

2017

## Approaching Complex Problematical Situations in Management of Learning, Teaching and Assessment with Soft Systems Thinking - An Instantiation of the FMA Model for Research

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### Recommended Citation

Shen, Xiaoping and Feng, Junkang (2017) "Approaching Complex Problematical Situations in Management of Learning, Teaching and Assessment with Soft Systems Thinking - An Instantiation of the FMA Model for Research," *Journal of International Technology and Information Management*. Vol. 26: Iss. 3, Article 2.

DOI: <https://doi.org/10.58729/1941-6679.1326>

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## Approaching Complex Problematic Situations in Management of Learning, Teaching and Assessment with Soft Systems Thinking – An Instantiation of the FMA Model for Research

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### ABSTRACT

*Higher education in China has moved into a popularized and internationalization stage, which makes the management of Learning, Teaching and Assessment (LTA) challenging and sometimes problematic. However, research into its theory and practice is sparse and in demand. This paper explores how to approach complex problematic situations in LTA management with soft systems thinking, which embodies a phenomenological investigation, at the Business College of the Beijing Union University (BCBUU) China with our instantiation of Checkland's FMA model for research. Through this substantial study of seven years we made sense of and improved the problematic situation and one tangible result is the development of a new model for LTA management at BCBUU, which is composed of an articulated philosophy, a robust organizational structure and a set of procedures and regulations. It is found that action research grounded on soft systems thinking provides LTA managers with an innovative and fundamental approach to appreciate otherwise seemingly unapproachable and unmanageable complex and ill-structured problem situations that they face. It is also proven that our particular instantiation of the general FMA model for research in the context of LTA management in a Chinese university college is practically effective and may be seen as substantiation of it.*

**Keywords:** Management of Learning, Teaching and Assessment; Action Research; FMA Model; Soft Systems Methodology.

## INTRODUCTION

Chinese higher education has entered into a new era of popularization and internationalization with economy growth rates averaging 10% over 30 years, and as a result, the management of Learning Teaching and Assessment (LTA) in it becomes ever challenging and sometimes problematic. LTA management should be an integrated system with a robust organizational structure, regulations and working procedures of LTA on the basis of certain management ideas, which provides the guidance, evaluation and services for academic programmes and procedures. However, research into its theory and practice seems sparse and thus much needed.

Through years of experience in higher education and LTA management, we observe that the 'social reality' that LTA management faces is messy, ill-structured and ever-changing. Many different types of people are involved in it, such as academics, students, administration staff and managers. They are constantly creating the social world with which LTA management is concerned in interactions with others. They are negotiating their interpretations of reality and those multiple interpretations at the same time constituting the reality itself. There is no 'pre-given universe of objects' out there for LTA management to tackle 'but one which is produced by the active doing of subjects' (Giddens, 1976). Many different real world purposeful human activities are involved in it too that are concerning perceived technical, political and social objects, which may be seen as a result of what Dilthey calls the process of 'objectification' of human mind (Checkland 1981, p.276).

Facing such complex and ever-changing situations, some fundamental questions may be asked, for example, how may we approach the problematic situations? We believe that it would neither be appropriate nor possible to approach problematic LTA management situations with the Durkheimian (1895) 'structural functionalism', which would dictate an objective study of the social facts in LTA management, and rather we should take a phenomenological (Husserl 1891) approach to it by looking at the structure of the lived-in everyday world of experience: the types of everyday taken-for-granted knowledge and how they are socially structured and distributed. That is, we would adopt a 'human-culturalistic' approach of the Weberian (Weber 1979) tradition to social science, phenomenology and hermeneutics (Dilthey, 1858), which is concerned with the actor's subjective understanding of social actions, and not a 'positivistic-naturalist' approach of the Durkheimian tradition. This is probably the only appropriate and workable approach to making sense of LTA management situations and hopefully then improve them.

Unlike hard systems engineering methodology, which is seen as a new version of functionalism having a 'built-in' positivist ontology, soft systems thinking is placed in the phenomenological tradition of social science (Checkland 1981, p.277) including the nature of social reality. It is of a paradigm of 'learning', which is never-ending, and it is a phenomenological investigation into the meaning which actors in a situation attribute to the reality they perceive. Checkland's FMA model for Action Research (AR) (to be described below) gives some illustration in this regard.

In this paper we explore how we may approach complex problematic situations in LTA management by using Checkland's FMA model for AR at the Business College of the Beijing Union University (BCBUU) China. This would also help us explore whether the FMA model instantiated with phenomenological ideas would inform a suitable and powerful inquiry system for approaching the complex problematic situations that we face.

