" and "divergence" from initial objectives is "inevitable because of the complexity of reality on the ground" (Trowler, 2002:5). A good example of policy ramifications can be seen in the 'implementation staircase' of Reynolds & Saunders (1987), showing just how hard it is to realize initial policy and navigate the messiness of HEI contexts.

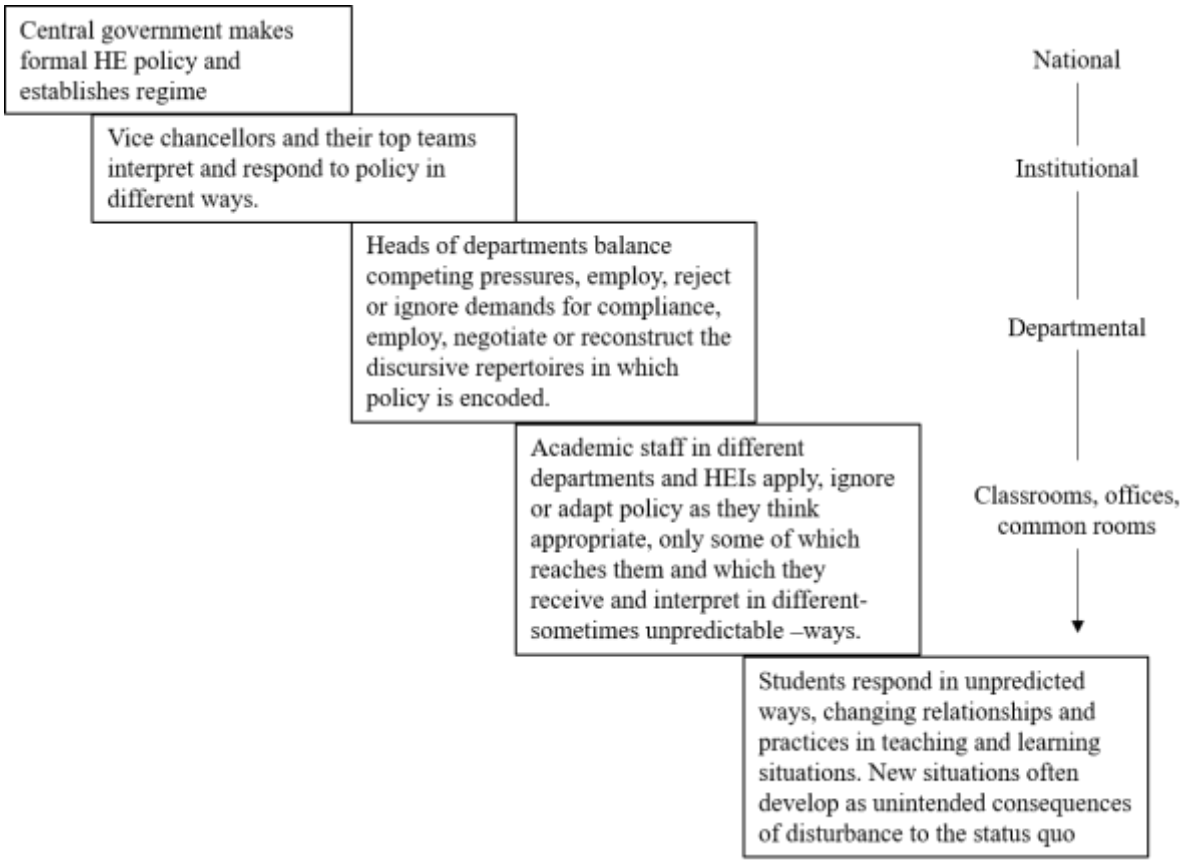


Figure 2 The implementation staircase

(adapted from Reynolds & Saunders 1987 in Trowler, 2002:4)

To lessen some of the unwanted side effects of top-down policy outcomes, organisations should actively engage subjects in decisions which affect the object of their activity. Being involved in such decisions could produce more bottom-up policy, empower employees, create openness in communications, facilitate ownership of the change process and its outcomes, promote a culture of collaboration, and promote continuous learning (Hurley et al., 1992).

2.2.2 Decision Making

Trowler (2002:5), in what he called "non-canonical" practice, supports the idea that policy decision-making should be the result of broad "negotiation, compromise and conflict than of rational decisions and technical solutions, of complex social and political processes than careful planning and the incremental realization of coherent strategy".

In literature on institutional change practices in HE, authors such as Trowler (2002, 2020); Heffernan et al. (2015); Jacobs (2016); Bligh & Flood (2015) and Virkkunen & Newnham (2013) espouse a more non-canonical approach to change processes, approaches preferring more inclusive models of negotiation, compromise, and conflict, such as Ethnographic Research, Action Research, TPACK Research, and Activity Theory.

Weidman & Park (2000:67) argued that when decision making (decisions which affect the objects of employee activity) is "concentrated at upper administrative levels, without broad participation on the part of university constituents, internal conflicts or dissatisfaction may occur." As such, unilateral policy decision-making (at higher levels of management), should be more organic, in that it is responsive to and created by agents who know what is really going on. According to Biesta et al. (2015:624), there is "ongoing tension within educational policy worldwide between countries that seek to reduce opportunities for individuals to exert

judgement and control over their work, and those who seek to promote it." Some contexts may see "agency as a weakness" in the operation of institutions, others would argue that "because of the complexities of situated educational practices', individual and collective "agency is an indispensable element of good and meaningful education".

In generic organisation theory, the rationale for employee participation in decision making in shared work practice, within a HEI context, rests "primarily on the right" of employees to participate, and the claim that employee "satisfaction and morale are closely related to opportunities for effective participation" (Floyd, 1985:6).

Faculty, and it is argued here, low level administration staff, have the 'right to participate' in policy decision-making which affects their activity for two main reasons: both have (or want) expertise in their activity, and both have interests at stake (Spitzberg, 1980).

The intrinsic needs of HEI employees (self-esteem and job satisfaction etc.) are linked to participation in decision making. In a more top-down bureaucratic HEI, where employees see their role in decision making as limited or non-existent, morale is lower (Anderson, 1983). Employees react negatively to being outside the decision-making process because they perceive such exclusion as an affront to their professional worth, and a criticism of their ability to participate in guiding institutional affairs (Kamber, 1984). Any decisions made regarding the activity of employees, will likely, without their participation, result in legitimacy disputes and implementation resistance (Floyd, 1985). It is important to note here, that participation does not always lead to higher rates of job satisfaction, higher participation requirements (time, workload) may lead to reduced satisfaction, and challenges faced in decision making (what can be changed?), may lead to more frustration for participants.

Nonetheless, deference to an autocratic approach to decisions affecting the objects of employee activity far out-way the discomfort of 'taking part'. In HEI, "participative leadership styles" are needed in decision making, because "higher education problems are highly unstructured"; management does not have all the information and the "acceptance of decisions" by employees "is crucial to the effective implementation of decisions" (Floyd, 1985:10). For Vahasantanen et al. (2020:10), when looking at influencing and developing shared concerns in HE, there is a need for "agency-promoting leadership practices", where the emphasis is on "people, relationships, and identities, rather than on managerial practices, control and monitoring." Like Englund et al. (2018:1051), when looking at "communicative pathways", Vahasantanen et al. (2020:10), argue the need "to support collaboration and individuals' agentic roles in development work, rather than to implement changes on a top-down basis".

In addition to the rights and intrinsic needs of employees, common aspirations (shared by employees and the institution), to "further the institution as a house of learning" are "both the cause and effect of the principle of shared authority" (Kahn, 1973:69). As such, there is an argument for good governance, the sharing of "decision-making authority so that power and resources don't accumulate in the hands of a single individual or group" (Bucoy, 2011:1). As argued in the literature, when developing/implementing policy, HEIs should consider commonalities, contexts and consequences, and decision making about such policy should adhere to a multilateral non-canonical approach.

How an institution considers policy and approaches decision making is dependent upon the behaviour and governance type of the institution. As such, the following section will look at

styles of institutional level governance in HEIs with specific attention given to a South Korean context.

2.2.3 Governance

HEIs are "social organisations" with "complex, multiple, overlapping, and fluid organizational elements (structure, technology, resources, control, culture)" (Good, 2018:16). Allen (2003:86) argues that HEIs are "symbiotic communities", with internal and external parts working together to effectuate education, research, and industry partnerships. These symbiotic communities are not always equitable nor congenial, and in the face of "neo-liberal economic policies, information technology, and globalised competition" (Allen, 2003:87), change in HEIs has become more bureaucratic, rational, and Classical. When looking at institutional level governance in HE in the UK, Allen highlighted the disparate perspectives of faculty and management: the former wanting more input, the latter seeking more dominance. This institutional level governance 'tug-of-war' is resulting in the fragmentation of HE faculties, the alienation of academics, and mistrust between both groups. Allen, like Becher and Kogan (1992:179), argues against organisational governance and faculty governance at institutional level; instead, he promulgates the concept of shared governance, a HEI where a different brand of management is needed, a brand which does not promote management values "above those of the academic enterprise which management is meant to serve", a brand which bonds "the organisation together as a community" (Allen, 2003:87). Walker & Torraco (2004:817), suggest that "change in higher education is typically characterized by collegiality, extended dialogue, consensus, an emphasis on educative excellence, and respect for academic tradition", a holistic and possibly 'idyllic' endeavour by and for the stakeholders in HE.

In HEIs, the type or style of governance "remains a central point of controversy" (Williams, 2015:31), with the argument being about 'who is in control' - who is making the decisions. Governance can be defined as "the possible ways in which policy actors combine to solve collective problems and thus to the ways in which the policy-making process is steered" (Capano, 2011:1625). The question is, who are these policy actors?

Governance can be seen from two levels, the macro, which is the relationship between HEIs and the government, and the institutional, the relationship between academics and management. This paper is foremost concerned with the institutional level; however, as will be highlighted later in this chapter, macro level governance has important influence over institutional level governance in a South Korean context. At an institutional level, governance can be categorized into three models: Organizational Governance, Faculty Governance and Shared governance. The first model, Organizational Governance, puts 'decision making or resources acquisition and allocation" primarily in the hands of high-level administration and management (Birnbaum, 1988:7). This top-down approach to governance is tethered to market pressures and as a result "promotes the massification and commodification of higher education" (Austin & Jones, 2016 in Williams 2015:18). To some this style is appropriate to meet the demands on higher education (Lambert, 2003), as it streamlines operational decisions. Others see this style of governance as producing corporate-like universities with "oppressive accountability regimes" that de-skill, devalue and distance employees (Schoorman & Acker-Hocevar, 2010:312).

The second model, Faculty Governance, sees faculty "having primary responsibility for academics, aspects of student development related to the educational process, faculty employment matters, and operations where relevant (Williams, 2015:23). This governance

sees a faculty senate being in place to address these issues, with specific roles of "faculty control, democratic participation and strategic policy making" (Dill & Helm, 1988 in Williams, 2015:20). To some this style of governance can empower faculty (Beaky et al., 2013) and allow for more stern resistance to "market demands" (Gerber et al.1997 in Williams 2015:20). To others, the involvement of faculty results in organisations being "bottom-heavy" (Gornitzka & Maassen, 2000:88), it can slow down the decision-making process (Heaney, 2010), result in weak organizational leadership (Cohen & March, 1974), and lead to heightened frustrations and friction between decision making communities.

The third model, Shared Governance, refers to interaction between administration and faculty in decision making, where "institutional participants interact with and influence each other and communicate with the larger environment" (Birnbaum, 1988:4). Both would "have a joint decision relationship" in areas of joint concern: pedagogy, research, and administration (Williams, 2015:23). A HEI is 'ideally, a professional community in which common educational interests supersede all potential divisions between the faculty and the administration" (Kahn, 1973:68). Ideally, it is an institution of shared authority, where all units - the governing board, president, faculty, and administration staff are interdependent in enterprise, with "adequate communication among these components and full opportunity for appropriate joint planning and effort" (Kahn, 1973:71). It is a place where vertical hierarchy and horizontal hierarchy work parallel, enabling individual units to influence decision making in areas of legitimate concern.

In a South Korean context, I would argue that at both macro and institutional level, there was a desire for shared governance, post the IMF crisis of 1997, with the Higher Education Act of March 1998. However, this desire was short-lived. With opposition on the ground and the

World Economic crisis of 2007, both levels continued their age-old organisational models of governance, based on personal and socio-political Confucian ethical values (Lee, 2001).

In the following section, I want to elaborate upon this South Korean context, to look at first; a brief historical outline of governance models in South Korea HEI; second, Confucian thought characterizing all HEI governance and culture; third, a look at the proposed reforms of the Higher Education Act of 1998 and fourth, the rise of managerialism in modern day HEI governance.

2.2.3.1 Models of Governance in South Korean HEIs

HEIs began to appear in the country in the 1880s, mostly established by US Christian missionaries. This was followed by the establishment of universities and vocational colleges by Japan, during the Japanese colonial period (1910-1945). It wasn't until Korea gained independence (post 1945), that HEIs began to flourish. This growth was mostly spearheaded by private universities. As of 2019, Korea has 430 universities, 372 of which are private (MOE, 2019). Private universities have mostly been influenced by the US Christian models (an evangelical model focused on social ethics), but other domestic educator models also exist in private universities set up by Korean educators, with more focus on the cultivation of "distinctive Korean values" (Shin, 2011:322).

On paper, there are three models, the US model (private universities), the domestic educator model (private universities) and the German Humboldtian model (public universities) which focuses on the holistic combination of learning and research, with senior faculty having a say in "institutional decision making" (Shin, 2011:322). The Korean higher education system is seen as being closer formally to the US model, but culturally operating "on the lines of the German model" (Shin, 2011:322).

In reality, all three models are heavily influenced by personal and socio-political Confucian ethical values. These values, beliefs, and actions, which run deep in the veins of South Korean society, characterise the leadership styles and organizational cultures of all South Korean HEIs.

2.2.3.2 Confucian thought in South Korean HEIs

South Korea has had a long relationship with Confucianism, beginning with the Chosun Dynasty (1392-1910), a relationship which is still very much alive, and evident in the personal and sociopolitical ethical values of modern-day Korean society. These ethical values based on Confucian thought have a deep effect on HEI leadership and culture, an effect which casts a long shadow over calls for shared governance.

The 'personal' in Confucian thought refers to the idea of self-cultivation, that if you study hard, you will have a "bright future" (Walsh, 2009:1). In leadership roles, leaders should have "virtuous characters and attitudes to make themselves correct, to do their duty, and to do their best, ultimately in order to achieve moral self-actualization and sociopolitical order" (Lee, 2001:16). In the case of a HEI president for instance, they are seen as the top administrator (Kim, 1984). He, and it is normally a 'he' (Yoon, 2000), is expected to be "representative of the institution, the integrator of the university community; the core decision maker and top administrator with respect to academic governance related to the education, research and service functions of the university, and the top manager of supporting services and functions, including planning, organizing, personnel management, facilities, and financial management" (Weidman & Park, 2000:76).

In addition to being cultivated, the role of a leader in Confucian thought is to "build harmonious sociopolitical order", through "hierarchically authoritative leadership and

reciprocally humanitarian leadership" (Lee, 2001:2). Essentially, leadership style is central to the identity of an organization's culture, and from a Confucian perspective, an organization should be led by a cultivated leader with a firm hand and a compassionate heart.

In South Korean HEI governance today, at both macro and institutional level, the firm hand of hierarchical authoritative leadership (Lee, 2001) is commonplace, creating an organisational culture where the roles and reciprocal obligatory relationships between subordinates and superiors are distinct:

> – For instance, subordinates use honorific words to superiors: the sitting position is usually based on rank determined by status, age, and gender; female faculty members are generally discriminated or disadvantaged in personnel or school administration by the majority of male administrators; most administrators seldom open communication networks to faculty members or students both in school administration and in decision-making processes; and administrators or professors urge their subordinates or students to obey and to devote (Lee, 2001:15)

This type of authoritarian leadership leads to a HEI culture which is closed, hierarchically rigid, a HEI with one-way communication channels. Within the lengthy quotation above, it is easy to see that the second Confucian thought on leadership - reciprocal humanitarian leadership is notably absent. Leadership should show benevolence to subordinates, and value their high-level needs. In South Korea HEI governance, this is not the case. It is the antithesis of democratic and transformational leadership, a mechanical bureaucratic model of governance, where power is guarded and participation in decision making is only for those of higher rank.

In essence, private HEIs in South Korea, canonical prescriptive policies are the norm. Both the text and discourse of policies emanate from age-old top-down structural forces, so decision making involving those outside the 'power blocks' is seldom encouraged (Prichard,

2000). These power blocks are rarely challenged due to Confucian elements of filial piety, loyalty**,** hierarchical authoritative leadership, and reciprocal obligatory relationships.

2.2.3.3 Reforms in South Korean HE

From 1961 to 1992, South Korea was ruled by three consecutive dictatorial regimes. In this time period, the governments sought to "curb" (Kim, 2001, as cited in Kim & Yonezawa, 2008:202) the direction, growth, and demand for HE, to align it to market needs, to "industrialize the country and build national identity" (Lee, 2000:63). This 'curb' was manifested in all HEI governance being uniformly controlled and centrally supervised by the Ministry of Education.

- a highly centralized institutional hierarchy based on Confucian sociopolitical rules, authoritatively closed communication systems stemmed from Confucianism or Japanese Shinto-Confucianism, inefficient administrative management due to nonprofessionals and unsuitable posts, unfairness and inappropriateness of personnel management on the ground of personal connection and factionalism, and documentation centered administration on the bases of formalism and hierarchical steps of a decision (Lee, 2000:67).

From 1993, with the inauguration of President Kim-Young-sam, the country began to push for political, economic and education reforms. Joining the OECD in 1996 was an example of this. In terms of HE, the government in 1995, enacted four reform plans, with the overall aim of strengthening international competitiveness and improving the college entrance exam system. The 3rd Reform Act in 1996 sought to distance centralised control by giving HEI more autonomy, enabling HEIs to address economic and educational challenges in their own backyard. In 1998, The Higher Education Act, post the bitter IMF crisis of 1997 and under the new leadership of President Kim Dae Jung, paved the way for further HEI reform. In this period, HEIs had to transform to survive. Higher education needed to respond to the "waves of globalization and information age" that were forcing universities into "unprecedented

challenges to cultivate the best quality manpower while transforming themselves into globally competitive organisations" (Lee, 2009:1). The challenges of the day brought changes to the very value of education, with "market competition, university autonomy, economic effectiveness, and education services" becoming the standard for South Korea (Cho, 2015:38). With the Higher Education Act, the Educational Reform Committee suggested how institutional governance (administration) should, to survive, look:

- autonomous and support centered administration, decentralized open organization systems for the administrative transparence, professional management for the guarantee of administrative specialization and efficiency, fairness and justice of personnel administration and faculty appointment systems, and information-technology centered administration (Lee, 2000:67)

In essence, the Higher Education Act of 1998, promoted the idea of an open organizational culture, based on democratic, humanitarian values.

2.2.3.4 The Rise of Managerialism in Modern Day HEI Governance

In truth, the control or governance of HEIs is a form of decentralized centralisation (Shin & Harman, 2009), where the government gives HEIs autonomy, but still holds on to the purse strings with an evaluation-based budgeting mechanism (Shin, 2015). So, to survive, HEIs must jump through centralised instrumentalist hoops to receive funding. With universities and academics competing for government attention, institutional and departmental factionalism are rampant. This has caused anxiety across all levels of HE. These hoops have "brought fundamental changes to various aspects of Korean higher education, all in the belief that market-oriented reform will lead to maximum efficiency" (Cho, 2015:38).

The world economic crisis of 2007 opened up HE to more reforms, with globalisation becoming the "state mantra for moving beyond crisis, developmentalist state models and

lower-technology and low-labour cost technologies to a modernised, globalised, market-driven and mass-consumption economy (Lee & Hewison, 2010:184).

With rising market dependence and an ever-increasing focus on accountability, HEIs have become more profit driven, and as a result are now centers of managerialism, accommodating the interests of other stakeholders, such as industry, in the governance process (Leach, 2008).

Since the Higher Education Act of 1998, the competition for budget share and market dependence has seen university presidents becoming more like CEOs, focusing on HEI market value, competitiveness, and performance. According to Shin (2011), and Shin & Kim (2018), the two main components of institutional level governance, structural change, and decision-making processes, are in the hands of HEI managers (the president and higher-level administration), leaving faculty and mid to low level administration staff standing out in the cold. In Shin's study on the collegiality of decision making in South Korean HEI governance at institutional levels, he found that only 18.1% of faculty saw decision making as a collegial process, with the conclusion that "academics perceive that decision making is administrator-centered at the institution level" (Shin, 2015:336).

Despite the suggestions of the Higher Education Reform Committee (1998), HEIs are still hierarchically authoritatively led with a leadership style and governance steeped in Confucian thought that seldom values the high-level needs of subordinates and rarely (if ever) involves them in any decision-making processes.

This thesis argues that the university has a managerialism style of institutional governance, a classical bureaucratic approach to decision making, steeped in Confucian thought, a governance which intentionally omits the voices of the wider faculty and lower-level

administration staff. It argues that those in control should remove barriers or boundaries which inhibit participation (Fuller et al., 2005, Gress & Shin, 2020).

The thesis contends that for a university to function 'ideally', all units should have a seat or representative voice at the table. A collective bargaining approach is advocated, with actors not normally involved in institutional level governance having a say in institutional educational technology policy and practice which affects their activity and objectives. Such an approach promoting a symbiotic consideration of components and mindfulness of social and cultural contexts (St. Clair Browne, 2011), would result in improved decision making, policy, governance, task performance, extrinsic and intrinsic attainment. It is an argument against institutional managerialism governance in favour of a more authentic shared institutional governance.

Having established that decisions are taken by the very few, and the voices of the many are omitted, just how in the literature have HEIs dealt with ICT? How do they introduce new systems, how do they change old ones? What are the decision processes involved? Who are the decision makers?

2.3 ICT and Change in HEIs

In HEIs today, ICT "serves as the backbone" to many "activities, operation and functions" (Polly et al., 2020:2). ICT has brought many positives to faculty, staff, and students, but it has also brought some barriers (complexity of tools, lack of sufficient training, time commitments etc.) which may be preventing HEIs "from leveraging technology in ways to support their mission, goals, and objectives" (Polly et al., 2020:2).

To deal with these barriers and others, there is a need for HEIs to tailor ICT and ICT policy, to proactively bring about change which considers specific contexts and the need/wants/concerns of its users.

However, when looking at literature on ICT and change in HEIs, extensive research has been carried out on ICT artefacts focusing on retroactive heuristic models investigating implementation, evaluation, and usability satisfaction (Doll & Torkzadeh, 1988; DeLone & McLean, 2003; Noiwan & Norcio, 2000; Nielson, 1995; Pierce, 2005; Kostaras & Xenos, 2007; Astani & Elhindi, 2008; Lee et al., 2009; Hasan, 2013, and Toit & Bothma, 2010). These retroactive approaches, using either the Technology Acceptance Model (Davis, 1986) or Innovation Diffusion Theory (Rogers, 1995) are both based on the idea that "technology has some characteristics that determine whether and how it will be adopted and used" (Tatnall 2009 in Khosrow-Pour, 2009:4066). The problem with this 'essentialist' approach is that the research is more top-down than bottom-up, more quantitative than qualitative, and more technically laden than social. That is, the importance and use of the tool is more important than the user and the quality of their experience. These heuristic approaches to problem-solving also use "a practical method or various shortcuts in order to produce solutions that may not be optimal but are sufficient given a limited timeframe or deadline", leading to "poor decision-making based on a limited data-set" (Chen, 2021). Taking the form of prescriptive quantitative/qualitative surveys, these heuristic models may lead to change in ICT; however, the outcomes and the approach are often not inclusive, nor reflective of end-user needs and fluid contexts.

I would argue that these models of investigation align more to a managerialism style of institutional governance, a classical bureaucratic approach to decision making favouring canonical prescriptive policies. I would further argue that, in the context of the university,

such model use is rare, as decision making usually happens behind closed doors; user feedback when addressing change is seldom sought.

As mentioned in Section 2.2.1, in their literature review of ICT policy goals in HE, Toro & Joshi (2012:20) highlighted the need for decision makers to collaborate with users, so that "key issues of access, equity, management, efficiency, pedagogy and quality" are addressed. What they argued for was in a sense, capacity building/development - a change intervention "that builds on existing skills and knowledge, driving a dynamic and flexible process of change, borne by local actors" (EPRS, 2017:1). This flexible process of change "addresses complex multi-faceted problems requiring the participation of various actors, organisations and institutions" (Morgan & Qualman, 1996 as cited in Blagescu & Young, 2006:4). It is a developmental process which is dependent upon the interaction of the individual level, the organisational level, the sector/network level, and the enabling environment (Blagescu & Young, 2006:4). This system's approach to change is holistic, with changes to one system influencing another.

Apart from traditional retroactive heuristic models investigating evaluation and usability satisfaction etc., there are some researchers who have explored more proactive alternative sociocultural approaches to ICT activity in HEIs, notably Stensaker et al, 2006; Nvyang, 2006; Hu & Webb 2009; Mostert & Quinn 2009; Virkkunen & Newnham, 2013.

The *Ethnographic* work of Stensaker et al, on the struggle to "use, update and integrate ICT" in Norwegian HEIs, found that "purpose, people and pedagogy" are ineffectively linked. There was a mismatch between the "administrative routines, communication and transmission of knowledge" and the "personal needs of those who actually have to use and integrate new technology on the 'working floor'" (Stensaker et al, 2006:431).

In Nvyang's (2006) sociocultural approach, using *Activity Theory* to look at ICT implementation in HE in Denmark, two interesting findings resulted. First, implementation is not only "about management driven decisions. It is a complex negotiation between factors that are often contradicting each other." Second, there was a "need for abroad ownership of the implementation and its results. Without broad ownership among the potential participants in the implementation they are likely to ignore implementation of ICT or engage in a competing implementation project…. challenge is most effectively met by involving as many actors as possible in the mid-level activities" (Nvyang, 2006:7).

In their look at integrating ICT to HE in China, Hu & Webb (2009), using *Activity Theory*, discovered deep conflicts between teacher-centered pedagogy and student-centered pedagogy and advised that "teachers, curriculum developers and policy makers" needed a shared understanding of the conflicts, and a shared plan on how to address needed changes.

In the *Technological Pedagogical Content Knowledge* approach to understanding the professional development of academic staff to integrate ICT in teaching and learning, Mostert & Quinn (2009) found that boundary crossing was needed between academic staff and educational technologists in HE in South Africa, noting that working in groups with people with different expertise and experience leads to nuanced understanding of other contexts.

Virkunnen & Newnham (2013) used a Change Laboratory intervention with an Activity Theory framework to look at the "pedagogical use of ICTs in schools" in Botswana. Though not a HE context, the methodology, framework, and findings are important. They found that developments in ICT are "only possible through a sustained development activity in the school in collaboration with other actors" and this "developmental process takes place in a 'conditional matrix', in which the consequences of actions taken on one context become the conditions for actions taken in other contexts" (Virkunnen & Newnham, 2013:122).

Essentially, development in ICT needs the collaboration of a "heterogeneous network of participants", who for the most part need to take on "hybrid roles", to understand and engage with those from different specialized backgrounds (Virkunnen & Newnham 2013:163).

As can be seen from existing literature, these alternative sociocultural approaches to ICT have revealed wider systemic problems found in either ICT integration, implementation or development; mismatches between the routines, communication and transmission of knowledge by administrators and the personal needs of users, misunderstandings of contexts, the need for boundary crossing and capacity building/development initiatives, the need for ownership in change processes, a shared understanding of conflicts, a shared plan on how to address change, and the need for sustained collaboration.

There is a common thread in this literature, that of disconnect between those in charge and those not, and a need for those not in charge to have a say or voice in ICT integration, implementation and development, a desire to be heard.

To support my claims in the Discussion chapter, I will reengage with this literature, drawing on comparisons when needed and challenging this research when necessary.

2.4 What does this research offer?

This research describes a formative Change Laboratory intervention as it seeks to unearth contradictions, suggest change, and consolidate new activity in institutional educational technology policy and practice concerning pedagogy and research object-oriented activity in one university in South Korea.

This research shows that the intervention offers an appropriate toolkit, systematic steps, and a safe democratic environment for change, allowing for more inclusive, visceral engagement with policies concerning work practice. This engagement produces more relational, democratic, practical, and meaningful institutional educational technology policy, more so

than being on the receiving end of a top-down decision-making process where rational-purpose policies bear little relation to the day-to-day realities encountered by faculty and staff.

However, in literature concerning institutional change practices, multilateral non-canonical approaches to institutional educational technology policy decision-making are not utilized nor advocated. Instead, managerial/top-down unilateral canonical approaches are the norm. This study addresses this gap by describing the process of the intervention and reflecting critically on the experience of the intervention, arguing that the intervention with its multilateral non-canonical approach may be a better option for policymakers and practitioners.

2.5 Summary

This case study, the first such study conducted in a Korean context, occupies a gap in the body of literature on institutional change practices and approaches to ICT and change in HEIs.

Addressing change to institutional educational technology policy and practice, should, in my mind, be a multilateral non-canonical process, a sustained collaborative heterogeneous approach to understanding people, tools and objectives, bearing in mind the weight of historical, social, and cultural contexts. Doing so, allows for change to be instantiated by actual user experience, enabling, and involving the ‘user’ community in the shaping of their own practice.

I see an organisation as an interrelated and interdependent social structure, and successful planning or implementation of change happens at the individual or group level, those who make up an organisation. It is “only through their behavior that the structures, technologies,

systems and procedures of an organisation move from being abstract concepts to concrete realities" (Burnes, 2004:267).

In this study, a collective bargaining approach is advocated, with actors not normally involved in institutional level governance having a say in policy and practice which affects their activity and objectives. As mentioned before in Section 2.2.3.4, such an approach promoting a symbiotic consideration of components and mindfulness of social and cultural contexts (St. Clair Browne, 2011), would result in improved decision making, policy goals, governance, task performance, extrinsic and intrinsic attainment.

This idyllic/ideal approach is uncommon in literature and practice concerning ICT policy decision-making in South Korean HEIs, due to existing institutional level governance models, and unilateral canonical approaches to policy making.

This thesis argues that a formative Change Laboratory intervention coupled with CHAT is a more appropriate model to investigate/address change in institutional educational technology policy and practice.

A formative Change Laboratory intervention finds its theoretical roots in Cultural Historical Activity Theory. The following chapter will present an understanding of Activity Theory and discuss why Engeström's Cultural Historical Activity Theory (CHAT) is a suitable theoretical framework given the context and my ontological and epistemological stance. Special attention will be given to six principles of Engeström's CHAT: object-oriented analysis, multivoicedness, historicity, contradictions, expansive transformation, and social context.

3 Theoretical Framework

3.1 Introduction

In the previous chapter, I noted that addressing change in ICT, should be a multilateral non-canonical process, a sustained collaborative heterogeneous approach to understanding people, tools, and objectives, bearing in mind the weight of historical, social, and cultural contexts. This approach attempts to understand sociocultural contexts, viewing

a person's cognitive development as being tied to their surrounding culture, context and historicity. It is an attempt to "understand how human social and mental activity is organized through culturally constructed artifacts" (Lantolf, 2000:1), aligning to the "assumption that learning is not merely something that happens to individuals; rather, it is a derivative effect of people's participation in sociocultural…practices" (Shan, 2017:692).

Sociocultural research, with its roots in Vygotskyian psychology, "a psychologically relevant application of [Marxist] dialectical and historical materialism' (Vygotsky 1978: 6)" is evident within Lave & Wenger's (1991) legitimate peripheral participation, Wenger's community of practice (2012), and Engeström's CHAT (1987).

This thesis uses Engeström's CHAT as a sociocultural toolkit to help practitioners "identify, shape and ask questions about 'normal' or 'routine' practices in shared research and pedagogy activity. The specific intention is to see how societal policies and practices across activity systems inclusive of social, material, cultural, contextual, and historical elements "might be questioned and changed for the better" (Kahlke et al. 2019:117-118).

3.2 Cultural Historical Activity Theory (CHAT)

As a philosophy, CHAT emphasises the relationship between activity and consciousness, positing that 'conscious learning emerges from activity (performance), not as a precursor to it" (Jonassen & Rohrer-Murphy, 199:62). As a psychology, CHAT is "concerned primarily

with how the personality is formed by the social situation in which the person grows up and lives", it is an understanding that "societal entities and individual personalities mutually constitute and form one another" (Blunden, 2010:171). Thus, human activity is "the fundamental building block of individual consciousness via a process of internalizing the societal" (Snowden, 2018:22). As a practical lens, CHAT is "an activist and interventionist" epistemology (Sannino, 2011:572). It has "long been associated with intervention-research on social practice and the developing agency of those involved" (Moffitt & Bligh, 2021:6). It generates new practices and promotes change in activity through the "study of dynamic and complex sociocultural environments through a strong and sustained emphasis on the notions of objects, history, tensions and contradictions which are embedded in a sociocultural landscape" (St. Clair Browne, 2011:42).

With its roots in the early German philosophy of Hegel and Kant, and later in Marx and Engels, CHAT was born out of Soviet Marxist psychology, with the psychologist Sergei Rubinstein (1889–1960) laying much of the foundation work for Lev Semyonovich Vygotsky's (1896 – 1934) 1st Generation of Activity Theory. Both thought, like Marx, that human activity was situated, systemic and an important component in trying to approach/understand the complexity of human existence. In what he termed "dialectical-materialism" (Bligh & Flood, 2015:144), Marx believed that "the relationship between the internal and external is dialectical, that one influences the other" (Van der Riet, 2010), that we, as individuals, are "constituted by our practical activity, particularly by our participation in social, cultural and historical practices. We are the products of our own activity" (Van der Riet, 2010). In a sense, "we are who we are because of the activity we engage in in the world" (Van der Riet, 2010).

For Marx, human activity was based on a "system of social practices, inclusive of the

individuals enacting them and their conditions of their existence, and he makes the material production of people's needs the archetypal activity" (Blunden, 2011:462). This allowed Marx to move beyond the 'thought forms' of Goethe and Hegel's work on Gestalt theory before him, to propose that it was "not the consciousness of men that determines their existence, but their social existence that determines their consciousness" (Marx & Engels, 1987:263).

3.2.1 1st Generation Activity Theory

The 1st generation of Activity Theory developed by Vygotsky in the 1920s and 1930s drew from and evolved Marx's dialectical materialism into the idea that individual human action is object-oriented and mediated by cultural artefacts (Figure 1).

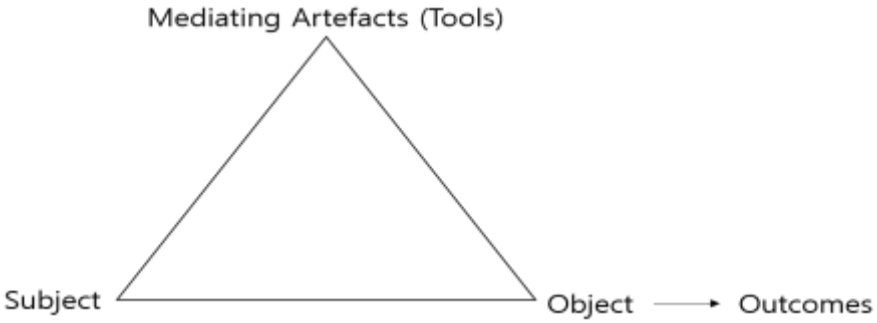


Figure 3 First Generation CHAT Model (adapted from Daniels, 2016:86)

As with Marx, when he made "the material production of people's needs the archetypal activity" (Marx & Engels, 1987:263), the "object-orientedness of action" becomes "the key to understanding human psyche" (Engeström, 2001:134).

Individual human action is motivated by an object. This object may be an individual or socially determined need. To realize this object, individuals use physical tools or signs (psychological tools) - artefacts which are socially, culturally, and historically formed.

These artefacts "through which subjects make sense of the object, mediate the subject's

relationship to the object of the activity" (Snowden, 2018:43). This concept of "mediated action" (Bligh & Flood, 2015:145) sees individuals as active participants making meaning of their world, while trying to realize their needs. When necessary, individuals can advance the realization of their objects/needs by modifying or creating actions that "trigger transformations" in existing artefacts, objects, and themselves (Scribner, 1997 as cited in Yamagata-Lynch, 2010:16). It is the relationship between subject, artefact and object which constitutes practical human action, and gives us an insight into "who is doing what, why and how?" (Hasan & Kaslauskas, 2014:9).

Vygotsky's 1st Generation CHAT focused solely on the individual, and was more concerned with cultural mediated action, than cultural mediated activity. In an attempt to bridge or tie the needs/objects of the individual action and the social activity, Alex Leontiev expanded on Vygotsky's cultural mediated action, to explicate "the crucial difference between an individual action and a collective activity" (Engeström, 2005:60).

For Leontiev (Figure 2), "an activity is an objectively existing system of actions with a social motive, whereas actions are the finite actions of individuals directed towards their personal goal, which all, thanks to the organization of labor, contribute to the achievement of the object of the activity" (Blunden, 2010:172).

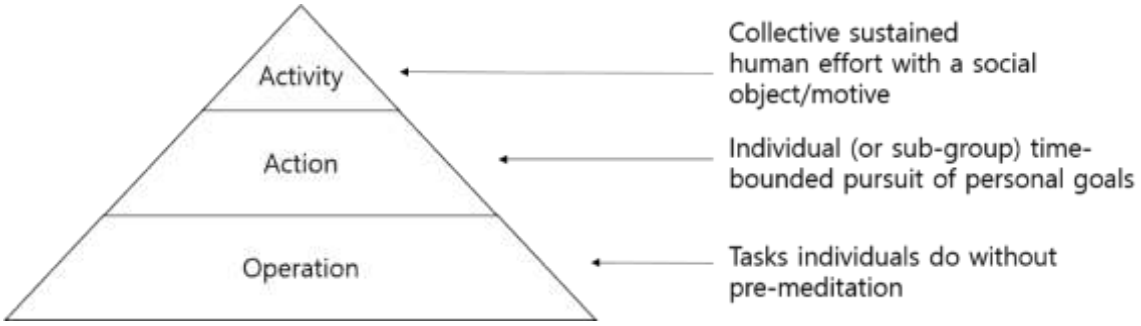


Figure 4 The hierarchical structure of Activity (adapted from Daniels, 2016:87)

This hierarchy of human activity, moving from operation to action to activity hopefully results in the achievement of both individual and social objects. But is this as straightforward as it seems? Surely, the realization of objects is not as linear (I almost said triangular) as picking up a chisel and carving out a statue? What tools are available, what is the object, for whom, for when, for where, for what purpose? In reality, the realization of objects is dependent upon social, cultural, and historical contexts. No mediated operation, action or activity is a subject-artefact-object island.

3.2.2 Engeström's CHAT

Engeström's CHAT (Figure 3.3) attempts to give a more expansive understanding of human activity. It augments Vygotsky's culturally mediated action and Leontiev's culturally mediated activity in an attempt to understand everyday human activity in the real world (Kaptelinin & Nardi, 2006). He develops cultural mediated activity beyond the subject, object, mediating artefact relationship, to show that "not only do cultural artefacts mediate human activity, but so does the social context in terms of institutionalized social structures" (Prenkert, 2010: 643). Engestrom's CHAT considers "an entire activity (or work) system to include all of its component parts and how they interact" (Cleland & Durning, 2019:49).

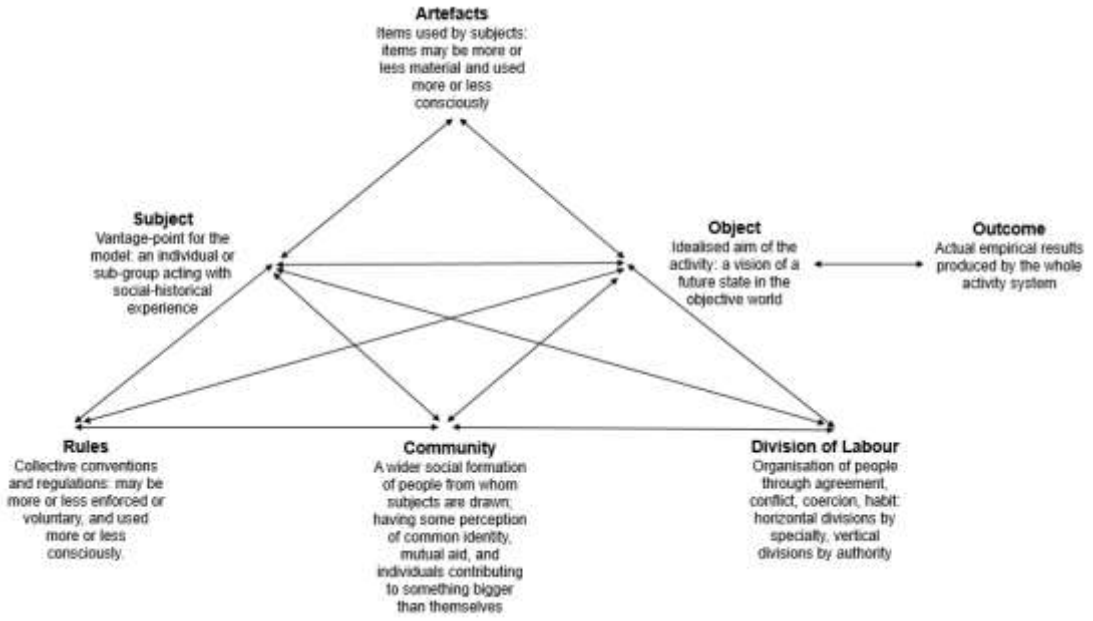


Figure 5 CHAT Model (adapted from Engeström 1987, Bligh & Flood, 2015:149)

In his CHAT model, the subject is a person or persons engaging in an object-oriented activity. This activity is mediated by artefacts (physical tools or signs (psychological tools)). The object is the individual or socially determined need/goal of the activity. The outcome is the intended or unintended long-term consequences of this realized need/goal. The activity is regulated by implicit or explicit rules, either internal or external. The community element is made up of a wider group of people who have an interest in, a connection to, and are affected by the activity. The division of labour element describes the horizontal or vertical hierarchy of roles or responsibilities people have across the activity.

Engeström's CHAT is concerned with practical application, "empirical grounding" than "endless conceptual" exercises (Engeström, 1999a:27). It is seen as a suitable framework to investigate and change social practices within an organization (Blackler, 1993; Engeström, 1999a; Virkkunen & Kuutti, 2000; Suratmethakul & Hasan, 2004), as it "can help make explicit the history and culture of groups and systems" and "examine how the component

parts of a system interact" (Cleland & Durning, 2019:46). CHAT is concerned with providing a "rich holistic understanding of how people collaborate, i.e., carry out purposeful collective activities, with the assistance of sophisticated tools (information systems) in the complex dynamic environments of modern organizations" (Waycott et al., 2005; Hasan, 1999 as cited in Hasan and Kazlauskas, 2014:12). CHAT serves "to collect manifestations of tensions as data. It is through the identification of tensions/contradictions, and their resolution, that innovation occurs within the activity of a group or a community" (Laferrière, 2018:2).
The foregrounding of practical application was important for the project, as his activity system model provided a systematic way to explore systemic policy/practice problems in activity. This systematic way, founded on core principles of object-oriented analysis, multivoicedness, historicity, contradictions, expansive transformation, and social context paints a very accurate picture of the sociocultural landscape being researched (St. Clair Browne, 2011).

3.2.2.1 Object-oriented analysis

Human activity (both individual action and collective activity) is motivated, coordinated and directed by/toward objects. To understand the object, one needs to analyse the whole activity system and vice versa. Human activity is a system of actions with both an individual and social motive, both contributing to the "achievement of the object of the activity" (Blunden, 2010:172). To achieve the object of their activity, subjects must make sense of the system they are in, analyse it, adapt to it, navigate it and possibly when needed push for qualitative change; change which would better facilitate the achievement of objects/objectives.

3.2.2.2 Multivoicedness

An activity system has a multitude of interrelated internal and external elements, a symphony

of historically engraved components working together or at times against one another to realize individual and social objectives. Some of these objects are hard to achieve, for many different reasons. To know what these many reasons are, it is imperative to cross learning boundaries - to listen to other people's problems, perspectives, to ask why something is happening and to see how this can be best resolved through collaboration, with resulting changes being mutually beneficial for all concerned. A multivoicedness of subjects is required, a diverse set of subjects who can speak from personal perspectives and experiences.

3.2.2.3 Historicity

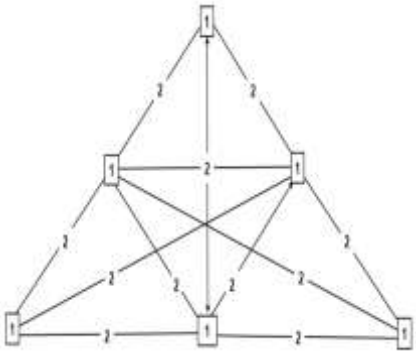
One of the core principles of CHAT is its historicity. Activity systems are not something you pull out of thin air; they have a developmental legacy. They are evolving systems, moving through developmental cycles, with each cycle building upon previous stages of development. Just like its subjects, activity systems have frames of reference, maybe even developmental baggage, and just like its subjects, this developmental baggage, whether negative or positive, constitutes part of the existing system. Any attempt to understand and evolve an activity system, should involve an in-depth exploration of past forms, so that those questioning current systems and proposing future renditions have a thorough understanding of how their current system came about, why it came about and what can be done in the future to improve upon it.

3.2.2.4 Contradictions

As mentioned earlier, human activity is object-oriented. The object is a given need, and its realization is not always straightforward because sometimes tensions found in activity systems get in the way. These tensions, referred to as contradictions, are the "drivers for change" (Bligh & Flood, 2017:6), and their purposeful exposure, aggravation, resolution or attempted resolution not only facilitates object attainment, it also evolves and changes the

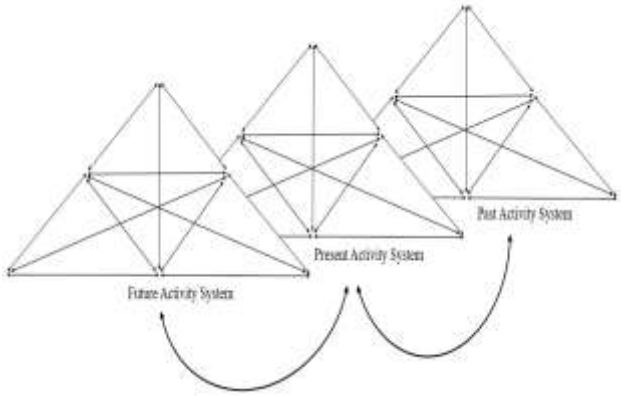
activity system (Putnam, 2013). Issroff and Scanlon (2002), Engeström (2001) and Putnam (2013) see contradictions, "while causing obstruction and conflict" (Kim & Park, 2020:10) as opportunities for development and change. Thus, the analysis of contradictions helps people reimagine activity.