## CHECKLAND'S FMA MODEL FOR RESEARCH

According to Checkland (1985), at a basic level, any piece of research in any mode may be thought of as entailing the elements shown in Figure1, namely a particular set of linked ideas *F* are used in a methodology *M* to investigate some area of interest *A*. We may call this model of research Checkland's FMA model.

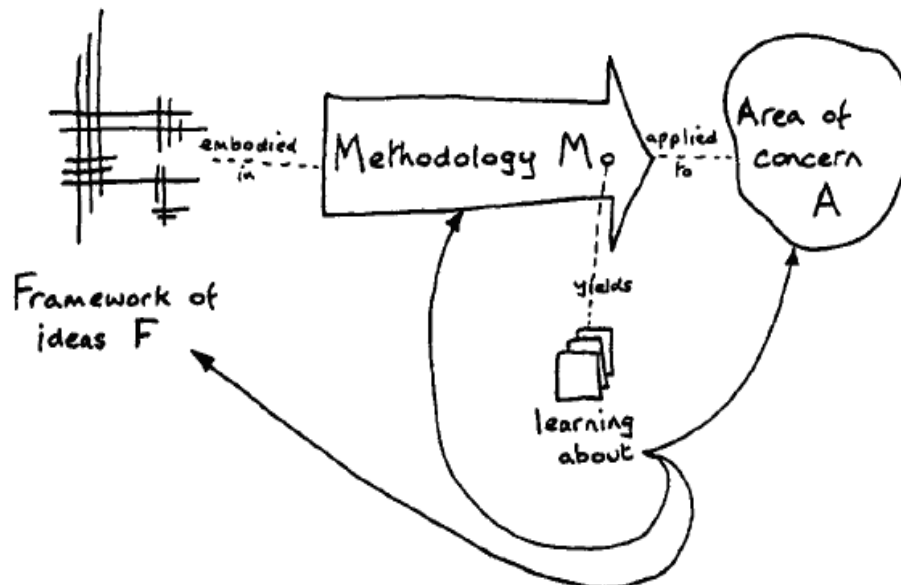


Figure 1: Elements relevant to any piece of research

This model has three main elements, represented by the letters F, M and A.

- F stands for framework of ideas which is the collection of linked ideas to form the theoretical basis of our personal understanding of the world.
- M stands for methodology. Our understanding of the world enables us to take some action about it. It is sensible if our actions are consistent with our perspectives and so the model shows that the framework of ideas is embodied in the methodology.
- A stands for area of application. Our methods of putting our understanding into practice are applied to a particular problem situation.

Using the notation in Figure 1, Checkland and Holwell (1998a) described the cycle of AR in human situations in Figure 2. The concept of AR arises in the behavioural sciences and is obviously applicable to an examination of human activity systems carried out through the process of attempting to solve problems (Checkland 1981, p.152). It is one type of social science research (Clark, 1972). Its core is the idea that the researcher does not remain an observer outside the subject of investigation but becomes a participant in the action, and the process of change itself becomes the subject of research (Checkland *ibid.*). In the diagram in Figure 2, initially the researcher find a real-world situation that seems relevant to research themes which he or she regards as significant. Then it is essential to declare both the framework (F) of ideas and the methodology (M). Next, he or she will enter the "social practice" of a real-world situation in which the themes are relevant and become involved as both a participant and a researcher. Work to effect change and improvement can then ensue. While doing this the researcher tries to make sense of the accumulating experiences, doing so using the declared F and M. Finally, the researcher negotiates an exit from the situation and reflects on the experiences in order to extract the various lessons learnt. The process of AR in human situations is shown in Figure 3 (Checkland and Holwell, 1998a).

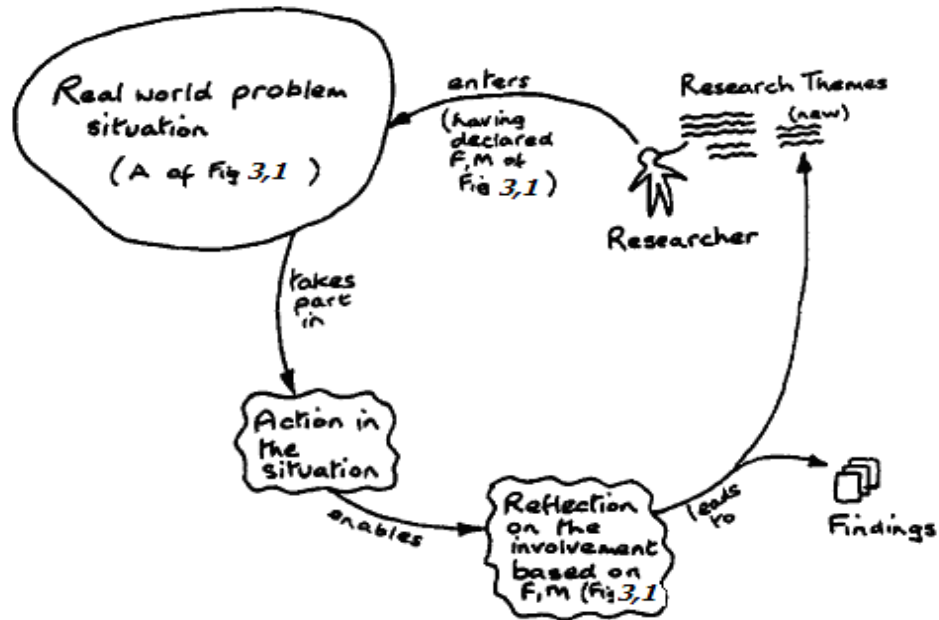


Figure 2: The cycle of action research in human situations

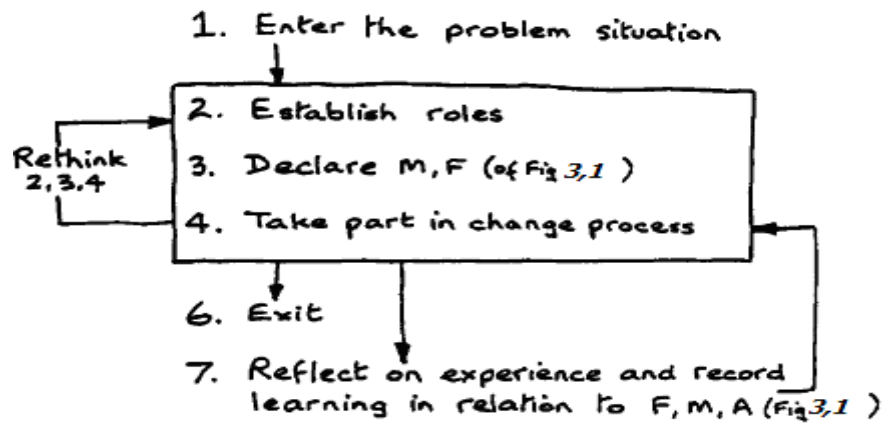


Figure 3: The process of action research in human situations

## THE DEVELOPMENT OF THE DECLARED FRAMEWORK (F) OF AR GROUNDED ON SOFT SYSTEMS THINKING

According to main viewpoints of Checkland's (1993) soft systems thinking, the social world is seen as being the creative construction of human beings. So, it is necessary to proceed by trying to understand the subjective points of view and the intentions of the human beings who construct social systems. Therefore, one of the important notions in soft systems thinking is the "World View" (Checkland, 1981, p.18). Following this, the core of declaring an intellectual framework for our AR is focused on what worldview we should have.

Our general research theme is about the exploration of how to approach (i.e., make sense and then improve) complex problematic situations in LTA management with soft systems thinking. A number of linked ideas, which include the main building blocks of 'Weltanschauung' (W), 'transformation' (T) and 'environment' (E), constitute an intellectual framework for our research theme. Here, W refers to the idea about what value orientation we should adopt to develop a model of LTA management, T refers to the idea about what basic path we should take to transfer LTA management and E refers to the idea about what environmental factors we should consider in LTA management transformation. The relationship between W, T and E is shown in Figure4.

We find that the three linked ideas as a whole form a worldview that plays an eminent role in our particular action research. This framework will be developed in the following sections through looking at a number of relevant theories, a comparative study and by drawing on years of teaching and learning management experience of the authors.