These contradictions become "known only through a historical analysis of changes in the structure of the activity and an actual empirical analysis of their manifestations in the practitioners' daily actions and their coordination" (Virkkunen & Newnham, 2013:52). So, where can these contradictions be found? Engeström (2001) locates contradictions in 4 places across activity systems, calling them primary, secondary, tertiary, and quaternary contradictions (Figure 4).

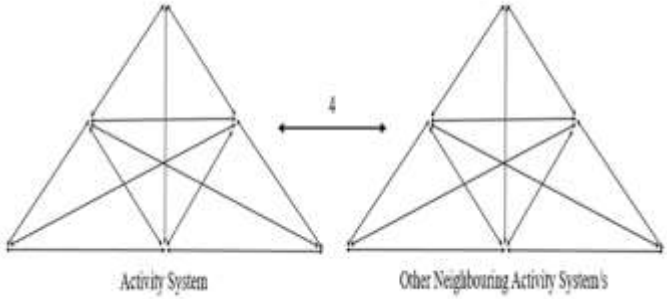


Type 1: Primary Contradictions – located within elements of an activity system &

Type 2: Secondary Contradictions – located between elements as they interact within the same activity system



Type 3: Tertiary Contradictions – between different versions (i.e., past, present, and future) of the same activity system



Type 4: Quaternary contradictions - contradictions between different neighbouring activity systems that interact with each other

Figure 6 Primary, Secondary, Tertiary, and Quaternary Contradictions

3.2.2.5 Expansive Transformation

Activity systems are not static, they are constantly evolving, moving through "relatively long cycles of qualitative transformations" (Engeström, 2001:137). For Engeström, a full cycle of expansive transformation (as realised in the seven stages of the expansive learning cycles (Section 4.3.3, Figure 4.2) found in the formative Change Laboratory intervention), can be "understood as a collective journey through the zone of proximal development of the activity - the distance between the present everyday actions of the individuals and the historically new form of the societal activity that can be collectively generated as a solution to the double bind

potentially embedded in the everyday actions" (Engeström, 1987:174). A formative Change Laboratory realizes expansive transformation. When contradictions are exposed, participants question them and attempt to resolve them. This leads to subtle or dramatic changes in object-oriented activity. A formative Change Laboratory intervention is "direct attempt to foster expansive learning" with people working "together to re-imagine the object of their activity", to ascend from the "abstract to the concrete" (Bligh & Flood, 2015:142).

3.2.2.6 Social Context

An activity system is linked to its unique social context, it is an attempt to understand a specific sociocultural environment. It needs to make sense "to all the parties concerned in their own terms" so that the actions which are "required of people as part of the project" make "sense to everyone" and everyone has "a means of understanding what others were trying to do" (Blunden, 2010: 251). Therefore, the identified elements, the contradictions found, the resolutions offered, and the people affected are unique to that activity system, and while the triangular model can be used in different contexts, the outcomes may not be wholly transferable, "a system of actions cannot be plucked from one cultural context into another" (Blunden, 2010:250). CHAT allows participants to zoom in and out of contexts (Yamagata-Lynch et al., 2015), to get a better grasp on how each policy/practice problem found in object-oriented activity is not an isolated incident, that both problems and solutions have a cause/effect relationship. Being able to witness these relationships across the activity system, helps participants see the consequential effects of their discussions/decisions – how change in one context affects others and so on.

CHAT's activity system model and its six core principles offer a sustained collaborative heterogeneous approach to understanding people, tools, and objectives, bearing in mind the

weight of historical, social, and cultural contexts. This is one reason why I used CHAT in the project, below are some more.

3.3 My reasons for using CHAT

CHAT activity system models help interventionists comprehend the complexity of institutional educational technology policies. They enable participants to socially identify and confront for themselves the contradictions found in activity.

This is achieved by untangling the complexity of human activity and instigating change in object-oriented activity, by exploring and resolving contradictions within and between interwoven elements (subject, artefact, object, rules, community, and division of labour) in activity system models. CHAT and the intervention were chosen to project the value of other voices, and other models of investigation in institutional educational technology policy decision-making. Both were chosen to challenge the status quo and overcome tensions in shared work practice. Together, they allow for transformational change in activity.

In a study of 59 empirical research papers using CHAT as a theoretical framework, Bligh & Flood (2017:12-13) extracted 11 prospective reasons for the use of CHAT in higher education research. Overall, my reasons for using CHAT in the project align to all eleven prospective reasons. Table 1 below names the eleven reasons, their description, and my personal epistemology, articulating how and why CHAT aligns with my aims, research questions, how it helps me with analysis, and contributes to the gap in the literature.

#	Reason	Description	Personal Beliefs
1	Contextual Situation	CHAT can locate research objects within some context or structure	Context should be at the forefront of explaining and using activity theory so that participants can better grasp their situation and tasks with each context being unique to each activity system.
2	Complexity Apprehension	CHAT can grasp the complexity of the	Organisations are messy. The CHAT framework helps practitioners comprehend

		researched situation	the complexity of the organization.
3	Developmental Focus	CHAT can highlight how practice does or might change	CHAT enables interventionists to trace change in/to activity systems over time. Knowledge of current and former practices can lead to future change in activity.
4	Epistemological Agreement	CHAT is compatible with author's epistemological commitments	CHAT is compatible with my ontological and epistemological beliefs – dialectic social constructionism, social constructivism, and interventionism.
5	Accumulation	Accumulation is a desire to contribute to the body of knowledge already conceptualized using CHAT	This project contributes to literature on CHAT and institutional educational technology policymaking in HE.
6	Comparative Advantages	CHAT has advantages over some alternatives	Numerous methodologies were considered for the project, including Participatory Action Research, Ethnographic Research, Actor Network Theory, Complex System Modelling, Technology Acceptance Model, Innovation Diffusion Theory and Design-based Research. However, these methodologies were dismissed for numerous reasons: a lack of historical analysis of activity systems, a focus on description, a pre-determined problem, a lack of focus on human agency and transformative change, and an emphasis on an end-product.
7	Question Bestowing	CHAT is useful for formulating research questions	CHAT enabled me to look at elements and contradictions in more depth, from an individual and collective perspective, helping me formulate questions related to collective transformative agency, institutional governance, concrete change, and the value of sociocultural models of inquiry.
8	Methodologically Appropriate	CHAT matches well the chosen methodology	CHAT is the theoretical toolkit to the practical toolkit of the chosen methodology – a formative Change Laboratory intervention realising expansive learning – a well suited match.
9	Concept calibration	One or more activity-theoretical concepts are intuitively relevant	For example, when explaining and using concepts, such as identifying, locating, and resolving contradictions = an attempt to develop, change and decrease tensions in an organization.

10	Acclaim	Activity theory is respectable and popular	The project claims that CHAT is a useful sociocultural change inquiry model.
11	Investigate the theory	A desire to examine how useful activity theory is for investigating the research object	One reason was to show how useful CHAT models are, especially in relation to existing top-down unilateral canonical decision-making process and/or heuristic models of investigation.

Table 3.1 Eleven reasons for using CHAT, their description, and my personal epistemology. Adapted from Bligh & Flood (2017:12-13)

3.4 Criticisms of CHAT

CHAT is "often valued for its ability to grasp the dynamics of complex social situations and place phenomena in context" (Bligh & Moffitt, 2021). It is useful for "technology enhanced learning researchers", as it "foregrounds the role of 'technologies' as being central to everything that humans do" (Bligh & Moffitt, 2021).

However, CHAT does have its critics Bakhurst (2009), de Souza (2008), Wheelahan (2004), Minnis & John-Steiner (2001) etc. In this section, I would like to briefly present, discuss and challenge two criticisms of CHAT: western modelling and ontology/philosophy traditions, and over-socialization.

In his paper "Reflections on Activity Theory" David Bakhurst (2009), discusses the dichotomy between two strands of activity theory: the philosophy and psychology bound strand of its early Russian founders and the modern western strand of methods or models to analyze activity systems. While Bakhurst is supportive of Engeströms' CHAT and its attempt at analysing complex activity systems, he, as a philosopher laments the ever-increasing gap between its philosophical origins and its modern-day inception. CHAT has become a practical tool to map out activity, an "empirical method for modelling activity systems" (Bakhurst, 2009:197), rather than an attempt to explain "our place in the world, the nature of

consciousness, or personality" (Bakhurst, 2009:202).

Throughout the project, I found myself questioning practical application versus ontology. While I do agree that in the project, practical change was foregrounded, and the unforgiving terminology of CHAT precluded a more philosophical/psychological discussion on issues, CHAT still carried with it the "practical ethos" (Bakhurst, 2009:209) of its original philosophical and ontological traditions, especially Marx's belief in dialectical materialism. Participants were very much aware of the dialectical relationship between the internal and the external, the affect the societal had on their individual and collective consciousness and vice versa.

In addition, I would argue that the more practical application of CHAT with its "activist and interventionist history" (Sannino, 2011:580) is a direct attempt by the individual or the social (the group) to affect change in societal (organisational) policy, practice and consciousness. CHAT is and has always been practical, philosophical, and psychological in that sense. While the gap to some may be increasing, I believe that the more practical strand of CHAT is still, in ethos, tethered to its traditions.

A second criticism which has been raised about CHAT is its propensity for over-socialisation. In CHAT, activity is seen as collective sustained human effort with a social object/motive. On the surface, this seems reasonable, but there are two problems that have arisen in the literature on CHAT that I will look at: individual identity and individual agency.

First, societies are mostly nonhomogeneous, and in this project, individual participants crossed professional, cultural, and historic boundaries to collaborate and collectively change/develop object-oriented activity. Multivoicedness is a core principle of CHAT, people with different perspectives and different experiences (professional, cultural, historical etc.)

work together to change activity for the better. However, the problem with CHAT is that the identities behind these voices are rarely explored. For Billett (2006:67), “an individual’s ontogenies and ontogenetic development are unique, any one person’s prior experience is not and cannot be the same as others as it is individually negotiated through a lifetime of interactions with the social world”. There is a concern that we are negating the individual's unique identity and personal work history in this collective human effort, “though the social context may be similar for all members of a community, the positioning of each individual within it is distinctive” (Larkin, 2014). Blunden goes further stating that CHAT “can and must shed light on identity-formation, interpersonal relationships such as solidarity, loyalty, friendship, ethical commitment, respect for law, pursuit of science, political affiliation, religious identity, ability to cooperate with others, the acquisition of cultural competences and so on” (Blunden, 2010: 227). A relational approach to interplay between participants may add to the dialectical ontology of CHAT. These prerequisites would not only complement the collaborative process of CHAT, allowing the researcher-interventionist and practitioners to better know each other, they would also allow for insights into both collective and individual development. However, the project did not focus on individual identity, and while the relational approach may have helped facilitate the collaboration process of the intervention, collaboration itself was not under investigation.

A second criticism found in the literature on CHAT is the lack of consideration for individual agency at subject level (Larkin 2014; Valsiner & van der Veer, 2000; Billett, 2003, 2006; Wheelahan, 2004; Daniels, 2008). The collective social object/motive outweighs the individual social object/motive. Larkin (2014) argues that to “understand my individual experience of perturbing practices within the Activity Systems I have depicted, an accounting

of my active agency and also the influence of particular workplace affordances (Billett, 2006), is critical." This is reflected again in the work of Wheelahan when she argues that the individual is not merely a social construction, "society's gift", individuals are "relatively autonomous of the activity systems" and if this is not seen, then "we privilege learning in the activity system, and conflate the learning needs of individuals with the skill needs of their organisation or enterprise" (Wheelahan, 2004:7).

In this project, the participants characterized the subjects, and their active agency and personal work histories were able to be voiced. Other subjects not sitting at the table were also able to have their stories told, primarily through quantitative/qualitative surveys and interviews pre and post the intervention. So, to a point I disagree with this criticism. Both individual and collective agencies are fostered in CHAT.

However, two problems in power relations did arise. First, top-down hierarchy in division of labor at times silenced individual agency at the table, and second, the interests of the many at times outweighed the interests of the few. These limitations will be discussed further in the Conclusion chapter of this thesis,

3.5 Summary

The use of theories in research provides a "framework to organize and interpret the data in such a way as to highlight commonalities and patterns and generate conceptual generalizability" (Cleland & Durning, 2019:42). As mentioned earlier, Engeström's CHAT is concerned more with practical application, "empirical grounding" than "endless conceptual" exercises (Engeström, 1999a:27). His CHAT does not cut ties with its traditions, it merely refocuses the practical over the theoretical. The foregrounding of practical

application was important for this project, as his model provided a systematic way to explore systemic problems in shared activity.

While there are criticisms of over-socialization, I believe that activity, collective sustained human effort with a social object/motive, is an important strength for this project. Trying to affect organisational change is a numbers game, a collective voice is needed when asking for or pushing for practical change. CHAT and its practical Change Laboratory intervention embody individual agencies, cultures, histories, tensions and needs. They embolden these into a unified collective voice, a voice which may be better heard by upper management.

The following chapter sets out the empirical approach of a formative Change Laboratory intervention methodology, an approach which foregrounds the practical application of Engeström's CHAT, keeping in mind its traditional beginnings.

4 Research Design and Methodology

4.1 Introduction

This chapter sets out the empirical approach of a formative Change Laboratory intervention methodology. Reasoning behind this chosen methodology and arguments dismissing alternative approaches are set out. This chapter touches upon the theoretical framework of Chapter 3, Engeström's CHAT, followed by an explanation of the chosen methodology and its three main principles: Double Stimulation, Transformative Agency, and Expansive Learning. The design of this Change Laboratory is then presented, looking at eight preparatory steps needed for the approach. Data collection procedures are presented followed by research design strengths and weaknesses, ethical considerations, and data analysis procedures.

4.2 Reasoning the chosen intervention methodology

In a Change Laboratory intervention, "organisations" are "changed, concepts developed, and participants empowered" (Bligh & Flood, 2015:166). This red thread, the core narrative woven throughout Change Laboratory intervention research, is also woven throughout this thesis. The formative nature of the intervention allows for transformational change in activity, where people collectively challenge "the management rhetoric" (Haapasaari et al., 2016:233) and take purposeful actions to jointly change their work activity (Engeström & Virkkunen, 2007).

In the context of this research, a formative Change Laboratory intervention was chosen to unearth and address contradictions in activity; to use these contradictions as "the energy of change" (Heikkila et al., 2014:7), the starting point from which people can jointly explicate and envision new possibilities (Haapasaari et al., 2016). These contradictions drive the process (Engeström & Sannino, 2011), and energize the "collective joint design efforts" of

participants, allowing them (not the researcher) to address contradictions and transform the object of their activity - “core elements of the expansive learning process” (Sannino et al., 2016:600). In practical terms, the Change Laboratory intervention was chosen because it offers tools, systematic steps, and a safe democratic space for change, allowing people to successfully redesign and co-construct their work practice (Skipper et al. 2020).

A formative Change Laboratory intervention is process-oriented research and the five main aspects of the intervention (object, starting point, process, outcomes, and researcher’s role) (see Table 4.1) differ from a more linear change intervention and align to my ontological and epistemological beliefs.

The formative intervention looks at historically developing systems of collaborative learning, using the interlaced historicity of systems, participants, and the researcher-interventionist to enable a deeper exploration of activity. Looking at past and present systems through the historical eyes of participants is different from a more linear object approach, where the here and now is predominantly analaysed.

As an insider researcher-interventionist (and as an outsider to the culture and institution as an international faculty member), the intention was not to start the research by enforcing my voice on others, or by presenting a list of variables/contradictions to work with. Rather, the intention was to facilitate a process where participants, by exploring activity with a blank slate, could jointly devise the content and goals of the research (Morselli, 2019:43).

In addition, the research process needed to be flexible, with iteration and negotiation being central to the learning process, allowing for a multitude of voices to be heard and acted upon. The primary desired outcome was expansive learning, with the possibility of new concepts of analysis being replicated in other work settings, and new ways of activity being implemented and consolidated into practice.

Lastly, as a facilitator, the intention was to be just that, not to take the lead, but to elicit and sustain a collaborative transformative process, learning from the participants and intervening/guiding when needed, allowing participants to "increasingly take charge of changing their own activity, thereby engendering transformative agency, while interventionist's roles correspondingly reduce" (Moffit & Bligh, 2021:8).

Aspect of the intervention	**Formative Change-Laboratory intervention**
Object	A historically developing system of collaborative learning
Starting point	Contradictory demands, which the participants encounter in their virtual activity.
Process	The content and course of the intervention are subject to multi-voiced negotiation. The subjects gain agency in the process and eventually take charge of it.
Outcomes	New concepts that may be used as instruments of analysis and problems solving in other settings. Participants' transformative agency.
Researcher-interventionist's role	Provokes and sustains a collaborative led expansive transformation process.

Table 4.1 A formative Change Laboratory intervention (adapted from Virkunnen & Newnham, 2013:12)

4.3 The Change Laboratory Methodology

The Change Laboratory is a toolkit and a method to help a work community carry out expansive learning – a "developmental intervention to support collaborative learning in and transformation of work activities" (Virkunnen & Newnham, 2013: xix).

It is built on the theoretical framework of Engeström's CHAT (Engeström, 1987) with an emphasis based on expansive learning, realized through double stimulation and transformative agency (Engeström et al., 2014).

As a toolkit and a method (Figure 4.1), it supports multi-level analyses of present, past, and future activity systems, utilizing task designs which employ mirror data and double stimulation techniques to help participants collaboratively analyse models and work together in a safe democratic space to expose, aggravate, and resolve contradictions in object-oriented activity, promoting transformative agency and realizing expansive learning (Figure 4.2, Section 4.3.3).

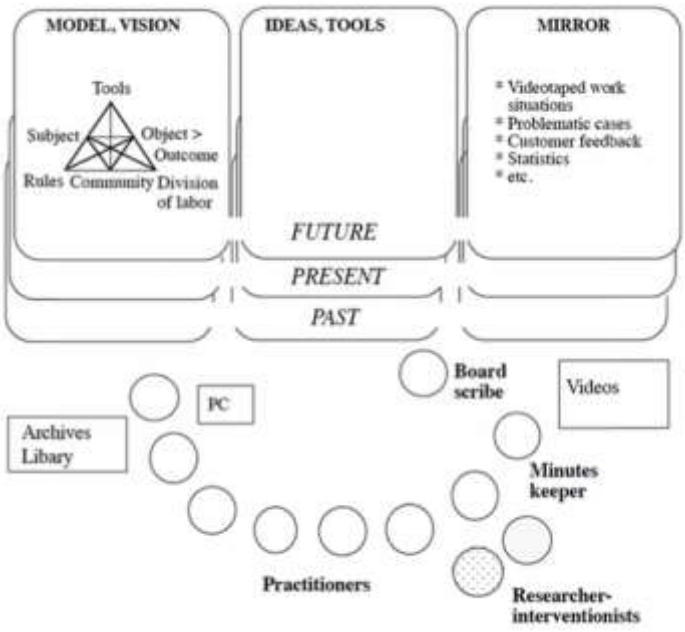


Figure 7 Change Laboratory Tool kit (taken from Virkunnen & Newnham, 2013:16)

4.3.1 Double Stimulation

The Change Laboratory intervention "provides a structure for designing and enacting double-stimulation tasks in workshops" (Moffitt & Bligh, 2021:8). The principle of double stimulation is key to building "practitioner's will to transform their activity system" (Virkkunen, 2006 in Morselli 2019:48). Task designs which employ mirror data and

Vygotskyan double stimulation (first and second stimulus) techniques aid and direct this process.

- Mirror-data: materials used to represent practice-problems and contradictory situations to participants
- First stimulus: the task specification - questions and problem statements participants are asked to focus on
- Second stimulus: the analytical tools or methods to be used for addressing the first-stimulus task

Table 4.2 Mirror-data & Double Stimulation Tasks: Adapted from Bligh & Flood (2015:157) and Moffitt & Bligh (2021:10)

Sannino (2011:584) sees double stimulation as "the mechanism with which human beings can intentionally break out of a conflicting situation and change their circumstances or solve difficult problems."

In practical terms, within a given task, mirror data is provided to give participants some background knowledge, and the first stimulus is usually a question or questions, a representation (provided by the researcher-interventionist) of "important problems in work practices that the participants are confronted with" (Morselli, 2019:47). Mediating artefacts (Vygotsky, 1978), conceptual tools such as activity system models (Engeström, 2015) are used as second stimulus (provided by researcher-interventionists and possibly participants) to help participants analyse and overcome the problems represented in the first stimulus. Double stimulation provides "support for decision-making" (Moffitt & Bligh, 2021:8). By utilizing the principles of double stimulation, participants are able to expose/examine, and challenge tensions/contradictions found across activity systems.

This "mediated action" (Bligh & Flood, 2015:145), the volition of the group to challenge the status quo and collaboratively find new models and practices to overcome contradictions and transform "artefacts, tools, and people in their environment" (Scribner, 1997 as cited in

Yamagata-Lynch, 2010:16) is seen as “collective transformative agency” (Morselli, 2019:48).

4.3.2 Transformative Agency

Transformative agency is the second fundamental principle of a formative Change Laboratory intervention and is a direct result of double stimulation, an “important outcome” (Englund & Price, 2018:195) in the intervention. Transformative agency is a “cognitive transformation and reframing process evidenced in peoples’ initiative and commitment to transform the context of their activity for personal, academic, working life, and/or civic ends”, a “non-linear and tension-laden process” (Kajamaa & Kumpulainen, 2019:266-267) always related to a sociocultural context and practice.

Individual and collective transformative agency is an expression of professional agency, the ability of individuals and groups to have “active involvement in directing and designing their working practices” - to exert influence in “ways that cover both individual and shared work practices” (Vahasantanen et al, (2020:2). This influence reflects the needs of end-users to challenge the status quo and overcome tensions in shared work practice.

Haapasaari et al. (2016) building on the earlier work of Engeström (2011) identify six expressions/types of transformative agency: resisting, criticising, explication, envisioning, committing to actions and taking actions (See Table 4.2 for an extended description). These expressions are useful when attempting to locate and account for transformative change in an intervention and as such form part of the data presentation found in Chapter 6.

Type of expression	Identification criteria
Resisting	Resisting the change, new suggestions or initiatives. Directed at management, co-workers or the interventionist
Criticising	Criticising the current activity and organisation. Change oriented and aiming at identifying problems in current ways of working
Explicating	Explicating new possibilities or potentials in the activity. Relating to past positive experiences or former well-tried practices
Envisioning	Envisioning new patterns or models in the activity. Future oriented suggestions or presentations of a new way of working
Committing to actions	Committing to taking concrete, new actions to change the activity. Commissive speech acts are tied to time and place
Taking actions	Reporting having taken consequential actions to change the activity in between or after the laboratory sessions

Table 4.3 Six types of expressions of transformative agency

(adapted from Haapasaari et al., 2016:242)

4.3.3Expansive Learning

Expansive Learning is "often represented as a sequence of epistemic or learning actions" (Kerosuo, 2017:336) utilizing double stimulation to provoke transformative agency, to move from abstract concepts/solutions to new concrete forms of activity (Bligh & Flood, 2015). It is a learning cycle where participants work together for "intensive, deep transformations and continuous incremental improvement" of activity (Engeström, 2005:291).

A formative Change Laboratory intervention should follow the 7 stages of the expansive learning cycle found in Figure 4.2, although this is not a universal formula (Engeström, 2015) and should be followed-up later by several workshops. To realize the expansive learning cycle, the formative Change Laboratory intervention should comprise between seven to twelve 2-hour sessions, with no more than 20 participants (Virkkunen & Newnham, 2013:15).

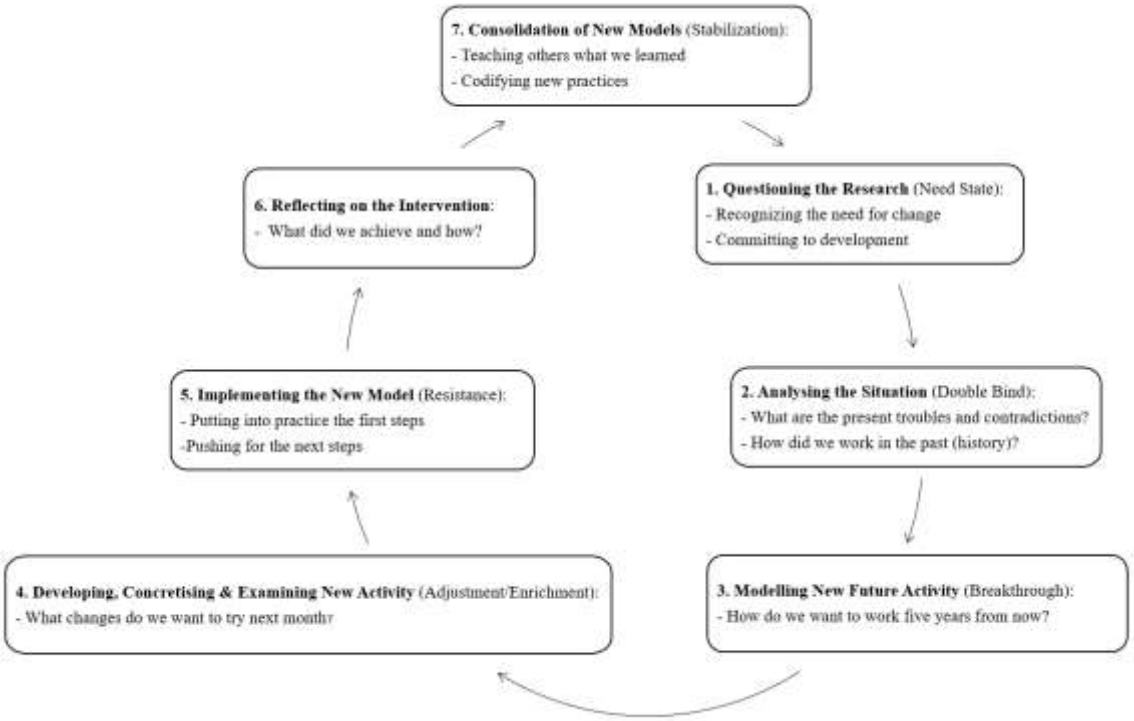


Figure 8 The phases of a Change Laboratory expansive learning cycle (adapted from Engeström & Sannino 2010:8)

Figure 4.3 below outlines this project's actual 12 Change Laboratory sessions aligned to the 7 stages of Engeström's Expansive Learning Cycle.

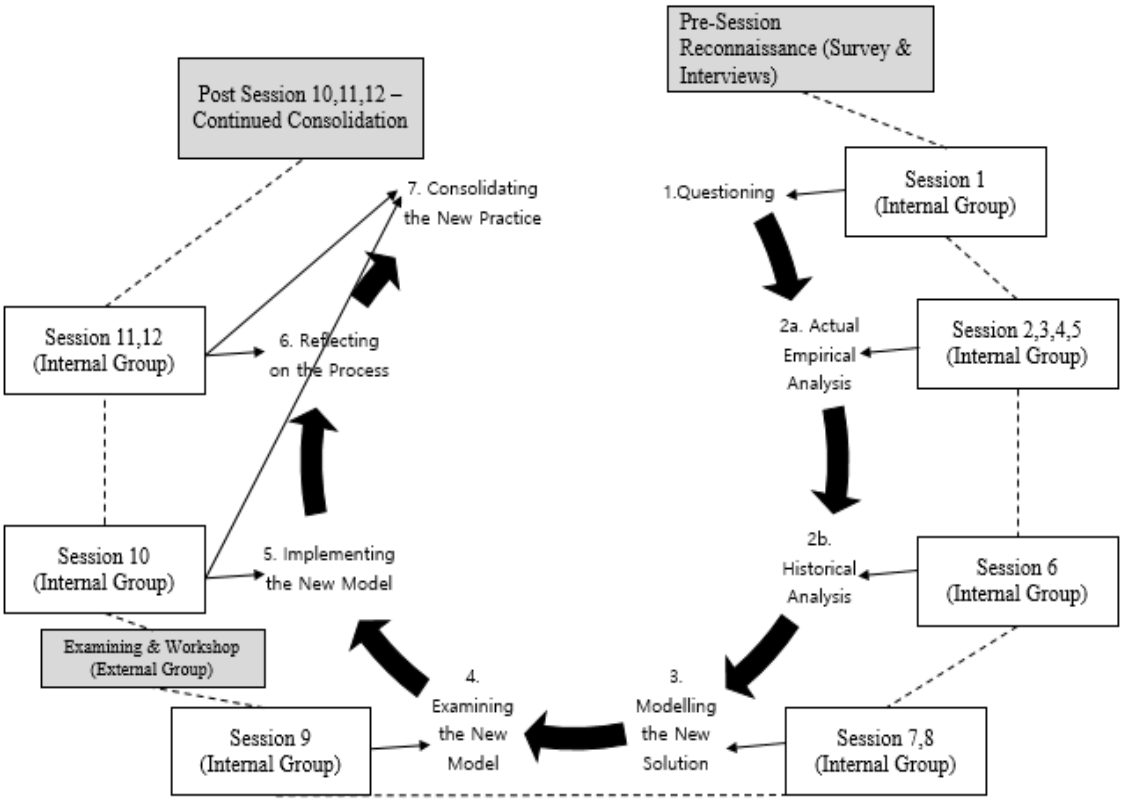


Figure 9 The project's actual 12 Change Laboratory sessions aligned to the 7 Stages of the Expansive Learning cycle (adapted from Engeström, 1999b:384)

These three fundamental principles; double stimulation, transformative agency, and expansive learning (along with insider-researcher knowledge) influence research design.

Throughout this intervention, this influence is felt; not only did the principles influence the research design, but they also provided a rather comfortable systematic process for participants to understand and engage with, a working blueprint to guide (and sometimes push) participants and the researcher-interventionist along.

The following sections of this chapter focus on the design of this study's intervention, looking at eight preparatory steps needed for the approach.

4.4 Designing the Intervention

Before the intervention begins, there are several design issues the researcher-interventionist needs to work on to ensure that "practitioners can feel safe to freely express their opinions and are allowed to experiment with new ways of acting" (Bligh & Flood, 2015:155). Eight of these "most pressing design issues" were highlighted by Bligh & Flood, 2015:155-158):

1. Setting out the theoretical underpinnings
2. Identifying the intervention unit
3. Selecting participants
4. Scope and timing
5. Identifying a venue
6. Connecting the process to management
7. Generating Mirror Data
8. Task Designing

As for the intervention carried out at the university, these eight design issues were adhered to, before and during the intervention. Two of these issues; theoretical underpinnings, and selecting participants were addressed by the researcher-interventionist before the intervention began. The other six issues: scope and timing, identifying the intervention unit, identifying a venue, connecting the process to management, generating mirror data and task designing, were addressed by both the researcher-interventionist and participants across the intervention, with constant iteration being a characteristic of their use.

4.4.1 Setting out the theoretical underpinnings

This issue is usually presented in the first Change Laboratory session (Questioning the Research). The researcher-interventionist sets out the overall aims of the intervention, its intended scope, and explains the terminology of the methodology (contradictions, double

stimulation, transformative agency, and expansive learning etc.). The theoretical framework, ontological and epistemological stance of the researcher are also laid out for participants. Roles should also be addressed at this stage - both researcher-interventionist and participant's (Morselli, 2019, Vikunnen & Newnham, 2013).

Regarding this intervention, most of the above underpinnings were discussed in the first intervention meeting; however, the terminology of the methodology was not discussed at this early stage, as it was felt that this session needed to be light, informal, friendly, and not too heavy. In addition to the aims and scope etc., participants also committed to the research, by recognizing the need for change and accepting ethical considerations. Participants at this early stage also began identifying and narrowing down the unit of analysis, based on mirror data from pre-intervention surveys and face to face interviews.

4.4.2 Identifying the intervention unit

What unit or section of work practice is the formative Change Laboratory intervention going to look at? Why has this unit been chosen? Virkkunen & Newnham (2013) suggest that the unit should be in need of change. As an insider-researcher, the researcher-interventionist may have sufficient knowledge of this unit in advance, but this does not mean the unit is solely chosen by the researcher, participants must have their say. Indeed, I wanted participants to identify the intervention unit, as this would result in a sense of ownership, enhanced meaning, and motivation. In this study, the initial four intervention units (four units of analyses epitomizing the university system) were identified through pre-intervention reconnaissance surveys and face to face interviews and later re-identified (narrowed down) by participants in the first six stages of the intervention. Figure 4.3 below outlines the progression of this intervention's units of analyses.

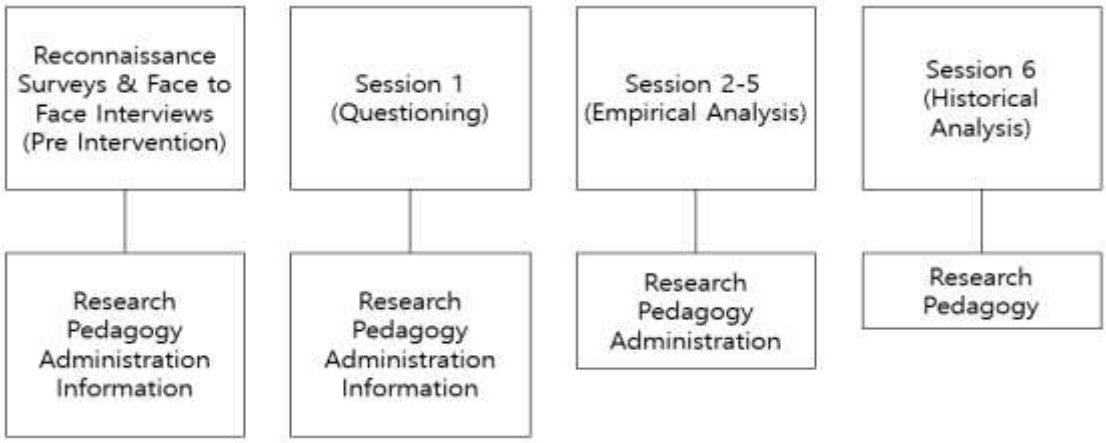


Figure 10 Identifying/Narrowing down the Intervention Unit through Progression

4.4.3 Selecting participants

Virkkunen & Newnham (2013) suggest two important criteria for selecting participants: group composition and shared practice.

Selecting the right people and the right number of people for the intervention is an important task. In the context of this research, four important factors played into the selection process: relationship of participants to the unit of intervention, type/level of position/office, length of employment with the university, and English language ability.

I wanted people from three distinct university groupings: Korean faculty, international faculty, and administration staff (levels 9-6). Two theoretical principles of CHAT influenced the diverse group selection: multivoicedness and social context. The outcomes of this intervention would affect all three groups, so the need for all three to be at the table, to hear their voices, was imperative. From the Korean and international faculty, participants are users of the systems, receivers of the information and share common tools to access these services online. Administration staff see and use the same online systems, but their tools are wider, their perspectives are wholly different from the users.

Following criterion sampling (Patton, 2001), within Korean faculty, I selected people who held two positions, a teaching position, and an administrative position (namely faculty who were also Deans or Directors of Departments/Offices). The administrative positions were important for two reasons, first, these positions related to the four units of analysis and second, having Deans/Directors on board was an important tool to later help bridge outcomes of the intervention to upper management - connecting the process to management. All Korean faculty were fluent speakers of English, and each had been with the university for over 10 years. For this intervention, five Korean faculty participated from:

1. Department of English Language and Literature / Dean of Academic Affairs/Graduate School
2. Department of English Education / Dean of English Education
3. Department of Public Administration / Dean of Public Administration
4. Department of e-Trade/ Director of Center for Teaching and Learning
5. Department of Communication English / Director of Communication English

With international faculty, I had three main criteria: type of position, length of employment and English language ability. At the university there are two types of teaching positions for international faculty, content teaching and language teaching. These are distinct in terms of contracts, salary, and research requirements. I felt that it was important to have both groups represented throughout the intervention, so this is reflected in the chosen participants. Also, length of employment was important. There have been many changes to online systems in the university over the past number of years, and I wanted to have both 'old timers' and 'newbies' at the table. Having both groups allows for better historical and present empirical analyses. All international faculty participants were fluent in English. For this intervention, seven international faculty participated from:

1. Department of English Education
2. Department of Public Administration
3. Department of Psychology

4. Department of Physical Education
5. Department of Library Information Studies
6. Department of Communication English
7. Department of Food & Nutrition

With administration staff, I had three main criteria: type of office, level type, and English language ability. It was important to have administration staff from offices which had some connection to the initial four units of analyses; Research, Pedagogy, Information and Administration. Also, it was very important to have low ranked administration staff participate, for three reasons. First, they are hands on in practice every day – the front line so to speak and have good insights into practice problems from a different perspective. Second, they have more flexible schedules to attend the sessions (and in general – they report back up to their office managers about progress). Third, they can speak freely without office hierarchy playing its part. All administration staff participants were fluent in English. For this intervention, five administration staff participated from:

1. Academic Affairs Office
2. Research Office
3. International Affairs Office
4. International Affairs Office
5. International Affairs Office

Table 4.3 below further details Change Laboratory participants (with pseudonyms).

Group	Participants	Nationality	Gender	Years on campus	Type of teaching	Track	Notes – where people work, responsibilities, who they report to etc.
Korean Faculty (KF)	Jun	Ethnic Korean	Male	10+	Content	Tenure	Dept. of English Language & Literature / Dean of Academic Affairs/Graduate School
	Jiyeon	Ethnic Korean	Female	10+	Content	Tenure	Dept. of English Education / Dean of Education/Graduate Education
	Bong	Ethnic Korean	Male	10+	Content	Tenure	Dept. of Public Administration / Dean of Public Administration
	Dong	Ethnic Korean	Male	10+	Content	Tenure	Dept. of e-Trade/ Director of Center for Teaching and Learning
	Hoon	Ethnic Korean	Male	10+	Content	Tenure	Dept. of Communication English / Director of Communication English
International Faculty (IF)	Paul	Irish	Male	10+	Language	Non-Tenure Track	Dept. of English Language & Literature (Responsible for International Faculty online systems training)
	Leo	USA	Male	10+	Content	Tenure Track International	Dept. of Public Administration (International Faculty Facebook Administrator)
	Ronan	Israel	Male	10+	Content	Tenure Track International	Dept. of Psychology
	Mike	Ghana	Male	5+	Content	Tenure Track International	Dept. of Food & Nutrition
	Rose	Philippines	Female	5+	Content	Tenure Track International	Dept. of Physical Education
	John	UK	Male	5+	Language	Non-Tenure Track	Dept. of Communication English
	Gerard	USA	Male	5+	Content	Tenure Track International	Dept. of Library Information Studies
Administration Staff (AS)	Park	Ethnic Korean	Male	10+		Full-time permanent	Academic Affairs Office (Responsible for all faculty contracts, hiring, firing etc.) – reports to Dean of Academic Affairs
	Son	Ethnic Korean	Male	10+		Full-time permanent	Research Office (Responsible for Research Grants, Research Homepage etc.) – reports to Dean of Research/University Vice President
	Eunji	Ethnic Korean	Female	10+		Full-time permanent	International Affairs Office (Coordinator for International Faculty) – Reports to Dean of International Affairs
	Hyun	Ethnic Korean	Female	10+		Full-time permanent	International Affairs Office (International Relations) – Reports to Dean of International Affairs
	Cho	Ethnic Korean	Male	10+		Full-time permanent	International Affairs Office (International Relations) – Reports to Dean of International Affairs

Table 4.4 Change Laboratory participants (names are pseudonyms) Korean Faculty = 5, International Faculty = 7, Administration Staff = 5 (Total = 17)

Careful consideration went into the selection of participants, and this was followed by careful session planning, something which was outlined (with flexibility built-in) on day one of the intervention.

4.4.4 Scope and timing

A formative Change Laboratory intervention must have enough sessions to fully support the expansive learning cycle. These sessions must be "sufficiently frequently that momentum is maintained for undertaking tasks or generating new evidence between sessions" (Bligh & Flood, 2015:156) and a successful intervention would run weekly, with a total of 5-12 sessions, each session being around 2 hours duration (Virkkunen & Newnham (2013:66). Avoiding ruptures (long breaks between sessions) is important for intervention momentum. In this intervention, sessions were negotiated on a session-by-session basis. I did have an overall deadline in mind, and a beginning desire to hold about 7 sessions (this was set out in the first session). However, I needed to add a great deal of flexibility into the scope to accommodate for transformative agency, participant schedules, workloads, and unexpected events. In the case of transformative agency such flexibility is an "essential" part of intervention planning (Virkkunen & Newnham, 2013:79).

In total, this intervention ran for 12 sessions, from October 24th, 2018, to April 17th, 2019, for around 7 months. Sessions usually ran every 1 to 2 weeks, except during the summer vacation period, where 1 online session (Session 9) was only possible. Figure 4.4 below, outlines the 12 sessions of this intervention, the timeline, the corresponding stages in the expansive learning cycle, and activities external/between intervention sessions. How these stages (both the internal and external elements) progressed will be looked at in more detail in Chapter 5: Data Presentation.

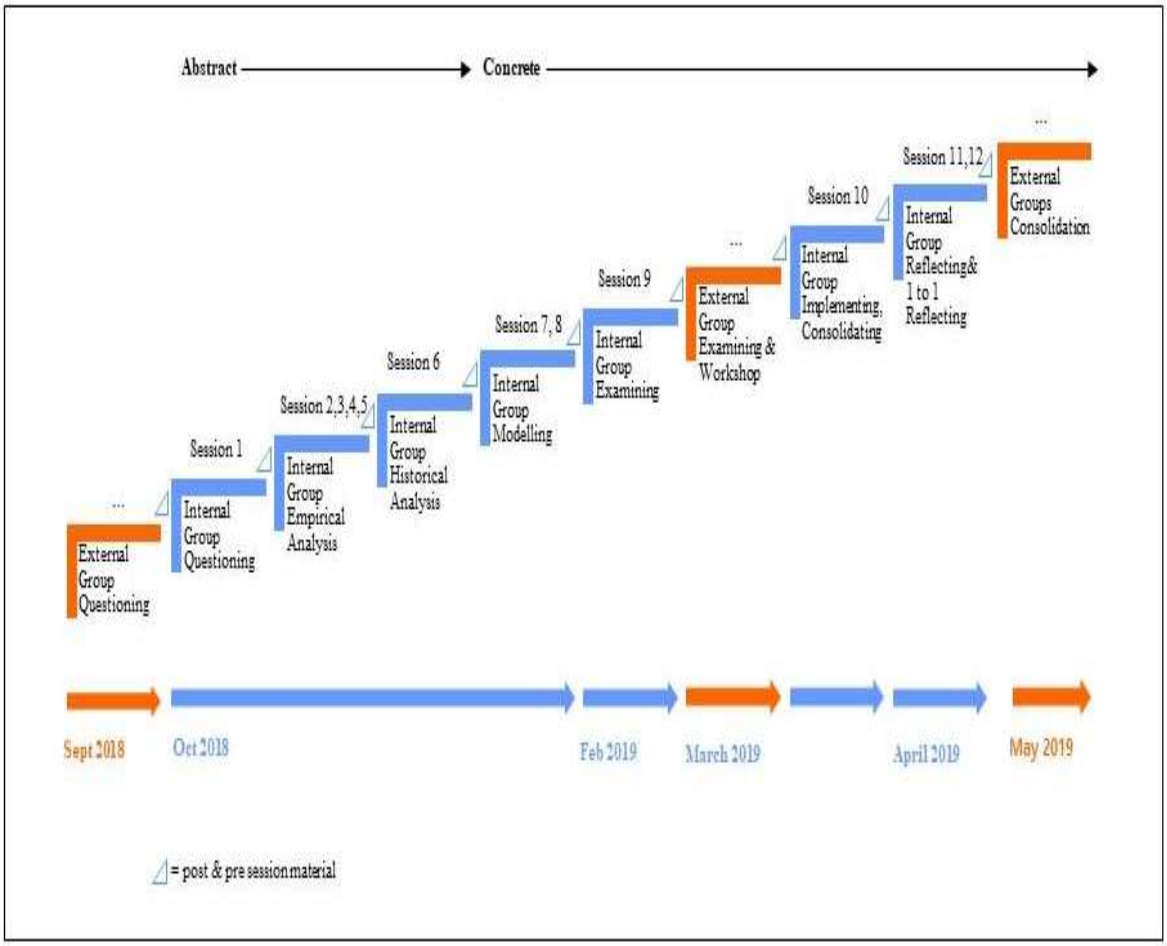


Figure 11 The actual scope and timing of the intervention with expansive learning stages (ascending from the abstract to the concrete)

4.4.5 Identifying a venue

A venue to hold the sessions is a very important decision. It must be geographically accessible for participants (not too far from their workplace), be large enough to house the sessions, with the appropriate tools: a large screen, laptop, audio/visual recording tools, whiteboards, and an expansive writing surface. The space should also be equipped with sufficient stationery: large paper sheets, coloring pens, whiteboard magnets (or tape), and an archive of easily accessible mirror data material (activity system charts, cycle of expansive learning etc.) Also, having a table to the side with tea/coffee and snacks is also useful.

For this intervention, I chose a boardroom on campus, with enough seating, space, and technology for the sessions. The following image depicts the typical set-up of sessions:

Image 4.1 The formative Change Laboratory intervention venue

4.4.6 Connecting the process to management

Preparing for this is key in advancing outcomes beyond the Change Laboratory. If the full expansive learning cycle is to be realized, upper management must be kept in the loop. In this intervention, it was made clear by participants that the outcomes of the intervention should not be abstract. The intervention should seek real tangible change in institutional education technology policy and practice, change which would advance the objectives of subjects. Without the implementation and consolidation of (or at least the hope of) concrete changes to activity across work practice by upper management, a certain level of intervention-deflation may creep in. In this intervention, 2 levels of management were involved: mid-level and upper-level. Initial knowledge of the intervention was brought to mid-level management

(various office managers & Deans) and they were informed about progress throughout the intervention. In the examination/implementation/consolidation sessions, discussions with upper management were taken (President and Vice President). As an insider researcher in a South Korean HEI, three elements are important when connecting the process to management: your relationship/capital with management, your understanding of organizational culture and knowing who/how/when/where to talk to someone. I will discuss these three elements later in Chapter 7.

4.4.7 Generating Mirror-Data

Mirror-data are material/resources presented at the beginning of a session, much like classroom warm-up materials. For Bligh & Flood (2015:156), mirror-data are material to render "practice problems and systemic contradictions obvious to participants". Data are usually developed by the researcher-interventionist in the earlier sessions of the intervention, but later on, participant mirror-data can come into the process. Mirror-data can "take various forms, including documents, statistics and transcripts (Bligh & Flood (2015:156). In this intervention, mirror-data was used in two ways, first, to connect past sessions/discussions, and second, to situate the participants in the 'here and now' context of the session. Materials used included activity system models, the expansive learning cycle, survey findings, website screenshots, websites, and rankings/listings etc. Sample mirror-data can be found in Image 4.2. Further mirror-data will be presented in Chapters 5 and 6.

Image 4.2 Sample mirror-data (from Session 8, Modelling: 11/01/2019)

4.4.8 Task Designing

It is important with this methodology to have some sort of overall idea as to what will happen throughout the intervention. Task-designing to utilize double stimulation to provoke/sustain transformative agency and realize expansive learning stages can help the researcher grasp this overall idea (Virkkunen & Newnham, 2013). So, when designing session tasks (to be used pre/post/during sessions) the researcher-interventionist should focus on designing tasks which utilize mirror-data, first stimulus and second stimulus to promote collective transformative agency and realise expansive learning. Following/keeping a task-design document (word file, excel file etc.) is very useful for the researcher in this methodology. The template is consistent, but the content (the mirror-data., first stimulus, second stimulus, tasks) is evolutionary. Over time deviations occur and tasks/timelines sync with transformative agency needs/wants/progress/direction of the participants (Morselli, 2019). Bligh & Flood (2015:160-161) have provided a useful template for researcher-interventionists to follow (see

Table 4.4). I have used this for my overall task-design template (see Section 5.1, Table 5.2). I have also used Virkkunen & Newnham's session planning sheet (2013:239, see Appendix 1) to organize daily (session) tasks. Both will be looked at in more detail in Chapter 5.

Expansive learning action	**Mirror-data**	**First-stimuli**	**Second-stimuli**	**Comments for researcher-Interventionists**
Questioning	Autobiographical accounts of practice (perhaps provided by practitioners)	Identify the practice-problems that are being described Identify elements of activity that contribute to the problem	Concepts such as *disturbance* or *rupture* Activity system model	Encourage participants to talk about aspects of their work they are passionate about. Ensure movement between moments of emotional energy and detached analysis.
Analysis: historical	Timelines from institutional documents, from interviews, or developed in-session	Map how the object of activity has changed over time; identify which other activity system elements have changed and when	Activity system model Cycle of expansive transformation	Encourage investigation of how earlier contradictions underpinned the development of the current activity system
Analysis: actual empirical	Video-recordings of workplace encounters or interviews Activity system representations developed earlier	Identify intention-outcome, differences Identify forms of collaboration used Map activity system development as a historical work-type	Concepts such as *disturbance* or *rupture* Typology of *coordination, cooperation, communication* Work-types model	Develop hypotheses about systemic contradictions. Support further development of existing activity system representations

Modelling	Activity system representations developed earlier Video-recordings of practice and interviews Models and documents from other institutions	Identify people who might become involved in the activity in future; effects of policy change; change already happening Identify what is desirable and undesirable about alternate models Sketch a new activity system idea and then work through actions and elements (top-down thinking) Identify desirable components (elements, actions) of a new activity system and imagine the surrounding activity model (bottom-up thinking)	Activity system model labelled with forms of *contradictions* Activity system model considering *neighbours* concept	Better understand systemic contradictions, to underpin thought about possibilities for change Ensure movement between aspects of top-down and bottom-up thinking
Examination	Videos and documents representing test-case situations	Work through how the *new* and *existing* models would differ in each of the test cases Imagine using aspects of the new models in practice between sessions	Models developed by participants Table of actions and elements with columns for each activity system	Sub-groups of participants might test new models developed by others
Implementation	Everyday practice (outside sessions)	Implement aspects of the new models 'experimentally'; note consequences, problems and opportunities for	Models developed by participants	Participants taking ownership and responsibility is crucial

		further development Gauge reactions from colleagues Alert researcher-interventionist to possibilities to record mirror-data		
Process reflection	Project outline document Video-recordings of prior sessions Interviews with participants	Identify factors supporting or restricting expansive learning Identify how participants have changed their thinking about the new work activity	Cycle of expansive transformation Models developed by participants	Some form of liaison with management Pay close attention to quaternary contradictions highlighted at the implementation phase
Consolidation	Institutional documentation examples	Clarify those concepts and models as *organisational principles* and new *vocabulary* Produce a "road map" of subsequent changes Arrange subsequent action	Models developed by participants	Management coordination important Consider what happens when the researcher-interventionist moves on and/or funding ceases Produce written output documentation

Table 4.5 Summary of task examples devoted to different expansive learning actions (taken from Bligh & Flood, 2015: 160-161)

4.5 Data Collection Procedures

Data were collected in numerous ways and stages throughout the intervention. Pre and post intervention surveys were taken, along with pre- and post-intervention interviews. Audio recordings from the 12 intervention sessions, along with artefact analysis (produced models from these sessions) were also collected. The researcher also maintained a Change Laboratory diary with recorded notes on various aspects of the intervention.

4.5.1 Surveys

Before Session 1 of the intervention took place, I wanted to get a better insight into possible problems people were facing with their work activity, so I sent out three surveys. The findings from each survey would act as mirror data for Session 1. While the surveys are not the primary methodology chosen for this thesis and do not appear in the data analysis of this thesis, they are worth looking at briefly as they did form part of the mirror data of the intervention. The three surveys were sent out to the following groups:

1. Korean faculty at the university - in the Korean language
2. International faculty at the university - in the English language
3. Administration staff at the university - in the Korean language

Each survey was created in Qualtrics using structured closed and open-ended survey questions. Structured closed-ended survey questions were utilized because reducing the 'cognitive load on the respondent" may result in more responses and accurate data (Timpany, 2019). Structured open-ended survey questions were chosen to go a little deeper, to gain insight into "sensitive issues" (Smith et al., 2015:229) and investigate "beliefs, attitudes, and practices" (Smith et al., 2015:224). Each survey asked questions concerning online support services for Pedagogy, Research, Administration and Information, focusing on two themes: the quality of user experience (Doll & Torkzadeh, 1988; Hasan, 2013; Lee et al., 2009;

Nielson, 1995 and DeLone & McLean, 2003), and questions concerning voice, community and equality/equity, questions based on the parity of participation work (recognition/misrecognition, redistribution/maldistribution, representation/misrepresentation) by Nancy Fraser (2003, 2013). Questions were altered when needed, due to the varying work practice perspectives/cultures of the different groupings. A sample of pre intervention survey questions can be found at Appendix 2.

The findings from these three surveys were presented and discussed in Session 1 of the intervention as mirror data.

Between Session 9 and Session 10, the new International Faculty Portal and New Research Homepage (two outcomes of the intervention) were given to international faculty to use and test. This examination of the new artefacts ran for one month and was followed up by a survey with questions on the quality of user experience and parity of participation. Findings from this survey were looked at in Session 11 of the intervention, aiding intervention participants in the redevelopment of all new artefacts, and implementation/consolidation concerns. A sample of post intervention survey questions can be found at Appendix 3.

4.5.2 Interviews

Following the surveys, I wanted to hold several interviews before the intervention sessions began, to elicit/reinforce/expand upon some of the data found in the surveys, and to help solidify mirror data for the early stages of the intervention. Due to time constraints and ease of completion, I decided to hold five pre-intervention reconnaissance interviews (Appendix 4), followed up later with five post-intervention feedback interviews (Appendix 5).

While the interviews do not form part of the data analysis of this thesis, they are worth looking at briefly as they did inform part of the mirror data of the intervention.

The pre- and post-intervention interviews were held with the same participants; five international faculty who were not part of the intervention group. An email was sent out to all international faculty at the university, asking for participation. The first five respondents were accepted. There was no specific reason for selecting five participants, other than a time concern. Of the five participants, one was a newcomer to the university, the other four were here for more than 5 years each. The interview questions were semi-structured and focused on questions concerning voice, community, and equality/equity, along with questions concerning participant data, online support services, pedagogy, research, administration, and new online tools. Each interview lasted between 45 minutes and 60 minutes. A sample of pre/post intervention interview questions can be found at Appendices 4 and 5. Consent forms, explaining participant privacy, data confidentiality and potential risks were given to participants at the beginning of each pre and post interview.

4.5.3 The Intervention Sessions

All 12 intervention sessions were audio recorded, and at the beginning of Session 1, consent forms, explaining participant privacy, data confidentiality and potential risks were given to participants. Sessions 1 - 11 ran to between 1 hour and 2 hours at a time, with Session 12, being longer, with 17 one to one feedback interviews being held, each interview ranging from 30 to 60 minutes in length. Throughout the intervention, several documents/models/lists etc. were produced by the researcher-interventionist and the participants. These artefacts are the physical representations of expansive learning cycles, double stimulation, and transformative agency, evidencing solutions to contradictions and modelling new activity. The artefacts were analysed in their original forms (large paper sheets, Google Docs, Qualtrics survey findings etc.) or through photographic representations.

Chapter 5 establishes the intervention and research process, adopting the strategy of covering data from all 12 change laboratory intervention sessions. Data from sessions 2-8 (the actual-empirical, historical, and modelling actions of the intervention) are presented and analysed, as these are where contradictions inhibiting object-oriented activity were brought to light, and changes advancing object-oriented activity were suggested.

4.5.4 Change Laboratory Diary

The researcher was also advised by his supervisors to maintain a diary throughout the intervention. This was a useful tool to record the "context and sequence of events" and to help me "determine critical mirror tools and task design in preparation for future sessions" (Hasted, 2019:113). This diary was written up post/pre each session, with a more informal copy sent off to my supervisors, to keep them abreast of the progress (see Appendix 6 for a sample page).

4.6 Research Design Strengths and Weaknesses

Haapasaari et al., (2016:240) state that "agency is expressed in discourse and action." The strength of this research design is that it does this, people come together to transform activity. However, participants do not always agree on everything. There are arguments, personalities, hierarchies, misunderstandings, "culture bumps" (Archer, 1986:170), "socio-cognitive approaches" - emotional responses rather than detached analyses (Virkkunen & Newnham, 2013:20). The expansive learning cycle is a long and somewhat uncontrolled process, participants are sometimes absent, or late, or veer off target. The formative Change Laboratory intervention does have enough scope and flexibility to accommodate these challenges, but at times, it can be a frustrating process. However, these weaknesses pale in comparison to the strengths of the research design – double stimulation, collective transformative agency, and expansive learning.

4.7 Ethical Considerations

Before undertaking the research intervention, a research proposal was submitted to Lancaster University for ethical approval in line with Lancaster University's New Ethics Procedure, Data Protection, and Information Security procedures. Ethical issues related to my research proposal were fully discussed with my supervisor prior to the start of my research. A total of 15 files were submitted for ethical approval. Upon confirmation of ethical approval and the submission of an email confirming ethical approval for my research from Lancaster University, data collection procedures began. Data collection procedures complied with the Data Protection Acts (1984 and 1998) and Good Information Security Principles were kept. In relation to the intervention sessions, potential participants were invited by email to session one, where a clearly written participant information sheet was given, setting out the intention, time, scope, and privacy notice of the research. At this session, a consent form was given to potential participants, with information on participant withdrawal, change laboratory confidentiality, possibly future publishing, participant and institutional anonymity, audio recording, transcriptions, data protection and storage procedures. All 17 participants consented freely and voluntarily to participate in the research.

Regarding interviews, interview questions, participant information sheets and consent forms were given to participants prior to the interviews taking place. In relation to all surveys given, electronic informed consent was asked for prior to any data being submitted, with the first page of each survey outlining information on the research, findings, withdrawal, participation, benefits, risks, questions, and confidentiality.

All consent forms, participant information sheets and interview questions etc., were typed in both Korean and English.

All audio-recordings were transcribed by the researcher, with both the recordings and transcriptions being stored in an encrypted zip folder held on the researcher's personal computer.

4.8 Data Coding Procedures

In Chapter 6, data from the actual-empirical, historical, and modelling actions of the intervention have been specifically coded as this is where contradictions inhibiting object-oriented activity were brought to light, and changes advancing object-oriented activity were suggested. These chosen intervention actions are central to the research questions of this thesis, because they illuminate the individual and collective transformative agency of participants as they explore and re-design their own activity.

I chose a semantic and latent level thematic analysis approach to the coding of data in this chapter. This approach has been taken for two reasons. First, a latent thematic approach aligns to my epistemological beliefs, in that it "seeks to theorize the sociocultural contexts, and structural conditions, that enable the individual accounts that are provided" (Braun & Clarke, 2006:85), both reflecting reality and unpicking or unravelling "the surface of 'reality'" (Braun & Clarke, 2006:81). Second, the approach not only identifies, analyses and reports patterns within the data, helping me to address the research objectives/research questions of this thesis, it also allows for interpretation of various aspects of the research topic, allowing the analyst to be both a cultural member and cultural commentator (Braun & Clarke, 2006), something which reflects the nature of the research and my position in the research project - as both an insider-researcher, and research-interventionist.

This approach is somewhat unconventional, as data is coded in a way that is different from how other Change laboratory projects have generally been coded. I am fully aware that other writers have used other approaches (St. Clair Browne, 2011; Morselli, 2014; Snowden, 2018; Hasted, 2019; and Moffitt, 2019 etc.), and that I have chosen my approach because I have different objectives to theirs.

By employing thematic anlaysis in Chapter 6, I identify main themes and codes (contradictions & suggested changes) in specific areas of investigation (areas of interest discussed/highlighted by participants) concerning research and pedagogy activity, highlighting what areas of investigation were important for participants, what contradictions were found/what changes were suggested, what themes these contradictions & suggestions represent, who they affect, how they came to be, and to what extent participants saw these problems/changes inhibiting/advancing the realization of objectives. In turn, this approach allows for interpretation of various aspects of the research topic, allowing myself as the analyst to be both a cultural member and cultural commentator.

As mentioned previously, latent thematic analysis, reports, describes and interprets a rich set of data. It can be achieved through a six-stage procedure moving from data familiarization, initial coding, initial themes, reviewing themes, defining, and naming themes to producing a report. Further explanation of the six phases can be seen in Table 4.5 below.

Phase		Description of the process
1	Familiarizing yourself with your data:	Transcribing data (if necessary), reading and re-reading the data, noting down initial ideas.
2	Generating initial codes:	Coding interesting features of the data in a systematic fashion across the entire data set, collating data relevant to each code.
3	Searching for themes:	Collating codes into potential themes, gathering all data relevant to each potential theme.
4	Reviewing themes:	Checking if the themes work in relation to the coded extracts (Level 1) and the entire data set (Level 2), generating a thematic 'map' of the analysis.
5	Defining and naming themes:	Ongoing analysis to refine the specifics of each theme, and the overall story the analysis tells, generating clear definitions and names for each theme.
6	Producing the report:	The final opportunity for analysis. Selection of vivid, compelling extract examples, final analysis of selected extracts, relating back of the analysis to the research question and literature, producing a scholarly report of the analysis.

Table 4.6 Phases of thematic coding (taken from Braun & Clarke, 2006:87)

In general, this approach (in this thesis) has allowed me to move from the larger data corpus to data sets, where codes (contradictions) were analysed, and themes gleaned. These themes, reviewed, defined, and named, "capture something important about the data in relation to the research question, and represent some level of patterned response or meaning within the data set" (Braun & Clarke, 2006:82). In this thesis, data sets from the actual-empirical and historical actions (sessions 2-6) and the modelling actions (session 7 & 8) of the research intervention have been coded, with the specific intention of answering the two research questions of the thesis.

While these research questions are in place, data coding (and the analysis thereafter) has tried to be inductive in nature, allowing for the data to speak for itself, but as rightly pointed out by Braun & Clarke (2006:84), "researchers cannot free themselves of their theoretical and

epistemological commitments, and data are not coded in an epistemological vacuum". With this in mind, I have avoided bringing my own preconceptions of the data to the table, while at the same time ensuring that my voice is evident in the analysis of the data.

The data presentation moves beyond surface level findings, to focus on latent levels, moving beyond the semantic content of the data to "identify or examine the underlying ideas, assumptions, and conceptualizations - and ideologies - that are theorized as shaping or informing the semantic content of the data (Braun & Clarke, 2006:84). As such, data is presented at both semantic and latent levels, with the latter level allowing for a more in-depth and insightful story.

To help in the process, various techniques were employed throughout. First, all sessions were transcribed by the researcher, read, and re-read, with initial ideas noted down. Second, the transcriptions were manually coded, with all codes collated. As a sample from the actual-empirical analysis of research artefacts, codes such as *lack of integration / complex and clunky / limited interactive forms* were assigned. Following this, the list of codes and their associated transcriptions were looked at in more detail to consider themes. Themes such as *Complexity, Exclusion, Impotence, Obfuscation*, etc., were selected based on two things: keyness and prevalence; the importance of the codes, and how often the codes were articulated (individual occurrences) across the sessions. The themes were reviewed against the larger data sets, the initial notes, and codes, with initial, developed, and final semantic data thematic charts being produced (see Appendix 7 & Appendix 8 for example Research and Pedagogy thematic charts). To seek a more in-depth and insightful story, latent thematic coding tables were produced explores the areas of investigation, main themes and contradictions further, aligning them to contradiction type/s, the activity system elements

they relate to, the resulting direct effects they have across the activity system, and affected groups.

In the data presentation chapter of the thesis, both the semantic and latent data tables are included, followed by triangular diagrams indicating the positioning of findings on the activity system, samples of illustrative 'participant' extracts, my narrative, and my synthesis.

To help with the claims, the following questions were considered during the thematic coding process:

1. What does this theme mean?
2. What are the assumptions underpinning it?
3. What are the implications of this theme?
4. What conditions are likely to have given rise to it?
5. Why do people talk about this thing in this particular way (as opposed to other ways)?
6. What is the overall story the different themes reveal about the topic?

Taken from Braun & Clarke, 2006:94

In addition, Braun & Clarke's 15-point checklist of criteria for good thematic coding was used as a guide to strengthen the rigour of the work.

Process	No.	Criteria
Transcription	1	The data have been transcribed to an appropriate level of detail, and the transcripts have been checked against the tapes for 'accuracy'.
Coding	2	Each data item has been given equal attention in the coding process.
	3	Themes have not been generated from a few vivid examples (an anecdotal approach), but instead the coding process has been thorough, inclusive and comprehensive.
	4	All relevant extracts for all each theme have been collated.
	5	Themes have been checked against each other and back to the original data set.
	6	Themes are internally coherent, consistent, and distinctive.
Analysis	7	Data have been analysed - interpreted, made sense of / rather than just paraphrased or described.
	8	Analysis and data match each other / the extracts illustrate the analytic claims.
	9	Analysis tells a convincing and well-organized story about the data and topic.
	10	A good balance between analytic narrative and illustrative extracts is provided.

Overall	11	Enough time has been allocated to complete all phases of the analysis adequately, without rushing a phase or giving it a once-over-lightly.
Written report	12	The assumptions about, and specific approach to, thematic analysis are clearly explicated.
	13	There is a good fit between what you claim you do, and what you show you have done – i.e., described method and reported analysis are consistent.
	14	The language and concepts used in the report are consistent with the epistemological position of the analysis.
	15	The researcher is positioned as active in the research process; themes do not just 'emerge'

Table 4.7 A 15-point checklist of criteria for good thematic analysis (taken from Braun & Clarke, 2006:96)

4.9 Summary

In summary, the formative Change Laboratory intervention is a method and toolkit to achieve expansive learning. By employing task-designs based on double stimulation, participants collectively work towards changing shared practice. The intervention begins with participants questioning practice, then moves on to analyzing contradictions in present systems. How participants worked in the past is then explored, followed by modelling future activity, making, and testing new activity, implementing it, and consolidating this new activity across work practice. The methodology ties into my belief that people working together can better change their shared work practice. The intervention offers a more appropriate toolkit, systematic steps, and a safe democratic environment for change in a HEI setting.

Chapter 5 will focus on establishing the intervention and research process. The purpose is to, at each stage of the expansive learning cycle, demonstrate how, with the aid of the first intervention principle, double stimulation, participants identified and attempted to transform systemic policy and practice problems in their shared work practice.

5 Intervention and Research Process

5.1 Introduction

This chapter builds on the narrative of the thesis, that through a formative Change Laboratory intervention which realizes expansive learning, an inter-professional group of participants in South Korean HE can challenge the status quo and affect concrete change in institutional educational technological policy and practice.

In this chapter I focus on establishing the intervention and research process. I adopt the strategy of covering data from 12 change laboratory intervention sessions, aligning them to the seven stages of the expansive learning cycle (Questioning the Research, Analyzing the Situation (Analyzing Present Activity & Past Activity), Modelling New Future Activity, Developing & Examining New Activity, Implementing & Consolidating New Activity and Reflecting on the Intervention).

The purpose is to, at each stage of the expansive learning cycle, demonstrate how, with the aid of the first intervention principle, double stimulation, participants identified and attempted to transform systemic policy and practice problems in their shared work practice.

Table 5.1 below shows the actuality of all twelve Change Laboratory Sessions as they unfolded and their corresponding Expansive Learning Stages. This table does not represent my original plan. The original plan was to have 7 Change Laboratory sessions, with each session being aligned to the 7 stages of expansive learning. However, I had to diverge from the plan due to the length and direction of the intervention participants' discussions, and scheduling issues.

Change Laboratory Session	Expansive Learning Stages	Rationale	Date	Numbers
1	Questioning	Understanding the purpose and scope of the research, participants committing to the research (recognizing the need for change), participants committing to	24/10/2018 (60 min)	10 members present (3 Int'l Fac /5 Korean Fac /2

		narrow down the research focus		Korean Admin) excluding me
2	Actual-Empirical Analysis	Listing positives and problems with current activity – Research, Pedagogy & Administration Using Activity System Models to position existing problems and investigate their cause/affect across activity systems	31/19/2018 (60 min)	6 members present (4 Int'l Fac / 2 Korean Fac) excluding me
3			7/11/2018 (60 min0	6 members present (4 Int'l Fac / 2 Korean Admin) excluding me
4			21/11/2018 (60 min)	7 members present (4 Int'l Fac / 1 Korean Fac / 2 Korean Admin) excluding me
5			18/11/2018 (60 min)	7 members present (5 Int'l Fac / 2 Korean Admin) excluding me
6	Historical Analysis	Mapping Change / Identifying Elements / Exploring Key Contradictions – in Pedagogy and Research – especially the ranked lists we made post session 5	12/12/2018 (90 min)	4 members present (4 Int'l Fac) excluding me
7	Modelling New Future Activity	Looking at new system/effects/people/tools etc. – Pedagogy Guidelines Looking at new system/effect/people/tools etc. – Research Guidelines & Research Homepage	20/12/2018 (90 min)	5 members present (4 Int'l Fac / 1 Korean Admin) excluding me
8			11/1/2019 (120 min)	6 members present (6 Int'l Fac) excluding me
9	Developing and Examining New Activity	New Tools – Pedagogy Guidelines / Research Guidelines & Research Homepage & a new addition to the research – a wider International Faculty Portal (mentioned earlier in sessions and based on findings from Session 1-5) – (implementation of Research and International Faculty Portal/Homepage with new International Faculty Workshop Feb 28th)	11/1/2019-23/2/2019	11 members contributing (6 Int'l Fac / 5 Korean Admin) excluding me (Online using SMS, Google Docs and face to face informal one to one meetings)
10	Implementing & Consolidating New Activity	How best to bring new tools (Pedagogy Guidelines, Research Guidelines Research Homepage & International Faculty Portal) to the university/changes needed/timeline for this, also survey design for int'l faculty)	20/3/2019	4 members present (4 Int'l Fac) excluding me
11	Reflecting on the Intervention	Collective Reflection Talking about the intervention, expansive learning, individual and collective	10/4/2019 (60 min)	5 members present (5 Int'l Fac) excluding

		transformative agency		me
12		Individual Reflection Talking about the intervention, expansive learning, individual and collective transformative agency	10/4/2019-17/4/2019 (30-60min x 17)	17 interviews (informal, 30-60 min each over coffee)

Table 5.1 A Chronological Outline of the Actual 12 Change Laboratory Sessions & Expansive Learning Stages

5.2 Session 1: Questioning

The intention of **Session 1** was for participants to meet, ask questions and become familiar with each other and the project. The expansive learning goal behind this intention was for participants to recognize the need for change in activity and commit to development (the purpose and scope of the research).

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
1	Questioning	1	What online services for Research, Pedagogy, Administration, and Information are in need of change?	Feedback from pre-intervention surveys	University online services supporting Research, Pedagogy, Administration, and Information (open webpages)
		2	What could we achieve in 7 weeks?	The expansive learning cycle and a blank activity system model	University online services supporting Research, Pedagogy, Administration, and Information (open webpages)

Table 5.2 Session 1: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

The **first task** of this session was for participants to recognize a need for change.

The ***first stimulus*** was introduced: *What online services for Research, Pedagogy, Administration, and Information are in need of change?*

To help all participants think, the ***second stimulus (***feedback from pre-session surveys given out to Korean faculty, international faculty, and administration staff) was introduced. Participants were able to see that there were differences of perspectives concerning the need for change and in what areas etc.

For example, in the three surveys carried out (Korean faculty: total respondents = 88 (11%), international faculty: total respondents = 71 (60%), and administration staff: total respondents = 89 (19%)), all respondents saw a need for a change to existing artefacts (Q5), but regarding equality of access to information (Q8), Korean faculty saw this more positively, while international faculty and administration staff did not. When looking at community (Q10) and voice (Q7), international faculty and administration staff were generally more negative, while Korean faculty were more positive.

Q5. I think a centralized online space specifically for international faculty & Korean faculty is needed. (i.e., an online space inclusive of pedagogic, research, administrative and information support services offered in the English language)

	Agree	Disagree	Neutral
Korean faculty	72%	4%	24%
International faculty	72%	17%	7%
Administration staff	83%	11%	6%

Q7. I think the University's online support services recognize/reflect the wants etc. of Korean/International faculty members.

	Agree	Disagree	Neutral
Korean faculty	66%	11%	23%
International faculty	20%	50%	30%
Administration staff	9%	64%	27%

Q8. I feel that the University's online support services give me equal access to information/resources (equal to my Korean/International colleagues).

	Agree	Disagree	Neutral
Korean faculty	63%	17%	20%
International faculty	19%	74%	7%
Administration staff	27%	64%	9%

Q10. I feel that the design, content, and delivery of the University's online support services promote a sense of belonging to the university/that I am included in the university community.

	Agree	Disagree	Neutral
Korean faculty	65%	12%	23%
International faculty	19%	44%	37%
Administration staff	30%	36%	33%

Resulting from discussions held around the survey data, participants were able to get a picture of what problems were being voiced concerning online services for Research, Pedagogy, Administration, and Information. From this, they were able to recognize the need for change in certain areas:

> Online support service, you mean all the service including the University Homepage, Edward system, CTL homepage, something like that? (Jiyeon, KF)

The participants did find a problem with this, as the scope of the problems was quite large. So, to deal with this, a **second task** was looked at: the time frame of the research, what could feasibly be looked at within the initial 7-week intervention plan:

With the same ***mirror data*** to hand, the participants were given the ***first stimulus*** - What could we achieve in 7 weeks?

The ***second stimulus*** - The expansive learning cycle and a blank activity system model, were then introduced to outline how the research was to be carried out and how long it would take.

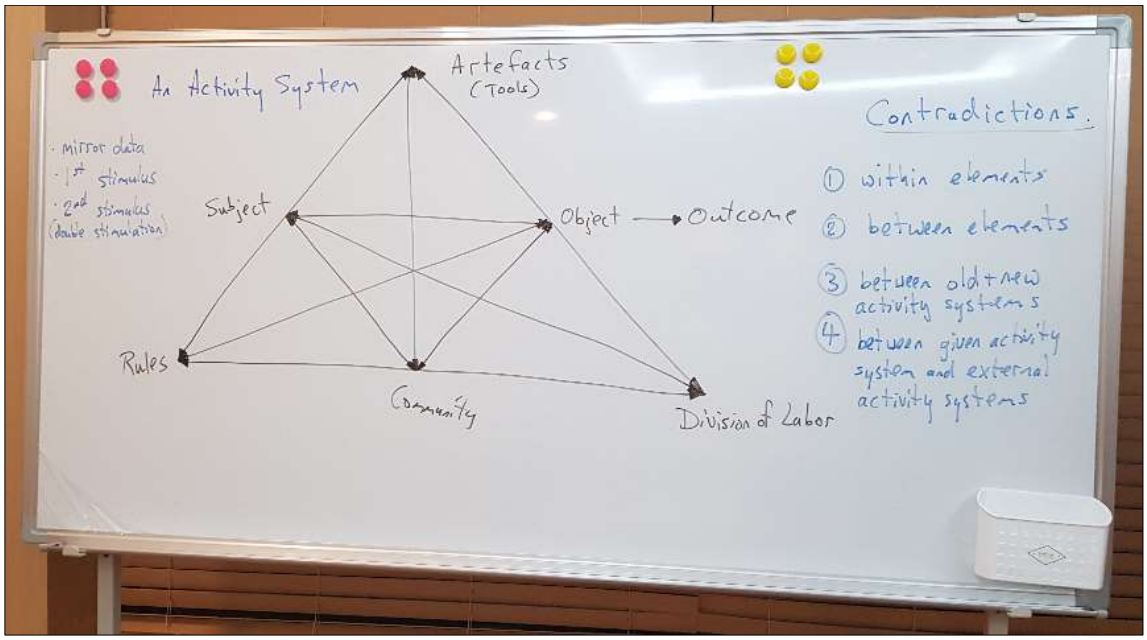


Image 5.1 Session 2: Task 2 Sample Mirror Data: Activity System Model

A second voice, from one of the Korean Deans suggested to narrow down the focus of the research given the initial timeframe.

> How about focusing on one or two specific area, for example CTL aspect or administration aspect rather than comprising all online services? (Jun, KF)

Resulting from the questions asked and the responses given, session one concluded with four outcomes: an understanding to the purpose and scope of the research, a commitment by participants to the research (recognizing the need for change), and a commitment to narrow down the research focus to maybe one or two of the four units of analyses - Pedagogy, Research, Administration, and Information activity. Regarding the initial intention of the session, it did generally go to plan. This was the first time on campus for Korean faculty, international faculty, and administration staff to be in a research setting together. As mentioned in the previous chapter, such a meeting is atypical and indeed 'unheard of' in the context of affecting change in a South Korean university. So, at the beginning of the session

people were rather tentative, but curious. However, it wasn't long before strong voices started to emerge in the room; in particular, the two Deans from the Korean faculty.

Two interesting and challenging situations arose from the first session. First, quite an amount of time was given over to explaining the survey language, as there seemed to be an issue with the English-Korean translation. Second, the voices (and presence) of the two Korean Deans did seem to have a quietening effect on the Korean Administration present. At first, I thought this was a hierarchy issue, but after chatting with the administrative participants post the session, their hesitancy to speak was a result of less or rather different system knowledge concerning research, and pedagogy activity, two areas of greater interest to the faculty participants present.

5.3 Sessions 2: Actual-Empirical Analysis: Listing Positives and Problems

The goal of **Session 2** was for intervention participants to think about which area or areas they would like to see concrete change in. The intention for this was influenced by the outcomes of the previous session where participants wanted to narrow down the focus of the project. The expansive learning intention of this session was actual-empirical analysis, to share/discuss/list positives and problems in current activity, and through this realization, hone in on units of analyses participants wanted to affect change in.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
2	Actual Empirical Analysis – Listing Positive & Problems	1	What problems exist in current online support dealing with "Research", Pedagogy" and "Administration"?	Board markers and large sheets of paper to discuss and list 'what' positives and problems they (from their individual perspective) experience with current online policy and practice regarding "Research", "Pedagogy"	Visuals of the online tools facilitating "Research", "Pedagogy" and "Administration" activity.

				and "Administration"	
		2	Is there anything you want to further discuss/ add/challenge to the lists?	Board markers and large sheets of paper on whiteboard to discuss/add/challenge the lists.	Visuals of positive/negative lists
		3	What unit/s of analysis/analyses would you like to focus on?	Large sheets of paper on whiteboard to narrow down the focus of the project.	Visuals of positive/negative lists and Visuals of the online tools facilitating "Research", "Pedagogy" and "Administration" activity.

Table 5.3 Session 2: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

In the ***first task***, as ***mirror data***, I presented visuals of the online systems housing and delivering these objects: the Edward system "Administration", the CTL "Pedagogy", the Research homepage "Research" and Groupware "Information". Participants chose "Research" first, followed by "Pedagogy", then "Administration". "Information" was not considered and omitted from the project at this time. Participants chose to do steer away from "Information" as it was seen to be too general to approach, and not as pertinent to their current objectives. As a ***first stimulus***, the participants were asked what problems exist in online support dealing with "Research", "Pedagogy" and "Administration". As the ***second stimulus,*** participants were given red and blue markers and large sheets of white paper to discuss and list 'what' positives (blue colour/left) and problems (red colour/right) they (from their individual perspective) experience with current online policy and practice regarding "Research", "Pedagogy" and "Administration".

In the ***second task***, participants were asked: Is there anything you want to further discuss/ add/challenge to the lists? To help participants respond to this ***first stimulus***, the ***mirror data*** (the positive/problematic lists) were put on a whiteboard, with participants using board markers, the board, and the papered lists as a ***second stimulus*** to discuss/add/challenge their findings (See Image 5.3).

Concerning Research, more problems are identified than positives (see Image 5.2). Some of these problems are shared by all participants (no promotion of community, lack of human resources and complex online systems), some are shared by Korean and international faculty (limited access to journal catalogues, no online collaboration space, and limited interactive forms), and others are just felt by international faculty (minimal to no information coming out in English and ambiguity of systems).

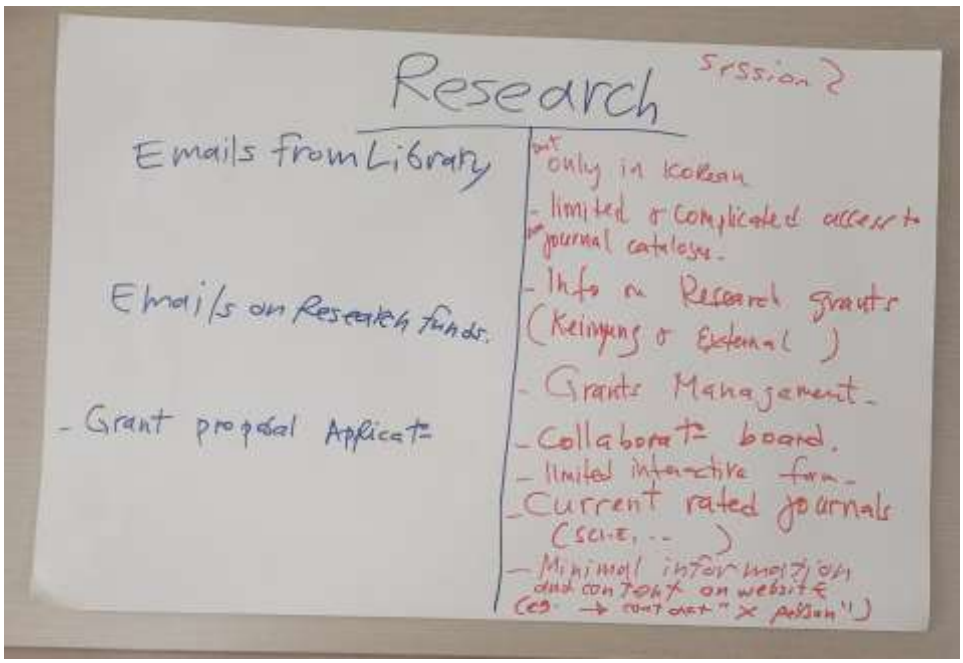


Image 5.2 Session 2: Positives & Problems in Research activity

With Pedagogy (see Image 5.3), Korean and international faculty found some common positives - early announcements on Edward, the possibility to amend syllabi, function

duplication, and SMS function etc. However, problems were also found. First, all participants shared problems concerning the university SMS system - the exclusion of exchange students from the system and on Edward/CTL - no auto save function. Korean and international faculty both experienced problems with many aspects of online Pedagogy activity – photo avatars, difference in layout/content between Korean and English systems, make up problems, late access to the grading curve page, and the upload capacity on CTL. International faculty voiced concerns over SMS character limitation (affecting English language speakers more than Korean speakers), professional development materials (or lack of) and the complete absence of training/documentation on how to use the CTL.

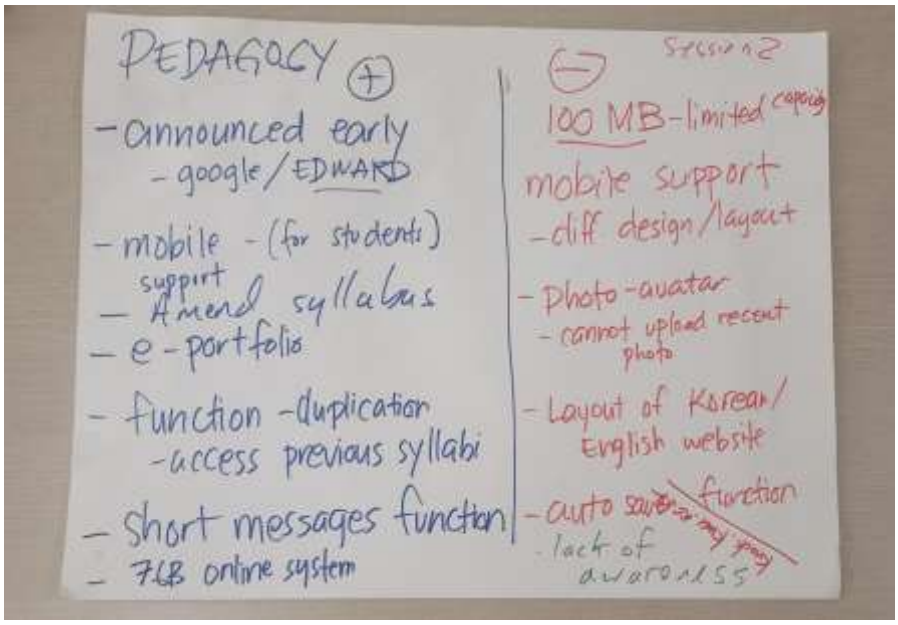


Image 5.3 Session 2: Positives & Problems in Pedagogy activity

Regarding Administration (see Image 5.4), some positives were listed for all participants, a better more accessible graphic user interface for the Edward system (desktop version), a good memo system, less paperwork and good storage. There were many shared problems by all participants – lack of integration, slippage, complexity, redundancy, ambiguity, tracking, and

time consumption etc. Korean faculty found that information in Korean comes out promptly on Edward, not so with English. Problems concerning international faculty revolved around language, information, and communication – no bulletin board for dormitories, surface level English translations in the Edward system, no handbooks and limited/late information being posted/emailed in English.

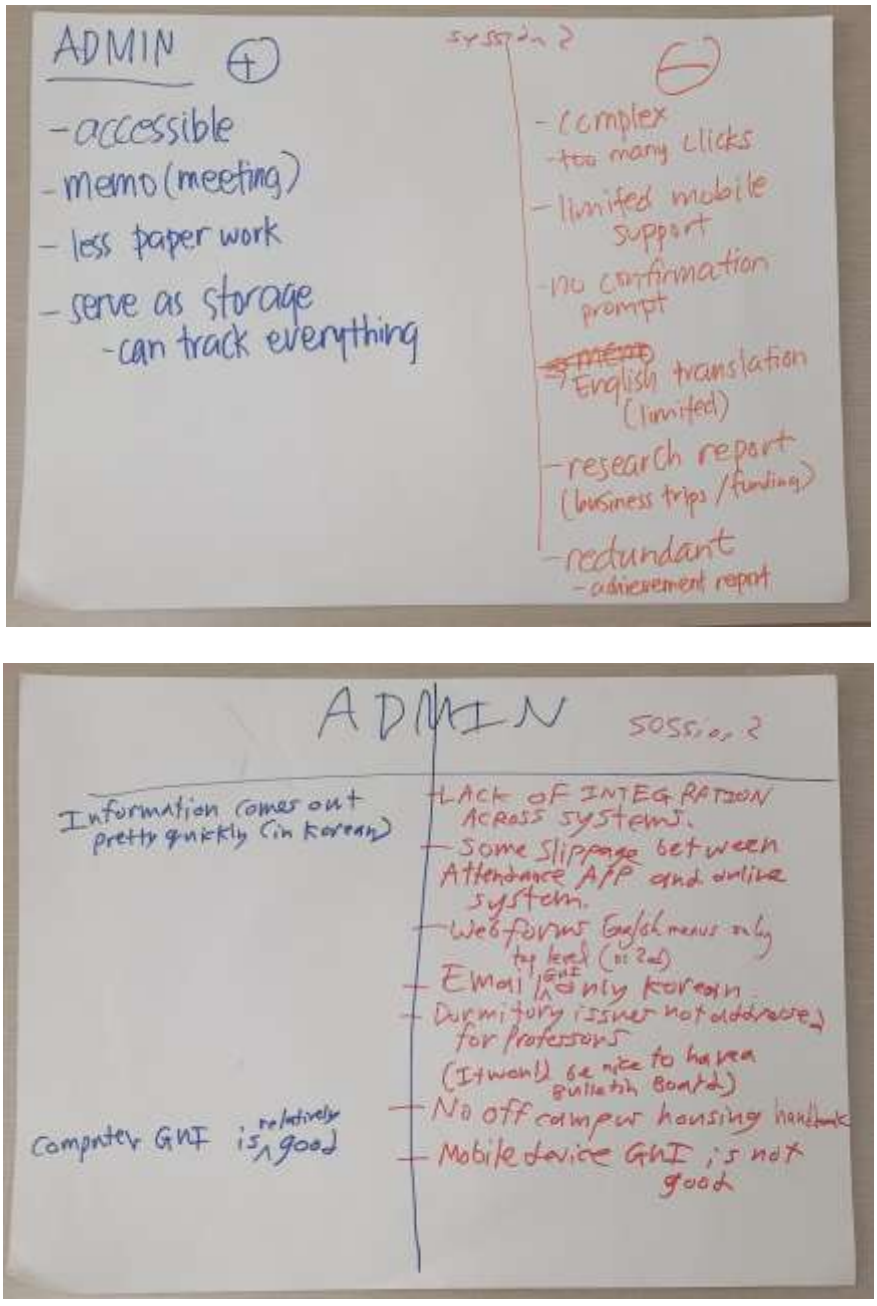


Image 5.4 Session 2: Positives & Problems in Administration activity

The intention of session two was for participants to identify/list positives and problems in current practice across activity. In doing so, many more problems were found than positives. Some of the problems found (no promotion of community, no collaboration boards, restriction of access to information, limited training/documentation, and language dilemmas etc.) highlight and reflect deeper issues affecting all groups across campus. The second intention was for participants to narrow down the scope of the research to 2 or 3 units of analyses. While "Information" was dropped from the project early on in this session, no further movement (Task 3) was made concerning the remaining units of analyses, Pedagogy, Research and Administration. The reason for this was that participants were not ready at this stage to dismiss anything else, as all three areas were of interests to participants, of course, some more than others. In addition, not all participants were able to attend session two, so taking a decision at this time would not be reflective of the total group.

A further outcome from this session was a suggestion by participants to go beyond the 6 present members in session 2, to ask (by survey), which area/areas to change/improve - a survey given to all International / Korean faculty and Administration across campus. Upon discussion with my supervisors about this suggestion it was decided not to involve outside voices at this time, as the 16 participants will be "the ones interacting with one another, providing feedback, and shaping the process and product so…stick to their ideas, suggestions and inputs rather than broadly considering what others (those who will not be in changelab) want and then impose it to your participants".

As some participants were absent from session two, notably the administration staff (all were called away to a university event), findings were typed up and sent out via google docs to all

participants with the intention of further (more inclusive) input. As a note, it was common practice after each session to email findings out to all participants, asking them to add to or edit information.

5.4 Sessions 3-5: Actual-Empirical Analysis: Locating Contradictions & Establishing Cause/Effect

The goal of **Sessions 3 to 5** was to go deeper into the problems found in session two, using Activity System models to position the identified problems and investigate their cause/effect across the systems. The expansive learning intention of these sessions was for participants to collectively explore these existing problems in greater depth from varying perspectives (with a certain degree of empathy), and in doing so, this new knowledge would assist in their later thinking about reframing and reforming shared work practice for all involved.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
3-5	Actual Empirical Analysis – Locating Contradictions & Establishing Cause/Effect	1	Where are the identified problems located, and what are their cause/effect across the systems?	Large sheets of paper with Activity System Models drawn on them	The listed problems from session two & blank activity system sheets
		2	Is there anything you want to further discuss/ add/challenge to the models?	Board markers and all models (sheets of paper) on the whiteboard to discuss/add/challenge the information	The listed problems from session two & completed models

Table 5.4 Session 3-5: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

With all three units of analyses, Research, Pedagogy and Administration activity, participants used the listed problems from session two as ***mirror data***. Both Tasks 1 and Tasks 2 are repeated for each unit of analyses. In ***Task 1***, for the **first *stimulus,*** participants were asked: Where are the identified problems located, and what are their cause/effect across the systems? To help participants think this out, as the ***second stimulus***, they were given markers and large

sheets of white paper with blank Activity Systems models drawn on them, to label elements and identify primary and secondary contradictions.

In ***Task 2***, participants were asked: Is there anything you want to further discuss/ add/challenge to the models? To help participants respond to this ***first stimulus***, the ***mirror data*** (the listed problems from session two & the completed Activity System models) were put on a whiteboard, with participants using board markers and all the models (sheets of paper) as a ***second stimulus*** to discuss/add/challenge their findings.

In **Session 3/4**, when questioning current **Research** activity (see Image 5.5), participants labelled the various elements of the model and spent a long time looking at primary contradictions found within the **Rules** element (university rules - limits on where to publish, deadlines, grant restrictions, lack of financial support for conferences, points system, lack of paid journal subscriptions, timing of research credits and government regulations - journal database centralization). Participants' analysis highlighted that these primary contradictions within the rules element resulted in secondary contradictions between rules/subjects and rules/object/objectives (no access to recent research for Korean faculty and international faculty, lack of knowledge on publishing, points, and internal grant information for international faculty).

In addition, participants discovered that the lack of skilled human resources in the Research office, within the **Division of Labour** element, was a significant obstacle affecting staff in the research office, in particular the one person responsible for internal grant applications and all communications with international faculty. The lack of skilled staff is resulting in secondary contradictions between division of labour/subject (no translations being done or emails in English being sent out to international faculty re grants etc., tensions being felt

between international faculty and administration staff) and division of labour/object (slow internal grant process for all subjects).

Within the **Artefacts** element, participants noted that the lack of system integration was causing secondary contradictions - duplication of tasks, redundancy, and confusion for all subjects. In addition, the artefacts were not seen to be promoting community, resulting in secondary contradictions of disconnect between artefacts/subjects and artefacts/community. With the primary language of the artefacts being Korean, there is added confusion between artefacts/ subjects for international faculty.