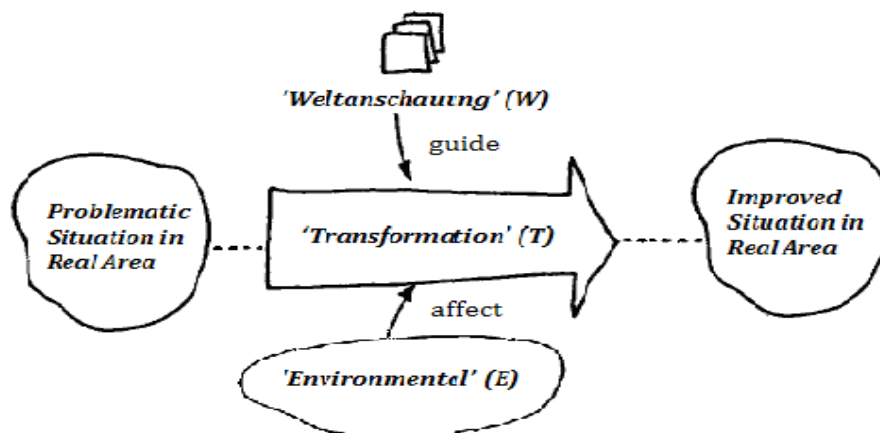


Figure 4: The three blocks of W, T and E in framework of AR

### *The value orientation in approaching complex problematic situations in LTA management (W)*

One definition of LTA management is that it is an integrated system under the guide of one's values and concepts of what a model of LTA management ought to be. LTA management is therefore dominated by the value orientation of it. There are two kinds of core value orientation, namely, scientism and humanism, no matter which type of LTA management we choose (Zhang, 2007).

LTA management based on the value orientation of scientism is a model that puts the Scientific Management Theory (Taylor and Frederick, 1916) and the Bureaucracy Theory (Weber and Max, 1979) based on the "Rational-Economic Man" hypothesis (Schein, 1988) into LTA management practice in universities and colleges. The scientism-based LTA management focuses on efficient management in universities through the establishment of a set of LTA management regulations by training staff.

Just as the scientism-based LTA management, which came from Taylor's Scientific Management Theory and Weber's Bureaucracy Theory and practice, LTA management based on the value orientation of humanism is closely related with the Human Relations Theory (Mayo, 1933), which is in turn built on the "Social Man" hypothesis (Schein, 1988). Based on humanistic self-management, focusing on the students' and the academics' individual development and aiming at the school's common goal, this model of LTA management makes the students' and the academics' integrated development come true by giving them appropriate authorization and complete trust to encourage them to work hard.

The two models of LTA management discussed above seem to be underpinned by classical management theories, such as Taylor's Scientific Management Theory, Weber's Bureaucracy Theory and Mayo's Human Relations Theory, which develop descriptions of organizations as hierarchical and bureaucratic structures based around clearly defined aims and objectives of rationalization and optimization (Sheldrake, 1996). From the soft systems thinking perspective, they are both grounded on hard systems thinking in that the two models see organizations as coordinated functional task systems seeking to achieve declared goals and see the task of management as decision making in support of goal seeking (Checkland, 1999). We may call these models as goal-seeking models of LTA management. According to Checkland's viewpoints (Checkland, 1999), these goal-seeking models would be useful in situations in which goals and measures of performance are clear-cut, communications between people are limited and prescribed, in which the people in question are deferential towards the authority



that lay down the goals and the ways in which they are to be achieved. But this image has never accurately described the life in most Chinese universities and colleges against the background of higher education in China having moved into a popularized and internationalisation stage. It would appear that 'traditional' goal-seeking models of LTA management are no longer appropriate. Instead, Vickers' (1965) model of 'relationship maintenance' provides us with an alternative idea for thinking about the notion of LTA management.

The 'relationship maintenance' model was put forward by Vickers in 1965, which was discussed and adopted by Checkland and Holwell (1998b). Vickers (1970, p.116) considers the concept of goal-seeking to be poverty stricken. In place of goal-seeking Vickers suggests a way of conceptualizing, planning and regulating a system over time through the concept of 'relationship maintenance'. As Vickers (*ibid.*) explains, the successful management of any human activity system, whether organization or one's personal life, does not consist in prescribing one goal or even a series of goals but in regulating a system over time in such a way as to optimize the realization of many conflicting relations without wrecking the system in the process. For Vickers (*ibid.*, p.128), management is about trying to effect stability in a situation by encouraging and supporting desired relationships and avoiding or minimizing the effect of undesirable ones. In a word, Vickers argues that the prime activity for a manager is to maintain the relationship of the organization to its environment.

Vickers' criticisms of goal-seeking and his suggestion of relationship maintenance is a richer concept, which can help us think about decision making and human action within the organizational setting. The relationship maintenance model provides us with a means of maintaining a relationship with the constantly changing environment. We believe that such a version of an organization implies that we should represent the system of interest and its environment from the perspective of those involved within the problem situation rather than an outside observer. We should think of an organization as something that is not fixed and is constantly changing whose survival is dependent upon the maintenance of its relationship with its environment. Vickers' ideas of relationship maintenance can also be useful when thinking about how each of us manages our own circumstances.