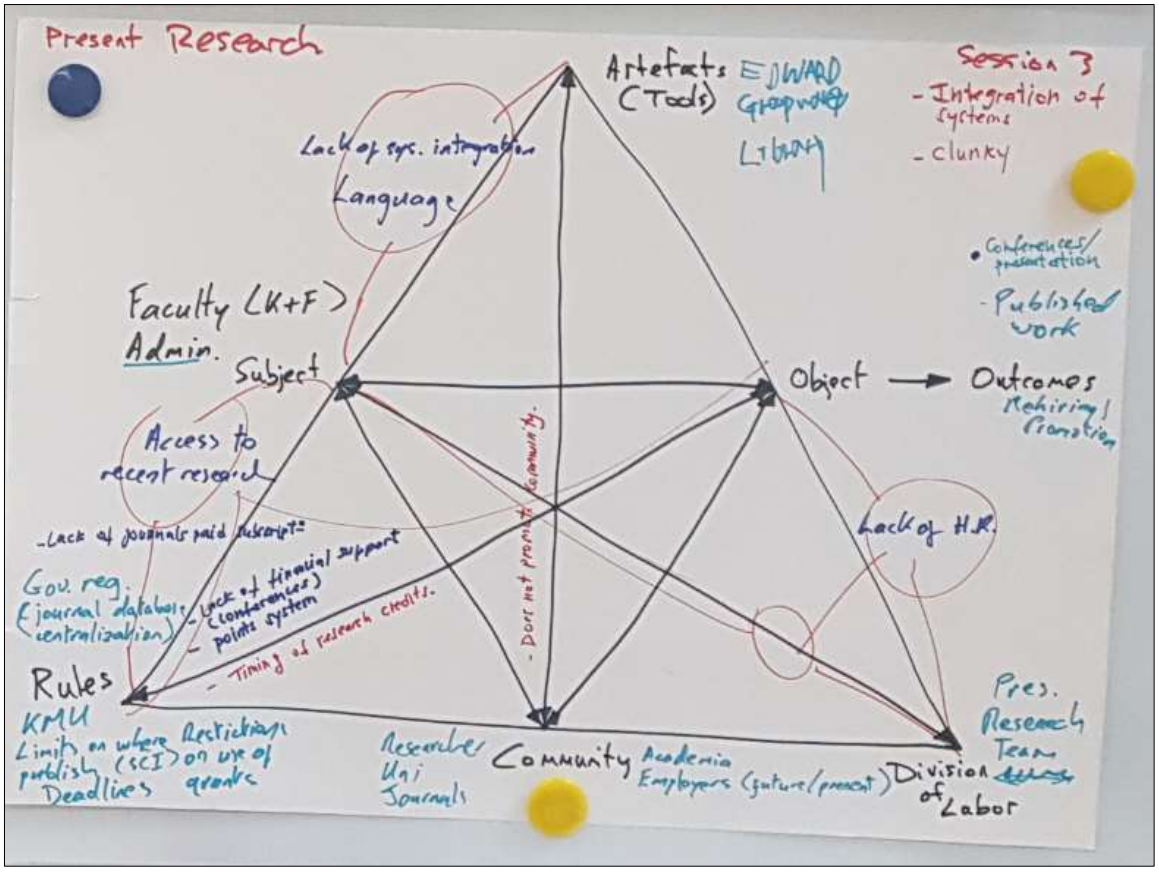


Image 5.5 In-session Present Research Activity System Model

As some participants were absent from sessions 3/4, findings were typed up and sent out via google docs to all participants with the intention of further (more inclusive) input. Figure 5.1

reflects the updated Post-Sessional Present Research Activity System Model considering perspectives from all participants.

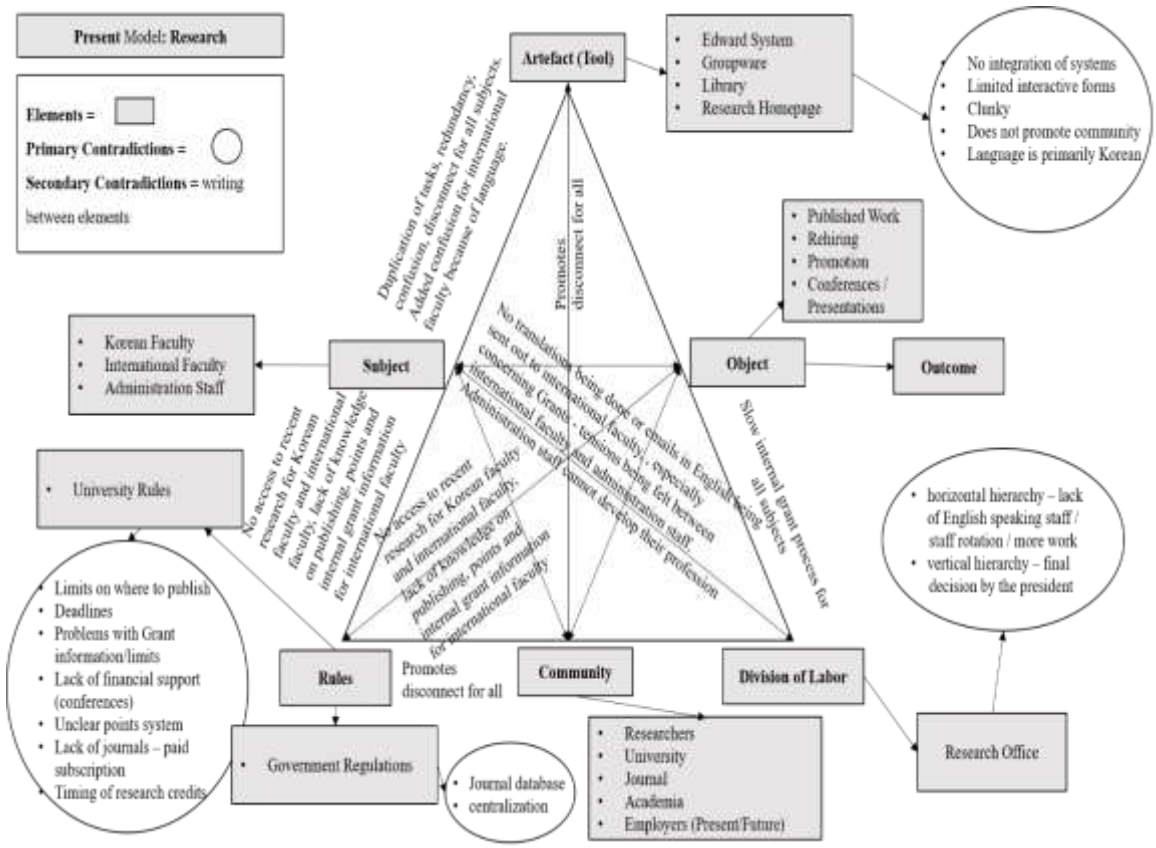


Figure 12 Post-Sessional Present Research Activity System Model

When looking at Administration activity in Sessions 3/4 (see Image 5.6), began by labelling the elements of the model, then spending most of their time identifying primary contractions with the Rules element. This work resulted in the following primary contradictions seen to be affecting all subjects; not being told information, lack of time for notifications, no correction element, no clarity in terminology/lots of ambiguity, too many fields (to fill in), too time consuming (redundancy of tasks). These primary contradictions resulted in secondary

contradictions between rules/subject; restrictions of access to information (about how, what, when and why to do things) for all subjects, and rules/object; slow, repetitive work for all subjects.

In turn, participants pointed out that the **Artefacts** (Groupware (intranet), Edward System, Attendance & Syllabus, and Reports) housed too much unrelated information and not enough related information, causing secondary contradictions of frustration among all subjects.

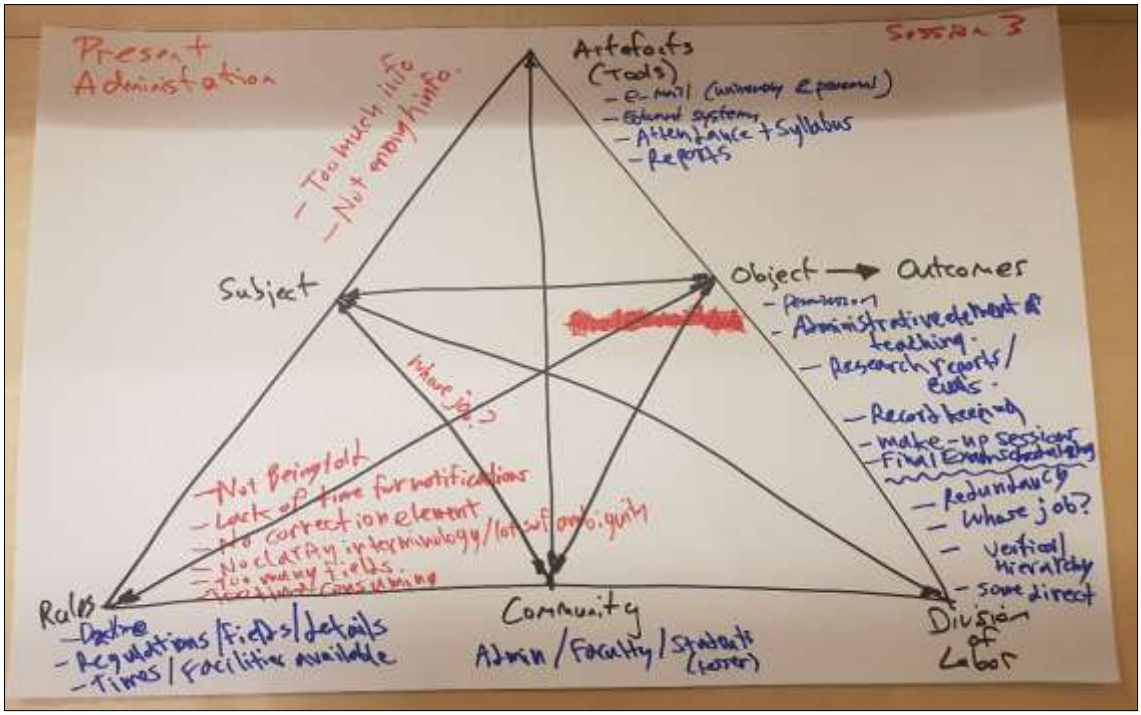


Image 5.6 In-session Present Administration Activity System Model

Again, as some participants were absent from sessions 3/4, findings were typed up and sent out via google docs to all participants with the intention of further (more inclusive) input. Figure 5.2 reflects the updated Post-Sessional Present Administration Activity System Model considering perspectives from all participants.

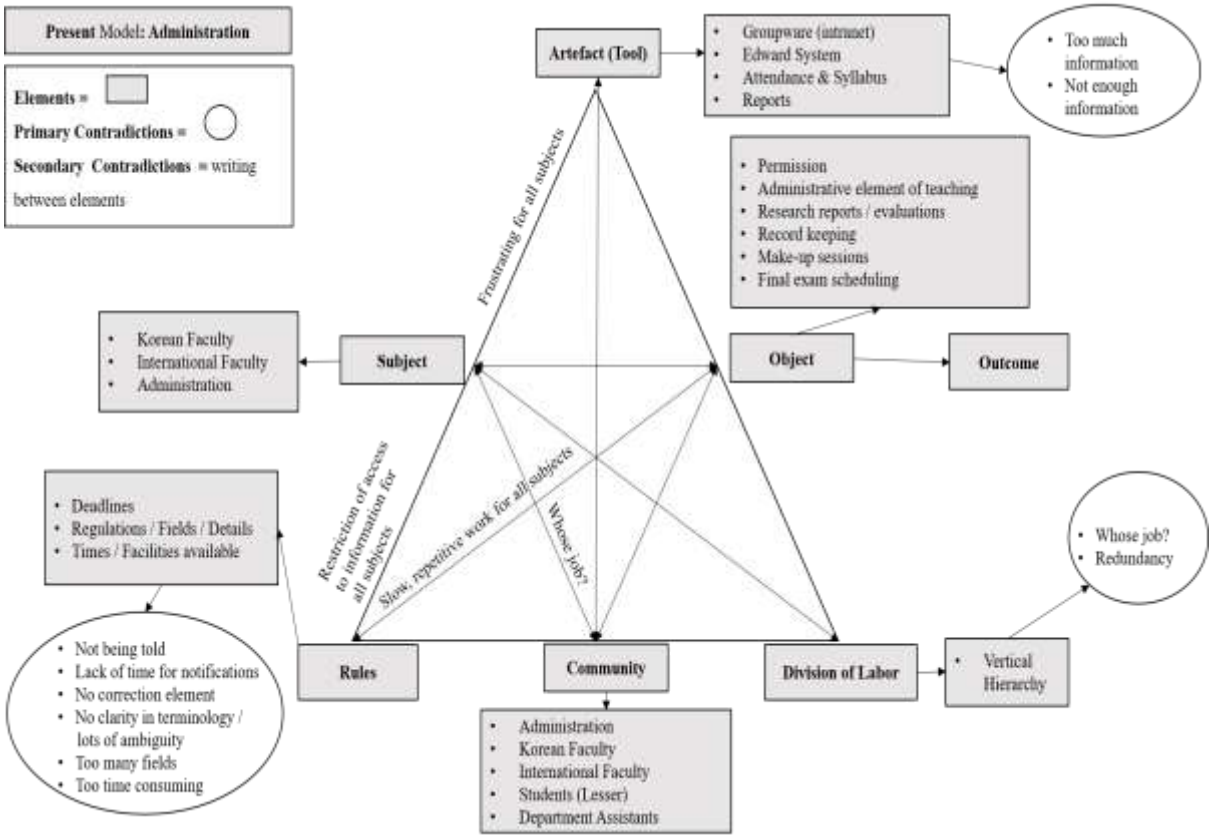


Figure 13 Post-Sessional Present Administration Activity System Model

When looking at Pedagogy activity in **Sessions 4/ 5** (see Image 5.7), participants divided most of their time between **Rules** and **Artefacts**.

In the **Rules element**, participants talked about university and government rules. They identified several primary contradictions in university rules: online make-up class rules/methods, syllabus input rules in CTL/Edward artefacts, the 100mb capacity upload limit in CTL, and late access to the grading page (and issues concerning the grading curve) in Edward. These primary contradictions were causing secondary contradictions for Korean and international faculty, between rules/subject and rules/object: difficultly in scheduling of make up classes, rushed syllabi, file splitting due to upload capacity, and exclusion from needed grading curve information.

Regarding government rules, participants talked about the government mandated training videos all faculty and administration staff must watch every semester as primary contradictions. These videos, delivered in Korean, were seen to be resulting in secondary contradictions for international faculty between rules/subject and rules/object, with the linguistic and cultural elements of the videos excluding international faculty from important national training.

When looking at **Artefacts** in more detail - the Edward system, CTL (LMS), External Tools (e.g. Moodle), Classroom Multimedia Console, Syllabus, and CTL Seminars, the intervention participants found many primary contradictions impeding Korean faculty, international faculty and administration staff: no auto-save function, cannot upload recent student photos in profiles, lack of integration, system redundancy, have to re-submit data, no follow-up/confirmation from systems, exclusion of international students from SMS system, no professional development videos online, and no higher education portfolio management. Additional primary contradictions impeding international faculty objectives were SMS limited characters 70, strange acronyms in CTL, and no training in English given/no manual. These primary contradictions were resulting in secondary contradictions between artefacts/subjects: slow, increased workloads for all subjects, cannot place Korean student faces, international students get information slower/differently, no focus on professional development for faculty or administration staff, and no training for international faculty.

In addition, similar to the Research activity system model, the same or similar primary contradictions of horizontal and vertical hierarchy were looked at in the **Division of Labour** element, resulting in secondary contradictions between division of labour/subject: international faculty not being informed about things, administration staff rotate, difficult to develop professionally.

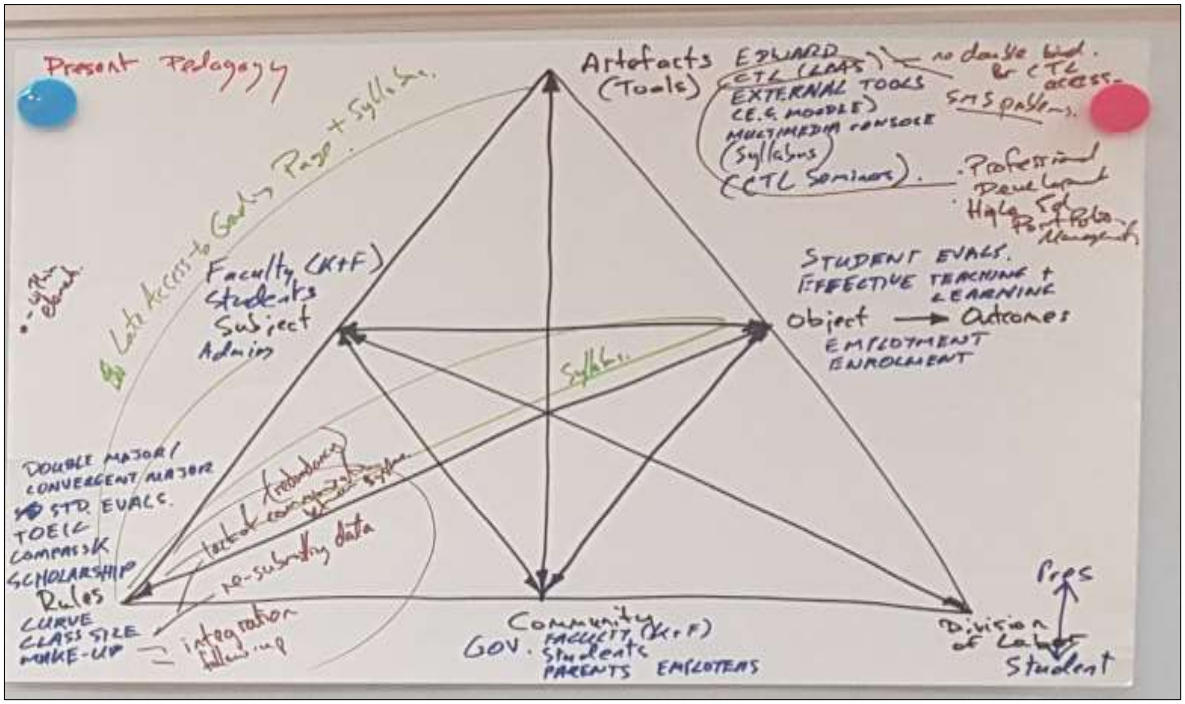


Image 5.7 In-session Present Pedagogy Activity System Model

Similar to earlier sessions, some participants were absent from sessions 4/5, so findings were typed up and sent out via google docs to all participants with the intention of further (more inclusive) input. Figure 5.3 reflects the updated Post-Sessional Present Pedagogy Activity System Model considering perspectives from all participants.

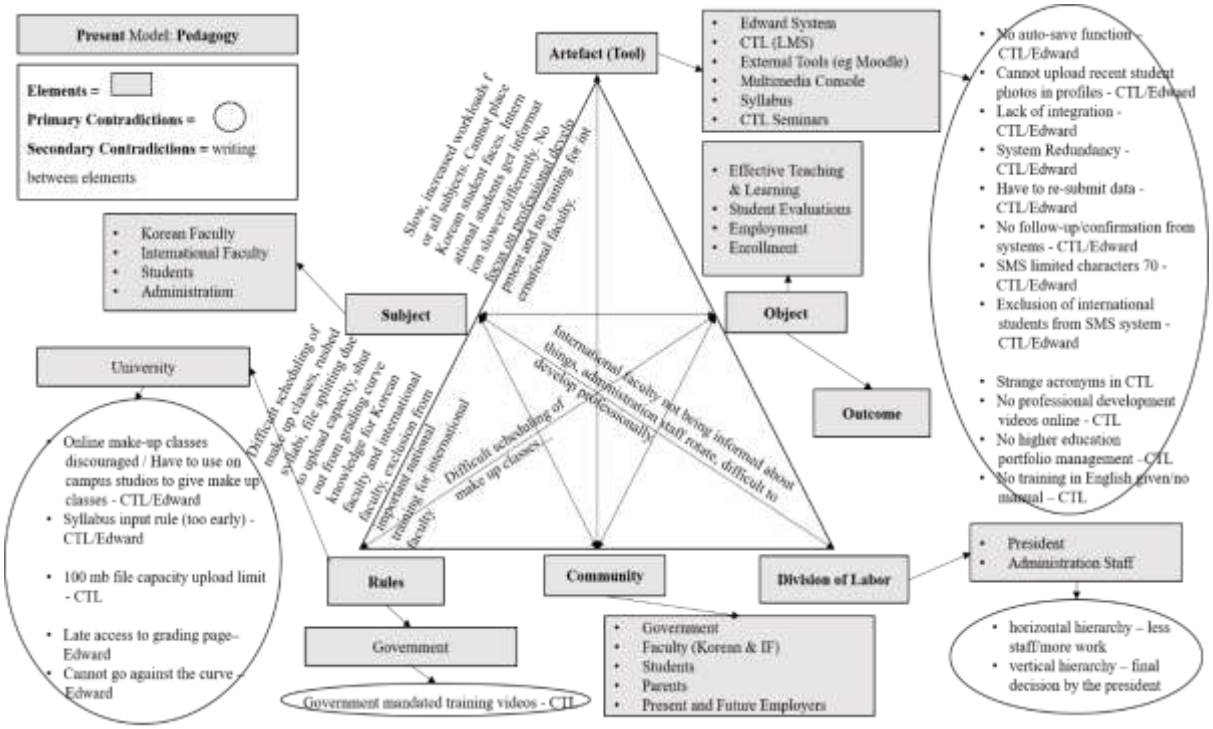


Figure 14 Post-Sessional Present Pedagogy Activity System Model

Sessions 2 to **5** facilitated collective efforts to identify current problems in activity from varying professional and cultural perspectives. With the aid of the intervention's double stimulation principle, participants were able to voice their concerns (mostly criticisms) about institutional educational technology policy in the context of research, pedagogy, and administration activity on campus. Interestingly (and something to be discussed later), the elements of rules, artefacts and division of labour drew most of the participant's attention, a common behaviour found across all the units of analyses. Sessions 2-5 saw participants sharing individual and collective concerns and being contemplative and empathetic of other viewpoints, something which in the context of this study has not happened before. The sessions also helped participants to begin thinking about change, not just as an abstract idea, but as a concrete endeavor.

With this seed planted, participants began looking at feasibility; what could they change, what would the university most likely accept, what would they not. They also discussed narrowing down the focus again, from three to two units of analyses. The following is a conversation between participants in Session 5 about narrowing down the focus:

> Research has the highest possibility of ultimate adoption by the school (Leo, IF)
> That's why I'd like to go there (Paul, IF)
> One point I would like to make, and I really agree with that, where will we have the highest success of change, it's probably research, we have a great chance of seeing things moving forward (Mike,IF)
> As you said, the research page is very underdeveloped (John, IF)
> For us foreign faculty, the only way to go up is Research. It is the same for Korean faculty too (Rose, IF)
> If you only do research, you are excluding a lot of the stakeholders. Pedagogy, it affects everyone. Research, I would say 30% of people of campus are potentially not interested in being included in that (Paul, IF)
> We have a higher chance of ultimate success, the university making changes if we stay out of admin, there are too many fingers, too many emotions. As admin, how difficult is it to change something? (Leo, IF)
> Ugh, almost impossible (Eunji & Hyun, AS)
> Do you think we can have any success changing anything? (Mike, IF)
> First, we have been working here within 5 years, we didn't experience about success, I think usually, all the change is controlled by the main building, but if it is reasonable, it is possible to access directly to the main office, that is more better, fast (Eunji, AS)

Following the realization that future change to administration may be troublesome, the focus on Administration was dropped from the intervention, with the group deciding to push forward with Research and Pedagogy.

At the end of Session 5 (and not an intention of this session), participants wanted to push on with proposing changes to these contradictions. They decided to individually rank the contradictions based on feasibility and desired change. As such, post Session 5, participants produced a list of 25 proposed changes to Research and Pedagogy policy, ranked in order of preference and highlighting affected groups (Table 5.9). These changes would be looked at again in Sessions 6, 7 and 8.

Research Activity – Proposed Changes and Affected Groups	Pedagogy Activity – Proposed Changes and Affected Groups
1. Receive bi-lingual emails from Research Office regarding Research Grants, Grant Management etc. (currently online in Korea) **IF, AS**	1. Increase the CTL upload limit (currently at 100mb) **KF, IF, AS**
2. Provide online access to current rated journals **IF**	2. Improve bi-lingual training/documentation **IF, AS**
3. Receive bi-lingual emails from library regarding Research (currently only in Korean) **IF, AS**	3. Allow earlier access to online grading page (to see curve percentages etc.) **KF, IF**
4. Increase number of online interactive forms (reduce paperwork) **KF, IF, AS**	4. Add an auto save function to systems (so work on filling out forms etc.) is not lost if an error occurs **KF, IF, AS, KS, IS**
5. Increase and simplify access to journal catalogues **KF**, **IF**	5. Create and make available professional development videos through CL for faculty (teaching methodology and research focused) **IF**
6. Improve/update online information on points system **IF**	6. Move syllabus input to a later date (closer to course registration period) **KF, IF**
7. Provide financial support for conferences etc. **KF**, **IF**	7. Receive a confirmation message from systems, when you have completed an online task (such as making a request or report) **KF, IF, AS**
8. Improve number of paid subscription journals to access **KF**, **IF**	8. Allow more recent student photos to be added to photo avatars **KF, IF, AS**
9. Increase/improve/update/maintain Korean and English Research websites (i.e., contact person, research information (Grants etc.) recent/current research interests etc.) **IF, AS**	9. Make it easier to give online make up classes (a lecture), as physical classes are difficult to arrange **KF, IF**
10. Increase human resources in Research Office **IF, AS**	10. Add international student phone numbers to Edward, so they can be messaged (or provide another means to do this) **KF, IF**
11. Promote an online research community (where all faculty can discover/discuss and collaborate) **KF, IF**	11. Increase SMS character limit (on Edward) when sending messages to students/class (current limit is 70 characters) **KF, IF, AS**
12. Establish a Research Collaboration board (where colleagues can discuss/collaborate online etc.) **KF, IF**	12. Record and make available CTL seminars for viewing **IF**
13. Improve timing of research credits (some articles are published 1 year after being accepted) **KF, IF**	

KF = Korean Faculty, IF = International Faculty,

AS = Administration Staff, KS = Korean Students, IS = International Students

Table 5.5 Proposed Changes to Current Research & Pedagogy Activity and Affected Group/s

5.5 Session 6: Historical Analysis of Research and Pedagogy Activity

Session 6 was a longer meeting with only international faculty being present, so discussions mostly focused on their understanding of past activity. Historical findings are presented here in post session format, inclusive of those voices physically present and of those who added to the session later online.

The first intention of this longer session was to look at how participants worked in the past in relation to Research and Pedagogy - to map change, identify elements, and explore key contradictions.

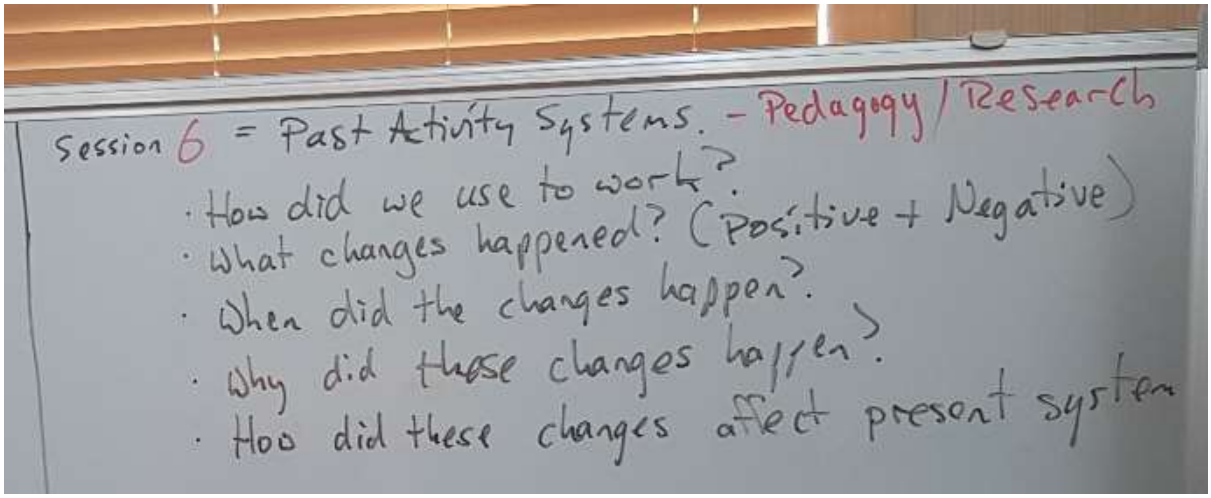


Image 5.8 Session 6: Past Activity Questions

Part of the logic for this was for participants to see what worked and didn't work in the past, so as not to repeat the negatives in future suggested changes to policy and practice. Another part, which was possibly more fruitful for participants, was learning from and sharing information with each other, short-term faculty & administration learning from & sharing with long-term faculty & administration and vice versa.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
6	Historical Analysis of Research and Pedagogy Activity	1	How did we work in the past? – What changes happened? – When did the changes happen? – Why did the changes happen? – How did these changes affect present systems?	Map historical timeline changes, identify elements and explore key contradictions between past and present Research and Pedagogy systems	The listed problems from session 2, Pedagogy/Research activity system sheets, the 25 suggested changes to Pedagogy and Research policy, and past/present visuals of systems

Table 5.6 Session 6: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

As ***mirror data,*** the group took out their completed current Pedagogy/Research activity model systems sheets (Figures 5.1 & 5.3), and their lists of positive/problems found post session two (Tables 5.2 & 5.3), and visuals of present and past online systems (prepared by the researcher-interventionist) to act as reference when discussing past practice.

- University Homepage (pre & post 2017)
- Edward Portal & Edward System (pre & post 2017)
- Groupware (pre & post 2017)
- CTL (pre & post 2017)
- Research Homepage (no change)
- Library Homepage (pre & post 2017)

Table 5.7 Sample Mirror Data: A list of visuals of present and past online systems

As a ***first stimulus***, participants were asked to use their reference work (***mirror data***) to

explore how they worked in the past/what changes happened/when did the changes happen/ why did the changes happen/how did these changes affect present systems. As a ***second stimulus***, participants were given large sheets of paper with which to consider historical timeline changes, elements, and key contradictions between past/present Research and Pedagogy systems.

When mapping timelines, identifying elements, and exploring key contradictions in Research activity, participants came up with some interesting present/past, and positive/negative/no change comparisons (see Figure 5.4).

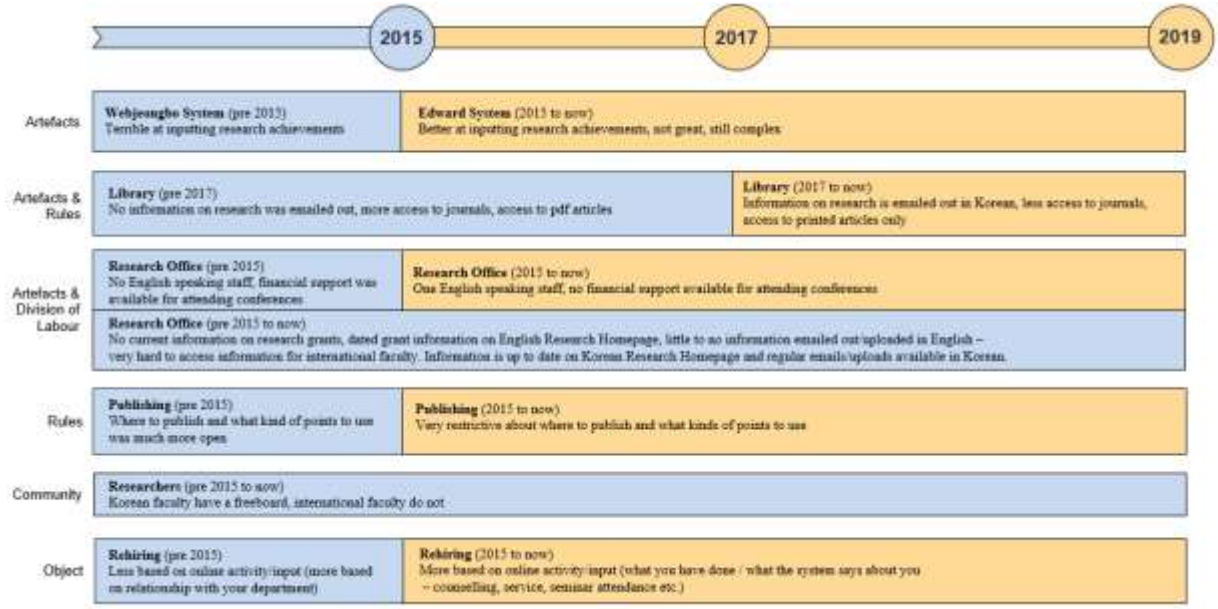


Figure 15 Research Activity Past/Present: Elements, Timelines & Key Contradiction

Some past activity was preferred by both faculty - better journal access and online pdf files and less restriction on publishing, while other present activity- improved human resources in the Research office (one English speaking staff member) was a positive addition for administration and international faculty. Some important findings came from no change to activity from the past to present. With the Artefact – Research office, the no changes

discussed (no current information on research grants, out of date English homepage, little to no information sent out in English…) were causing severe frustrations for international faculty, and within the Community element, the continued absence of a freeboard was seen to be a deliberate stifling of international faculty voice.

When mapping timelines, identifying elements, and exploring key contradictions in Pedagogy activity, participants also came up with some interesting present/past, and positive/negative/no change comparisons (see Figure 5.5).

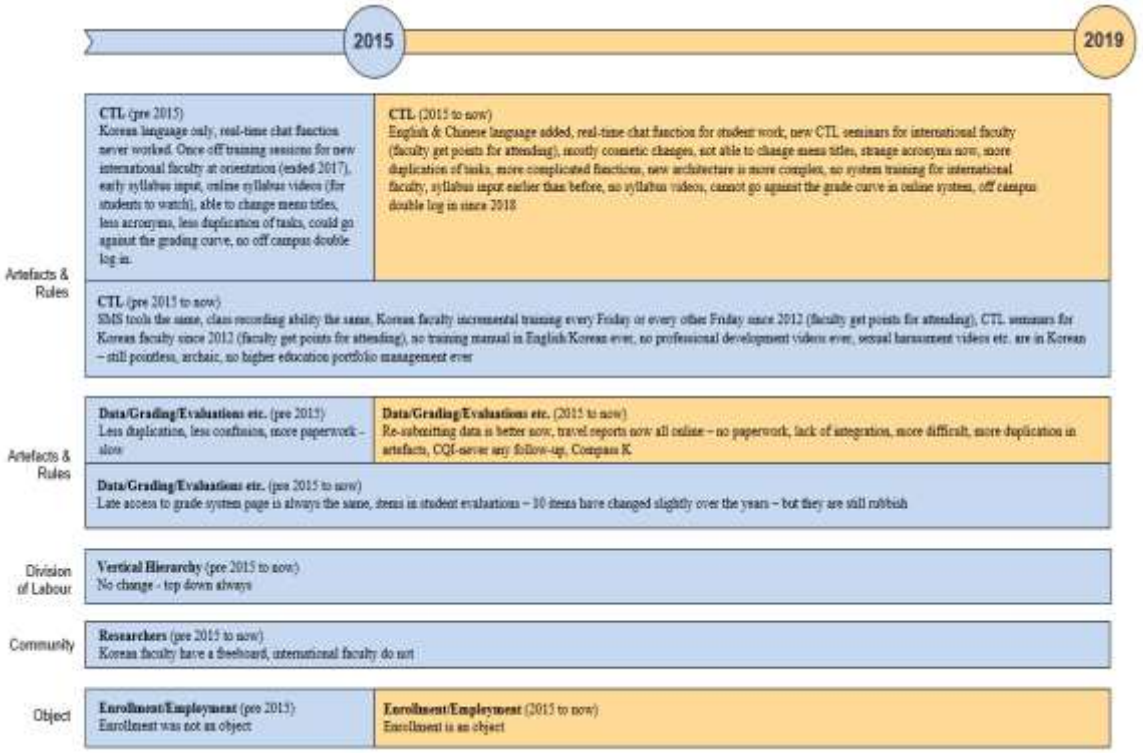


Figure 16 Pedagogy Activity Past/Present: Elements, Timelines & Key Contradictions

In the CTL artefact, the addition of languages (a present positive) was welcomed by all faculty, but changes to the CTL system post 2015 and still in effect at the time of this study were seen by all faculty as negative. International faculty were almost nostalgic about the old ways, when once-off training in English (ending in 2017) was given. The 'no change' in

pedagogy activity from past to present is a sore point for many international faculty. International faculty are offered two CTL seminars in English per year and (adhering to government mandates) must watch sexual harassment videos and data protection videos etc., via the CTL system in Korean. In particular, the absence of incremental training for international faculty in English is in stark contrast to Korean faculty who receive weekly seminars in Korean, seminars where they receive promotional points for attending. Both Korean faculty and international faculty miss the time when the architecture of the CTL was simpler, and when functions and tasks were straight-forward.

The intention of this session was for participants to identify elements, map timeline changes and explore key contradictions in present/past Research and Pedagogy activity. Resulting from this, at times very heated discussion, participants were able to see the positives and negatives of both past and present activity, and to see when no change occurred. One of the key reasons in conducting historical analysis is to get a sense that participants learned something about the state of the present activity from having conducted this historical analysis. Across this session, participants who had not been on campus for a long time were able to see what had gone on before, and how/why their present activity is the way it is. Those participants who have been on campus for a number of years were able to hear of current issues and help others retrace the origins or changes in activity. As mentioned earlier in this thesis (Section 3.2.2.3), any attempt to understand and evolve an activity system, should involve an in-depth exploration of past forms, so that those questioning current systems and proposing future renditions have a thorough understanding of how their current system came about, why it came about and what can be done in the future to improve upon it.

5.6 Sessions 7: Modelling New Future Pedagogy Activity

The intention of **Session 7** was for participants to model new future Pedagogy activity. Using the 12 proposed changes (Section 5.4, Table 5.9), participants would work towards framing a future model by looking at group rational (bottom-up thinking), possible university resistance (top-down thinking) and likelihood of acceptance.

The aim was to discuss the effects such future suggested changes would have on people, policy, place, and practice, as well as other systems (quaternary contradictions).

Session 7 saw participants using their 12 proposed changes to frame/concretize new institutional educational technology policy and practice concerning pedagogy object-oriented activity.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
7	Modelling New Future Pedagogy Activity	1	What effect would the future suggested changes have on people, policy, place, and practice, as well as other activity systems?	Group rationale, Perceived University Resistance, Likelihood of Acceptance	Previous Activity models, Past/Present timelines, Ranked proposed changes
		2	Is there anything you want to further discuss/ add/challenge to the lists?	Board markers and all sheets of paper on the whiteboard to discuss/add/challenge the lists	Previous Activity models, Past/Present timelines, Ranked proposed changes, the work on rational, resistance and acceptance

Table 5.8 Session 7: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

Session 7 (***Task 1***) began with participants looking at ***mirror data***, previous activity system models (Figure 5.1 & 5.3), past/present timelines (Tables 5.5 & 5.6) and the ranked proposed changes (Table 5.7). Following this, as ***first stimulus***, participants were asked: What effect would the future suggested changes have on people, policy, place, and practice, as well as

other activity systems? To help participants, they were asked (as a ***second stimulus***) to consider group rationale, perceived university resistance and likelihood of acceptance. These criteria it should be noted, did not come from the researcher interventionist, they resulted from the participants themselves. Participants walked through each of the 12 suggested changes to Pedagogy activity in order, addressing their rationale for each change, possible university resistance and the likelihood of acceptance.

In ***Task 2***, participants were asked: Is there anything you want to further discuss/ add/challenge to the lists? To help participants respond to this ***first stimulus***, the ***mirror data*** (Previous Activity models, Past/Present timelines, ranked proposed changes, their work on rationale, resistance, and acceptance were put on a whiteboard, with participants using board markers and the sheets of paper on the whiteboard as a ***second stimulus*** to discuss/add/challenge their findings.

From the data, seven changes were seen as having a high likelihood of being accepted, four with a low likelihood and one with a 50/50 chance (Table 5.13). Participants saw possible resistance in the form of the university arguing cost, lack of people, power (you don't need to know), need v demand, and expectation. These imagined arguments were an important part of the intervention. By exploring a top-down perspective, participants (post session ten) were able to frame a better proposal to the university, taking into consideration these perceived arguments.

	Suggested Change	Group Rationale	Perceived University Resistance	Likelihood of acceptance
1	Increase file upload limit – CTL	Keep all files in-house, easier for students to access materials, can upload longer videos etc.	Too expensive	*Middle* – question of money – an outside company runs CTL

2	Bi-Lingual Training/Documentation – CTL, EDWARD etc.	Needed for all aspects of job performance Improves resources for all	Parity of expectation, expensive, waste of time, lack of human resources, difficult to maintain/sustain	*Low* – university expectation of international faculty (cultural and political) and Korean faculty is different, and lack of human resources (people with the right skills) - much less viable - money
3	Earlier Access to Online Grading System	Helps with grading on a curve – shows early how many students I have, how many A/B/C/D grades can I give	Sharing of too much power = building up student expectations	High – it is just changing the code (maybe no one has ever thought about doing this) It wouldn't cause negative ripples/downside
4	Auto-save function	Helps us save stuff when Edward goes down. Bottom-Up perspective = saves time	Too much space needed, too heavy on the system	High – just coding - an outside company runs this
5	Professional Development videos	Connected to S1 We have the recording studios It is about keeping students happy	Who makes them? Will people watch them?	Low- need vs demand
6	Move syllabus input to later date	Why do we input new syllabus before students appeal their grades – how many students sign up during 1st registration period? Why not just input just before 1st registration date…not 5 weeks before that? We can change it later – but only cosmetic changes. Busiest time of semester, too rushed, no time for reflection, no feedback from students prior to new syllabus input Inadequate syllabus Wait till after CQIs	Needs to be done before faculty leave for vacation Not enough faculty input syllabus Syllabus change is allowed at a later date	High – no ripples foreseen
7	Receive conformation message from systems	Just a message – done, or a sentence/email		High – it is easy

		Mostly for admin not pedagogy No confirmation on SMS message sent		
8	Recent photos for avatars	Photos are too old, high school photos Impossible to recognize students On CTL website – no photos on their avatars, no student access to do this	They may not want students messing with their profiles Who is responsible, which department is responsible?	High – we have an office of student advisement – could be done through this office easily. No reason, this couldn't be done. Upload to Edward through student advisement center
9	Easier to do online make-up classes	Useless for a communication class but for content useful Getting all students to attend physical make-up class is hard A lot of procedure to do this – must go through university studios, reserve 2 ½ weeks in advance Should have support from Korean faculty as well The systems is available so why not use it	You are a face-to-face teacher Frowned on by some departments – they don't allow it Some departments think what's the point Need to use studios, system on campus Need to record student access Online option not an option for offline class	Low – no option to record from office etc…, must use studio system
10	Add international student phone numbers to system	Full time language students can Exchange students cannot – admin have to email them, but they don't read email	Here for a short time Email is used Student responsibility	Low – no way around it, no Korean phone number, just wifi users, cannot hook up to cell companies
11	Increase SMS character limit	Sending long messages difficult in English Receiving message duplicates of long messages split up is annoying	Fine for Korean language – 2 bit characters Costs money to change	High – old technology, just update
12	Record CTL seminars	We can have access to them	Designed to be live Look through the pdf files	High, no reason not to

Table 5.9 Pedagogy Activity: Change, Rationale, Resistance and Likelihood of Acceptance

5.7 Sessions 8: Modelling New Future Research Activity

In Session 8, looking at Research activity, participants diverged from my initial intentions somewhat, as they wanted to start realizing a new Research artefact, a physical tool. Session 8 focused on participants using their 13 proposed Research changes as guidelines to help visualize a new Research artefact.

Participants decided that, in addition to their 13 proposed changes, a new Research website using the university's content management system (CMS) would help improve shared work practice and better push their agenda. With rationale, resistance, acceptance, and the effects this new tool would have on people, policy, place, practice and other systems in mind, participants began the theoretical and practical development of this new website.

In **Task 1**, participants were shown the ***mirror data***, the university's CMS system and examples of research websites from seven Korean universities and one UK university, along with their ranked list of 13 proposed changes to Research activity, and previous models. With their ***first stimulus***, what do we need/want the new tool to do, participants as a ***second stimulus*** were given a whiteboard to add their ideas to (Image 5.8), bearing in mind the mirror data.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
8	Modelling New Future Research Activity	1	What do we need/want the new tool (Research Website) to do?	A whiteboard and board markers	Previous Activity models, the university's CMS system, examples of research websites from seven Korean universities and one UK university, their ranked list of 13 proposed changes to Research activity.

Table 5.10 Session 8: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

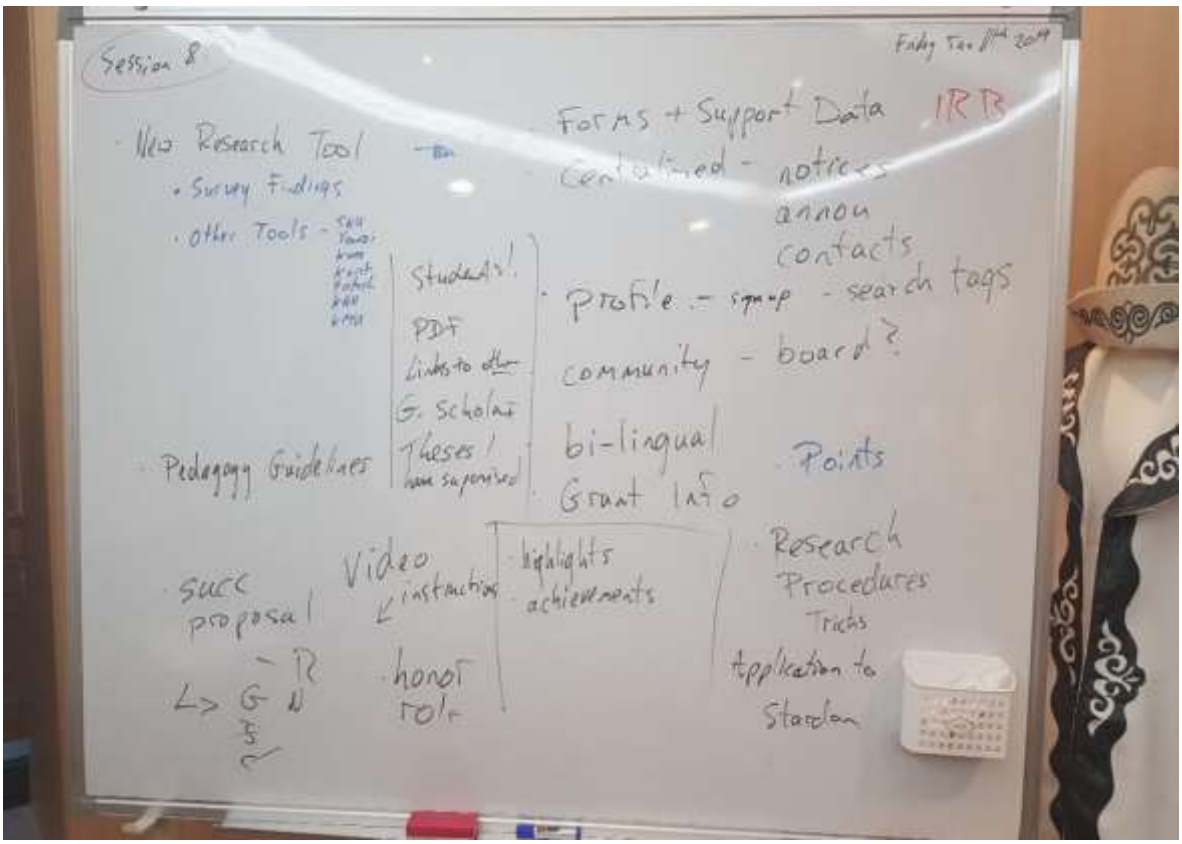


Image 5.9 Needs/Wants for new Research website in English

Session 8 was productive, interesting, and heated, especially when looking at international faculty and the culture of research in Korea, with some mentioning that hierarchy, power, access, and expectation were de-motivating their research activity.

> But I write the papers and I am always number 2 on the paper. When I work with Koreans, they own the project, you just collaborate with them, that's their mindset (Mike, IF)
> Yes, that's their mindset (Leo, IF)
> We are supposed to be helpful support, something a little bit higher than a graduate student. (Mike, IF)
> I just want to add something, the Korean standards of collaboration are different from international and even ethical ways of research and this will make a lot of crashes I am sure, so for example, if you write, you definitely should be first author, but in Korea, even if you write, if there is a senior, he should be the first author. (Leo, IF)

In addition to this new research website, a larger tool was also discussed - an international faculty portal. This addition arose out of a further want/need by international faculty and administration staff to improve institutional educational technology policy concerning research activity. This new tool would help both groups traverse problems in all four units of analyses: research, pedagogy, administration, and information. This portal, housing the research website, would be realized/examined/tested in session nine. At the close of this session, participants identified four concrete tools to be brought to the university.

1	A written set of Pedagogy proposed changes (12 in total – developed by Korean faculty, international faculty, and administration Staff)
2	A written set of Research proposed changes (13 in total - developed by Korean faculty, international faculty, and administration Staff)
3	A new Research Website in English (developed by international faculty, administration staff and the researcher-interventionist using the university's new CMS tool)
4	A new International Faculty Portal (housing the Research website - developed by international faculty, administration staff and the researcher-interventionist using the university's new CMS tool)

Table 5.11 Four new tools to be brought to the university

5.8 Session 9: Developing & Examining New Models

Session 9 covered online work carried out by the researcher-interventionist and the participants over the winter vacation, between January and March 2019. The intention was the development and testing of a new research website and a new international faculty portal using the university's CMS. Through SMS, Facebook and Google Docs, international faculty

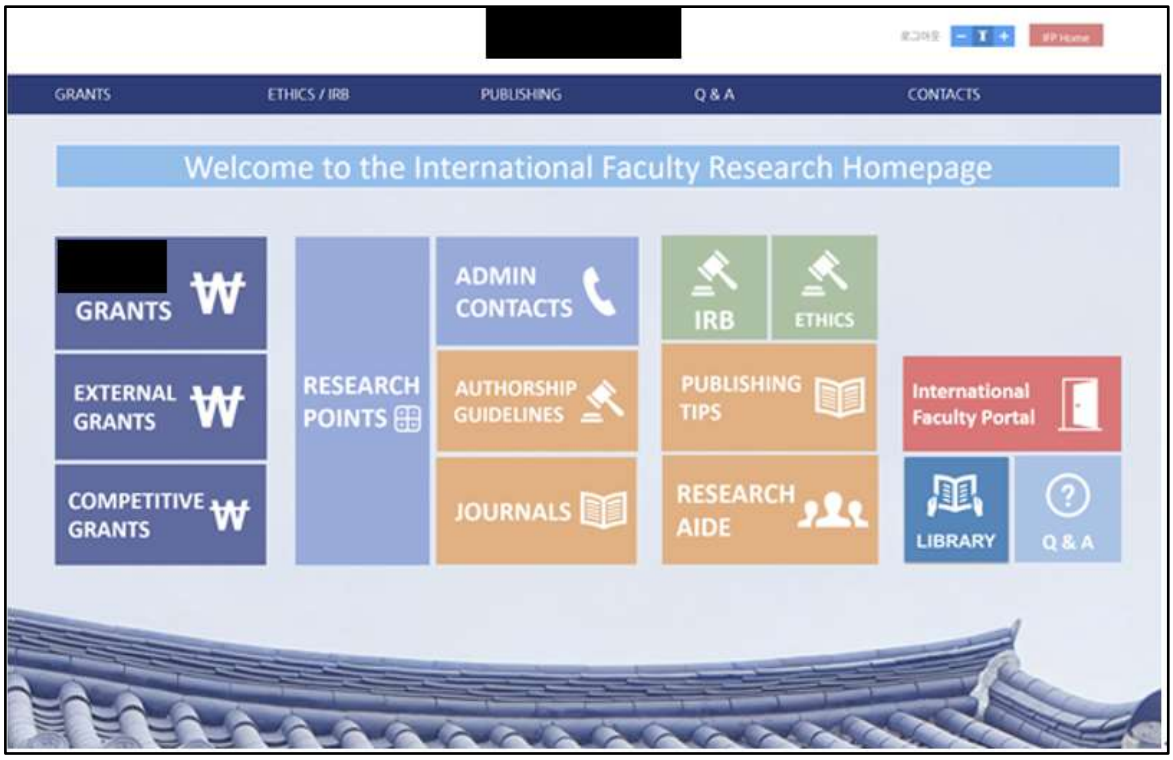
and administration staff added to the development of the tools, through discussions/work on function, content, design, and delivery. Numerous renderings of the tools were examined & tested, taking into account the views of all participants.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
9	Developing & Examining New Models	1	What ideas concerning function, content, design, and delivery are important for the new "Research" homepage and International Faculty Portal?	Numerous renderings of the tools	Session 8 whiteboard work, list of 25 proposed changes, numerous renderings of the tools

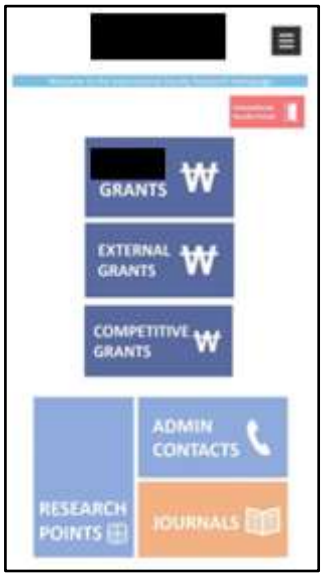
Table 5.12 Session 9: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

The whiteboard work from Session 8 and the list of 25 changes formed the early ***mirror data*** of this session. Regarding ***first*** and ***second stimuli***, over a two-month period, many ideas were shared, revisited and questions asked - layouts, colors, block sizes, functionality, content, and platforms etc. Session nine resulted in early beta versions (desktop/mobile/tablet) of the research website (Image 5.9) and international faculty portal (Image 5.10).

Desktop



Mobile

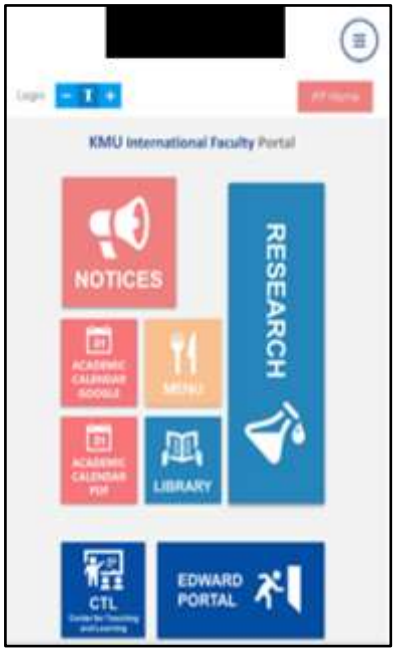


Tablet

Image 5.10 Research Homepage: Desktop, Mobile & Tablet (the university's name has been intentionally hidden for reasons of conforming to research ethics protocols)

Desktop

Mobile



Tablet

Image 5.11 International Faculty Portal: Desktop, Mobile & Tablet (the university's name has been intentionally hidden for reasons of conforming to research ethics protocols)

Post **Session 9**, the online tools were presented in a workshop and piloted/tested by all international faculty across campus for 3 weeks. This period was followed by a survey (designed by intervention participants in Session 10) to assess responses to the tool and gauge new perceptions. Survey responses to the pilot run are discussed in Section 5.10 below. Select comparative findings from this survey and the pre-intervention surveys (see Figure 5.6 Comparative finding pre/post intervention - an international faculty perspective) were used as mirror data in Session 11 to inform the intervention participants of positives and problems found with the new activity.

5.9 Session 10: Implementing New Activity

The intention of **Session 10** was to first, to decide how best to bring the four concrete tools to the attention of upper university management, with the direct intention of getting the tools implemented across campus. Second, participants were asked to formulate ideas/questions/themes for the survey concerning the 3-week pilot run of the Research Website and the International Faculty Portal by international faculty.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
10	Implementing New Activity	1	How can we bring the new tools to the university? Who can we bring them to? In what format should we bring these new tools?	The Ideas/Suggestion Space, Office & Contact Information across campus	The written set of 12 Pedagogy proposed changes The written set of 13 Research proposed changes The new Research Website in English The new International Faculty Portal
		2	What ideas/questions/themes are needed on the survey for the pilot run?	Pre-Intervention Survey & the survey tool (Qualtrics)	The new Research Website in English The new International Faculty Portal

Table 5.13 Session 10: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

In ***Task 1***, participants were given the ***first stimulus***, a series of questions: How can we bring the new tools to the university? /Who can we bring them to? /In what format should we bring these new tools? The task was designed to encourage participants to discuss how best to move forward with the four new tools (the ***mirror data***), how to approach the university, who to approach etc. Considering the nature of the 4 tools, and using the ***second stimulus***, the available channels of communication on campus (the online Ideas/Suggestions tool, and Office contact information), it was suggested that all four tools be brought to the Dean of Academic Affairs, the Dean of the Research Office, the Dean of International Affairs, and the Head Librarian, and posted on the Edward system in the official Ideas/Suggestion space.

Participants felt it was best to submit a written report (in Korean and English) concerning all the four tools, with supportive material (visuals, survey feedback) with information on participant rationale, expected administrative & faculty responsibilities/workloads, work to ease new policies/procedures (workshops, language anxiety, work reduction), future needs, and future positive outcomes/benefits for Korean faculty, international faculty, administration staff and the university.

Participants were aware that this process may or may not be successful and that it would also take some time to receive feedback. It is worth noting here, that the submission of these files did not take place till after the Collective Reflection Session 11, as people needed time to work on the reports, and participants needed to receive feedback from the survey.

In ***Task 2***, which was not a long process, participants were asked as ***first stimulus***; What ideas/questions/themes are needed on the survey for the pilot run? With the ***mirror data*** to hand (the open website and portal), participants proposed ideas/questions/themes relating to function, content, design, and delivery. As ***second stimulus***, the pre-intervention survey for

international faculty (Appendix 10.2) was also looked at. This allowed participants and the researcher interventionist to add comparative questions to the survey; pre and post the new tool (Appendix 10.3).

5.10 Sessions 11: Collective Reflection on the Intervention

In Session 11, the intention was for collective (all participants) reflection on the intervention, focusing on the process of the intervention, the problems and positives experienced, and the news ways of working developed.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
11	Collective Reflection on the Intervention	1	Can we/you identify factors which supported or restricted expansive learning? How have you changed your thinking about the new work activity? Thinking about: Cycle of expansive learning Models developed through transformative agency	8 Individual Reflection Questions and Feedback from 4 Korean faculty (individual interviews)	A table of all completed sessions and the expansive learning cycle

Table 5.14 Session 11: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

In *Task 1, mirror data* were presented in the form of an intervention table outlining to date all the completed sessions and the expansive learning cycle (see Appendix 10.12). This was followed by the ***first stimulus***, two questions to encourage reflection:

1. Can we/you identify factors which supported or restricted expansive learning?
2. How have you changed your thinking about the new work activity?
3. Thinking about:
    a. Cycle of expansive learning

b. Models developed through transformative agency

The participants of Session 11 (international faculty) identified one major factor restricting expansive learning - *inclusive participation* (as in Korean faculty made it to only 3 physical sessions). But this was also questioned by Leo (international faculty), mentioning that the physical Change Laboratory sessions (the physical meetings) were only a part of the data collection (online work and individual reflection interviews) making up the rest. Having told participants that individual reflection interviews had already begun, with 4 of the Korean faculty having been interviewed to date (two Deans: Jun, Jiyeon, and two Directors: Dong, Hoon), the participants present wanted to know what the Korean faculty had to say in their individual reflections, so they could have a more inclusive reflection session.

As ***2nd stimulus***, we looked at some of the 8 questions (Appendix 11) and responses from the individual reflection interviews with Korean faculty (Table 5.20 later, shows the common or unique responses Korean faculty, international faculty and administration staff gave to the 8 open-ended questions). In addition to the 8 questions, I asked the Korean faculty why they had been absent from many of the physical sessions and how engaged were they with the online work (emails, google docs etc.) Regarding these questions, Korean faculty mentioned busy scheduling as a factor, the fear of catchup when missing one or more sessions, and one faculty noted that the project didn't relate to their work (although this person is responsible for the Center for Teaching and Learning). Being present in the physical sessions was a question of prioritization. Some Korean faculty kept up with the emails/messenger, some added to the work online and some didn't. In the interviews, I showed each Korean faculty member the proposed changes and the new portal and research homepage. In each interview,

we went through the Pedagogy and Research proposed changes one by one, and Korean faculty had some new positive and negative input:

Positive: Pedagogy: Increasing CTL upload limit, Increase SMS limit
Research: Increase journal access

Negative: Pedagogy: Record and make CTL seminars available for viewing (could affect future employment etc.)

In general, the Korean faculty were very supportive of the proposed changes as they affected all faculty. Regarding the new homepage and portal, the Korean faculty were again very positive about these changes, noting that the new tools would be useful for not only international faculty, but also, students and Korean faculty (in terms of accessing information about foreign faculty). The Korean faculty were very supportive of the new online tools, adding that they would help bridge communities across campus (create more awareness), and give international faculty better access to resources at the university. In particular the Korean faculty were very supportive of the Research Homepage - Points System and the International Faculty Portal – Notices / Faculty Profiles / Phone Directory / Menu / Handbook / How to Videos.

The proposed changes, homepage and portal were seen as something beneficial for all and something several Korean faculty stated should have been addressed in the past. They also noted that the functionality of the homepage and portal across desktop, mobile and tablet platforms was something they (and international faculty) didn't have to date.

After discussing some of the findings from the individual reflection interviews, Leo (international faculty) then discussed the project in terms of successful outcomes, asking if the project would be seen as successful if our tool or tools were not the outcome. He

elaborated by saying that maybe the university might make their own tool, based on the work arising from these sessions. All participants, including myself, said yes. Any change to activity based on this research was seen as successful, regardless of who made/makes the tool. Participants saw that a successful outcome would also be the realization that maintaining and sustaining change is a collective process between faculty and administration.

From there, participants moved on to look at the international faculty survey findings on the homepage and portal, a survey taken between Session 9 and 10 (Figure 5.6). While not a designed Task of the session, participants were keen to see some of the feedback from the survey.

As a sample of comparative findings, regarding voice, equality of access to information/resources and community building (see Figure 5.6), participants saw that the largest difference recorded was how international faculty outside the intervention viewed equality of access to information/resources (Q2). International faculty were significantly more positive about equality of access to information/resources post the intervention. Regarding a sense of voice (Q1) and community (Q3), international faculty were also more positive post the intervention:

Q1. The **voices** of international faculty pre/post the intervention are being recognized.

	Pre-Intervention (International Faculty – 71 respondents)	Post-Intervention (International Faculty – 82 respondents)
Agree	20%	78%
Disagree	50%	2%
Neutral	30%	20%

Q2. There is **equal access/better access** to information/resources for international faculty pre/post the intervention

	Pre-Intervention (International Faculty – 71 respondents)	Post-Intervention (International Faculty – 82 respondents)
Agree	19%	100%
Disagree	74%	
Neutral	7%	

Q3. There is a strong sense of community pre/post the intervention.

	Pre-Intervention (International Faculty – 71 respondents)	Post-Intervention (International Faculty – 82 respondents)
Agree	19%	98%
Disagree	44%	2%
Neutral	37%	

Figure 17 Comparative finding pre/post intervention – an international faculty perspective

After discussing various aspects of the intervention and reflecting on some of the positive/negative/neutral outcomes, participants were given 8 reflective questions to look over (Appendix 10.13). These questions would be asked in their individual interviews in session twelve.

5.11 Sessions 12: Individual Reflection on the Intervention

In **Session 12**, all 17 participants were interviewed and asked these 8 reflective questions.

Session	Expansive Learning Stage	Task	First-stimulus	Second-stimulus	Mirror-data
12	Individual Reflection on the Intervention	1	8 Individual Reflection Questions	A table of all completed sessions and the expansive learning cycle	The written set of 12 Pedagogy proposed changes The written set of 13 Research proposed changes The new Research Website in English The new International Faculty Portal

Table 5.15 Session 12: Expansive Learning Stages, Tasks, Stimuli and Mirror-data

At the beginning, after some small talk, each participant was shown the ***mirror data***, just to remind them about the outcomes of their work. Second, as ***first stimulus***, participants were asked the 8 reflective style questions in order (Appendix 10.13). Participants were already familiar with these questions from the previous session. To help people reflect on the

intervention, as ***second stimulus***, the expansive learning cycle and table (Appendix 10.12) were looked at, just to remind people about the various activities they engaged in.

While it is not possible to present all responses to these questions individually in this section, I have cumulated unique/common responses from Korean faculty, international faculty, and administration staff in Table 5.20 below, to give a sense of what was discussed.

#	Questions	Korean Faculty	International Faculty	Administration Staff
1	What motivated you to be part of the project?	Altruism / working with new groups	Altruism, need for change, social (meeting people)	Find solutions problems, find out what others' problems are
2	What do you think of the outcomes?	More shared problems found / positive inclusive new activity	Positive/needed / successful if implemented (maintained and sustained)	Needed, easier way to work, appeasing
3	What factors supported the outcomes?	Physical meetings, commitment to change	People sharing ideas / the commitment to change / the process	Speaking and listening to others, commitment to change
4	What factors restricted outcomes?	Attendance / cultural difference / catch-up	People not attending	Scheduling, hierarchy, language, culture
5	Did your ideas about the project change? If yes, what changes occurred?	Novel process / Positive / Common contradictions / Portal & Homepage - useful for students, staff and all faculty.	Novel process/ new work practice / learning from others / learning more about systems	Novel process/ new work practice / learning from others
6	To what extent does the process change your perception of community, equality/equity and voice?	Stronger inter-cultural community / increased equality/equity of access / all voices heard	Better sense of community (with and within faculty/admin & university), increased equality/equity of access to resources (not perfect - never will be), all voices heard and listened to (better if outcomes are taken on board)	Stronger inter-cultural community / increased equality/equity of access / voices heard
7	What did you learn/take away from the process?	Shared problems / new perspectives/empathy of others activity / commitment to change / new way to change / new relationships / people care about work activity	Shared problems, new perspectives/empathy of others activity & present/past systems, inclusive commitment to change, a new way of working together	Shared problems, new perspectives/empathy of others activity & present/past systems, inclusive commitment to change, a new way of working together
8	What further requirements are needed for the outcomes?	Some action/commitment by the university	Some action/commitment by the university	Some action/commitment by the university

Table 5.16 Cumulative Individual Reflection Responses (common/unique)

5.12 Post Session 12: Continued Implementation & Consolidation of New Models

Following **Session 12**, the new tools were brought to the university using the methods of approach the Change Laboratory team decided upon in Session 10:

- The ideas/suggestions system
- Meeting with Deans/Offices of Academic Affairs, Research and Library

The new tools were:

- A written set of 12 Pedagogy proposed changes
- A written set of 13 Research proposed changes
- A new Research Website in English
- A new International Faculty Portal

The Research Website and International Faculty Portal did go through some changes post Session 10 & 11. The 3-week pilot run and the survey, while positive, did show the need for improvements in function, content, design, and delivery, before it could be brought to the university. These fixes were quite small and dealt with quickly.

A further office was also talked to, the office of International Affairs (as this office is directly responsible for international faculty welfare). However, it was impossible to meet the Dean of this office as scheduling did not permit it. Having said this, positive conversations with Academic Affairs, Research and the Library were had, and the outlook was good.

But, after the conversations and after submission of the written report through the ideas/suggestions systems, things went quiet for a good month. To see what the problem may be, I had several discussions with the administrative staff in the Change Laboratory team, with their advice being to bring the tools higher, to the office of the President or Vice-President, as they were sure that the tools were stuck in middle management and would possibly go no higher. So, an email was sent directly to the President of the university on a Friday afternoon, with a response coming two hours later, with a request to meet the Vice-

President (who is also Dean of the Research Office). My initial email had been forwarded to the Vice-President, who sent me an SMS Monday morning to meet. That Monday afternoon, I met with the Vice-President and his support team and pitched the tools to them - the 25 proposed changes, the Research homepage, and the International Faculty Portal. He was rather surprised at the 25 proposed changes and commented that they were deeply reflective of the issues being faced across campus by both faculty and administration. On his advice, I was to re-upload the 25 proposed changes through the ideas/suggestion system, but this time addressing the proposed changes to five specific offices (International Affairs, Academic Affairs, Research Office, Center for Teaching and Learning, and the Library).

Within 3 weeks, we had feedback from each office regarding the proposed changes - some positive/negative/neutral feedback – as expected. Out of the 25 suggested changes, 8 are being considered, 8 will not change and 9 have changed (see Appendix 9 (pedagogy outcomes) and Appendix 10 (research outcomes) for changes, non-changes, and explanations).

Regarding the new Research Homepage and International Faculty Portal, the university offered a $10,000 internal grant to further the work on these tools for 1 year, to maintain and sustain the tools, to be used by faculty and administration staff. A new research team was formed, a lead researcher (myself), three co-researchers (international faculty from the Change Laboratory team) and 2 research assistants (two graduate students responsible for research management, website design and translation work). Under the grant regulations, no administration staff could officially be on the team, but unofficially those administration staff from the Change Laboratory were still advised upon. The new research team had their first meeting in June 2019 and continued work until May 29th, 2020. As of writing, various

proposed changes have been accepted, and the new International Faculty Portal housing the new Research Homepage is still operational, being maintained and sustained by faculty and administration staff, with over 63,391 visits to date.

5.13 Summary

This chapter established the intervention and research process. The chapter presented and discussed 12 change laboratory intervention sessions aligning to the seven stages of the expansive learning cycle: Questioning the Research, Questioning Present Activity, Analysing Past Activity, Modelling New Future Activity, Developing & Examining New Activity, Implementing & Consolidating New Activity and Reflecting on the Intervention.
The purpose was to, at each stage of the expansive learning cycle, demonstrate how, with the aid of the first intervention principle, double stimulation, participants identified and attempted to transform systemic policy and practice problems in their shared work practice.

The intervention has seen participants collectively create new knowledge; a range of new concepts and models such as the 25 proposed changes, the Research homepage, and the International Faculty Portal with certain core characteristics, that they felt would address the contradictions they had identified in their practice. They amassed both greater knowledge about their own practices and proposed new models and tools that might plausibly overcome current contradictions.

By employing task-designs based on double stimulation, participants collectively identified and attempted to transform systemic policy and practice problems in their shared work practice.

In Chapter 6, I will present the quotes, key themes, and codes (contradictions) from the actual-empirical, historical, and modelling actions of the intervention, as these are where contradictions inhibiting object-oriented activity were brought to light, and changes advancing object-oriented activity were suggested. These chosen intervention actions are central to the research questions of this thesis, because they illuminate the individual and collective transformative agency of participants as they explore and re-design their own activity.

6 Data Presentation

6.1 Introduction

In chapter 5, I provided a broad overview of 12 change laboratory intervention sessions aligning to the seven stages of the expansive learning cycle. In addition, pre- and post-intervention surveys serving as mirror-data were looked at.

In this chapter, the actual-empirical, historical, and modelling actions of the intervention have been specifically chosen for the data presentation, as these are where contradictions inhibiting object-oriented activity were brought to light, and changes advancing object-oriented activity were suggested. These chosen intervention actions are central to the research questions of this thesis, because they illuminate the individual and collective transformative agency of participants as they explore and re-design their own activity.

1. How can a formative Change Laboratory intervention enable stakeholders to analyse, critique and transform their own activity systems of educational technology policy and practice?

2. How can a formative Change Laboratory intervention enable stakeholders and institutions to reimagine policy, decision making and governance in HEIs?

First, in Sections 6.2 and 6.3, I will present data across the actual-empirical analysis and historical analysis actions of the research intervention (sessions 2-6), identifying main themes and codes (contradictions) in specific areas of investigation (areas of interest discussed/highlighted by participants) concerning research and pedagogy activity. The purpose is to highlight what areas of investigation were important for participants, what contradictions were found, what themes these contradictions represent, how they came to be,

who they affect, and to what extent participants saw these problems inhibiting the realization of objectives.

Second, in Section 6.4 and 6.5 I will present data from the future modelling actions of the research intervention (sessions 7 & 8), identifying main themes and codes (suggested changes) in specific areas of investigation discussed by participants concerning research and pedagogy activity. The purpose is to highlight which institutional educational technology changes to research and pedagogy activity were suggested based on the contradictions found in Sessions 2-6, what resistance was foreseen, and how participants saw these changes advancing the realization of objectives.

A similar process will be followed for both the empirical, historical, and modeling actions of the research intervention. Each section will begin with semantic level data charts followed by tables which exploit the latent nature of the data, looking at the areas of investigation, main themes, contradictions, and concepts which are aligned to the theoretical framework and chosen methodology of this thesis. As I argued in section 4.8, what I aim to convey by doing so is to identify, analyse and report patterns within the data, and allow for interpretation of various aspects of the research topic, allowing myself as the analyst to be both a cultural member and cultural commentator.

Now, it must be stressed here, that an activity theory reader would expect an actual-empirical and historical analysis to be about solely documenting the core *contradictions* that participants identified in an activity system. It would be expected that the structure of this section would be subsections each describing a different contradiction. Contradictions are core to my analysis; however, they are presented under subsections referring to areas of

investigation. These areas of investigation are the area in which participants discussed the contradictions, for example, Grants, Journal Access, and Human Resources etc. The data presentation puts contradictions in context. It shows how integral contradictions are to the main themes and the overall areas of investigation participants discussed.
It is also important to note that in the categorization that I present, the main themes (complexity, exclusion, etc.) are my own interpretation, not the direct work of the participants.

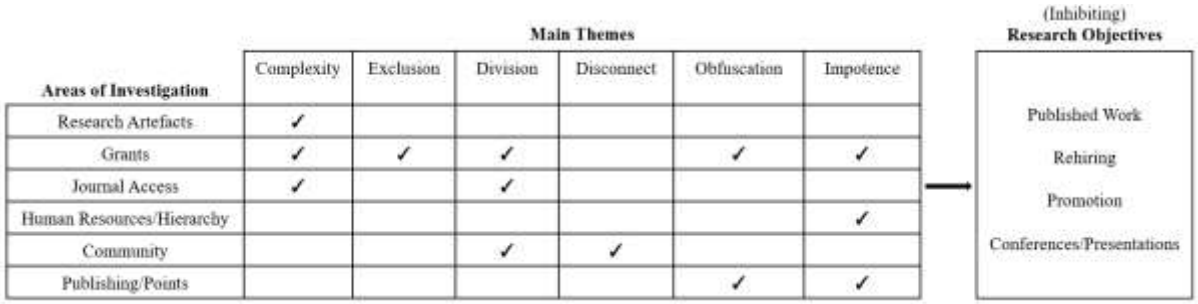
The tables are then followed by samples of illustrative 'participant' extracts and my narrative to provide a "convincing and well-organized story about the data and topic" (Braun & Clarke, 2006:96). These samples have been chosen for two reasons, one, to provide key/prevalent data in support of my claims, and two, to fit the word limitations of this thesis. Following sample participant extracts and my narrative, positioning the researcher's voice within the data (Braun & Clarke, 2006), each chapter will end with a synthesis of my findings. My reasons for this data procedure were highlighted in section 4.8 Data Presentation Procedures. Data is presented at both semantic and latent levels, with the latter level allowing for a more in-depth and insightful story.

6.2 Data from the Local Research Activity System

This section presents a categorization of the outcomes of how participants analysed the local research activity system. The following six areas of investigation regarding current and past Research activity systems were discussed: Research Artefacts, Grants, Journal Access, Human Resources/Hierarchy, Community, and Publishing/Points. The coding of data resulted in the actualization of six main themes - *Complexity, Exclusion, Division, Disconnect, Obfuscation and Impotence,* reflective of institutional educational technology contradictions

inhibiting the realization of research objectives: *Published Work, Rehiring, Promotion,* and *Conferences/Presentations.*

Below is a final semantic level data chart showing the six main themes and their relationship across the six areas of investigation. A full semantic level chart, illustrating initial, developed, and final themes can be found in Appendix 7.



Areas of Investigation	Main Themes: Complexity	Exclusion	Division	Disconnect	Obfuscation	Impotence
Research Artefacts	✓					
Grants	✓	✓	✓		✓	✓
Journal Access	✓		✓			
Human Resources/Hierarchy						✓
Community			✓	✓		
Publishing/Points					✓	✓

(Inhibiting) **Research Objectives**

- Published Work
- Rehiring
- Promotion
- Conferences/Presentations

Figure 18 Empirical Research Activity: Semantic Level Data

To read the table above, first, take an area of investigation, such as Research Artefacts, then see which Main Theme has emerged from the collation of contradictions, in this case, Complexity. This Main Theme of Complexity in the Research Artefacts is Inhibiting all Research Objectives in the right-hand side box. When two or more main themes are found under one area of investigation, there is a direct/indirect causal relationship. These relationships are explored later in this section when presenting my narratives.

Table 6.1 below (the latent data), explores the areas of investigation, main themes, and contradictions further, aligning them to contradiction type/s, the activity system elements they relate to, the resulting direct effects they have across the activity system, and affected groups. The areas of investigation/main themes/contradictions follow this table, supported by samples of illustrative 'participant' extracts, my narrative, and my synthesis.

Areas of Investigation	**Main Themes** 6 in total: Complexity, Exclusion, Division, Disconnect, Obfuscation, and Impotence.	**Codes (Contradictions)**	**Element** (location of sub-theme) A = Artefact S = Subject R = Rules C = Community DOL = Division of Labour O = Object	**Accentuated Tensions** between elements (+ sign denotes quaternary contradictions: tensions between neighboring systems)	**Affected Group/s** KF = Korean Faculty IF = International Faculty AS = Administration Staff	**Contradiction** 1 = Primary 2 = Secondary 3 = Tertiary 4 = Quaternary
Research Artefacts (Edward, Groupware, Library, Research Homepage)	Complexity	lack of integration	A	A-S-O +	KF.IF,AS	1, 2, 4
		complex and clunky (Edward, Groupware, Library, Research Homepage)	A	A-S-O +		1, 2, 3, 4
		limited interactive forms	A	A-S-O		1, 2
Grants	Complexity Exclusion Division Obfuscation Impotence	no information online in English regarding grant type/application/management	A, DOL	DOL-A-S-O	IF	1, 2
		emails on grants only in Korean	A, DOL	DOL-S-A-O	IF	1, 2
		complex grant application/management processes/procedures	R, DOL	DOL-R-S-A-O	KF, IF	1, 2
Journal Access	Complexity Division	database centralization - limited/ complicated access	R	R-S-A-O +	KF,IF	1, 2, 3, 4
Human Resources/Hierarchy	Impotence	vertical hierarchy issues – final decision by president	DOL	DOL-S-A-O	KF,IF,AS	1, 2
		horizontal hierarchy issues - lack of people (who speak English) in research office	DOL	DOL-S-A-O	IF,AS	1, 2, 3
Community	Division Disconnect	no promotion of community	A	A-C-S-O	KF,IF,AS	1, 2
		no promotion of collaboration	R	R-C-S-A-O		
Publishing/Points	Obfuscation Impotence	unclear points system	A, R	R-S-A-O +	IF, AS	1, 2, 3, 4

Table 6.1 Empirical Research Activity: Latent Level Data

6.2.1 Research Artefacts

With Research artefacts, the main theme of *complexity* encompasses three primary contradictions (*lack of integration / complex and clunky / limited interactive forms)*, within artefacts, accentuating tensions between artefacts/subjects, artefacts/objects and subject/object (secondary contradictions), and neighboring activity systems (quaternary contradictions) in the realisation of research objectives for Korean faculty (KF), international faculty (IF) and administration staff (AS).

A sample extract illustrating the primary contradiction *lack of integration, complex and clunky* from Leo (IF) highlighted the *complexity* problems for KF, IF and AS.

- *Edward, Groupware, Library, CTL, Research Homepage, they don't integrate well, and we are like, oh shit, oh where do I find that on…*

As an example of artefact integration problems, regarding research activity objectives, such as publishing or promotion, it is hard to know where to find information on points or internal/external grants. Some information may be on the Edward artefact, some may be on Groupware and others may be on the Research Homepage. There is quite a lot of duplication and redundancy across artefacts which adds to their complex (complicated) and clunky (slow) nature. The artefacts on campus are not all in house – some are run by third party companies and quite a large number of legacy issues still exist (old information working alongside new information). As such, the break-down in communication within and between artefacts causes more workload and uncertainty for users, and the redundancy/legacy issues in artefacts has a negative knock-on effect for neighboring activity systems, such as pedagogy, administration, and information activity systems.

Paul (IF) explicated that the previous version of the Edward system, the Webjeongbo system, seen as a tertiary contradiction, was no better:

- *I would say that compared to the utter clusterfuck that the Webjeongbo system was in terms of inputting research achievements, the Edward system is considerably, it is still not great, it is still complex, but…*

While Paul sees the current Edward system artefact as an improvement, it is still complex. Past artefacts were disconnected, data input was more laborious (paper), but input areas did not overlap; current artefacts are still disconnected, data input is less laborious (online), but input areas overlap more.

6.2.2 Grants

With Grants, the main theme of *complexity* encompasses one primary contradiction (*complex grant application/management/processes/procedures*) within rules, accentuating tensions (secondary contradictions) between rules/subject, rules/object and rules/division of labour- for KF and IF. The four remaining themes; *exclusion, division, obfuscation, and impotence* encompass two primary contradictions (*no information online in English regarding grant type/application/management and emails on grants only in Korean*) within artefacts, with secondary contradictions occurring between artefacts/subject, artefacts/object and subject/object for IF.

Regarding grants, Leo (IF) found *exclusion* and *obfuscation* issues with the non-existence of English language emails coming from the library and the research office. He was critical of the research homepage (English version), saying that it has no information on current journals (SCI, SSCI etc.), that the content is simplistic/minimal, while the process for grant

application etc. is overly complex (for both KF and IF). He criticized the fact that Korean faculty have material in Korean explaining grant application procedures:

- *Access is complicated, the content is very simplistic, they write something minimal and expect you to know what it means, what you want to know just comes out in Korean*

Mike (IF) added to these woes, being quite critical, frustrated and upset with the lack of information in English on how to access and manage internal and external research funding:

- *For me, it is really the Research funds, we are not aware where/when to apply for, where we can get it? The popular saying, publish or perish, for promotion here, the research is a really big part of it, so it is really a big concern, it may be selfish, but for us foreigners, most of the time we don't have access to these research funds, or we just don't know how to do, and it would be interesting if we could develop something for research*

In addition, he was extremely critical of hidden restrictions in university rules on the use of internal research grants, saying that the rules are not made explicit enough in the English guidelines:

- *For example, you are given 3 million won for a paper, and your paper costs 1 million won, you cannot use the remaining money for another paper. I wanted to use the remaining money. It is part of the rules, but I don't know about this in the guidelines. Getting information about grants hasn't changed. Management is a headache and I regretted taking it. What you can do with it and all the paperwork?*

Mike (IF) suggested one possible resistance why information on internal research grants is not available, nor translated, is because of collaboration:

- *When I first came here, this was, my Dean told me they really want foreign faculty to collaborate with Koreans. I think this is done on purpose so you are forced to actually work with the people there, other than that we will be segregated. You can do your own thing, but that is not the vision of the university, the vision is to blend with our Korean colleagues. I think this non-bilingual information on purpose where the mindset is for us to come as support to the Korean faculty*

When Mike (IF) talked about the deliberate policy restrictions in place concerning bi-lingual information, tethering international faculty to co-author, his level of frustration, *impotence* and possible paranoia concerning information policy is clearly discernible.

University guidelines concerning internal grant use/management are quite *complex* and written online in both Korean and English. However, the English version has not been updated since 2016. For IF who apply for internal grants, knowing the ins and outs of grant rules and grant management is particularly complex. Indeed, the internal grant system at the University is complex and confusing for both KF and IF.

For IF, this confusion is further exacerbated by a dormant English language version of the Research Homepage, out of date guidelines in English, and a lack of transparency concerning current or upcoming grant application dates, deadlines, procedures, and policies etc., either online or emailed from the Research office.

By not offering support in English regarding internal grants, the University is *excluding* most IF from the internal grant application process, a situation which magnifies the *obfuscation* and *impotence* felt by IF, and through unfair competition and apparent deliberate restrictions, results in faculty *division*, between KF and IF and within IF.

6.2.3 Journal Access

The two themes of *complexity* and *division* were constructed from one contradiction (*database centralization - limited/complicated access*). Both themes derive from external government rules (quaternary contradictions), where external centralised databases and internal systems (the University Library) are in tension, negatively affecting the research

objectives of both KF and IF. This tension also leads to problems between university rules/subject, university rules/object, and subject/object (secondary contradictions).

John (IF) and Paul (IF) were critical of recent government regulations which limit, *complicate* and change access to journal databases:

- *I wanted to look up stuff, for law, and I found it incredibly difficult to do (through our library) – limited and complicated access to some journal catalogues (John, IF)*
- *The library system, the access to journals is such a pain these days, the databases are only accessible through Seoul National or Yeonsei. This is related to rules, a government thing – journal database centralization (Paul, IF)*
-

These current regulations were different in the past.

- *Did we have more access to paid subscriptions in the past? (Leo, IF)*
- *Yes. It dropped because of centralization of the database (Paul, IF)*

For KF and IF, the past situation, reflective of tertiary contradictions, was better, with less *complex* access to journals – all were critical (as you would expect), of changes in government regulations.

In essence, this problem highlights better/ease of access to journal articles for higher tier universities. These central databases hold most journals and cannot be accessed directly. For University faculty, to access a journal/article through a central database, they must use a document delivery service – faculty have to pay for the article to be photocopied and posted to the University for collection – no soft copies are available (copyright issues). While the delivery service is prompt and cheap, this government regulation does stymie the research objectives of faculty at mid to low tier universities and adds to the physical and abstract divisions between institutions of different levels.

6.2.4 Human Resources/Hierarchy

This one theme *impotence* derived from two primary contradictions (*vertical & horizontal hierarchy issues in the Research Office*). The first (*vertical hierarchy in the Research Office*), is a primary contradiction found within the division of labour element, with secondary contradictions occurring between division of labour/subject, division of labour/object, and subject/object, affecting all three groups, KF, IF and AS. The latter primary contradiction, *horizontal hierarchy in the Research Office* - resulting from a lack of skilled English-speaking staff in the Research office, is found within the division of labour element, with secondary contradictions ensuing between division of labour/subject, division of labour/artefacts, and divison of labour/object, affecting IF and AS.

Within the division of labour element of the current Research activity system, Paul (IF) and Son (AS) were critical of hierarchy: - vertical dominance and horizontal incapacity (the lack of human resources).

- *In terms of power structure, within the research team? (Paul, IF)*
- *The final decision is the president (Son, AS)*
- *In your team, do different people have certain expertise, or a similar level of expertise (Paul, IF)*
- *As I mentioned, I am the only (Son, AS)*
- *So, there is really no horizontal hierarchy, as there is only one person in charge (Paul, IF)*
- *Yes, just me (Son, AS)*

In the research office, Son (AS) is responsible for all KF and IF internal grant applications, as well as being responsible for all grant information for IF in English: updating the Research Homepage and emailing. While Son enjoys his position, there is a level of impotence felt. His workload is immense, there is no horizontal hierarchy in place to help him, and vertical hierarchy takes any decision-making power he has, out of his hands. For Son (AS), the lack

of support staff who speak English, his multiple roles, and having to always go up the chain of command, means that he has little to no time to translate documents, emails or update the Research homepage in English, something which for him is genuinely disheartening. Prior to Son's appointment to the Research office, no English-speaking staff were on hand to assist IF, so things were worse in the past, and his position, while taxing, is welcomed.

6.2.5 Community

These two themes *division* and *disconnect* were constructed from two primary contradictions (*no promotion of community and no promotion of collaboration*), with the former in the artefact element and the latter in the rules element. The primary contradiction *(no promotion of community*) found in the artefacts results in secondary contradictions between artefacts/community, artefacts/subject, and subject/object. The primary contradiction (*no promotion of collaboration*) found in the university rules element results in secondary contradictions between rules/community, rules/subject, rules/object, and subject/object for KF, IF and AS.

When discussing Community, intervention participants found problems within the research artefacts and rules:

- *our artefacts do not promote community, they are directed at: my case, my problem. If we look around this university, they are trying to push collaborative work across departments, creating classes across departments, but all the departments I am acquainted with, they are very insular…the ideal artefact would promote a sense of community, I think that's a real challenge, it doesn't promote community. Of course, the rules don't either. If you are a second name on a paper, you get hammered, you don't get half, you get 25%. It's fair, but it does not promote community (Leo, IF)*

As mentioned in the literature review of this paper, departmental factionalism is rampant, competition for recognition and funding outweigh inter-departmental collaboration and community. As such, the artefacts, and rules (especially publishing points allocations) do

very little to support a sense of community beyond the department, rather they highlight, if not fuel themes of *division and disconnect.* For Leo (IF), creating an artefact which promotes community beyond the department, when rules are in place promoting interdepartmental competition, seems a difficult task.

6.2.6 Publishing/Points

These two themes *obfuscation and impotence* derive from one primary contradiction (*unclear points system*), found within the research artefacts and the university rules. This primary contradiction found in artefacts causes obfuscation for IF, and accentuates tensions between artefacts/subject, and subject/object. Within the rules element, this primary contradiction derives from external government rules affecting university rules (quaternary contradictions), causing a certain degree of impotence, with accentuated tensions occurring between rules (university)/subjects, rules (university)/object, and subject/object (secondary contradictions) for both IF and AS.

To gain promotion or ensure job security, KF and IF must accumulate points from research, teaching and service. In the University, research activity is valued above the other two. However, it seems, from the data, that there are obstacles thwarting the research objects of IF. Mike (IF) admonished the *obfuscation* of current online information in English regarding publishing and points:

- *The new points system is so confusing, I actually got upset last time…you need to have the link of a website before you publish. I lost 50 points on a paper because the journal was not on the Korean list...were we told that when we got hired? I was not told that.*

Leo (IF) added that this confusion may be a result of ever-changing government rules:

- *Okay, university rules, the whole idea of where to publish and what kind of points use to be much more open, the whole idea of where to publish, the rules have changed dramatically, and that's all government driven, that's all based on university evaluation*

According to Leo (IF), information about publishing and points was more visible in the past, but recent governmental rules have made it more difficult to identify and navigate publishing and points' opportunities. In effect, South Korean HEIs are constantly playing catch-up with governmental changes to evaluation rules in higher education policy, resulting in information concerning publishing and points being outdated and confusing, leaving both AS and IF somewhat helpless.

6.2.7 Summary

With the aid of the intervention's double stimulation principle, participants were able to voice their concerns (mostly criticisms) about institutional educational technology policy in the context of research activity on campus. From the six areas of investigation: *Research Artefacts, Grants, Journal Access, Human Resources/Hierarchy, Community,* and *Publishing/Points*, six main themes were presented - *Complexity, Exclusion, Division, Disconnect, Obfuscation and Impotence.* These themes are seen to be reflective of various institutional educational technology contradictions inhibiting the realization of research objectives (*Published Work, Rehiring, Promotion,* and *Conferences/Presentations)* for KF, IF and AS. Figure 6.8 below summarizes the state of current Research Activity, the areas of investigation, main themes, and contradictions.

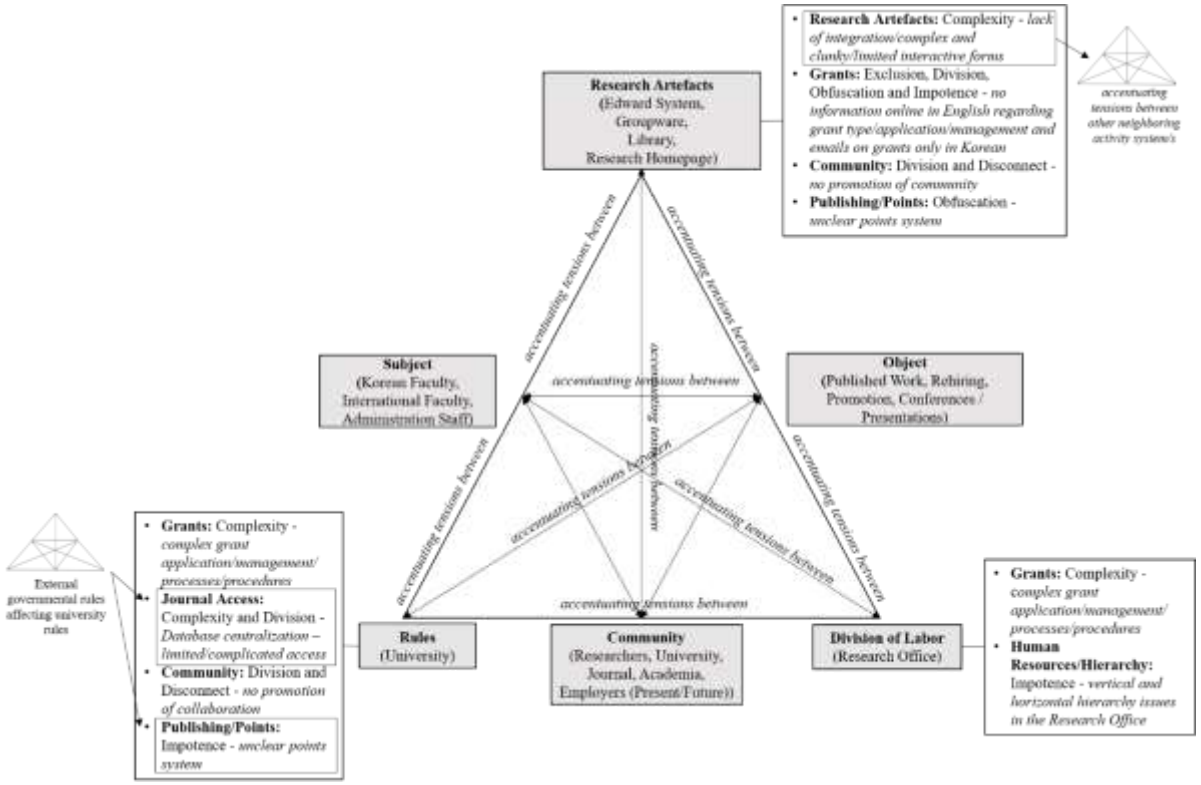


Figure 6.2 Summary: Current Research Activity - Areas of Investigation, Main Themes, and Contradictions

6.3 Data from the Local Pedagogical Activity System

Across two area of investigation: CTL and EDWARD System, the coding of data resulted in the actualization of three themes - *Limitations, Exclusion, and Incognizance*, reflective of systemic institutional educational technology contradictions inhibiting the realization of pedagogy objectives: *Effective Teaching & Learning, and Student Evaluations/Employment/Enrollment.*

Below is a final semantic level data chart showing the three main themes and their relationship across the two areas of investigation. A full semantic level chart, illustrating initial, developed, and final themes can be found in Appendix 8.