Vickers' idea of relationship maintenance is instructive for our in-depth analysis of how to make sense and improve the problematical situations in LTA management at BCBUU. As mentioned above, LTA management is a human activity system, and so it should be useful to consider relationship maintenance as a basis for understanding the nature of LTA management. The prime task for LTA

managers is to establish and maintain good relationships, improve problematical but desired relationships, and remove poor relationships among stakeholders involved in LTA management. So, we may think Vickers' concept of relationship maintenance as the W block (Weltanschauung) of our intellectual framework of AR in our research. This forms the worldview, which is taken as a basis for further work that we will develop in the following sections for making sense of and therefore improving the problematical situations in LTA management in our college.

### ***The pathway to transform LTA management (T)***

There are two tracks of the formation of LTA management according to the literature review reported (Zhang, 2007). One is from theory to practice, namely from the abstract to the concrete. Managers take or develop an ideal model for operation based on some scientific theory integrated with management practice, or they identify the similarity between various models that exist in parallel (such as American model, European model, and Japanese model, etc.) to form a new model of LTA management. Then they apply the model to the daily work and gradually modify and improve it. The other is from practice to theory, namely from concrete to abstract. That is, from the long-term accumulation of experience in management practice, managers formulate a model of LTA management by summing up the relationship between factors with universal significance or/and refining the formation of some standards based framework.

Which pathway of the formation of LTA management is suitable for BCBUU? It depends on the external environment, history and *status quo* of the LTA management at BCBUU. Our day to day practice seems to show that the LTA management at BCBUU is largely one that is of the administrative LTA management with experiential knowledge. It would seem urgently needed for the LTA management to be transformed into one that is based upon Vickers' 'relationship maintenance' model at this crucial time when rapid and huge changes are taking place in Chinese higher education. To achieve this, it seems necessary to follow the internationalizing pathway with a theory-to-practice track. That is to say, with the guidance of modern LTA management theories and a comparative study of the domestic and foreign models, BCBUU should learn from experience of foreign LTA management, and then develop a new model of LTA management that is adapted to the situation at BCBUU. The new model should be tested by the practice and be modified and improved continuously.

To develop the pathway for the LTA management transformation, we should absorb and learn enlightening ideas, methods and means of LTA management in higher

education from developed countries for an internationalized transformation of LTA management, which is around the idea of how to enable students to become talents ready for performing on an international stage. We should focus on internationalizing curricula, module contents, teaching skills, systems of LTA management and evaluation of teaching and learning quality. For this purpose, we conducted a comparative study on LTA management in British and Chinese local universities. Through the study, we identify the ideas about the T of the framework, that is, to absorb the philosophical underpinnings, mechanisms and procedures of LTA management in the University of the West of Scotland (UWS) to help transform the model of LTA management at BCBUU from being administrative to being of relationship maintenance.

### ***Environmental factors that affect LTA management transformation (E)***

The idea about E of our framework is concerned on the environmental factors that need to be focused on in LTA management transformation. Our approach aims to make sense of and then improve the problematical situation in LTA management. It means that some changes will take place in LTA management operations. There are a variety of events and situations in the environment of LTA that affect LTA management operations positively or negatively. We call these events and situations as environmental factors of LTA management transformation.

There are two types of environmental factors of LTA management transformation: internal environmental factors and external ones. Internal environmental factors include academics and administration staff, students, learning facilities, operating budget, committees and various management systems, which are easier to be controlled than external environmental factors. External environmental factors are events that take place outside of the college and are hard to predict or control. External environmental factors is comprised of prospective employers of graduates, parents of students, competing universities and colleges, the number of students that take the national entrance exam, administrative authority and so on. Obviously, all these environmental factors have significant impact on LTA management transformation. It is necessary for us to take a systematic consideration about these environmental factors.

We rely on environmental scanning to achieve this. Environmental scanning refers to the monitoring of the organization's internal and external environments for early signs that a change may be needed, to accommodate potential opportunities or threats and to make adjustments so that the organization's strengths can combat its weaknesses.

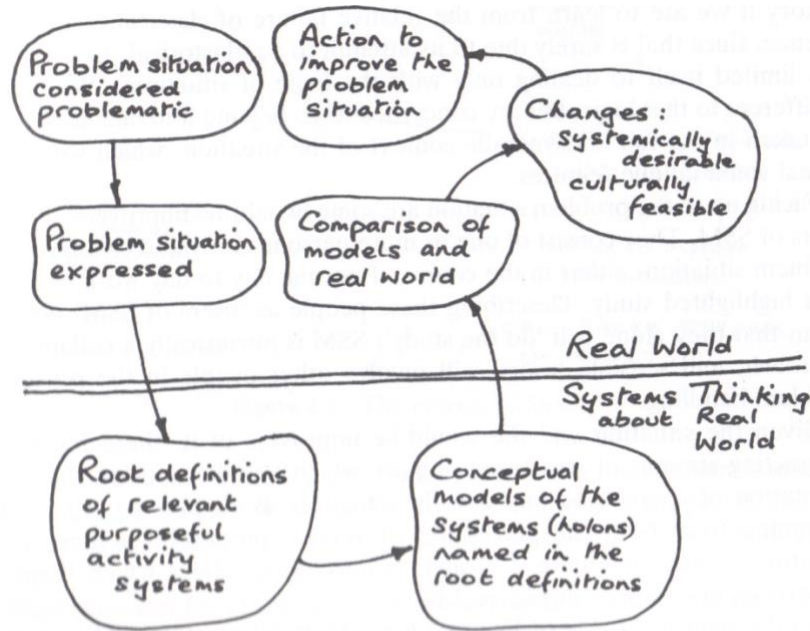
Through a SWOT analysis, for the E of the framework, it can be seen that the environment of LTA management transformation at BCBUU is complex. The environmental factors that come from external governing authorities and from internal human resource management seem to have a limited impact on W and T of our framework. It also explains respectively that why internationalized transformation path should combine with the localization in the T of the framework. These weakness and threats of environmental factors should be carefully considered in our AR.

### **USING SSM AS A DECLARED METHODOLOGY (M) FOR PROBLEMS APPRECIATION AND CHANGES IDENTIFICATION**

It is important that the methodology (M) used to investigate the research themes within a real-world area (A) embodies the declared intellectual framework (F) (Checkland and Holwell, 1998a). We should therefore carefully select a methodology that should be consistent with the thinking that underpins the framework we declared earlier.

When we analyse the problems existing in LTA management by adopting systemic thinking, we can see that these problems are complex, ill-structured and ever-changing. Thus it is clear to us that a hard system approach would not be appropriate. Instead, we use Soft Systems Methodology (SSM) in general as a declared methodology to investigate our research theme. It would seem that SSM is consistent with the interpretivist thinking that underpins our framework.

SSM was developed by Peter Checkland and his colleagues at the University of Lancaster in the United Kingdom. It is a methodology that aims to enable learning and then possibly bring about improvement in an area of social concern by activating a learning cycle for the people involved in the situation, which is ideally never-ending (Bulow, 1989). SSM has two modes called Mode 1 and Mode 2. Mode 1 is a formal application of SSM and is usually undertaken as part of a consultancy into soft problem situations on behalf of a client organisation. SSM Model 1 is a seven-stage process (Checkland and Scholes, 1990, p.27) (see Figure 4): problem situation considered problematical (stage 1), problematical situation expressed (stage 2), root definitions of relevant purposeful activity systems (stage 3), conceptual models of the notional systems defined in the root definitions (stage 4), comparison between the conceptual models and the real world (stage 5), systemically desirable culturally feasible changes (stage 6), and finally actions to improve the problematical situation (stage 7).



**Figure 5: The conventional seven-stage model of SSM Model1**

Here we will not describe the process of using SSM Model1 for LTA management transformation in detail and we assume that the reader is familiar with SSM Model1. We will only give one notional system in terms of its root definition and its conceptual model here.

Relevant system 1: A system to reconcile conflicting demands from academics, students and supporting staff.