	Main Themes			(Inhibiting) Pedagogy Objectives
Areas of Investigation	Limitations	Exclusion	Incognizance	Effective Teaching & Learning
Edward System & CTL	✓	✓		Student Evaluations
CTL	✓	✓	✓	Employment
Edward System		✓		Enrollment

Figure 19 Empirical Pedagogy Activity: Semantic Level Data

Table 6.2 below (the latent data) explores the present main themes and contradictions further, aligning them to areas of investigation, contradiction type/s, the activity system elements they relate to, the resulting direct effects they have across the activity system, and affected groups. The areas of investigation/main themes/contradictions follow this table, supported by samples of illustrative ‘participant’ extracts, my narrative, and my synthesis.

Areas of Investigation	**Themes** 3 in total: Limitations, Exclusion and Incognizance	**Codes (Contradictions)**	**Element** (location of sub-theme) A = Artefact S = Subject R = Rules C = Community DOL = Division of Labour O = Object	**Accentuated Tensions** between elements (+ sign denotes quaternary contradictions: tensions between neighbouring systems)	**Affected Group/s** KF = Korean Faculty IF = International Faculty AS = Administration Staff KS = Korean Students IS = International Students	**Contradiction** 1 = Primary 2 = Secondary 3 = Tertiary 4 = Quaternary
CTL & Edward	Limitations	no auto save functions	A	A-S-O	KF,IF,AS, KS, IS	1, 2
		cannot upload recent student photos (Photo Avatars)	A	A-S-O	KF,IF,AS, KS,	1, 2
		lack of integration	A	A-S-O	KF,IF, AS	1, 2, 3
		system redundancy	A	A-S-O		1, 2, 3
		have to re-submit data	A	A-S-O		1, 2, 3
		no follow-up or confirmation from the system	A	A-S-O		1, 2
		problems with online/off-line make-up styles	R	R-S-A-O	KF, IF	1, 2, 3
		Syllabus input rule	R	R-S-A-O	KF, IF	1, 2
		limited SMS characters of 70	A	A-S-O	IF	1, 2
	Exclusion	international students excluded from SMS (no phone number or name in system)	A	A-S-O +	KF,IF,AS, IS	1, 2, 4
CTL	Limitations	Strange acronyms – no personalization of LMS – cannot edit LMS menu	A	A-S-O	KF, IF	1, 2, 3
		100mb file upload limit capacity	R	R-S-A-O	KF,IF	1, 2
		no professional development videos online	A	A-S-O	IF	1, 2
		no higher education portfolio management	A	A-S-O		1, 2
	Exclusion	government-mandated training videos	R	R-S-A-O +	IF	1, 2, 4
	Incognizance	lack of awareness of what exists	DOL	DOL-S-A-O	KF, IF	1, 2
		no training given, no manual	DOL, A	DOL-S-A-O	IF	1, 2
Edward	Exclusion	access to grading page/curve is too late (grading page)	R	R-S-A-O	KF,IF	1, 2

Table 6.2 Empirical Pedagogy Activity: Latent Level Data

6.3.1 CTL & Edward System

As can be seen from the above table, falling under the main theme of *limitation*, nine codes (contradictions) were found/discussed, most of which are related to technical limitations on use and functions common to both areas of investigation, the CTL and Edward System. In this section, I will present data from some of the more key and prevalent contradictions constructed.

The first key *limitation* criticised by Rose (IF), Eunji (AS) and Dong (KF) was *the absence of an automatic save function* on the Edward System and CTL. This primary contradiction found within the Edward system and CTL artefacts is directly affecting the pedagogical objectives of all subjects: KF, IF, AS, Korean students (KS) and international students (IS).

When inputting data concerning students, grades, attendance etc.; should the system shut down, or there is a human error, all data is wiped, and you need to start over.

- *There is no automatic saving function, if I do something and I accidentally go back or exit, everything will be gone (Rose, IF)*
- *Yes, it is the same for us (Eunji, AS)*
- *It is better to use the application like word, write it down, copy and paste it. Change will cost a lot of money. (Dong, KF)*

Another primary contradiction found in the rules element (university rules), accentuating tensions between rules/subject, rules/artefacts, and subject/object concerned *the absence of recent student photos* - a *limitation* affecting KF, IF, AS and KS.

- *Students cannot upload their photo/avatar to CTL. Their photos are still from 1st year registration, some are still in high school uniform (Rose, IF)*
- *Checking the attendance is difficult, they are in their school uniform (Hoon, KF)*

In effect, the inability of KS to upload recent photos to the CTL and the Edward system, leaves many KF and IF trying to match who they have in class with a photo taken in high school - this is especially problematic when taking attendance or trying to visually place a student during the grade input period.

In addition, Paul (IF) and John (IF) were critical of having to *re-submit data and system redundancy* across the CTL and Edward system, a *limitation* seen as a primary contradiction in the artefacts element resulting in secondary contradictions between artefacts/subject, artefacts/objects and subject/object.

- *The problem with applying for make-up classes and travel, there are 4 different places in 3 areas where you would have to put in that information, it is not very clear which one you use (Paul)*
- *Redundancies on the Pedagogy system, I guess this has been commented on before, the stuff you can do between CTL and Edward, and I thought on the Edward, but you can do all this on the CTL site too and I'm like really? (John)*

With multiple data input fields and little in the way of task-completion notifications, KF and IF regularly find themselves questioning if they have completed their tasks or not. In the past (a tertiary contradiction), this was different, data input was carried out on paper, a slower but more direct process. This argument was furthered by Leo (IF) and Paul (IF) when looking at the complexity of the artefacts:

- *We got Edward Portal which is a mesh of things, CTL, Edward system, all under the name Edward, why don't they just rename it to make it clear (Leo)*
- *The changes haven't made it that much more user friendly. I think some people like the new architecture but even with the changes in the new architecture, I don't think it makes the system easier to use (Paul)*

A further primary contradiction (*lack of integration within Edward System & CTL*) is accentuating tensions between artefacts/subject, artefacts/object and subject/object. Similar to

the Research Artefacts, the *integration* of CTL and the Edward system was worse in the past, but this separation of artefacts actually made life easier:

- *They were much more separate. They were much more separate, but it was pretty easy, they just said fill out this form. There was duplication of functions between systems, not more than now, as there is duplication within Edward now*

Present artefact integration is a little better, but more duplication of functions exist, past artefact integration was a little worse, but duplication was a little less.

Participants saw tasks in the past (such as data input, attendance, grading) as more separate, distinct – you knew what to do, how to do it, where to do it. Now, the systems are larger, more integrated, but what to do, how to do it, where to do it, is less clear.

A *limitation* found in the rules element which was discussed at some length concerned *offline/online make-up class styles*, the inability in some cases to offer non-face-to-face make up classes and the physical restrictions in place to create make up class videos:

- *My experience is you have to record it at the video recording studio and then they will upload your video to the CTL, so there is a lot of procedure because they want to check how many students will go online and check the video while I am out. I asked if we could make a video in our office and upload, and they said no. (Rose, IF)*

This primary contradiction is causing problems between rules/subject, rules/artefact, rules/object, artefacts/object, and subject/object. Having to reserve a studio in advance and in many cases, not being able to offer video-based make up lectures due to departmental policies is something which can slow down the process for KF and IF and can create scheduling issues with their classes. It is important to note here that this research and its presented findings to the University did take place pre COVID-19. Current policy and processes regarding online classes have changed, so a tertiary contradiction is evident,

although how permanent a change this is remains to be seen. Presently, faculty can offer asynchronous videos made outside of the university's studio spaces, uploaded to YouTube, and linked/tracked through the CTL system. In addition, synchronous lectures using Zoom are now commonplace.

Another key *limitation* raised by Paul (IF) was the *early syllabus input rule,* a primary contradiction found in the rules element, something which is causing frustration for KF and IF, and directly affects their objects and outcomes, with secondary contradictions being felt between rules/subject, rules/artefact, rules/object, and subject/object.

- *We have to have our syllabus in the computer before the students are finished appealing their grades, I mean that's insanity. If the idea is that you have a syllabus out there that is as comprehensive and as well-developed as possible, so the students have a very good idea of what materials they will be going through in the class, how the class will go for the rest of the semester. Don't ask us to do it 24 hours before students have finished appealing their grades. (Paul, IF)*
- *I mean we are kind of busy. (John, IF)*
- *Exactly, we are busy doing this and that, no we are not just packing to actually go on vacation at this point. It is not logical in this day and age when you can hook up to the Edward system from like outer Mongolia, it doesn't make any sense. It is gone a weird way, it has just kept on getting earlier. (Paul, IF)*
- *Maybe they see many faculty members not doing it, or only updating it at the start of the semester during the registration process. (John, IF)*

At the end of the semester, after grade appeals, all faculty must upload their syllabi for the following semester to the Edward system. Students can view these syllabi via the CTL. However, feedback from students about the semester just completed is not available at this time - both numerical and written feedback. So, there are two problems with this policy, one - faculty have about two days to hastily draw up a complete syllabus for each of their classes before inputting their Continuous Quality Improvement (CQI) self-reflection forms, and two, they have to do so without seeing feedback from their students, feedback which could help them with their syllabi design.

A further *limitation* was voiced by John (IF) in relation to a capacity problem, the University's *70-character limit in the SMS system*, accessible through both the CTL and Edward system.

- *I am not so impressed with the 70-character limitation of the university's SMS. I had to send a student four messages to convey what I meant.*

This *limitation* (a primary contradiction in the SMS artefact accessed through the CTL and Edward system) is standard for SMS messages using the Korean language (UCS-2 characters) and was probably set up in the beginning for KF - as there were few faculty texting in English (GSM-7 characters) at that time on campus. However, nowadays, most IF will send SMS messages to their classes in English, so this results in less space to do, meaning a long message in English may have to be split up over 2 or 3 texts, whereas the same text in Korean could be sent once, a limitation in the tool directly affecting the workload of IF. This contradiction is causing problems for IF between artefact/subject, artefact/object, and subject/object.

A much talked about *exclusion* theme raised by Mike (IF) concerned the issues of *not being able to contact IS via the internal SMS system*. This *exclusion* problem is seen as a primary contradiction within the Edward system and CTL artefacts, resulting in problems between artefacts/subject, artefacts/object, and subject/object, and one which draws in an outside system, KakaoTalk, leading to quaternary contradictions.

Being quite concerned with the legality or sensitivity of direct communication with IS and KS, when using non-university systems to communicate, namely KakaoTalk (an external Korean instant messaging app), Mike sought advice from the other participants:

- *I was actually wondering, can we create an external group with all the students on Kakao, then they can receive your message. But in the rules, you have the rules. Is it actual acceptable to do? (Mike, IF)*
- *As long as everyone is in the group (Paul, IF)*

IS who are here for 1 or 2 semesters, usually do not buy a Korean phone, so their contact number cannot be added to the university's internal SMS system. This can cause problems when messaging classes about assignments, changes to schedules etc. Instead, KF, IF and AS must email IS separately with this information; however, from experience, most IS rarely check their emails. So, this results in KS getting information quicker and IS, sometimes missing out on information. To solve this, KakaoTalk is used, an external SMS. But using this to communicate with students, as Mike has noted, may lead to problems for faculty.

6.3.2 CTL

One strong criticism falling under the *limitations* theme was voiced about the menu items solely on the CTL system, a primary contradiction found in the artefact element, creating tensions between artefacts/subject, artefacts/object and subject/object (secondary contradictions). Paul (IF) is confused with the new *strange acronyms* and regrets the move away from the menu item editing ability of the past, another example of a tertiary contradiction:

- *Now of course, you cannot rename your menu items, now they have these kind of weird acronyms and they don't actually make any sense*

In the past, the menu board of the CTL system – your classroom learning management system (LMS), menu items could be edited by faculty, items added, and names changed etc. Today, there is a set list of menu items, some with rather confusing acronyms (PDS, BBS) as well as a Q&A section and Notice section. Not being able to personalize the LMS, having

unusual acronyms and no in-depth training on the system (past and present), has resulted in some faculty, especially IF, not using the University's CTL, instead opting to use other platforms: Moodle, Canvas, and Google Classrooms etc.

Another pertinent contradiction coming from the data was the *100mb file upload limitation rule* relating to the CTL artefact, a university rule causing secondary contradictions between rules/subject, rules/artefacts, rules/object, artefacts/objects, and subject/object.

- *So negative part, so we upload limited (Rose, IF)*
- *Limited space (Dong, KF)*
- *Yes only 100mb (Rose, IF)*
- *Because we cannot upload bigger files, that is quite inconvenient (Hoon, KF)*

This primary contradiction means KF, and IF cannot upload large files for their classes, sometimes having to split large files into smaller chunks, so that students can access them, a problem adding to KF and IF workloads.

One of the most confusing primary contradictions, falling under the *exclusion* theme, found in the rules element, concerned online *government-mandated training videos*, hosted through the CTL system. In particular, IF were critical of expectations, language, and information:

- *We do have the sexual harassment videos (Mike)*
- *Yes, you had to watch a video to reach the end, you could double speed it and never watch it (John)*
- *I haven't watched it in 5 years (Paul)*
- *The unofficial answer is, after talking to some Koreans, if we don't send an email out in English, foreign faculty don't have to do it (Leo)*
- *Simple as that (Paul)*
- *Bottom line (Leo)*
- *For our own safety, there probably should me more (Mike)*

Participants mentioned that the government-mandated training videos in Korean are almost completely inaccessible to non-native Koreans, both culturally and linguistically. As Leo (IF) mentioned above, the common perception is that if IF do not receive an email in English, they are not 'expected' to watch these videos. There are two problems here. First, IF miss out on 'points' by not watching these videos and more importantly, training videos concerning sexual harassment, equal opportunity to education, and plagiarism etc., are extremely important educational tools in the workplace; even more so, when language, cultures, beliefs, norms, and expectations etc. may differ/clash.

A highly contentious and much criticised contradiction concerning the CTL artefact is the *absence of training and/or documentation available for IF in English*, a primary contradiction falling under the main theme of *incognizance*.

This primary contradiction found in the artefact element, and possibly the result of hierarchy policies in the division of labour element, is causing secondary contradictions for IF between artefacts/subject, artefacts/object, division of labour/subject, division of labour object, division of labour/artefact, and subject/object.

- *I've never had training, nothing on CTL (John, IF)*
- *There is no user manual (Paul, IF)*
- *I've had to learn on the go (John, IF)*
- *I haven't had any training either. I self-trained (Mike, IF)*

Paul (IF) mentioned that he used to give once a semester-training-session (for new incoming IF) up to about 2015 but had to stop doing so because of expansions in the Edward system:

- *Using something like CTL, I used to do 30 minutes on it, basically you are getting no training on it. When the CTL guy comes in after my workshop, he more talks about what the center can do. Now the Edward system has exploded, there are too many options, I don't have time to do the CTL*

This contrasts with KF, who receive weekly training seminars on the system and many other aspects of their profession from the CTL office.

- *For new Korean faculty, every single Friday, about 3pm every single Friday or second Friday they have a new seminar. They get points for attending this. CTL seminars, sexual harassment programs, indoctrination programs (Paul, IF)*

The continued non-existence of training and documentation in English for the CTL system is bewildering to IF, to say the least. Along with this, the training opportunities for new KF on Fridays suggests that the lack of training for IF in English may either be a deliberate snub, or a human resources/language issue (much like the Research office).

One interesting primary contradiction related to *incognizance* highlighted the fact that some CTL policies and practices are unknown to both KF and IF, there is a *lack of awareness of what exists*. This results in further problems between artefacts/subject, artefacts/object, subject/object, division of labour/subject, division of labour/object, and division of labour/artefacts.

Dong (KF), who is the director of the CTL, talked about the existence of an in-house online video hosting platform - KNOCK, where faculty can self-record/upload class make-up videos:

- *How about make-up class, can we upload our videos to CTL? (Hoon, KF)*
- *No, we can use the KNOCK system. We have 7gb to do this (Dong, KF)*
- *Where can I find the KNOCK system? (Hoon, KF)*
- *What is that? (Leo, IF)*
- *See, I don't know this (Rose, IF)*

Setting up face-to-face make-up classes is quite difficult, with teachers and students having to agree on a date/time and classroom. Some faculty prefer (if permitted) to upload videos for their students to watch. To do so, faculty are required (a rule) to use a campus studio to record their make-up class, where it is edited and uploaded by the studio team to the

university's KNOCK platform – a process taking up to 3 weeks. According to Dong (KF), both KF and IF can also self-record/upload their video to the KNOCK platform. This was new news to KF and IF in the intervention group. First, they had never heard of the KNOCK platform (although some had inadvertently used it) and second, they never knew they could self-record/upload make up class videos. The reasoning for this lack of awareness again is possibly the result of hierarchy policies in the division of labour element with information not being readily available or communicated.

While current policy and processes regarding online classes have changed due to the Covid-19 pandemic, the theme of incognizance here refers to KF and IF not being aware of what artefacts, in this case the CTL system, offer, something which is still true today.

6.3.3 Edward System

A further common primary contradiction, falling under the main theme of *exclusion* was the criticism voiced by both KF and IF regarding *late access to the grading page* on the Edward system, with Leo (IF) in particular being at odds with the university rules on this:

- *I want to talk about the grading appeal process. What is frustrating for me is that I have a class right now and I don't know what the curve is going to be in that class*

The grading page is accessible only during the final exam week. The university grades on a curve, so to Leo (and other KF/IF), late access to this page is frustrating, with faculty needing to know the percentages early, so as to avoid miscalculating grades and possibly misleading students. This university rule causes problems between rules/subject, rules/object, rules/artefacts, artefacts/object and subject/object. It excludes both KF and IF from accessing the grading page early, causing frustration for KF and IF and directly affects their objects (effective teaching and learning, and student evaluations/employment/enrollment).

Adding to this is the problem of the current grade curve input policy. In an explication of past systems, Mike (IF) mentioned the ability to go against the grading curve during the grade input period on the Edward System:

- *Another thing, we used to be able to break the curve in the system. Now we can't. Why? (Mike, IF)*
- *Transparency (Paul, IF)*
- *The Kin Young-ran rule (John, IF)*
- *I think it was more about the fact, that more and more universities were becoming concerned about grade inflation and it was becoming an evaluation standard (Leo, IF)*

In the past, when inputting grades, all faculty could go against the grade curve, but now, since the inception of the Kim Young-ran Act (Improper Solicitation and Graft Act, also more informally known as the anti-graft law, which came in to force on 28 September 2016, see http://www.acrc.go.kr/), the online system is locked down, all faculty must abide by the curve – to be more transparent and to stifle grade inflation.

6.3.4 Summary

With the aid of the intervention's double stimulation principle, participants were able to voice their concerns about institutional educational technology policy in the context of pedagogy activity on campus. From the three areas of investigation: *CTL & Edward, CTL, and Edward*, three main themes were presented – *Limitations, Exclusion and Incognizance.* These themes are seen to be reflective of various institutional educational technology contradictions inhibiting the realization of pedagogy objectives (*Effective Teaching & Learning, and Student Evaluations/Employment/Enrollment)* for KF, IF and AS. Figure 6.8 below summarizes the state of current Pedagogy Activity, the areas of investigation, main themes, and contradictions.

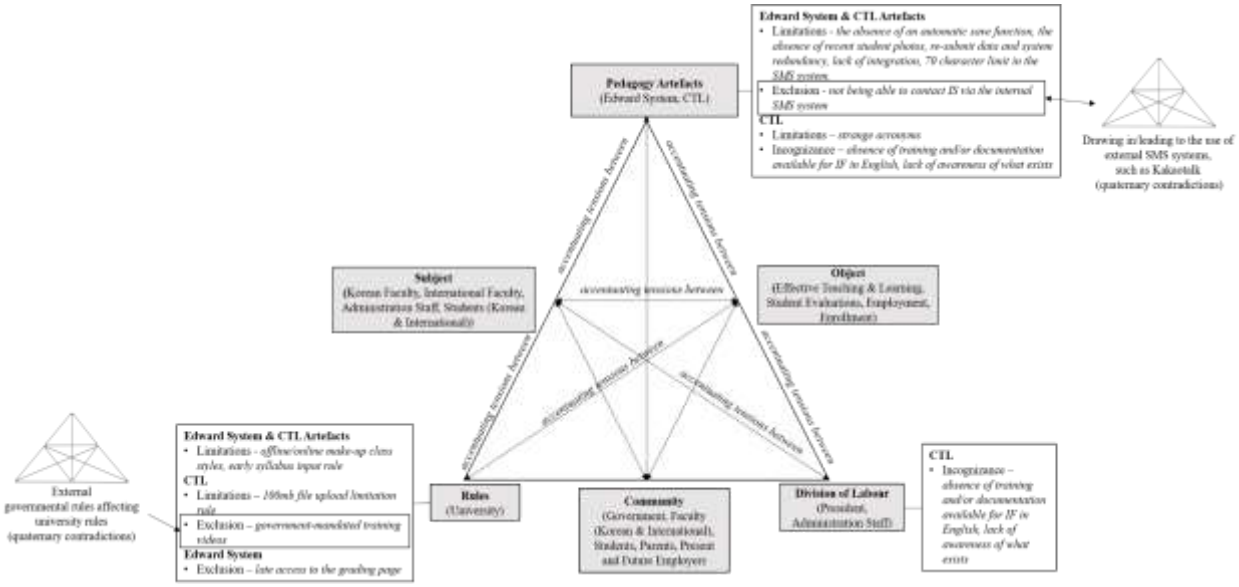


Figure 20 Summary: Current Pedagogy Activity - Areas of Investigation, Themes & Contradictions

In Section 6.4 and 6.5 I will present data from the future modelling actions of the research intervention (sessions 7 & 8). These modelling actions have been chosen because they illuminate the individual and collective transformative agency of participants as they re-design their own activity.

Regarding Future Modelling of Research activity, the data presentation will focus on discussions concerning the creation of a new research artefact (website) based on the participants' 13 suggested institutional educational technology changes to Research policy (See Chapter 5, Table 5.7). With Future Modelling of Pedagogy activity, the data presentation will focus on discussions concerning their 12 suggested institutional educational technology changes to Pedagogy policy (See Chapter 5, Table 5.7).

6.4 Future Modelling of the Local Research Activity System

In Session 8, Modelling Future Research Activity, the following three areas of investigation were discussed: *Human Resources / Information, Notices & Translations / Faculty & Administration Profiles*. The coding of data resulted in the actualization of three main themes – *Sustentation & Support / Equality/Equity of Opportunity / Community Building*. These themes are my own interpretation, and while not the direct work of the participants, they are reflective of the discussions participants had when utilizing their 13 proposed changes to design a new research artefact.

Below is a final semantic level data chart showing the areas of investigation, main themes, and Research objectives.

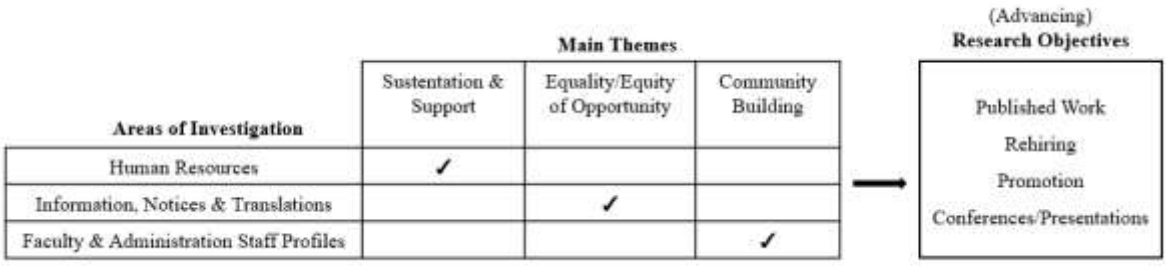


Figure 21 Future Modelling Research Activity: Semantic Level Data

Table 6.3 below (the latent data), explores the areas of investigation, main themes, suggested changes, possible university resistance and affected groups in more depth. Selected key areas of investigation, main themes and suggested changes follow this table, with illustrative participant extracts from the dataset being presented, followed by my narrative. The areas of investigation/main themes/contradictions follow this table, along with samples of illustrative 'participant' extracts, my narrative, and my synthesis.

Areas of Investigation	Themes 3 in total: Sustentation & Support, Equality/Equity of Opportunity and Community Building	Suggested Changes (Advancing Objectives)	Perceived University Resistance	Affected Group/s KF = Korean Faculty IF = International Faculty AS = Administration Staff KS = Korean Students IS = International Students
Human Resources	Sustentation & Support	– longevity is needed, a tool which will become consolidated, so IF can have a better chance at competing for grants etc.	– change initiatives are sometimes short-lived, information in English is rarely updated beyond the first 6 months	IF, AS
		– create a platform with more personnel to help faculty get grants (internal & external), more beneficial for IF and the University – having people who are bilingual, who understand research, would really helpful for the IF	– too costly – hard to find bi-lingual staff – admin staff change offices every 2 years	
Information, Notices & Translations – Internal Grants	Equality/Equity of Opportunity	– provide links to original information/office, workarounds on the homepage – Equality/equity of opportunity for IF – by adding grant information and posting notices to the research homepage, international faculty could compete for grants, they would have the opportunity to do so, rather than now – could help new researchers, or new grant applicants to navigate the research field at the University and South Korea	– too many offices involved, will people update, will offices cooperate – too much work – too many forms – research office has 1 English speaker, work overload – possibly - deliberate policy restrictions in place concerning bi-lingual information, tethering international faculty to co-author – hard to find bi-lingual staff – lack of time, too costly	IF, AS
– Points System		– updated & clear information on points system online would help IF: where to publish, not to lose out on points	– changes happen too fast (government regulations) – hard to find bi-lingual staff – lack of time, too costly	
– IRB		– a specific page, direct information, how to apply: would help IF trying to get IRB approval for research – IRB approval is a long process: information could help IF understand the ins/out of the process	– IRB office has no bi-lingual staff – IRB approval takes a long time – IRB approval is sought in specific types of research only	
– Instructional Videos		– instead of research assistants asking research office question on how to do things: specifically grant management, inputting receipts etc., videos would create a workaround for IF and AS	– who is going to make them? – will they be watched? – information changes so, videos may need to be remade	
– FAQ		– a list of common FAQ uploaded to the research homepage would help IF know common Q&A before needing to contact research office	– no resistance thought of	
– Research Assistants		– would help IF know how to hire a research assistant, this kind of instruction, how much to pay, how to find them, standard operational procedures	– no resistance thought of	IF, IS
Faculty & Administration Staff Profiles	Community Building	– online faculty profiles could strengthen, bridge and project KF, IF communities and individuals across campus – rather than a complaints section, this information would allow IF to contact those AS who are directly responsible for certain tasks – photos, tel., email, language skills, responsibilities – making life easier for both IF and As	– KF professors not keen to having public profiles, a culture of resistance – who will update? Isn't this a department thing? – internal movement of administration staff every 2 years, makes it difficult to maintain such info	KF, IF, AS, KS, IS

Table 6.3 Future Modelling: Research Activity - Latent Level Data

6.4.1 Sustentation & Support: Human Resources

In reference to proposed changes to research activity, change # 9 *(Increase/improve/update/maintain Korean and English Research websites)*, Leo (IF) envisioned *sustentation* as a future concern of any new Research tool:

- *We don't want a beautiful cathedral that will come down 6 months later*

Participants noted that the University was not alone in having outdated information on the English versions of their homepage. The Seoul National University Research Office English homepage has not been updated since 2016, and its files have not been updated since 2012. Yeonsei University also had an issue with its Research Magazine in English last coming out in 2015. Leo (IF) cautioned participants by saying that:

- *I really believe this is the case, when they set it up they did all this, then there was no maintenance which is what I'm cautioning for us.*

Regarding *sustentation*, participants know that online tools in English are rarely updated beyond the first few months, they become ineffectual rather quickly. As Leo (IF) noted, change initiatives are sometimes short-lived, a quantitative box is ticked, grant money is spent, and people move on or are moved on to the next thing. At the modelling stage of the intervention, *sustentation* must be considered and included in implementation and consolidation plans. Such consideration would result in current and future IF/AS having a maintained/sustained Research homepage which is effectual, with up-to-date information, an artefact which would help in all areas of Research activity objectives.

Related to the main theme of *support*, in reference to guideline 10 (*Increase human resources in Research Office* – see Chapter 5, table 5.7), Ronan (IF) envisioned the need for personnel changes in the research office:

- *My approach is like, create a platform with more personnel to help faculty get an external grant, for example the Korean research foundation. Everything is in Korean, but if you have people who can actually help us, I think it will be more beneficial and the university would be happier*

Being somewhat critical of current research activity, Ronan (IF) said that Korean faculty do not have these problems:

- *When they receive an email they know what to do, they have assistants, they have people working for them. We don't have that advantage. Number 1, the advantage is the language and number 2 we don't receive information. Even though the grants are available, we don't know the dates, we don't know what is going on and we don't know how to do it. If you have a support office for international faculty, people who are bilingual, who understand research, then I think that is going to be really really helpful for the community*

The current state of having one person responsible for IF in the Research office is inadequate as this person also has Korean faculty and other duties to care for. As previously discussed by Son (AS) and Paul (IF), vertical dominance and horizontal incapacity is hindering the online and offline Research activity of IF in particular. Ronan's call for change/addition to personnel in the division of labor element of research activity would improve both face to face and online research support for IF, ease the workload for AS and ultimately benefit the university.

6.4.2 Equality/Equity of Opportunity: Internal Grants & Points System

Ronan (IF), and the other participants envisioned that the new tool could go some way in providing grant information (guidelines, management rules/regulations, deadlines etc.) in English, a discussion relating to suggested change *# 1 (Receive bi-lingual emails from Research Office regarding Research Grants, Grant Management etc.)* and *# 9 Increase/improve/update/maintain Korean and English Research websites (i.e., contact person, research information (Grants etc.) recent/current research interests etc.):*

- *All the information would be in this space. If we have that (information of admin staff responsible for individual grants), so then we know, even though we know there are*

competing grants, we have a chance to compete for these grants, but the problem here is we don't even know. This is the purpose of the tool is it not? An information portal (Ronan, IF)

- *It is not just information. The university has a database, and they announce it through these notices (Leo, IF)*
- *Only in Korean (Rose, IF)*
- *With all the deadlines. You just need to look for the word grant. They announce it (Leo, IF)*
- *But (Paul, IF)*
- *But not for international faculty no (Leo, IF)*

By adding updated information and notices to the research homepage in English, IF could compete for grants, at least they would have the opportunity to do so, rather than now. A change to the current situation would lessen the *complexity, exclusion, division, obfuscation,* and *impotence* felt by IF, and through fair competition and the lifting of apparent deliberate restrictions, result in *equality/equity of opportunity* for IF.

Furthering this argument, Mike (IF) mentioned that *"we cannot have everything translated, but the important stuff, the research part could be".*

Paul (IF) and Ronan (IF) agreed, and both saw this as a possibility while noting possible resistance, adding that:

- *For the research office, grants etc., initially it is quite a large project, there is an enormous amount to be translated, however, once it is done, the basic template...there are no changes except for the dates. Of course, grant management and rules will change, they will have to be updated, but 90% of it is going to stay the same from year to year (Paul, IF)*

The lack of bi-lingual administration staff is leading to absences in translation, timely information, and a point of contact for IF, a situation seen to be more favorable to Korean faculty. This suggested change, *information, notices & translations,* would make IF aware of what is going on, especially - when to apply for internal grants and deadlines etc., in effect,

increasing *equality/equity of opportunity* for IF research objectives, and eventually, resulting in reduced workloads for AS.

Mike (IF) added that *information on the points system*, suggested change # 6, should also be online in English:

- *The point system, I think it has to be very clear even when they hire the professor, it has to be even online...what I am trying to say is, we need to put the points system on the research tool*

As mentioned earlier in this chapter, when looking at current research activity, from personal experience, Mike (IF) has had problems with the points system, so adding this information to the new Research Homepage would help him and other IF navigate the University's rehiring and promotion regulations. As it stands now, information on the points system for IF is not available online, and it is unknown to many IF. This is different for KF, such information is readily available online. Having up to date and clear information online regarding the points system would allow IF to know where best to publish, what points they could accumulate, and what amount and type of points would go towards rehiring or promotion. Without such information at their fingertips, IF can lose out on opportunities to advance and stabilize their career.

6.4.3 Community Building: Faculty & Administration Staff Profiles

Participants envisioned building a research community, by adding *KF, IF and AS profiles* to the research homepage, a discussion relating to proposed change number 9 *(Increase/improve/update/maintain Korean and English Research websites)*, 11 (*Promote an online research community - where all faculty can discover/discuss and collaborate*), and 12 (*Establish a Research Collaboration board - where colleagues can discuss/collaborate online etc.*).

They envisioned that the addition of faculty profiles would help build a research community:

- *If we put these profiles up it increases the possibility of generating a community. If I am doing some work, and I need somebody who has better knowledge than I to do it, that's where I should find it.*
- *That's true (Paul, IF)*
- *Working this together, if we can search for who is doing what, that sounds like having that sense of community and the data up there is a net plus (Leo, IF)*

However, Ronan (IF) pointed out possible resistance from Korean faculty to submit profiles:

- *Korean professors are not keen on having a public profile so for example, go to research gate, many of the professors have not joined, they don't have a google scholar profile, they are not interested. There is a culture of resistance I think, especially senior professors, they never wanna have a profile and if they have it, they never update it. I don't know if it is cultural or laziness. A lot of universities have this so somebody top down is pushing it*

Leo added to this by suggesting, that without incentives, KF may not be inclined to submit a profile:

- *because they are not incentivised for it and if there is no incentive, at this university, they don't do it*

To counter his own argument and that of Leo's, Ronan (IF) suggested to make profiles participatory:

- *open the profile to people, give them a link so they can upload their information. I really believe that if it is not participatory, like people do it for themselves, it is not gonna stand for a long time, as far as I know, foreign universities they don't do it for professors, professors do it for themselves*

The addition of publicly available participatory faculty (KF &IF) profiles in English to the new Research homepage, would (as discussed by participants), strengthen, bridge, and project communities and individuals across campus and further afield, improving artefact - community – subject - object research activity. Such profiles would advance the research objectives *(Published Work, Conferences/Presentations)* of KF and IF, promoting awareness

and collaboration within and across departments, and allow KS, IS, and other internal/external communities to view/contact faculty. However, as can be seen from Ronan's words, such a move may face 'a culture of resistance' from senior KF. Such cautions would be considered further in the implementation and consolidation stages of the intervention.

Adding to the main theme of *Community Building*, the idea of a 'who to contact' section on the website was discussed, an idea stemming from the suggested change *# 9 Increase/improve/update/maintain Korean and English Research websites (i.e., contact person, research information (Grants etc.) recent/current research interests etc.):*

- *Why don't we add some sort of complaint section, and someone actually responds (Ronan, IF)*
- *If you make this, who is going to answer? (Mike, IF)*
- *I think the complaints will go to academic affairs (Paul, IF)*
- *That's a dead end (Leo, IF)*
- *I say you should put the photo and profile of the person who is responsible in the admin office to respond on the website (Ronan, IF)*

The notion of a complaints section on the homepage was seen as a non-starter, responses from AS would not be forthcoming. In addition, such tools are not encouraged; as mentioned in the Literature Review of this thesis; one way communication channels are preferred in South Korean HEIs. The addition of AS profiles, even though some resistance was foreseen (hard to update, regular internal movement of AS), such a tool would allow IF to contact those AS who are directly responsible for certain tasks, making research objectives easier for IF and identifying/alleviating/sharing the administrative tasks of AS.

6.4.4 Summary

With online research policy, intervention participants sought a means to address pressing issues affecting the shared work practice of KF, IF and AS. They were cognizant of

implementation and consolidation challenges ahead, with session 8 allowing them to refine and concretize their 13 suggested changes which would advance the realization of their objectives. Participants envisioned a new research artefact moving beyond surface level translation, a centralized research space, housed within a larger International Faculty Portal, where research information is maintained/sustained and available in English; a space which allows IF to have the same opportunities or access to information as KF currently enjoy. Over subsequent sessions, all suggested changes to institutional educational technology policy (13 proposed changes and a new research homepage housed within a larger IF portal - along with supporting rationale) were brought to the University for consideration. Figure 6.29 below summarizes Future Modelling Research Activity, a new research tool, the areas of investigation and main themes.

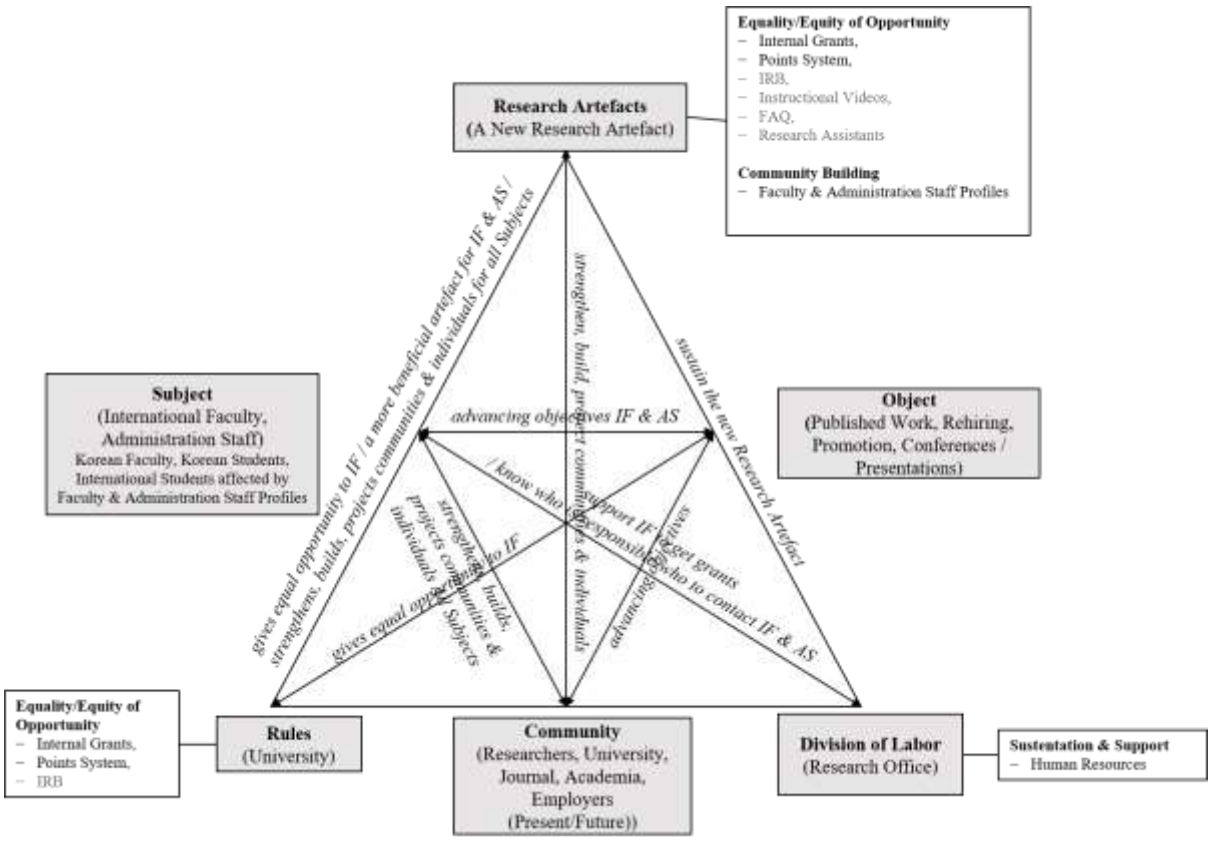


Figure 22 Summary: Future Modelling Research Activity - A New Research Tool

6.5 Future Modelling Pedagogy Activity: Semantic & Latent Level Data

In session 7, the intervention participants scrutinized their 12 suggested institutional educational technology changes to Pedagogy policy (see Table 5.7, Chapter 5). This session revealed what changes to pedagogy activity were finalized, what resistance was foreseen, and how participants saw these changes advancing the realization of their objectives. The coding of data resulted in the actualization of three main themes - *Accommodation, Inclusion* and *Awareness.* The main themes constructed are reflective of direct attempts by intervention participants to advance the realization of their pedagogy objectives; *Effective Teaching & Learning, and Student Evaluations/Employment/Enrollment,* and to counter earlier research activity findings of *Limitations, Exclusion, and Incognizance.* Below is a final semantic level data chart showing the areas of investigation, main themes, and research objectives.

Areas of Investigation	Main Themes: Accommodation	Inclusion	Awareness
1. Increase file upload limit - CTL	✓		
2. Bi-lingual Training/Documentation – CTL/Edward etc.			✓
3. Earlier access to online grading page		✓	
4. Auto-save function	✓		
5. Professional Development Videos (in English)	✓		
6. Move syllabus input to later date	✓		
7. Receive confirmation messages from systems	✓		
8. Recent photos for avatar	✓		
9. Make it easier to give online make-up classes	✓		
10. Add international student phone numbers to systems		✓	
11. Increase SMS character limit	✓		
12. Record CTL seminars	✓	✓	

→ (Advancing) **Pedagogy Objectives**: Effective Teaching & Learning; Student Evaluations; Employment; Enrollment

Figure 23 Future Modelling Pedagogy Activity: Semantic Level Data

Table 6.4 below (the latent data), explores the areas of investigation and main themes in more depth, aligning them to possible university resistance and how intervention participants saw these changes advancing the realization of pedagogy objectives, and for whom. Selected main

themes and key areas of investigation follow this table, with samples of illustrative 'participant' extracts, my narrative, and my synthesis of findings.

#	**Areas of Investigation** 12 Suggested Changes to Pedagogy Activity – across CTL, Edward System (suggested changes are ranked in order of importance)	**Main Themes** 3 in total: Accommodation, Inclusion, Awareness	**Perceived University Resistance**	**Advancing Objectives** (effective teaching and learning, student evaluations, employment, enrollment)	**Affected Group/s** KF = Korean Faculty IF = International Faculty AS = Administration Staff KS = Korean Students IS = International Students
1	Increase file upload limit - CTL	Accommodation	– Too expensive (server space) – Just use a YouTube link	– KF & IF could upload larger files for their classes (video files for make-up classes) – decreases workload	KF, IF
2	Bi-Lingual Training/ Documentation – CTL, EDWARD etc.	Awareness	– Parity of expectation – Expensive – Waste of time – Lack of human resources – Difficult to maintain/sustain	– improves all aspects of work performance for IF – improves resources/information for IF – lessens workload for AS (eventually)	IF, AS
3	Earlier Access to Online Grading System	Inclusion	– Sharing of too much power = building up student expectations	– helps KF & IF see grading curve percentages early, – helps KF & IF calculate grades – helps KF & IF with student counselling – decreases KF & IF frustration with the system	KF, IF
4	Auto-save function	Accommodation	– Too much space needed, too heavy on the system	– Helps all save stuff when Edward and/or CTL goes down – Bottom-up perspective = saves time	KF, IF, AS, KS, IS
5	Professional Development Videos (in English)	Accommodation	– Who makes them? – Will people watch them?	– IF can get points (like KF) – Improve understanding of societal and pedagogical issues in South Korean HE for IF	IF
6	Move syllabus input to later date	Accommodation	– Needs to be done before faculty leave for vacation – Not enough faculty input syllabus – Syllabus change is allowed at a later date	– would allow KF & IF more time to reflect – more time for KF & IF to develop more comprehensive syllabi taking into account student evaluations – both numerical and written feedback	KF, IF
7	Receive conformation message from systems	Accommodation	– None perceived	– KF ,IF, AS know when task is completed	KF, IF, AS
8	Recent photos for avatars	Accommodation	– They may not want students messing with their profiles – Who is responsible, which department is responsible?	– KF & IF able to match students in class with online photos in the Edward system and CTL – helps both KF & IF when taking attendance – helps KF & IF visually placing students during the grade input period	KF, IF
9	Make it easier to give online make-up classes	Accommodation	– You are a face to face teacher – Frowned on by some departments – they don't allow it – Some departments think what's the point – Need to use studios, system on campus – Need to record student access – Online option not an option for offline class	– Makes giving/taking make-up classes easier for KF, IF, KS and IS (less problems with scheduling/attendance/ time)	KF, IF, KS, IS
10	Add international student phone numbers to system	Inclusion	– Here for a short time – Email is used – Student responsibility	– Easier for KF, IF, AS to contact IS – Ensures IS and KS receive information at the same time – reduces advantage for KS – Protects KF and IF from contacting KS and IF on non-university SMS platform – legal and sensitive issues	KF, IF, AS, IS
11	Increase SMS character limit	Accommodation	– Fine for Korean language – 2 bit characters – Costs money to change	– Can enable IF to send 1 long message in English, not having to divide message over 2 or 3 texts, can benefit all	KF, IF, AS
12	Record CTL seminars	Accommodation, Inclusion	– Designed to be live – Look through the pdf files	– Allow IF to revisit seminars online – Allow those IF not in attendance to access the seminars online – Allow IF to get points for watching seminars online	IF

Table 6.4 Future Modelling: Pedagogy Activity - Latent Level Data

6.5.1Accommodation

6.5.1.1 Increase file upload limit to the CTL system

Increasing the file upload limit to the CTL system was the highest ranked suggested pedagogy change coming from the intervention. However, participants noted that from a top-down perspective, the university may resist this change, as it would have to pay more money for more space (CTL, a traditional LMS is outsourced). A further possible university resistance to the proposed change was voiced by John (IF) in the form of:

- *Can't you just add a Youtube link? (John, IF)*

This led participants to envision their own response to possible university *resistance*:

- *Shouldn't we try to do everything on campus, not that video particularly is a privacy issue (Leo, IF)*

Paul (IF) pointed out that the university may only change the system if demand is high, so he suggested committing to a future action, a campus wide survey:

- *If it would have much greater chance of happening if there were much great demand for it, I don't know how much demand there is for this. The school does surveys, they could certainly do it (Paul, IF)*

Bringing this suggested change to the rules would mean that KF and IF could upload larger files for their classes (video files for make-up classes), a change which would decrease workload and advance the effective teaching & learning objectives of KF and IF.