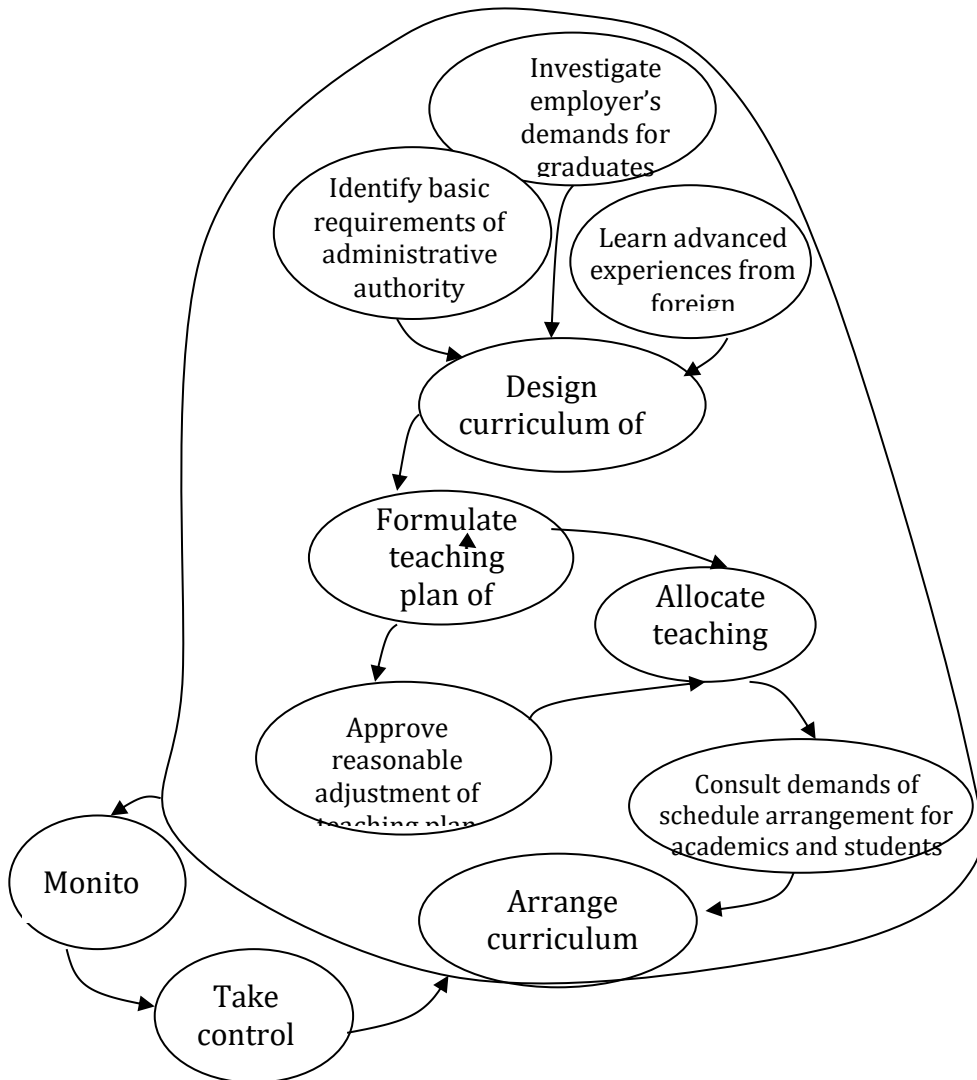
### **Root definition**

**Table 1: The root definition of system 1 (concerning ‘conflicting demands’) described using CATWOE**

Element of CATWOE	Description
<i>Customers (C)</i>	Academics and students
<i>Actors (A)</i>	Academics and administrative staff
<i>Transformation (T)</i>	The <i>need</i> for academics and students to reduce workload and to have a tight schedule of teaching and learning is transformed to the <i>need met</i> by optimizing programme curriculum and a balance between varied needs of academics, students and administrative staff.

<i>Weltanschauung (W)</i>	It is beneficial for all stockholders to develop a new model of teaching programme management based on Vickers' concept of relationship maintenance.
<i>Owners (O)</i>	Teaching administration leaders
<i>Environmental Constraints (E)</i>	Basic requirements of administrative authority and the internal limited teaching resources, such as the number of academics, classrooms and so on.
Root definition of system 1 : A teaching programme management system controlled by teaching administration leaders, is limited and restricted by the basic requirements of the administrative authority and the internal limited teaching resources, but can still help the academics and students to reduce their workload and to have a tight schedule of teaching and learning by means of developing a new model of teaching programme management based on Vickers' concept of relationship maintenance.	

### *A conceptual model of the relevant system*



**Figure 6: The conceptual model of system 1 (concerning 'conflicting demands')**

### *Taking actions for improvement*

After the 'Three Analyses' (Checkland and Poulter 2006, pp.27-38) in stage 6 of SSM Mode 1, it became clear to us that a few desired and feasible changes should be made. We identified and took five actions:

Action 1: Re-designing the curricula of programmes to make them more suitable for the requirements of Beijing's social and economic development and to reduce the overall credits that are required for completing a Degree.

Action 2: Designating coordinators for core modules and establishing teaching teams led by coordinators for the delivery of core modules in order to ensure that the teaching quality be in accordance with a standard and normative teaching activities maintained.

Action 3: Exploring interactive teaching methods by using the virtual learning environment Blackboard and encouraging academics to teach interactively via the Blackboard.

Action 4: Transforming methods of assessment from unitary summative exams to a combination of formative and summative exams not only for encouraging students to spend more time on learning but also for helping academics to reform their traditional teaching and assessment methods.