As can be seen from the conversation, such a change may face resistance; however, participants believed that the University could accommodate this proposed change if the demand and money were there.

6.5.1.1 Adding an auto-save function

When looking at change # 4, *adding an auto-save function*, the group posited *space* and *system burden* as possible resistances to change. Leo (IF) envisioned that having an auto-save function across the Edward system and CTL artefacts would:

- *From bottom up it just saves time. I am sure everybody has had this happened to them (Leo, IF)*
- *It is a pain in the ass when you are inputting your syllabus (Paul, IF)*
- *Yeah (Rose, IF)*
- *Yeah, it is the same for us (Eunji, AS)*

A change to this primary contradiction found in the Edward system and CTL artefacts would save work and time for KF, IF, AS, KS and IS. The University may resist this change, due to server space, but overall, intervention participants were positive about the likelihood of acceptance, pushing forward with it, surmising that the change is simply a coding issue.

6.5.1.2 Move online syllabus input to a later date

For change # 6, *move online syllabus input to a later date*, participants tried to see the logic of inputting an early syllabus from the university's perspective, suggesting reasons such as: *needs to be done before faculty leave for vacation, not enough faculty input syllabus* and *syllabus change is allowed at a later date.* It was hard for participants to understand these reasons, especially Paul (IF) who was quite critical about this:

- *I don't see the logic in that, if people have got time to do it and they are not doing it and you are making it even earlier so they don't have time to do anything, I mean this is going to be very low on their list of priorities. We have to have our syllabus in 5 weeks before the first registration period, I don't get the logic. (Paul, IF)*

Seen as a primary contradiction in university rules, this problem is directly hindering the objectives of KF and IF.

Moving syllabi input to a later date, post student evaluations, would allow faculty more time to reflect and develop more comprehensive syllabi taking into account student evaluations – both numerical and written feedback. Participants saw the accommodation of this suggested change as high, with no negative ripples being foreseen.

6.5.1.3 Allow recent photos for avatars

Concerning suggested change # 8, *allow recent photos for avatars*, participants discussed this at some length, with expressions of resistance and envisioning being debated in relation to responsibility and policy. KS photos do not change from year to year and these photos (mostly those of undergraduate KS) are taken in the final year of high school (secondary school), in support of their university application. So, as Paul (IF) puts it:

- *It's practically impossible to tell who they are sometimes, some of them have lost 10 kilos, some of them have put on 10 kilos, some of them have definitely had a bit of work done on them, I am not talking about photoshop (Paul, IF)*

KS and IS have no way to edit their online profiles directly, as the university may (according to Leo (IF)) *"not want students messing with their profiles"*, which of course seems practical, but participants, especially Rose (IF) wanted to see some change to future activity. On the CTL system, she criticized that there are no KS and IS student photos at all:

- *On the CTL website, there are no pictures whatsoever. The bigger question is who is responsible, what department is responsible to update that, if it is CTL, then it should be in the CTL system*

The bigger point in the discussion seemed to revolve around envisioning better policy:

- *But we do have an office of student advisement and they could say bring in or send in an image file for your, anytime you need to update your student profile, go to the student office, you can bring in your photo on a usb or whatever, maybe we will scan it for you. If you change your phone number, they go to the student advisement office. There is no reason they couldn't do it, just one more student part time worker whose job it is to update student profiles, it's done (Leo, IF) What do you think, can this be changed?*

- *We cannot change it, but if you submit a request, it will be listened to (Eunji. AS)*
- *Yes (Hyun, AS)*

The acceptance of this suggested change would result in KF and IF being able to match who they have in class with online photos in the Edward system and CTL, helping both KF and IF when taking attendance and visually placing students during the grade input period.

6.5.1.4 Make it easier to give online make up classes

With suggested change # 9, *make it easier to give online make up classes*, participants suggested that the university may resist this, as most teachers are hired to give face to face classes, *"no online make up for an offline class" (Leo, IF)*, and some departments are opposed to this:

- *Some departments don't allow make up classes online. They frown upon it (Rose, IF)*
- *You are a face-to-face teacher, they don't allow it, some departments think what's the point (Leo, IF)*

Paul (IF) disagreed with this logic saying:

- *There is a contradiction there, they have the tool. They are tacitly saying we support this way of doing things*

Participants also envisioned that this suggested change would *"have support among Korean faculty as well" (Paul, IF)*, as it is a universal need. Something which they were quite *critical* of was the restriction on how to go about making these videos – the mandatory use of physical studios and the complex/lengthy booking system:

- *They want you to reserve the recording studio two and a half weeks in advance (Mike, IF)*

Participants wanted to see two changes made here, first, for online make-up classes to be more accepted in departmental and university policy, and second, for the process of making the videos for online make-up classes to be easier/faster: for KF and IF to be able to record

make-up classes from their office via your desktop or laptop, rather than booking a studio. Acceptance of this suggested change was seen as low, due to departmental and studio policies.

As before, it is important to note here that this research and its presented findings to the University did take place pre COVID-19. Current policy and processes regarding online classes have changed. Presently, faculty can create pre-recorded videos, made outside the university's studio spaces, and synchronous lectures using Zoom are now commonplace.

6.5.1.5 Increase SMS character limit

When looking at change # 11, *increase the SMS character limit*, participants were more hopeful of change. From discussion it was interesting to see that the character limit is less of an issue for Korean language users than English language users, as the system is set up for 2-bit characters:

- *Korean is much shorter, you can say something in two syllables that might take 3 sentences in English. That is just old technology, they could change it (Leo, IF)*

Leo (IF) also suggested that money may also be an issue here, the cost to extend the limitation:

- *It might be money to change it or it might be someone going through it and flipping the switch, because nowadays SMS is 140 something, 150 something*

Not seen as particularly difficult to change, the issue being more of a financial concern, participants felt that a change would enable IF to send long messages in English, not having to divide a message over 2 or 3 texts, a change which would help communication between IF, KF, AS, KS and IS.

6.5.2 Awareness

6.5.2.1 Improving Bi-Lingual Training and Documentation

In relation to suggested change # 2 (*improving bilingual training and documentation*), participants discussed two areas which may or may not lead to resistance: parity of expectation and human resources.

Paul (IF) noted that language is a barrier, but that finding people with the right skill-sets may be hampering the university's desire to give past, present and future training. Adding to this, Leo (IF) pointed out another form of possible resistance, or just a general reality, what he termed parity of expectation:

- *If we look at this question of training, it really is a question of parity. In this case, parity of expectation because we don't get the training we are not expected to be able to do x, y and z things; whereas if all foreign faculty were required to do x training, y training, z training, we would then be expected to do the work that it is related to. As it is now, we are strongly encouraged to do student advising, but it is not actually a requirement like it is for Korean faculty, so we don't get the training, that's part of it. Well, they want us to do it because it adds points to the department, but on a university level it is not really required. (Leo, IF)*
- *Like for me in my case, I don't have any advisees but our chair requested me to absorb the students form our dean because he is busy, so if I advise all these students, where will it go, to the department points or my points or our deans. (Rose, IF)*
- *Well, if you are recording the advising, it goes on yours. The challenge there is, do you know A. all of the things the students need to know like you are supposed to be tracking their progress for graduation, and employment after the fact. (Leo, if)*

Paul (IF) added to this by pointing out that there are just some things international faculty just cannot or are not expected to be able to do:

- *A certain amount of logic has to come in, this is not just a language thing, it is also familiarity with society and ways of doing things, networking and stuff like that. There are certain things that we are simply, by virtue of the fact that we were not born here, did not grow up here, do not have the connections within society that Korean faculty do have or are expected to have and shouldn't be, even if we are here for 20 years, we are not going to build the same connections. I think there are certain things that logically we cannot do effectively (Paul, IF)*

Regarding bilingual documentation, a possible resistance to this was suggested, a human resources issue:

- *That is probably a human resources issue. It is a problem, it is not pointing fingers at anybody, we don't have enough people who have the skills to be able to do it (Leo, IF)*

From the discussion on changes to bi-lingual training and documentation, parity of expectation and human resources were seen as the main forms of resistance coming from the University, along with expense, time, and difficulty in maintaining/sustaining the workload. The realisation of these suggested changes, in the division of labour element in the CTL office, would if implemented, improve *awareness* in all aspects of job performance, and resources/information for IF, and in time lessen the workload of AS.

6.5.2.2 Allowing earlier access to Online Grading System

When discussing point 3, *allowing earlier access to the online grading page*, two possible reasons for possible resistance were looked at: power and oversight. Leo (IF) put forward the notion that faculty are locked out of the system because of power:

- *I believe that there is a perception that information is power and if we tell professors too much information that they will start building up student expectations. By the end of the first month, you should be able to say, this is how many students I have in class, this is how what the grading percentages are going to be. Now, I am locked out of the system in terms of I cannot see, I cannot punch in a grade right now, but that is, what's that. a bit of code?*

Paul (IF) (resisting Leo's idea) thought that maybe this was an oversight on behalf of the university, not a power-play:

- *I would suggest that no one has ever thought about it*

Whether it is an oversight or a deliberate power-play, participants wanted to see change to this policy. Exclusion from this information is causing frustration for KF and IF, inhibiting

their pedagogical objectives, while inclusion would enable KF and IF to see the grading curve percentages early, allow them to calculate grades more easily, and help faculty with student counselling.

6.5.2.3 Add international student phone numbers to the system

With point 10, *add international student (exchange students) phone numbers to the system*, Mike (IF) in particular was critical of their absence. However, participants could not really see a way around this, as exchange students rarely get a Korean sim card for their one or two semester stay:

- *Actually, the full time language students can put their phone number in the Edward system (Paul, IF)*
- *However, exchange students can't. Even I just send an email to them (Mike, IF)*
- *Through email, they don't check every day (Leo, IF)*
- *Nobody checks emails anymore (Paul, IF)*
- *Yeah (Mike, IF)*
- *Some just exist on Wifi for the semester and don't get a Korean phone number (Paul, IF)*

Participants reasoned that the university may resist this need by suggesting that the students are here for a short time, and that email can and is used to contact them. Still, they wanted this suggested change to be voiced to the University, in the hope that if IS were included, it would make it easier for KF, IF, and AS to contact IS, ensure IS and KS receive information at the same time – reducing advantages for KF, and protect KF and IF from contacting IS on non-university SMS platforms −legal and sensitive issues.

6.5.3 Summary

This session resulted in the actualization of three main themes - *Accommodation, Inclusion* and *Awareness.* The main themes constructed reflect direct attempts by participants to advance the realization of their pedagogy objectives; *Effective Teaching & Learning, Student Evaluations, Employment* and *Enrollment,* and to counter earlier pedagogy activity findings of *Limitations, Exclusion, and Incognizance.* Figure 6.40 below summarizes Future Modelling Pedagogy Activity: the 12 suggested changes to Pedagogy policy.

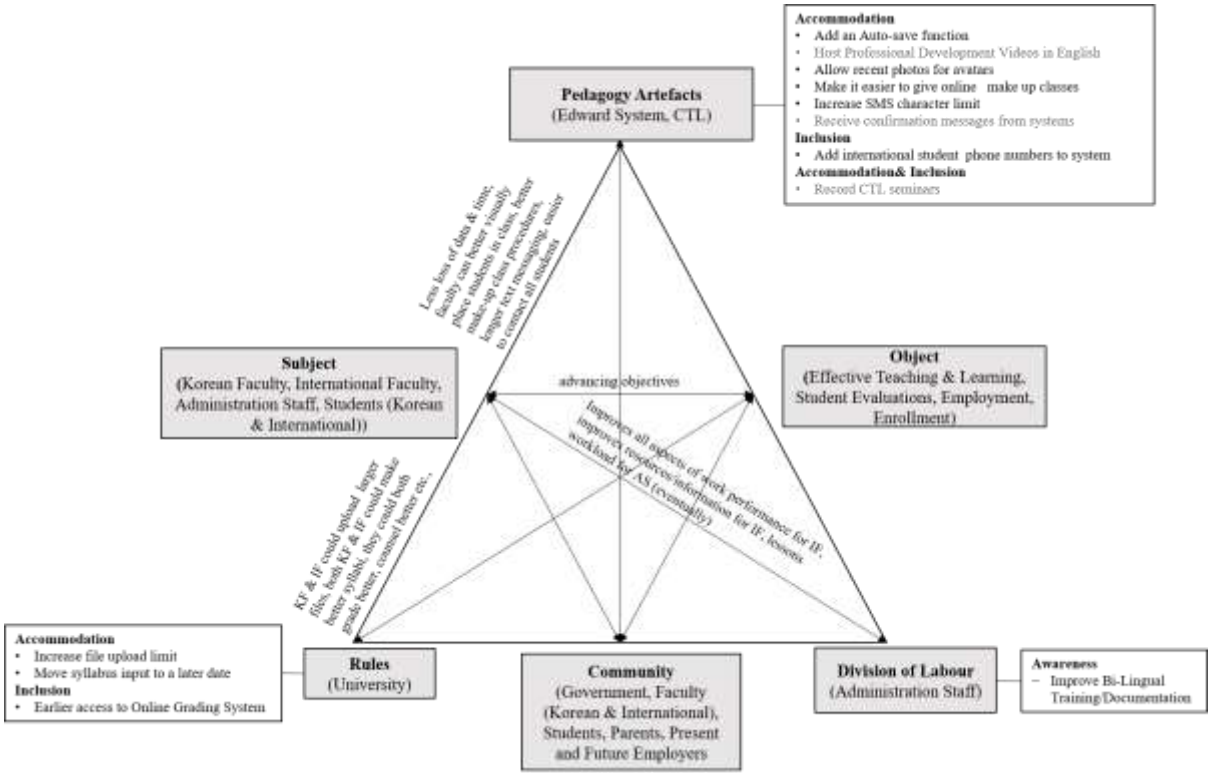


Figure 24 Summary: Future Modelling Pedagogy Activity - 12 suggested changes to Pedagogy policy

This chapter began in Sections 6.2 and 6.3, presented data across the actual-empirical analysis and historical analysis actions of the research intervention (sessions 2-6), identifying main themes and codes (contradictions) in specific areas of investigation (areas of interest

discussed/highlighted by participants) concerning research and pedagogy activity. The purpose was to highlight what areas of investigation were important for participants, what contradictions were found, what themes these contradictions represent, how they came to be, who they affected, and to what extent participants saw these problems inhibiting the realization of objectives.

Second, this chapter, in Section 6.4 and 6.5 presented data from the future modelling actions of the research intervention (sessions 7 & 8), identifying main themes and codes (suggested changes) in specific areas of investigation discussed by participants concerning research and pedagogy activity. The purpose was to highlight which institutional educational technology changes to research and pedagogy activity were suggested based on the contradictions found in Sessions 2-6, what resistance was foreseen, and how participants saw these changes advancing the realization of objectives.

In this chapter, the actual-empirical, historical, and modelling actions of the intervention were specifically chosen for the data presentation, as these are where contradictions inhibiting object-oriented activity were brought to light, and changes advancing object-oriented activity were suggested. These chosen intervention actions are central to the research questions of this thesis, and it is hoped (for the reader), that the data presented was able to illuminate the individual and collective transformative agency of participants as they explored and re-designed their own activity.

In the ensuing chapter, I will reflect on the intervention process and experience, reengage with the two research questions of this thesis, and provide a critical personal reflection on challenging aspects of the intervention.

7 Discussion

7.1 Introduction

The previous chapter has revealed a wealth of data reflective of institutional educational technology policy-practice inhibiting the realization of objectives, and direct attempts by participants to change existing policy-practice to advance the realization of their objectives. The findings revealed several policy-practice problems in pedagogy and research activity, mostly stemming from internal/external rules, horizontal and vertical hierarchy in division of labour, and limitations in artefacts. While the findings are reflective of one particular context and may not be wholly transferable, they do result from an intervention process where concept development, participant empowerment and institutional change are seen as universally accepted outcomes.

This chapter takes a step back from the data to reflect on the intervention process and experience, to reengage with the two research questions of this thesis, and to provide a critical personal reflection on challenging aspects of the intervention. The chapter is divided into three sections, a reflection on the intervention's enabling promise for stakeholders, a reflection on the intervention's enabling promise for institutions, and third, a reflection on the more challenging issues of the intervention.

My intention in section one is to discuss research question one: How can a formative Change Laboratory intervention enable stakeholders to analyse, critique and transform their own activity systems of educational technology policy and practice? In this reflection on the intervention's enabling promise for stakeholders, I will discuss why participants were able to ask the questions they did, why they were able to find what they did, and how they were able to critique and transform their work practice despite their historically top-down institutional setting.

Section two discusses research question two: How can a formative Change Laboratory intervention enable stakeholders and institutions to reimagine policy, decision making and governance in HEIs? In this reflection on the intervention's enabling promise for institutions, I will discuss how the intervention can bring change to HE governance, how it has an important place in reimagining the roles of power and more redistributed decision making.

In the last section of this chapter, I will critically reflect on some of the more challenging aspects I encountered before, during, and after the intervention: participant recruitment, engagement, and process.

Regarding the first research question, I contribute to literature on institutional change practices (Section 8.4) by espousing a more non-canonical approach to change processes in HEIs - approaches preferring more inclusive models of negotiation, compromise, and conflict. My focus here is to show the enabling promise of the intervention for stakeholders to analyse, critique and transform activity together. When looking at the second research question, I contribute to existing literature on ICT and change in HE (Section 8.4), by arguing against retroactive heuristic models of investigation in favour of more sociocultural models of change inquiry. My focus here is to highlight the enabling promise of the intervention for institutions to reimagine HE governance, the roles of power and more redistributed decision making. Third, by providing a critical personal reflection on challenging aspects of the intervention, I add to existing literature on the use of Change Laboratory interventions in HE research (Section 8.4). My focus here is to highlight the challenging issues I faced when undertaking the intervention, participant recruitment, engagement, and the process.

7.2 How can a formative Change Laboratory intervention enable stakeholders to analyse, critique and transform their own activity systems of educational technology policy and practice?

When I started this intervention, the main want from participants (stakeholders) was to see tangible change in institutional educational technology policy and practice concerning research and pedagogy activity, either direct change coming out of the intervention or eventual change resulting from the intervention. Stakeholders wanted to develop new concepts and see these or others like them implemented/consolidated in activity over time. So, the promise of realizing the expansive learning cycle was key to getting the intervention participants on board, and key to keeping them on track. But, while the completion of the cycle was an intended objective, and in some ways a met objective, why were participants able to get there, and get there together? This is because the intervention enabled stakeholders to ask questions, critique, and transform activity together.

7.2.1 The intervention's enabling promise for stakeholders: analyse, critique, and transform together

In an institution where a top-down unilateral canonical decision-making process is the norm, this intervention has shown that stakeholders working together can affect real meaningful change, change which is multilateral, non-canonical, challenging not only existing policies but also the status quo of unilateral canonical policy decision-making.

They were able to do this because the intervention enabled them to do this. The intervention gave stakeholders tools, systematic steps, and a safe democratic space/environment for change, allowing them to successfully redesign and co-construct their work practice.

The intervention's toolkit (Figure 4.1, Section 4.3), with its principles of double stimulation (utilizing CHAT models) and transformative agency, forms part of the systematic steps of the expansive learning cycle, all housed within a well-designed safe democratic space for change. The use of double stimulation (1st and 2nd stimulus) to highlight, analyse and help participants overcome contradictions in the workplace is a particular strength of the intervention. By employing task-designs based on double stimulation, utilizing first stimulus representations of existing problems and second stimulus mediating artefacts to help participants analyse and overcome the problems represented by the first stimulus, participants were able to expose/analyse and critique contradictions, and collectively work towards changing shared practice. Integral to this process was the use of mediating artefacts, such as CHAT's activity system models, which helped interventionists comprehend and navigate the complexity of institutional educational technology policies, enabling them to socially identify and confront for themselves the contradictions found in activity. As both a philosophical and practical lens, with participants attempting to untangle the complexity of human activity and instigate change in object-oriented activity, this sociocultural model of change inquiry with its activity system elements (subject, artefact, object, objective, rules, community, division of labour), and its principles (object-oriented activity, multivoicedness, historicity, contradictions, expansive transformation, social context) was found to be more revealing, relevant, and relational, more so than more traditional retroactive heuristic models of investigation. Indeed, a change inquiry model should be revealing. It should make use of the existing skills and knowledge of participants to reveal real problems people face in shared work practice. It should reveal what these problems mean for people, where these problems have come from, what these problems say about the workplace, why they exist and what can be done about them. A change inquiry model should be relevant. The process and outcomes of the inquiry

should be relevant, practical, and directly applicable to participants and their social context. A change inquiry model should be relational. It should connect people, bring management and faculty/staff together, build ties (Stensaker et al, 2006:431), and allow others to see others' problems/practices/ideas etc.

Commensurate with what Trowler (2002) called "non-canonical" practice (Section 2.3.2), the intervention enabled participants to address legitimate concerns in shared work practice by engaging in negotiation, compromise, conflict, and complex social/historical/cultural and political processes. This collective transformative agency, the antithesis of unilateral approaches to policy decision-making (Section 2.4), was more inclusive and allowed for more visceral engagement with policies concerning work practice which not only developed and empowered stakeholder voice, it also produced more relational, democratic, practical, and meaningful institutional educational technology policy and practice, certainly more so than being on the receiving end of a top-down decision-making process where rational-purpose policies bear little relation to the day-to-day realities faculty and staff encounter. This contribution is important for literature on institutional change practices (see Chapter 2, Section 2.2.2) as it highlights the importance of process and people in policy making.

Had participants followed more traditional research methods, such as retroactive heuristic models of investigation, they would most certainly not have been asked the right questions, nor have been able to ask the right questions, neither would they have been able to engage in the issues with any real depth, and the outcomes would not have been so useful, relational, practical, and meaningful. Such a traditional approach would have left concept development, participant empowerment, and institutional change off the table.

HEI contexts are messy, and ICT policy making requires an intricate problem-solving mechanism where interventionists can untangle the complex interwoven narratives of

artefacts, users, objects, and social/historical/cultural contexts. Yet, in institutional educational technology policymaking, such mechanisms are not widespread practice. Problem-solving decisions regarding ICT in HE is either unilateral or takes the form of retroactive heuristic models of investigation, top-down canonical essentialist approaches looking for quick fixes to problems that rarely consider the complexity of contexts on the ground, and actual user experience/voice (Section 2.3). These 'quick fixes' can lead to speedy decision-making; however, the decision-making process and its outcomes are unfitting for end-users and HEIs in the long term.

As a systematic methodology to reveal systemic tensions in object-oriented activity, the formative Change Laboratory intervention was seen as an appropriate framework to make explicit the problems people faced in work practice in HE. Stakeholder findings from this intervention did not come about through quick problem-solving decision making, nor are they the result of retroactive models investigating implementation, evaluation, and usability satisfaction (Section 2.3); these findings are the result of an intervention process which enabled participants to systematically and collaboratively expose, examine, and overcome contradictions in object-oriented activity through lengthy negotiation and deep sociocultural analyses/critique.

7.3 How can a formative Change Laboratory intervention enable stakeholders and institutions to reimagine policy, decision making and governance in HEIs?

This intervention, unlike the more top/down rational purpose policy models, approaches change by enabling stakeholders to work through problems, design/develop nuanced concepts/models, and collectively bring these to the institution. I believe that such an

approach to change is beneficial to stakeholders and institutions. As said before, the intervention develops new concepts, and empowers participants, bringing about institutional change. For both stakeholders and institutions, the intervention can help reimagine HE governance, roles of power, and more redistributed decision-making.

7.3.1 The intervention's enabling promise for institutions: reimagining HE governance, the roles of power and more redistributed decision making

Faculty and low-level administration at the university rarely have a say in policy concerning work practice, those decisions are carried out unilaterally by upper management. It is evident from the literature review that both the text and discourse of policies in HEIs (not solely in a Korean context) emanate from age-old top-down structural forces, with decision making involving those outside the power-blocks being seldom encouraged (See Chapter 2. Section 2.2.3.2). The resulting canonical prescriptive policies are often realistically inadequate when it comes to the complexity and movement of components and contexts on the ground. In this case study, this inadequacy is borne out. The wealth of inhibitive findings identified in the intervention are reflective of the policy ramifications of Reynolds and Saunders' (1987) 'implementation staircase'. The implementation of undemocratic rational-purpose policies is seldom useful, relational, practical, and meaningful. From an organizational governance perspective, a unilateral canonical decision-making process may make sense, as it "streamlines operational decisions" (Section 2.2.3); however, findings from this case study show that the outcomes of such a process are causing tensions which are inhibiting object-oriented activity for stakeholders. As such, comparisons can be drawn between the work of Shin (2015), (See Chapter 2 Section 2.3.3), and the outcomes of this thesis, where structural change and decision-making processes are seen to be in the hands of HEI managers (the

president and higher-level administration).

This research differs from Walker & Toracco (2004: 817) who put forward the idea that change in HE is "typically characterized by collegiality, extended dialogue" (Chapter 2, Section 2.3). The outcomes of this project show that this characterization of change in HE is idyllic, and that reality is strikingly different.

Although this South Korean context differs from Walker & Toracco's ideal or idyllic characterisation of change, this intervention has shown that change can indeed be explored/suggested through collegiality and extensive dialogue. What this intervention offers institutions, granted, in a very small way, is the idea that all stakeholders should have a seat or representative voice at the table. This collective bargaining approach not only promotes a symbiotic consideration of components and mindfulness of social and cultural contexts (Section 2.5), resulting in more meaningful nuanced changes, it helps people disrupt or navigate the complex hierarchal relationships in their institution, enabling them and the institution to reimagine HE governance, the roles of power and more redistributed decision making.

In many ways the broader significance of these findings is commensurate with previous literature using more sociocultural approaches to ICT and change in HE. Like the capacity building/development work of Toro & Joshi (2012), whose findings highlighted the need for decision makers and end-users to collaborate (Section 2.3), this formative Change Laboratory intervention has shown that having participative leadership styles or communicative pathways supporting individual and collective agentic roles in policy making is important for end-user intrinsic/extrinsic needs and policy outcomes (Section 2.2.2). This study is commensurate with the work of Mostert & Quinn (2009), who found that boundary crossing leads to nuanced understandings of other contexts (Section 2.3), a valued outcome of this

intervention. This thesis argues that nuanced policy making can only come about through nuanced understanding of other contexts. Hu & Webb's (2009) Activity Theory work on conflicts between teacher-centered pedagogy and student-centered pedagogy suggested a need for a shared understanding of the conflicts, and a shared plan on how to address needed changes. Shared understanding of conflicts/tensions and nuanced plans needed to address changes in object-oriented activity among intervention participants, as well as communicating outcomes/tensions/changes to upper management is central to the practice. Although, the work above is not directly related to institutional educational technology policy in HE, the investigation methods and their findings show the value and use of other more multilateral, non-canonical sociocultural approaches to ICT and change in HE. This current study contributes to literature on approaches to ICT and change in HE, by exploring institutional educational technology policy from a more multilateral, non-canonical and sociocultural perspective, a formative Change Laboratory intervention support by CHAT. This multilateral non-canonical approach brought a multivoicedness to the intervention, a diverse set of skilled subjects who spoke from personal perspectives/experiences, who crossed learning boundaries to collaborate, share and listen to other people's problems/perspectives, to ask why something is the way it is and to see how best it could be resolved, with resulting nuanced changes being mutually beneficial for all concerned. In line with Hurley et al. (Section 2.2.1), the core point is that other voices should be included in institutional educational technology policy decision making. The findings of this intervention are evidence that collective transformative agency not only develops employee voice, but produces more relational, democratic, practical, and meaningful institutional educational technology policy.

This intervention has brought some level of change to the institutions through collective

transformative agency, these changes have been tested, some of them have been adapted and some were rejected. This intervention has shown that collective transformative agency can affect real meaningful change, change which is multilateral, non-canonical, challenging not only existing policies but also the status quo of unilateral canonical policy decision-making. Advocating for collective transformative agency in institutional educational technology policy is important, this process is more relational, democratic, practical, meaningful, and empowering for people, but this collective transformative agency cannot just exist or perform in a vacuum, it needs a framework, a model of investigation to follow. This thesis argues that a formative Change Laboratory intervention is an appropriate model of investigation to use in institutional educational technology policy, as it offers a more appropriate toolkit, systematic steps, and a safe democratic environment for nuanced change, a model which reflects the complexity and movement of components and contexts on the ground, allowing people to successfully redesign and co-construct their work practice.

For institutions (and stakeholders), this type of change approach, as well as its outcomes, is more revealing, relational, and relevant.

7.4 A critical personal reflection on challenging aspects of the intervention, participant recruitment, engagement, and process

The previous section has discussed some of the values I see this intervention offering stakeholders and institutions. In this section, I would like to discuss some of the more challenging issues I encountered before, during, and after the intervention: participant recruitment, engagement, and process.

In the context of this study, I was very much interested in recruiting participants who were the end-users (not makers) of institutional educational technology policy and practice tools,

faculty, and staff who on a day-to-day basis needed to use these tools to reach their pedagogy, research, information, and administrative objectives. So, the voices of Korean faculty, international faculty, and low-rank administration staff were sought. As mentioned in Section 4.4.3, four key factors influenced my selection process: relationship of participants to the units of analyses, type/level of position/office, length of employment with the university, and English language ability. In addition, regarding Korean faculty, I asked those with dual faculty/administration positions to participate. I did this as it was important to have people who could later help bridge outcomes of the intervention to upper management. The problem, however, and this is quite evident when following the intervention sessions, both the Korean faculty and to a lesser extent, the Korean administration staff, became absent from several sessions early on. Although they were kept in the loop, with pre- and post-session emails, Google doc activities etc., their absence from sessions was something both I and the other international faculty members regretted. In hindsight, and through conversations with the Korean faculty, most were absent because of heavy schedules and priorities. So, even though their dual position was important for the intervention, especially at the implementation and consolidation stages, I could have made life easier if I had selected Korean faculty without administrative titles. Like the Korean faculty, the administration staff were in and out of sessions, this was primarily due to their workload. Honestly, the problem here is s related to the competence of the administration staff. Unfortunately, or fortunately, all administrative participants were extremely competent, they had the skills to match the current demands placed on them by the university in the face of globalization. What this means, however, is that they are pulled and pushed into events where their global competency is needed, as there are few on campus who have their skill levels. This workload, a consequence of being highly skilled and competent, took administration staff away from the intervention. It is hard to

circum-navigate this issue, as the administration staff was selected for the intervention based on their competence, level, and closeness to the units of analyses. In addition to these problems of participant recruitment and engagement, I must mention that within earlier sessions where all or most of the three groups were represented, I did witness some issues with power relations, and cultural differences. In the early sessions, Korean faculty and administration staff were more hesitant to speak, this was not just because of English and/or contextual knowledge, but more to do with the institution's organisational culture, where the roles and reciprocal obligatory relationships between subordinates and superiors are distinct (Section 2.2.3.2). One aspect of the intervention is to ensure that I as the researcher-interventionist created an environment where participants could feel "safe to freely express their opinions" and are allowed to "experiment with new ways of acting" (Bligh & Flood, 2015:155, Section 4.4). While every effort was made to do this, in the early sessions, the institution's organisational culture was apparent. Having said this, as the intervention moved on, and people became more comfortable and united in their understanding and objectives, these issues soon abated. I am not saying that this intervention can usurp an organisation's culture, but as argued in earlier sections, it could exemplify positive changes and processes which institutions could take on board.

The last issue I would like to talk about is the intervention process as a whole. In a talk given by Engeström in 2021 via Zoom, titled "Change Laboratories and Transformative Agency" organised by Lancaster University and Think Lab Cambridge University, Engeström mentioned that a Change Laboratory intervention should not be undertaken by a single research interventionist, its scope and workload (design, running of sessions, data collection etc.) is just too much to take on. When I heard this, I was not too surprised, as from

experience, the scope and workload of the intervention at times was time consuming, stressful, and seemingly unwieldly. Nevertheless, as a single research interventionist, I had just completed the intervention, and its expansive learning cycle. It must be noted, that while the intervention participants do most of the actual work in the intervention (analysis, critique, and concept development, etc.), the intervention must have a solid design and a solid unwavering stubborn commitment from the research interventionist, without this commitment to the process, this type of intervention may indeed become overwhelming and worse, unfruitful.

7.5 Summary

This chapter took a step back from the data to reflect on the intervention process and experience, to reengage with the two research questions of this thesis, and to provide a critical personal reflection on challenging aspects of the intervention. Throughout the chapter, I discussed the intervention's enabling promise for stakeholders and institutions, as well as some of the more challenging issues I faced. The subsequent chapter concludes the thesis by highlighting the strengths and limitations concerning the execution and outcomes of this project, contributions to scholarship, and final reflections.

8 Conclusion

8.1 Introduction

The previous chapter reflected on the intervention process and experience, reengaged with the two research questions of this thesis, and provided a critical personal reflection on challenging aspects of the intervention. This chapter concludes the thesis by discussing the implications of insights gained from the intervention for policy, practice, and future research. The chapter also highlights strengths and limitations concerning the execution and outcomes of this project, contributions to scholarship, and final reflections.

8.2 Implications for Policy and Practice

This thesis has shown that current institutional educational technology policy and practice at the University is inhibiting the research and pedagogy objectives of KF, IF and AS. Drawing on a formative Change Laboratory intervention, participants were able to overcome tensions in shared work practice and challenge the status quo of unilateral canonical practice. In doing so, they created nuanced institutional educational technology policies and practices directly advancing the realization of their research and pedagogy objective.

By identifying tensions and suggesting nuanced changes to institutional educational technology policy in pedagogy and research object-oriented activity, this project shows the value of other voices, and other models of investigation in institutional educational technology policy decision-making.

As such, when discussing implications for institutional educational technology policy and practice in HE, this thesis advocates for nuanced policies, other voices, and other models of investigation.

Policies should not be handed down by upper management, with the needs of the societal, outweighing the needs of the social or the individual, they should be nuanced, contextual,

relate to, informed by and beneficial to the needs of the societal, social, and individual. Collective transformative agency is needed in institutional educational technology policy making. These other voices would offer a more multilateral non-canonical decision-making process, one which not only empowers employees, but produces more relational, democratic, practical, and meaningful institutional educational technology policy. This research intervention advocates for a form of good governance, where policy decision making is a more inclusive process, listening to and acting upon all voices in an organization, not just those at the upper levels of management. It is an argument for the inclusion of fragmented bargaining unit voices in institutional educational technology policy, a multilateral non-canonical approach to policy and practice decisions which would result in improved decision making, policy, governance, task performance, extrinsic and intrinsic attainment.

This thesis has shown that a formative Change Laboratory intervention offers a more appropriate toolkit, systematic steps, and a safe democratic environment for change, allowing people to successfully redesign and co-construct their work practice. For policy and practice, addressing change in ICT should be a multilateral non-canonical process, a sustained collaborative heterogeneous approach to understanding people, tools, and objectives, bearing in mind the weight of historical, social, and cultural contexts. The value of a formative Change Laboratory intervention lies in its ability to create nuanced changes to activity, changes which derive from more revealing, relational, and relevant sociocultural models of investigation, and a multilateral non-canonical change process which is more relational, democratic, practical, meaningful, and empowering for intervention participants. Utilizing this intervention in institutional educational technology policy decision making is far more appropriate than existing unilateral canonical decision-making practices and/or retroactive heuristic models of investigation.

8.3 Strengths and Limitations of the Project

In very simple terms, this project facilitated a process where Korean faculty, international faculty and administration staff could come together to share differing perspectives on shared activity. When looking at the strengths and limitations of the project, I will offer two perspectives: the research intervention team and myself, the researcher-interventionist. Numerous project strengths were voiced by the intervention team; the realization of shared problems, new perspectives, empathy of other's activity, commitment to practical change, a new way of approaching change, the building of new relationships, the realization that other people care about their work practice and voicing outcomes to upper management. However, numerous problems were also voiced across the intervention, physical attendance, cultural differences, having to catch-up, hierarchy, scheduling, and language.

From my own perspective, as the researcher-interventionist, I would say the main strengths of the project have been the ability to listen to other voices, witness the change process, connect the outcomes of the project to upper management, and see proposed changes being acted upon. A further strength was the value of the intervention's task design and double stimulation principle in unearthing primary contradictions, how participants were encouraged to recognise and aggravate contradictions in the activity examined; providing people with the recognition of the necessity for change, for enacting and sustaining change as further contradictions are uncovered. The contradictions found were drivers of agentic change and were vital for the sustenance and development of empowering participants and their activity. This process was not as simple as identifying contradictions and moving on; the developmental potential of contradictions in activity, the local manifestations of contradictions for participants, and the impetus for change were a direct result of lengthy negotiation, compromise, conflict, and

complex social/historical/cultural and political processes, traits which this thesis espouses. There were limitations of course, such as the complexity of designing the intervention, the language of CHAT, participant recruitment/engagement, keeping everyone informed pre/post sessions, dealing with culture bumps, non-transferable outcomes, analysis of large data sets, and the general stewardship of the expansive learning stages. Regarding the language of CHAT for example, I would agree that CHAT's "dense terminology" is "unforgiving on newcomers" (Bligh & Moffitt, 2021). This is true for both researcher and intervention participant. An issue with the unforgiving dense terminology of CHAT is that it tends to preclude a more philosophical/psychological discussion of the issue. From my experience of using CHAT, intervention participants used it more as a practical lens for developmental change in complex social contexts. They quickly dispensed with the philosophical/psychological and got down to brass tacks. Whether one sees this as a positive or negative is open for debate. As a strength, both I and the participants found this practical application to be revealing, relevant, and relational, characteristics far more favourable for policymaking than unilateral canonical decision making and/or retroactive heuristic models of investigation. Both the intervention and CHAT made use of the existing skills and knowledge of participants to reveal genuine problems people faced in institutional educational technology policy concerning research and pedagogy object-oriented activity. The initial engagement of labelling elements and locating contradictions in present activity led people to realise not only the complexity of their context and the issues at hand, but that each decision made resulted in intended or unintended repercussions/ripples across the activity system/s. By exploring past activity, participants were able to trace activity breadcrumbs across space and time, revealing historic positives, negatives, and no change in activity. By modelling future activity, participants were able to surmise/realise practical

changes and consider reasons for their acceptance/non acceptance and the consequences of such.

A further limitation, when looking further afield, would be that the outcomes of the intervention may not be transferrable to other contexts, as the nature of the intervention is to explore a specific context. However, while the specific outcomes may not be transferrable, I believe the intervention approach itself is something HE institutions should avail of, to obtain a richer contextual understanding of the problems people face in shared activity, a change process which is more meaningful, collaborative, and democratic.

8.4 Contributions to Scholarship

My intention throughout this study has been to address the research gaps identified in the literature review and to understand the institutional educational technology challenges KF, IF and AS face in research and pedagogy object-oriented activity.

First, this study contributes to literature on institutional change practices, Trowler (2002, 2020); Heffernan et al. (2015); Jacobs (2016); Bligh & Flood (2015) and Virkkunen & Newnham (2013), authors who espouse a more non-canonical approach to change processes in HEIs, with approaches preferring more inclusive models of negotiation, compromise, and conflict, such as Ethnographic Research, Action Research, TPACK Research, and Activity Theory. This case study has argued against top-down unilateral decision-making processes in favor of multilateral non-canonical decision-making processes in institutional educational technology policy in HEIs. This study has shown that collective transformative agency empowers employees and produces more relational, democratic, practical, and meaningful institutional educational technology policy.

Second, this study contributes to existing literature on ICT and change in HE, by arguing against retroactive heuristic models of investigation (Doll & Torkzadeh, 1988; DeLone & McLean, 2003; Noiwan & Norcio, 2000; Nielson, 1995; Pierce, 2005; Kostaras & Xenos, 2007; Astani & Elhindi, 2008; Lee et al., 2009; Hasan, 2013, and Toit & Bothma, 2010), in favour of more sociocultural models of change inquiry (Stensaker et al, 2006; Nyang, 2006; Hu & Webb 2009; Mostert & Quinn 2009; Virkkunen & Newnham, 2013). This study has utilized a novel approach to address institutional educational technology policy and practice problems in a HEI setting. This study has shown that a formative Change Laboratory intervention offers a more appropriate toolkit, systematic steps, and a safe democratic environment for change in a HEI setting, allowing a group of people to successfully redesign and co-construct their work practice. This intervention has created nuanced changes to activity, changes which derive from more revealing, relational, and relevant sociocultural models of investigation, and a multilateral non-canonical change process which is more relational, democratic, practical, meaningful, and empowering for intervention participants. Third, this study contributes to the literature on the use of Change Laboratory interventions and CHAT in HE research. The thesis adds a South Korean case study to the field. It has shown how participants can challenge the status quo and overcome tensions in institutional educational technology policy and practice concerning research and pedagogy object-oriented activity. This novel approach to institutional educational technology policy is something that has seen participants collectively create new knowledge; a range of new concepts and models that they felt would address the contradictions they had identified in their practice. Through the process of double stimulation, they amassed greater knowledge about their own practices and proposed new models and tools that might overcome current contradictions. In addition to the positive values of the intervention; concept development, participant empowerment,

and institutional change, my critical reflection also highlighted challenging issues with participant recruitment, engagement, and the process. These reflections and this research may be of interest to researchers who wish to affect change, develop concepts, and empower participants in higher education.

8.5 Implications for Future Research

From the intervention team's point of view, this project needed to have tangible outcomes, they did not want it to be another exercise in academic enquiry. These outcomes, manifest as real changes, were dependent upon the responses from upper management. Something which this intervention does not take account for is upper management voice, their perspectives concerning ICT policy and faculty/administration use. Future research should try to incorporate the voice of upper management, to provide a more holistic understanding of contexts from both sides of the fence.

Something which this research could have benefitted from, given time, was to explore in greater depth the personal work history and unique identity of intervention participants prior to the intervention. As mentioned earlier, such understanding would complement the collaborative process of the intervention, allowing the researcher-interventionist and practitioners to better know each other, and allow for insights into both collective and individual development. Future research utilizing research interventions of this nature, should, time permitting, allow for such preliminary investigation.

Something which was of interest in the empirical analysis of both pedagogy and activity, was the proclivity of contradictions located within rules, artefacts, and division of labour elements. Very little attention was paid to the community, object/objectives, and subject

elements, other than identifying them. It would be interesting to see why this is the case, and if this is a common outcome of activity system analysis at empirical actions of inquiry.

A final area of interest would be to analyse the weight of importance or significance of each expansive learning stage as seen by intervention participants. An understanding of different weights might allow the researcher-interventionist to better cope with time, attendance, and motivation issues.

8.6 Final Reflections

Carrying out a research intervention to facilitate change in shared work practice in institutional educational technology policy in the context of a historically top-down institutional setting has been a long, and at times stressful journey. A researcher-interventionist needs to be a facilitator, a motivator, a steward, a bridge, and at times a referee. While the journey may have been long and difficult at times, it has been extremely rewarding. The intervention allowed me to hear the voices of faculty and administration, to hear their concerns, to get a better understanding of the units of analyses, and to facilitate change efforts. Being able to bring the proposed changes to upper management and have several of them acted upon has not only projected faculty and administration voices upwards, but also added real value to the work of the intervention and its team.

9 References

Allen, D. (2003). Organisational climate and strategic change in higher education: Organisational insecurity. *Higher Education* 46, 61–92. https://doi.org/10.1023/A:1024445024385

Anderson, R. E. (1983). *Finance and Effectiveness: A Study of College Environments*. Educational Testing Service, College and University Programs, Princeton, NJ 08541 ($8. https://eric.ed.gov/?id=ED242232

Archer, C. M. (1986). *Culture bump and beyond*. In J. M. Valdes (Ed.), *Culture bound: Bridging the cultural gap in language teaching* (pp.170-178). Cambridge: Cambridge University Press.

Astani, M., & Elhindi. M. (2008). "An empirical study of university websites." Issues in Information Systems 9.2 (2008): 460- 465.

Austin, I., & Jones, G. (2016). Governance of Higher Education: Global Perspectives, Theories, and Practices. New York, NY: Routledge.

Bakhurst, D. (2009). Reflections on activity theory. *Educational Review*, *61*(2), 197–210. https://doi.org/10.1080/00131910902846916

Beaky, L. A., Besosa, M., Berry, J., Martinez, P., & Bradley, G. (2013). The Inclusion in Governance of Faculty Members Holding Contingent Appointments. Academe, 99(4), 77-89.

Becher, T. & Kogan, M. (1992). Process and Structure in Higher Education. London: Routledge.

Biesta, G., Priestley, M., & Robinson, S. (2015). The role of beliefs in teacher agency. *Teachers and Teaching*, *21*(6), 624–640. https://doi.org/10.1080/13540602.2015.1044325

Billett, S. (2006). Work, change and workers. Springer: Dordrecht.

Billett, S. (2003). Individualising the social - socialising the individual: Interdependence between social and individual agency in vocational learning. Paper presented at the 11th Annual International conference on post-compulsory education and training: Enriching learning cultures, Gold Coast.

Birnbaum, R. (1988). How colleges work. The cybernetics of academic organization and leadership. San Francisco: Jossey-Bass Publishers.

Blackler, F. (1993). Knowledge and the Theory of Organisations: Organisations as Activity Systems and the Reframing of Management. Journal of Management Studies 30/6863-884.

Blagescu, M., & Young, J. (2006). *Working Paper 260 Capacity Development for Policy Advocacy: Current thinking and approaches among agencies supporting Civil Society Organisations*. Accessed online at: https://www.gichd.org/fileadmin/GICHD-resources/rec-documents/Capacity-Development-for-Policy-Advocacy.pdf

Bligh, B., & Flood, M. (2017). Activity theory in empirical higher education research: Choices, uses and values. *Tertiary Education and Management*, *23*(2), 125–152. https://doi.org/10.1080/13583883.2017.1284258

Bligh, B. & Flood, M. (2015). "The Change Laboratory in Higher Education: Research-Intervention Using Activity Theory." In Theory and Method in Higher Education Research, edited by Jeroen Huisman and Malcolm Tight, 1:141–68. Emerald Group Publishing Limited. https://doi.org/10.1108/S2056-375220150000001007.

Bligh, B. & Moffitt, P. (2021). CfP: Activity Theory in Technology Enhanced Learning Research. Accessed online at: https://stel.pubpub.org/cfp-activity-theory-in-

technology-enhanced-learning-research

Blunden, A. (2011). *Vygotsky's idea of Gestalt and its origins. Theory & Psychology, 21(4), 457–471*. https://doi:10.1177/0959354310386403

Blunden, A. (2010). An Interdisciplinary Theory of Activity, Leiden, Boston: Brill

Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*(2), 77–101. https://doi.org/10.1191/1478088706qp063oa

Bucoy, J. (2011). *NGO Governance: Management and Accountability, published by the Trinitian Scholar, Trinity University of Asia,*. (n.d.). ResearchGate.

Burnes, B. (2004). Managing Change: A Strategic Approach to Organizational Dynamics (4th ed.). London: Prentice Hall, Pearson Education.

Capano, G. (2011). Government Continues to Do Its Job. A Comparative Study of Governance Shifts in the Higher Education Sector. *Public Administration*, *89*(4), 1622–1642. https://doi.org/10.1111/j.1467-9299.2011.01936.x

Chen, J. (2021). Heuristics. Investopedia. Accessed online at: https://www.investopedia.com/terms/h/heuristics.asp

Cho, J. (2015). Responses to globalization: internationalization and institutional reform in two different types of universities in Korea. *Unpublished Thesis* College of Education, University of Maryland.

Cleland, J., & Durning, S. J. (2019). Education and service: how theories can help in understanding tensions. Med Educ. 53:42-55.

Cohen, M. D., & March, J. G. (1974). *Leadership and Ambiguity: The American College President*. McGraw-Hill.

Creely, E., & Tour, E. (2019). EAL teachers' professional learning about digital literacies: a

socio-material perspective. Conference paper. Accessed online at: https://www.researchgate.net/publication/332672169_EAL_teachers'_professional_learning_about_digital_literacies_a_socio-material_perspective

Daniels, H. (2016). Vygotsky and Pedagogy. London: Routledge, https://doi.org/10.4324/9781315617602

Daniels, H. (2008). Vygotsky and Research. London: Routledge

Davis, F. D. (1986). A Technology Acceptance Model for Empirically Testing New End-User Information Systems. (Doctoral dissertation, Massachusetts Institute of Technology).

DeLone, W. H., & McLean, E.R. (2003)."The DeLone and McLean Model of Information Systems Success: A Ten-Year Update", *Journal of Management Information Systems* 19 (4), pp.9- 30.

de Souza, C. S. (2008). Missing links in the rhetoric of Activity Theory. Interacting with Computers, 20(2), 267–271. https://doi.org/10.1016/j.intcom.2007.07.006

Dill, D. & Helm, K. (1988). Faculty participation in strategic policy making. Higher Education: Handbook of Theory and Research. (4), 319-355.

Doll, W. J., & Torkzadeh, G. (1988). The Measurement of End-user Computing Satisfaction. *MIS Quarterly*, June, pp. 259-274.

Engeström, Y. (2015). Learning by expanding. An activity- theoretical approach to developmental research. Second Edition. New York: Cambridge University Press

Engeström, Y., Sannino, A., & Virkkunen, J. (2014). On the Methodological Demands of Formative Interventions. Mind, Culture, and Activity, 21(2), 118–128. https://doi.org/10.1080/10749039.2014.891868

Engeström, Y. (2011). From design experiments to formative interventions. *Theory &*

Psychology, *21*(5), 598–628. https://doi.org/10.1177/0959354311419252

Engeström, Y., & Sannino, A. (2011). Discursive manifestations of contradictions in organizational change efforts: A methodological framework. Journal of Organizational Change Management, 24(3), 368–387. doi:10.1108/09534811111132758

Engeström, Y., & Sannino, A. (2010). *Studies of expansive learning: Foundations, findings and future challenges. Educational Research Review, 5(1), 1–24.* doi:10.1016/j.edurev.2009.12.002

Engeström, Y., & Virkkunen, J. (2007). Muutoslaboratorio - kehittävän työntutkimuksen uusi vaihe . teoksessa E. Ramstad, & T. Alasoini (Toimittajat), Työelämän tutkimusavusteinen kehittäminen Suomessa: lähestymistapoja, menetelmiä, kokemuksia, tulevaisuuden haasteita (Raportteja / Kansallinen työelämän kehittämisohjelma; Nro 53). Helsinki: Työministeriö.

Engeström, Y. (2005). Developmental Work Research: Expanding Activity Theory in Practice. Volume 12. *International Cultural Historical Human Sciences.*

Engeström, Y. (2001). Expansive Learning at Work: Toward an activity theoretical reconceptualization, Journal of Education and Work, 14:1, 133-156 https://doi.org/10.1080/13639080020028747

Engeström, Y. (1999a). Activity Theory and Individual and Social Transformation. In Y. Engeström, R. Miettinen, & R. Punamaki (Eds), Perspectives on Activity Theory. Cambridge: Cambridge University Press. https://doi.org/10.1017/cbo9780511812774.003

Engeström, Y. (1999b). Innovative Learning in Work Teams: Analyzing Cycles of

Knowledge Creation in Practice. In Y. Engeström, R. Miettinen, & R.-L. Punam?ki (Eds.), Perspectives on Activity Theory (pp. 377-404). Cambridge: Cambridge University Press. http://dx.doi.org/10.1017/CBO9780511812774.02

Engeström, Y. (1987). Learning by expanding. An activity- theoretical approach to developmental research. First Edition. New York: Cambridge University Press

Englund C, Olofsson AD, & Price L. (2018). 'The influence of sociocultural and structural contexts in academic change and development in higher education', Higher Education, 76 (6), pp.1051-1069.

Englund, C., & Price, L. (2018). "Facilitating Agency: The Change Laboratory as an Intervention for Collaborative Sustainable Development in Higher Education." International Journal for Academic Development 23 (3): 192–205.

EPRS. (2017). Understanding capacity-building/ capacity development A core concept of development policy. Briefing, The European Parliament. Accessed online at: https://www.europarl.europa.eu/thinktank/en/document.html?reference=EPRS_BRI(2017)599411

Fenwick, T., Edwards, R., & Sawchuck, P. (2011). Emerging Approaches to Educational Research Tracing the Socio-Material. London: Routledge.

Floyd, C. E. (1985). *Faculty Participation in Decision Making: Necessity or Luxury? ASHE-ERIC Higher Education Report No. 8, 1985*. Association for the Study of Higher Education, Publications Department, One Dupont Circle, Suite 630, Washington, DC 20036 ($7. https://eric.ed.gov/?id=ED267694

Fraser, N. (2013). Fortunes of Feminism: From State-Managed Capitalism to Neoliberal Crisis. London: Verso

Fraser, N (2003). 'Social Justice in the Age of Identity Politics: Redistribution, Recognition,

and Participation', in Nancy Fraser and Axel Honneth, Redistribution or Recognition? A Political-Philosophical Exchange, p. 36. London: Verso.

Fuller, A., Hodkinson. H., Hodkinson. P., & Unwin. L. (2005). Learning as peripheral participation in communities of practice: a reassessment of key concepts in workplace learning. *British Educational Research Journal*, 31(1), 49-68.

Ghazarian, P.G., & Youhne, M.S. (2015). Exploring Intercultural Pedagogy: Evidence From International Faculty in South Korean Higher Education. *Journal of Studies in International Education*. 2015;19(5):476-490. doi:10.1177/1028315315596580

Gee, J., Hull, G., & Lankshear, C. (1996). The New Work Order. Avalon Publishing

Gerber, L.G., Clausen, D.M., Poston, M.E., Perley, J.E., & Ramo, K. (1997). Behind closed doors? Reaffirming the value of shared governance. Academe, 83(5).

Good, A. G. (2018). *Teachers at the Table: Voice, Agency, and Advocacy in Educational Policymaking*. Lexington Books.

Gornitzka, Å., & Maassen, P. (2000). "Analyzing organizational change in higher education" In Comparative Perspectives on Universities. 83-99.

Gress, D. R., & Shin, J.C. (2020). "Diversity, Work environment, and Governance participation: A study of Expatriate faculty perceptions at a Korean University" Special Invite Paper. JIRSEA Issue: Vol. 18 No. 1, May/June Accessed online at: http://www.seaairweb.info/journal/JIRSEA_v18_n1_2020.pdf#page=12

Haapasaari, A., Engeström, Y., & Kerosuo, H. (2016). The emergence of learners' transformative agency in a Change Laboratory intervention, Journal of Education and Work, 29:2, 232-262, https://doi:10.1080/13639080.2014.900168

Hasan, H., & Kazlauskas, A. (2014). "Activity Theory: who is doing what, why and how".

Faculty of Business - Papers (Archive). 403. Accessed online at: https://ro.uow.edu.au/buspapers/403

Hasan, H. (1999). 'Integrating IS and HCI using AT as a Philosophical and Theoretical Basis', Australian Journal of Information Systems, vol. 6, no. 2, pp. 44-55.

Hasan, L. (2013). Using University Ranking Systems to Predict Usability of University Websites. *Journal of Information Systems and Technology Management* Vol. 10, No. 2, May/Aug., 2013 pp.235-250.

Hasted, C. (2019). Humanities doctoral education for a relational future: a Change Laboratory research intervention. Doctoral Thesis. Lancaster University https://doi.org/10.17635/lancaster/thesis/650

Heaney, T. (2010). Democracy, shared governance, and the university. New Directions for Adult and Continuing Education. 2010. 69 - 79. 10.1002/ace.392

Heffernan, A., Jones, D., & Albion, P. (2015). *TPACK as shared practice: Toward a research agenda* (pp. 13–20). In book: Research highlights in technology and teacher education 2015. (pp.13-20) Publisher: Society for Information Technology & Teacher Education

Heikkila, H., & Seppänen, L. (2014). "Examining Developmental Dialogue: The Emergence of Transformative Agency." Outlines. Critical Practice Studies 15 (2): 05–30.

Hu, L., & Webb, M. (2009). Integrating ICT to higher education in China: From the perspective of Activity Theory. *Education and Information Technologies*, *14*(2), 143. https://doi.org/10.1007/s10639-008-9084-6

Hurley, R.F., Church, A.H., Burke, W.W. and Van Eynde, D.F. (1992). Tension, change and values in OD, OD Practitioner, 29, pp. 1–5.

Issroff, K., & Scanlon, E. (2002). *Using technology in Higher Education: an Activity Theory perspective. Journal of Computer Assisted Learning, 18(1), 77–83.* https://doi:10.1046/j.0266-4909.2001.00213.x

Jacobs, S. D. (2016). The Use of Participatory Action Research within Education-Benefits to Stakeholders. World Journal of Education, 6(3). doi:10.5430/wje.v6n3p48

Jonassen, D.H., & Rohrer-Murphy, L. (1999). Activity theory as a framework for designing constructivist learning environments. *ETR&D* 47, 61–79. https://doi.org/10.1007/BF02299477

Kamber, R. (1984). Dissatisfied professors and the erosion of shared governance. The Chronicle of Higher Education, 29(16), 96.

Kahlke, R., Bates, J., & Nimmon, L. (2019). When I say…sociocultural learning theory. Medical Education 2019 53: 117-118 Accessed online at: https://onlinelibrary.wiley.com/doi/epdf/10.1111/medu.13626

Kahn, K. (1973). The NLRB and Higher Education: The Failure of Policymaking through Adjudication. *UCLA Law Review*, *21*, 63.

Kajamaa, A., & Kumpulainen, K. (2019). Agency in the making: analyzing students' transformative agency in a school-based makerspace, Mind, Culture, and Activity. https://doi.org/10.1080/10749039.2019.1647547

Kaptelinin. V., & Nardi, B.A. (2006). "Activity Theory in a Nutshell," in *Acting with Technology: Activity Theory and Interaction Design*, MITP, 2006, pp.29-72.

Keris, (2018). White Paper on ICT in Education Korea. *Korea Education and Research Information Service. Ministry of Education.* Retrieved from: https://www.keris.or.kr/eng/cm/cntnts/cntntsView.do?mi=1188&cntntsId=1334

Keris, (2015). White Paper on ICT in Education Korea. *Korea Education and Research*

Information Service. Ministry of Education. Retrieved from: https://www.keris.or.kr/eng/cm/cntnts/cntntsView.do?mi=1188&cntntsId=1334

Kerosuo, H. (2017). "Transformative Agency and the Development of Knotworking in Building Design." In Professional and Practice-Based Learning, 331–49. https://doi.org/10.1007/978-3-319-60943-0_17.

Khosrow-Pour, D.B.A. (2009). Encyclopedia of Information Science and Technology, Second Edition (8 Volumes). IGI Global. https://doi.org/10.4018/978-1-60566-026-4

Kim, J. & Park, H. (2020). An activity theory analysis of Korean secondary vocational education curriculum: A case study of Electronics and Media Meister high school. KJEP 17:1.PP.3-22

Kim, J. C. (1984). A study of the president's job analysis and efficiency in internal administration of colleges and universities. Research Report 84–9–30. Seoul: Korean Council for University Education

Kim, T. (2011). Globalization and Higher Education in South Korea – towards ethnocentric internationalization or global commercialization of higher education? In King, R., Marginson, S. and Naidoo, R. (eds). Handbook of Globalization and Higher Education, pp. 286-305, Edward Elgar Publishing Ltd. (USA & UK; ISBN: 978 1 84844 585 7)

Kim, T. (2001). Forming the Academic Profession in East Asia: A Comparative Analysis. Routlegde

Kim, T., & Yonezawa, A. (2008). *The Future of Higher Education in the Context of a*

Shrinking Student Population (pp. 199–220). https://doi.org/10.1787/9789264040663-8-en

Kostaras N., & Xenos, M. (2007). "Assessing Educational Web-site Usability using Heuristic Evaluation Rules", 11th Panhellenic Conference on Informatics with international participation, Vol. B, pp. 543-550, 18-20 May 2007, Patras, Greece.

Laferrière, T. (2018). Boundary Crossings Resulting in Active Learning in Preservice Teacher Education: A CHAT Analysis Revealing the Tensions and Springboards Between Partners. Front. ICT 5:22. https://doi:10.3389/fict.2018.00022

Lambert, R. (2003). Lambert Review of Business – University Collaboration Final Report. H.M. Treasury: London

Lantolf, J. P. (2000). Introducing sociocultural theory. In J. P. Lantolf (Ed.), Sociocultural theory and second language learning (pp. 1-26). Oxford: Oxford University Press.

Larkin, K. (2014). Can anyone share sources that critique Activity Theory? Accessed online at: https://www.researchgate.net/post/Can_anyone_share_sources_that_critique_Activity_Theory

Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge: Cambridge University Press.

Leach, W. (2008). Shared Governance in Higher Education: Structural and Cultural Responses to A Changing National Climate. *SSRN Electronic Journal*.

Lee, H. (2009). Higher Education in Korea – Future Strategies for New Challenges. *Korea Focus* Accessed online at: http://koreafocus.or.kr/design2/layout/content_print.asp?group_id=102947

Lee, J. (2001). *Confucian Thought Affecting Leadership and Organizational Culture of*

Korean Higher Education. Accessed online at: *https://files.eric.ed.gov/fulltext/ED504451.pdf*

Lee, J. K. (2000). Main Reform on Higher Education Systems in Korea. Revista Electrónica de Investigación Educativa, Vol. 2, No. 2. Accessed online at: https://redie.uabc.mx/redie/article/view/25/1161

Lee, H. S., Choi, Y. H., & Jo, N. O. (2009). Determinants affecting user satisfaction with campus portal services in Korea. *Journal of Internet Banking and Commerce*, *14*(1), 1–18.

Lee, S. J., & Hewison, K. (2010). *Introduction: South Korea and the Antinomies of Neo-Liberal Globalisation. Journal of Contemporary Asia, 40(2), 181-187.*

Lee, Z. N. (1999). Korean Culture and Sense of Shame. *Transcultural Psychiatry*, *36*(2), 181–194. https://doi.org/10.1177/136346159903600202

Marx, K., & Engels, F. (1987). Collected works (Vol. 29). London, UK: Lawrence & Wishart.

Minnis, M, & John-Steiner V, P. (2001). Are We Ready for a Single, Integrated Theory? Human Development. 44:296-310. https://doi:10.1159/000057069

MOE. (2019). Ministry of Education, Korea. Education System. Higher education emphasis on nurturing (Higher Education Policy Division, Educational Statistics Division) Accessed online at: http://english.moe.go.kr/sub/infoRenewal.do?m=0301&page=0301&s=english

Moffitt, P. (2019). Transformative Agency for the Collaborative and Future-Oriented Redesign of Activity in Military Higher Education; Empowering Participants to Change Their Boundary-Crossing Technology Enhanced Learning. Doctoral Thesis. Lancaster University

Moffitt, P., & Bligh, B. (2021). Online tasks and students' transformative agency: double-

stimulation as a design principle for synchronous online workshops, Journal of Vocational Education & Training, https://doi.org/10.1080/13636820.2021.1998792

Morgan, P., & Qualman, A. (1996). Institutional and Capacity Development: Results-Based Management and Organizational Performance. CIDA (Policy Branch), Ottawa

Morselli, D. (2019). "The Change Laboratory in Theory." In The Change Laboratory for Teacher Training in Entrepreneurship Education: A New Skills Agenda for Europe, edited by Daniele Morselli, 37–57. SpringerBriefs in Education. Cham: Springer International Publishing. https://doi.org/10.1007/978-3-030-02571-7_3

Morselli, D. (2014). Entrepreneurship teaching in vocational education: a comparative study in Italy and Australia using the Change Laboratory. Doctoral Thesis. The University of Melbourne & Ca' Foscari University of Venice
Accessed online at: http://hdl.handle.net/11343/40998

Mostert, M., & Quinn, L. (2009). Using ICTs in Teaching and Learning: Reflections on Professional Development of Academic Staff. *International Journal of Education and Development Using ICT, 5*.

Nielson, J. (1995). *10 Usability Heuristics for User Interface Design.*
Retrieved from https://www.nngroup.com/articles/ten-usability-heuristics/

Noiwan, J., & Norcio, A. (2000). "A comparison analysis on web heuristic usability between Thai academic web sites and US academic web sites". Proceedings of SGI, World Multi Conference on Systems, Cybermetrics and Informatics. Concepts and Applications of Systems, Cybermetrics and Informatics, Orlando, Florida, USA, 536 - 541

Nyvang, T. (2006). Implementation of ICT in Higher Education as Interacting Activity

Systems. In S. Banks, V. Hodgson, C. Jones, B. Kemp, D. McConnell, & C. Smith (Eds.), Proceedings of the Fifth International Conference on Networked Learning 2006 Lancaster University. Accessed online at: https://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.493.7969&rep=rep1&type=pdf

Orlikowski, W. J. (2010). *The sociomateriality of organisational life: considering technology in management research. Cambridge Journal of Economics, 34(1), 125–141*. https://doi.org/10.1093/cje/bep058

Ozga, J. (2004). From Research to Policy and Practice: Some Issues in Knowledge Transfer http://www.ces.ed.ac.uk/PDF%20Files/Brief031.pdf

Patton, MQ. (2001). Qualitative Research and EvaluationMethods (2nd Edition). Thousand oaks, CA: Sage Publications.

Pierce, K. (2005). Web site usability report for Harvard university. Technical Report. Capella University.

Polly, D., Martin, F., & Guilbaud, T. C. (2020). *Examining barriers and desired supports to increase faculty members' use of digital technologies: perspectives of faculty, staff and administrators. Journal of Computing in Higher Education.* https://doi:10.1007/s12528-020-09259-7

Prenkert, F. (2010). Tracing the Roots of Activity Systems Theory: An Analysis of the Concept of Mediation. *Theory & Psychology*, *20*(5), 641-665. https://doi.org/10.1177/0959354310375329

Prichard, C. (2000). *Making Managers in Universities and Colleges*. (2000). McGraw-Hill Education.

Putnam, L. L. (2013). Primary and Secondary Contradictions: A Literature Review and

Future Directions. Management Communication Quarterly, 27(4), 623–630. https://doi.org/10.1177/0893318913504139

Reynolds, J., & Saunders, M. (1987). Teacher responses to curriculum policy: beyond the 'delivery' metaphor, in J. Calderhead (ed.) Exploring Teachers' Thinking. London: Cassell

Rogers, E. M. (1995). *Diffusion of Innovations.* 4th ed. New York: Free Press

Sannino, A., Engeström, Y., & Lemos, M. (2016). Formative Interventions for Expansive Learning and Transformative Agency. *Journal of the Learning Sciences*, *25*(4), 599–633. https://doi.org/10.1080/10508406.2016.1204547

Sannino, A. (2011). Activity theory as an activist and interventionist theory. Theory & Psychology, 21(5), 571–597

Schoorman, D., & Acker-Hocevar, M. (2010). Viewing Faculty Governance within a Social Justice Framework: Struggles and Possibilities for Democratic Decision-Making in Higher Education. Equity & Excellence In Education, 43(3), 310-325.

Scribner, S. (1997). A sociocultural approach to the study of mind. In E. Toback, R. J. Flamagne, M. B. Parlee, L. M. W. Martin, & A. S. Kapelman (Eds.), *Mind and social practice: Selected writings of Sylvia Scribner* (pp. 266–280). New York: Cambridge University Press.

Shaffer, M. A., & Harrison, D. A. (1998). Expatriates' psychological withdrawal from international assignments: Work, nonwork, and family influences. Personnel Psychology, 51(1), 87–118. https://doi.org/10.1111/j.1744-6570.1998.tb00717.x

Shan, H. (2017). *Reconfiguring the Learning Space: Skilled Immigrants in Canada. The Palgrave International Handbook on Adult and Lifelong Education and Learning, 687–706.* https://doi:10.1057/978-1-137-55783-4_35

Shin, J. C., & Kim, Y. (2018). Changing Patterns of Higher Education Governance Under Neoliberalism: Global and East Asian Perspectives. In J. C. Shin (Ed.), *Higher Education Governance in East Asia: Transformations under Neoliberalism* (pp. 223–241). Springer Singapore. https://doi.org/10.1007/978-981-13-2469-7_13

Shin, J. C. (2015). *Higher Education Development in Korea: Accomplishments and Challenges. Mass Higher Education Development in East Asia, 43–61*. https://doi:10.1007/978-3-319-12673-9_3

Shin, J. C. (2011). South Korea: Decentralized Centralization – Fading Shared Governance and Rising Managerialism. In W. Locke, W. K. Cummings, & D. Fisher (Eds.), *Changing Governance and Management in Higher Education: The Perspectives of the Academy* (pp. 321–342). Springer Netherlands. https://doi.org/10.1007/978-94-007-1140-2_15

Shin, J. C., & Harman, G. (2009). New challenges for higher education: global and Asia-Pacific perspectives. Asia Pacific Education Review, 10(1), 1–13. https://doi:10.1007/s12564-009-9011-6

Skipper, M., Nøhr, S.B., & Engeström, Y. (2020). The change laboratory in medical education: Two examples of tackling contradictory challenges. Medical Education, 55, 100 - 93. https://doi.org/10.1111/medu.14298

Snowden, S. (2018). *Examining the mechanisms for variation in student outcomes from work placements: glimpsing expansive learning in a placement student change laboratory*. Lancaster University. https://doi.org/10.17635/lancaster/thesis/393

Spitzberg, I. (1980). Monitoring social and political change. In P. Jedamus & M. Peterson (Eds.), Improving Academic Management (pp. 9–19). San Francisco, CA: Jossey-Bass.

Smith, P., Morrow, R.H., & David. R. (2015). Field Trials of Health Interventions, 3rd edition. Accessed online at: https://library.oapen.org/bitstream/handle/20.500.12657/33127/569923.pdf?sequence=1&isAllowed=y

St. Clair Browne, C. (2011). Working Towards Institutional Change. PhD thesis. Bath: Department of Education, University of Bath.

Stensaker, B., Maassen, P., Borgan, M., Oftebro, M., & Karseth, B. (2006). Use, Updating and Integration of ICT in Higher Education: Linking Purpose, People and Pedagogy: Higher Education, Vol. 54, No. 3, pp. 417-433

Suratmethakul, W., & Hasan, H. (2004). An activity theory analysis of a case of IT-driven organisational change, 773-781.

Tatnall, A. (2009). Web Portal Research Issues. Encyclopedia of Information Science and Technology, Second Edition (8 Volumes), pp 4066-4069. Information Science Reference, Hershey, New York

Tatnall, A. (2005). Portals, Portals Everywhere. In A. Tatnall (Eds.), *Web Portals: The New Gateways to Internet Information and Services* (pp. 1-14). IGI Global. https://doi.org/10.4018/978-1-59140-438-5.ch001

Timpany, G. (2019). Structured vs. Unstructured Questions accessed online at: https://blog.cvent.com/events/feedback-surveys/structured-vs-unstructured-questions/

Toit, M., & Bothma, C. (2010). “Evaluating the usability of an academic marketing department’s website from a marketing student’s perspective”. International Retail and Marketing Review, 5(1), 15–24.

Toro, U., & Joshi, M. (2012). "ICT in Higher Education: Review of Literature from the

Period 2004-2011," International Journal of Innovation, Management and Technology vol. 3, no. 1, pp. 20-23

Trowler, P.R. (2020). *Accomplishing change in teaching and learning regimes higher education and the practice sensibility* (First Edition.). Oxford University Press.

Trowler. P. (2003). Education Policy: A policy sociology approach (second edition). London: Routledge.

Trowler, P.R. (2002). Higher Education Policy and Institutional Change Intentions and Outcomes in Turbulent Environments. Open University Press/Society for Research into Higher Education, Buckingham.

Katja Vähäsantanen, K., Paloniemi, S., Räikkönen, E., & Hökkä, P. (2020). Professional agency in a university context: Academic freedom and fetters, Teaching and Teacher Education, Volume 89, 2020,103000, ISSN 0742-051X, https://doi.org/10.1016/j.tate.2019.103000.

Valsiner, J., & van der Veer, R. (2000). The Social Mind: The construction of an idea. Cambridge, UK: Cambridge University Press.

Van den Hoven, M., & Litz, D. R. (2016). Organizational metaphors and the evaluation of higher education programs, management practice and changing processes: A UAE case study.In O. C. Espinosa (Ed.), Handbook of research on systemic knowledge-based assessment of higher education programs (pp. 43–68). IGI Global.

Van der Riet, M. (2010). An introduction to Activity theory (Part 1). Retrieved from https://vimeo.com/14632565

Virkkunen, J. & Newnham, D.S. (2013). The Change Laboratory. Rotterdam: Sense Publishers. https://doi.org/10.1007/978-94-6209-326-3

Virkkunen, J. (2006). Dilemmas in building shared transformative agency. Activités, 3(3-1).

Virkkunen, J., & Kuutti, K. (2000). Understanding organizational learning by focusing on "activity systems." *Accounting, Management and Information Technologies*, *10*, 291–319. https://doi.org/10.1016/S0959-8022(00)00005-9

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Cambridge: Harvard University Press.

Walker, S. J., & Torraco, R. (2004). Change and Higher Education: A Multidisciplinary Approach. *Online Submission*.

Walsh, S. (2009). The Contemporary Korean Education System and Confucianism. The Asadal Thought Blog. Accessed online at: https://asadalthought.wordpress.com/2009/06/02/the-contemporary-korean-education-system-and-confucianism/#:~:text=For%20half%20a%20millennium%2C%20the,dynasty%2C%20from%201392%20until%201910

Waycott, J., Jones, A., & Scanlon, E. (2005). 'PDAs as lifelong learning tools: An AT based Analysis', Learning, Media and Technology, vol. 30, no. 2, pp. 107-130.

Weidman, J., & Park, N. (2000). *Higher Education in Korea: Tradition and Adaptation*. Routledge Falmer Studies in Higher Education

Wenger, E. (2012). *Communities of practice and social learning systems: The career of a concept*. Retrieved from http://wenger-trayner.com/wp-content/uploads/2012/01/09-10-27-CoPs-and-systems-v2.01.pdf.

Wheelahan, L. (2004). Theorising the Individual in an Activity System. Proceedings of 12th Annual International Conference on Post-compulsory Education and Training, Centre for Learning and Work, Griffith University, Brisbane. December 6 to 8, 2004.

Williams, M. C. (2015). *The relationship between organizational governance and faculty governance in higher education: A national study of shared governance*. https://tamucc-ir.tdl.org/handle/1969.6/657

Yamagata-Lynch, L. C., Cowan, J., & Luetkehans, L. M. (2015). Transforming disruptive technology into sustainable technology: Understanding the front-end design of an online program at a brick-and-mortar university. The Internet and Higher Education, 26, 10–18.

Yamagata-Lynch, L.C. (2010). *Activity Systems Analysis Methods: Understanding Complex Learning Environments.* New York, NY: Springer

Yoon, K. (2000). 'Reforming higher education in Korea: the general trends and teacher education institutions'. Paper presented on September 3–7 at the 19th CESE (Comparative Education Society in Europe) Conference, Bologna, Italy.

10 Appendices

10.1 Appendix 1

Session Planning Sheet (Virkkunen & Newnham, 2013:239)

CHANGE LABORATORY SESSION PLANNING SHEET

CHANGE LABORATORY SESSION		N:o	
TO-DO LIST FOR PREPARATION			
THE MAIN PURPOSE OF THE SESSION IN THE CYCLE OF EXPANSIVE LEARNING			
Time	Min	THEMES	TOOLS, MIRROR, 2. STIMULI
PARTICIPANTS' TASKS FOR THE NEXT SESSION FOR MODERATOR'S ATTENTION			

10.2 Appendix 2

Sample Pre Intervention Survey Questions for International/Korean Faculty (Korean faculty Survey was translated into Korean)

Q1. In South Korean universities you have worked in, other than your current university, was there a centralized online space specifically for International Faculty? (i.e. an online space inclusive of pedagogic, research, information and administrative support)
Q2 - I can understand (with ease) the university's online support services for pedagogy, research, administration, and information in the Korean language.
Q 3. I can use (with ease) the university's online support services for pedagogy, research, administration, and information in the Korean language.
Q4. I am satisfied with the current online support services for pedagogy, research, administration, and information offered by the university in English/Korean.
Q5. I think a centralized online space specifically for International Faculty & Korean Faculty is needed. (i.e., an online space inclusive of pedagogic, research, administrative and information support services offered in the English language)
Q6. I think the university's online support services recognize/reflect the needs etc. of Korean/International Faculty members.
Q7. I think the University's online support services recognize/reflect the wants etc. of Korean/International Faculty members.
Q8. I feel that the University's online support services give me equal access to information/resources (equal to my Korean/International colleagues).
Q9. I feel that the University's online support services make me (aware of information/resources.
Q10. I feel that the design, content, and delivery of the University's online support services promote a sense of belonging to the university/that I am included in the university community.
Q11. I feel that the University's (Centre for Teaching and Learning (CTL)) online support services in English/Korean help me to improve my teaching and professional development.
Q12. I feel that the University's online support services in English/Korean help me carry out my research work in the following areas.
Q13. I feel that the University's online support services in English/Korean help me to carry out my daily administrative duties.
Q14. I feel that the University's online support services in English/Korean help me to be informed about academic activities/events on campus.
Q15. I feel that the University's online support services in English/Korean help me to be informed about non-academic activities/events on campus.

10.3 Appendix 3

Sample Post Intervention Survey Questions for International Faculty

Q10. In South Korean universities you have worked in, other than the University, was there a portal for International Faculty? (i.e., a website/homepage inclusive of pedagogic, research, information, and administrative support services in the English language)
Q11. I do or will use the new International Faculty Portal.
Q12. I do or will access the new International Faculty Portal through my, (more than one answer is possible)
Q13. I do or will use the new International Faculty Portal for, (more than one answer is possible)
Q14. I do or will use the new Research Homepage for, (more than one answer is possible)
Q15. The new International Faculty Portal is easy to Use.
Q16. The new International Faculty Portal is easy to Understand.
Q17. The new International Faculty Portal has useful Content.
Q18. The new International Faculty Portal has useful Functions.
Q19. The new International Faculty Portal has a pleasing Design.
Q20. I feel that the new International Faculty Portal could help recognize/reflect the status/voices of International Faculty members at the University.
Q22. I feel that the new International Faculty Portal could help give International Faculty equal access to/make them aware of information/resources at the University.
Q23. I feel that the new International Faculty Portal could help promote a sense of belonging to the University, that International Faculty are included in the University community?
Q24. I would like to see the University officially use/manage this new International Faculty Portal.
Q25. Do you have comments/suggestions regarding the new International Faculty Portal?

10.4 Appendix 4:

A Sample of Pre-Intervention Face to Face Interview Questions asked to International Faculty

Online Support Services

- Does your current university (in South Korea) have a centralized online space specifically for International Faculty? (i.e., an online space inclusive of pedagogic, research and administrative support services offered in the English language)

    A. If yes, do you find this centralised support service useful?
    B. If no, (everything is in Korean) do you think a centralised support service is needed?
    C. If no, (but English is used throughout the university's online systems) do you think a centralised support service is needed?

- If English is used across the university's online systems, how satisfied are you with the support services offered in English?

- In South Korean universities you have worked in, other than your current university, was there a centralized online space specifically for International Faculty? (i.e., an online space inclusive of pedagogic, research and administrative support services in languages other than Korean)

Recognition and Misrecognition

- Do you think your current university's online support services recognize/reflect the status/voices of International Faculty members? (in comparison to your Korean colleagues) Why/Why not?

Redistribution and Maldistribution

- Do you feel that your current university's online support services give International Faculty equal access to/make them aware of information/resources at your university? (in comparison to your Korean colleagues) Why/Why not?

Representation and Misrepresentation

- Do you feel that your current university's online support services promote a sense of belonging to the university/that International Faculty are included in the university community? (in comparison to your Korean colleagues) Could you elaborate?

Pedagogy

- Do your current university's online support services help your professional development? (resources/information/programs etc.… to improve your teaching/learning) Why/Why not?

Research

- Do your university's online support services help you carry out your research work? (access to research/grant information/applications etc.…) Could you elaborate?

Administration

- Do your university's online support services help you carry out your daily administrative duties? Could you elaborate?

A New Online Tool

- If a new online tool (a centralized online space for support services) for International Faculty were to be created, what

A. content would you like to see on this space?
B. functions would you like to be able to perform on this space?
C. design/format etc. should it take on?

10.5 Appendix 5

A Sample of Post Intervention Face to Face Interview Questions asked to International Faculty

Q2. In South Korean universities you have worked in, other than the University, was there a portal for International Faculty? (i.e., a website/homepage inclusive of pedagogic, research, information, and administrative support services in the English language)
Q3. Have you used the new tool over the past 3 weeks?
Q4. How often do you access this tool?
Q5. How do you access it?
Q6. What do you mainly use if for?
Q7. Is it easy to use?
Q8. Is it easy to understand?
Q9. What do you think of the content?
Q10. What do you think of the functions?
Q11. What do you think of the design?
Q12. Do you think the new International Faculty Portal could help recognize/reflect the status/voices of International Faculty members at the University? Why/Why not?
Q13. Do you feel that the new International Faculty Portal could help give International Faculty equal access to/make them aware of information/resources at the University? Why/Why not?
Q14. Do you feel that the new International Faculty Portal could help promote a sense of belonging to the University/that International Faculty are included in the University community? Why/Why not?
Q15. Would you like to see the University officially use/manage this new International Faculty Portal?
Q16. Do you have any other comments regarding the new International Faculty Portal?

10.6 Appendix 6

Sample Page of Change Laboratory Diary

Session 3 Nov 7, 2018

6 participants excluding myself were there, 4 from International Faculty, 2 from Administration. Of the 6, 3 had been to sessions previously, and 3 had not, they were aware of the project from the start though, and have been kept informed by email and google docs. The 2 participants from admin (not previously present) were important, one representing the research office and the other responsible for international faculty. Korean faculty were busy, with events and trips etc. One Dean is unable to attend further sessions due to work commitments but will add to anything online if possible.

In Session 3, we started with a review of session 2 findings - the positives and negatives in online systems dealing with pedagogy, admin and research.

Then I introduced Activity Theory and Activity Systems. The main focus of this session was to identify elements of current activity systems.

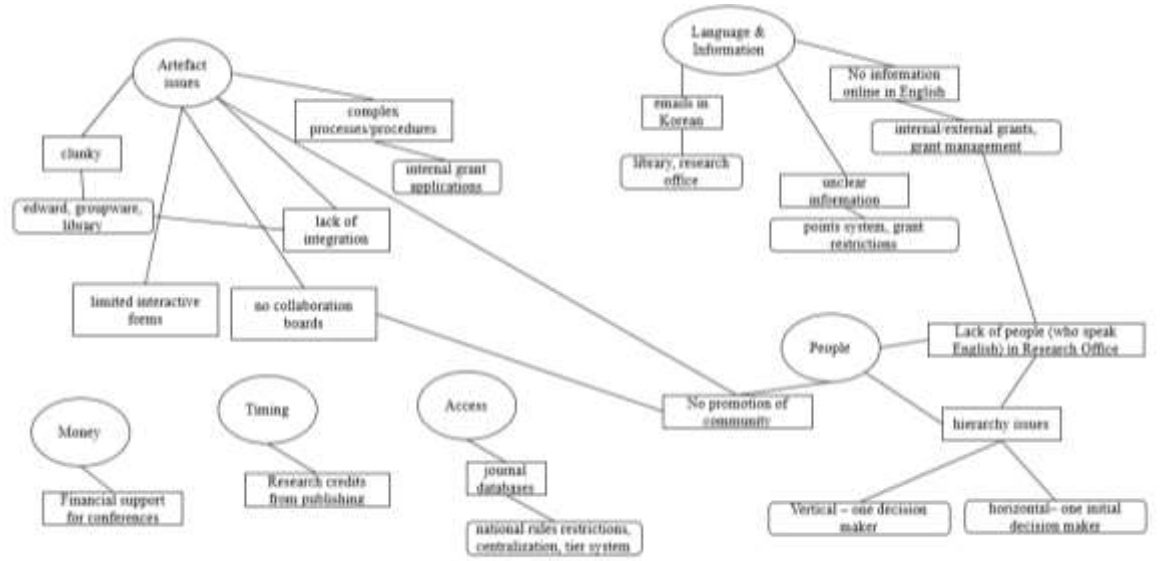
They focused on the 3 areas/systems separately (pedagogy, admin, research).

Then they explored current contradictions within and between elements, for participants to question, discuss and understand why these problems exists.

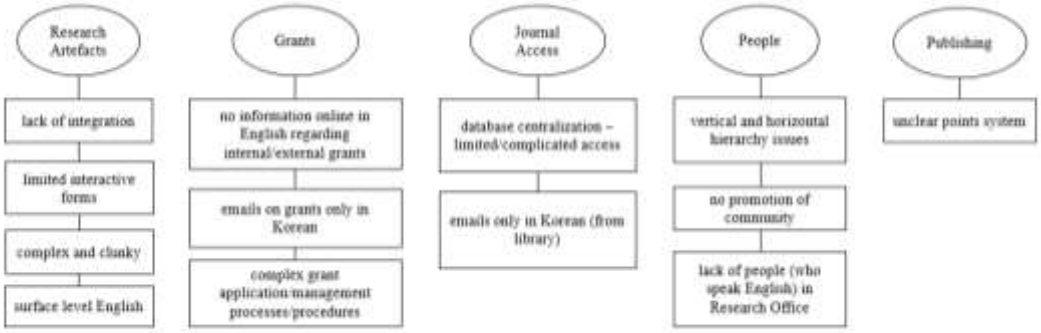
They did not finish everything, so this will carry on to Session 4.

10.7 Appendix 7

Sample Thematic Charts - Research



Empirical Analysis of Research Activity – Initial Thematic Chart



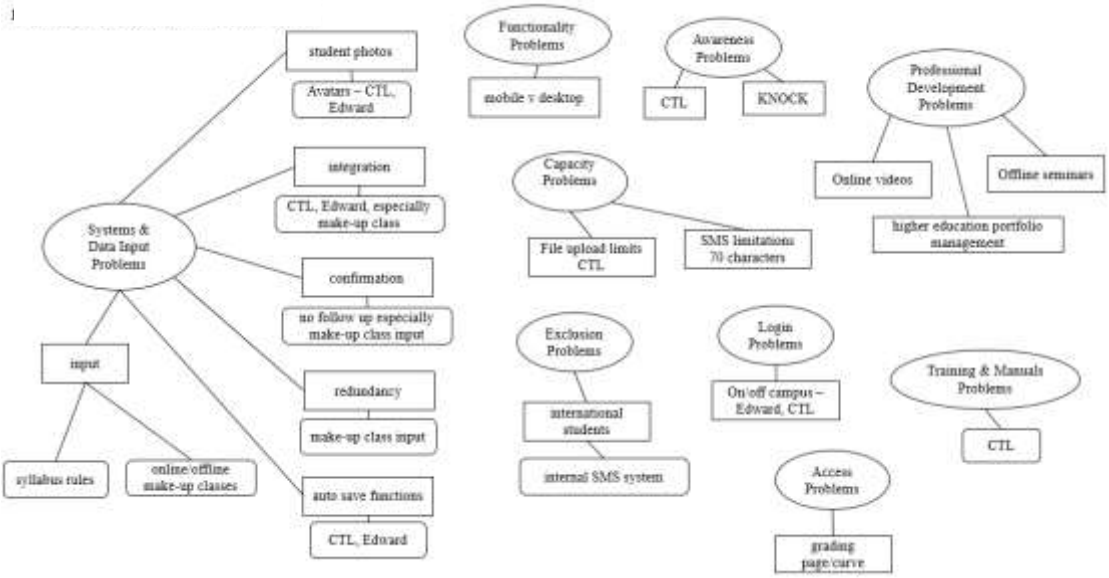
Empirical Analysis of Research Activity – Developed Thematic Chart

	Main Themes						(Inhibiting) Research Objectives
Areas of Investigation	Complexity	Exclusion	Division	Disconnect	Obfuscation	Impotence	
Research Artefacts	✓						Published Work
Grants	✓	✓	✓		✓	✓	Rehiring
Journal Access	✓		✓				Promotion
Human Resources/Hierarchy						✓	Conferences/Presentations
Community			✓	✓			
Publishing/Points					✓	✓	

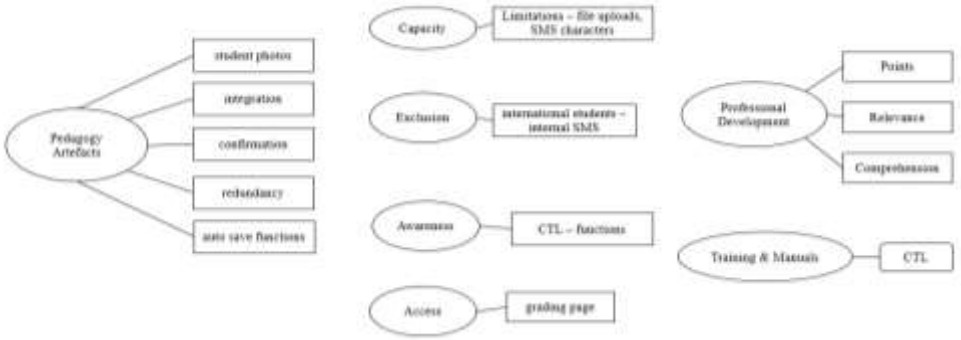
Empirical Analysis of Research Activity – Final Semantic Data Thematic Chart

10.8 Appendix 8

Sample Thematic Charts - Pedagogy



Empirical Analysis of Pedagogy Activity – Initial Thematic Chart



Empirical Analysis of Pedagogy Activity – Developed Thematic Chart

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Areas of Investigation	Main Themes: Limitations	Exclusion	Incognizance
Edward System & CTL	✓	✓	
CTL	✓	✓	✓
Edward System		✓	

→ (Inhibiting) **Pedagogy Objectives**

- Effective Teaching & Learning
- Student Evaluations
- Employment
- Enrollment

Empirical Analysis of Pedagogy Activity – Final Semantic Data Thematic Chart

10.9 Appendix 9

Post Submission Outcomes: Pedagogy Activity

1	Increase the CTL upload limit (currently at 100mb)	No change
2	Improve bi-lingual training/documentation	Being considered
3	Allow earlier access to online grading page (to see curve percentages etc.)	No change
4	Add an auto save function to systems (so work on filling out forms etc.) is not lost if an error occurs	Being considered
5	Create and make available professional development videos through CL for faculty (teaching methodology and research focused)	Being considered
6	Move syllabus input to a later date (closer to course registration period)	No change – but, faculty can amend syllabus at a later date
7	Receive a confirmation message from systems, when you have completed an online task (such as making a request or report)	Being considered
8	Allow more recent student photos to be added to photo avatars	Being considered
9	Make it easier to give online make up classes (a lecture), as physical classes are difficult to arrange	**Changed** - videos can be made away from studio spaces and uploaded online
10	Add international student phone numbers to Edward, so they can be messaged (or provide another means to do this)	No change – impossible to provide other means, exchange students are short-term
11	Increase SMS character limit (on Edward) when sending messages to students/class (current limit is 80 characters)	**Changed** – increased to 90 characters
12	Record and make available CTL seminars for viewing	No change – issues with copyright and future employment

10.10 Appendix 10

Post Submission Outcomes: Research Activity

1	Receive bi-lingual emails from Research Office regarding Research Grants, Grant Management etc. (currently online in Korea)	**Changed** - now updated and available online through the international faculty portal & research website. Also, emails in English coming out from the Research office
2	Provide online access to current rated journals	**Changed** - currently being updated in English
3	Receive bi-lingual emails from library regarding Research (currently only in Korean)	**Changed** - emails now being sent out directly to international faculty in English
4	Increase number of online interactive forms (reduce paperwork)	Being considered
5	Increase and simplify access to journal catalogues	Being considered
6	Improve/update online information on points system	**Changed** - now updated and available online through the international faculty portal & research website
7	Provide financial support for conferences etc.	No change – but if money is available later, this may change
8	Improve number of paid subscription journals to access	Being considered
9	Increase/improve/update/maintain Korean and English Research websites (i.e. contact person, research information (Grants etc.) recent/current research interests etc.)	**Changed** - now updated and available online through the international faculty portal & research website. Also, internal/external grant information - 'how to videos' being made by university in English
10	Increase human resources in Research Office	**Changed** – 4 to 5 staff now in research office who can speak English, with defined roles
11	Promote an online research community (where all faculty can discover/discuss and collaborate)	**Changed** - now updated and available online through the

	international faculty portal & research website
12 Establish a Research Collaboration board (where colleagues can discuss/collaborate online etc.)	No change – although new online community of practice cafes have been introduced by university
13 Improve timing of research credits (some articles are published 1 year after being accepted)	No change – as this most affects international journals, not domestic, so no need seen at present

10.11 Appendix 11

Session 12 Individual Reflection Questions

1. What motivated you to be part of the project?
2. What do you think of the outcomes?
3. What factors supported the outcomes?
4. What factors restricted outcomes?
5. Did your ideas about the project change? If yes, what changes occurred?
6. To what extent does the process change your perception of community, equality/equity and voice?
7. What did you learn/take away from the process?
8. What further requirements are needed for the outcomes?