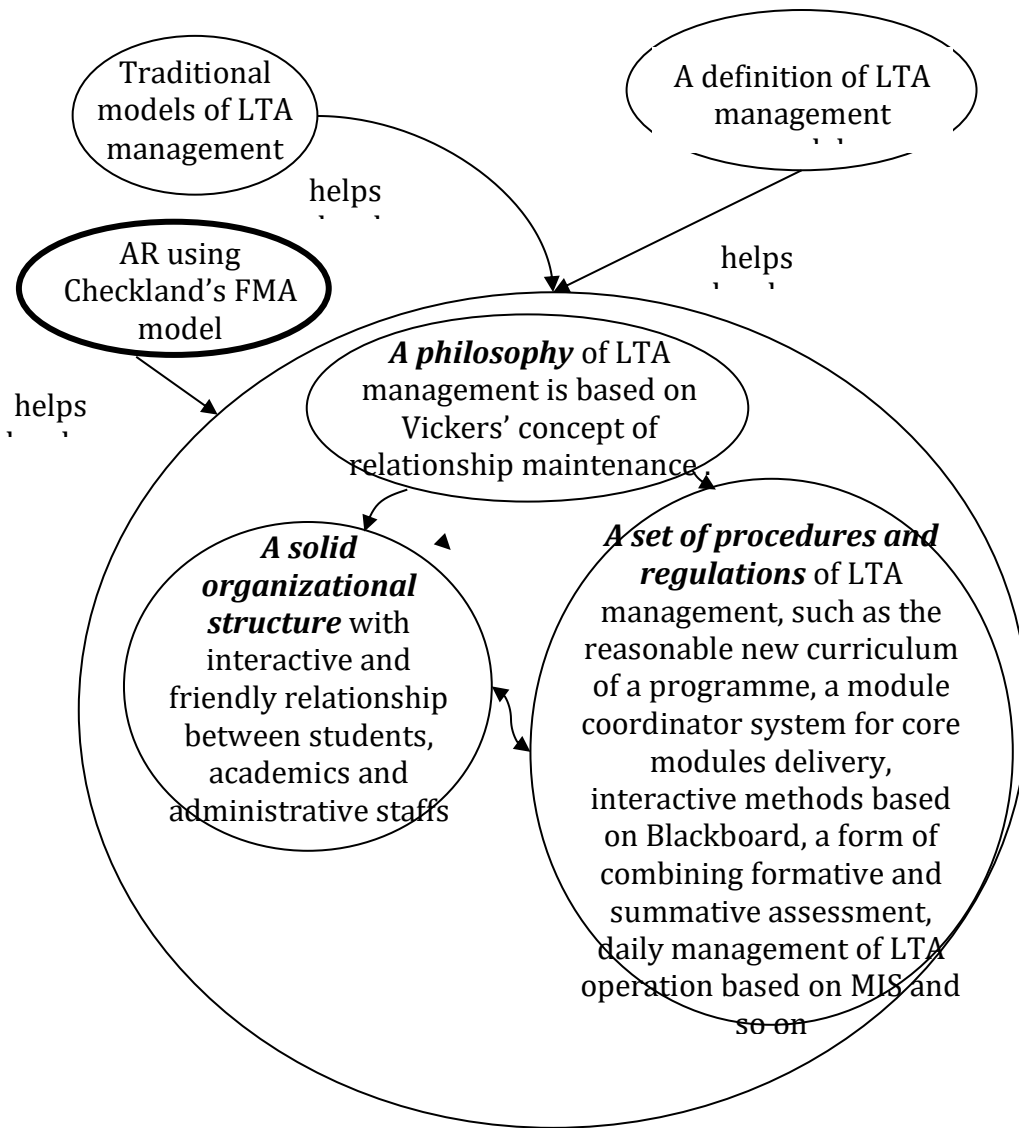
Action 5: Pushing forward the computerization of LTA management including the development of a LTA management information system to strengthen the normalization of LTA management procedures and to reduce workload of administrative staff.

Through the above five actions, the problematical situations of LTA management at BCBUU were improved tangibly. The main improvements are:

- The total credits of new curricula of programmes are reduced to less than 163 and the average teaching workload per academic year for academics is reduced from 430 standard hours to 370. Because of the reduction, the stress caused by shortages of teaching facilities is relieved.
- The quality of core module delivery is maintained. The achievements of students' learning and the grades of teaching evaluation by students are all increased.
- 85% of academics are now using interactive teaching methods including the use of the Blackboard System in their module delivery, and the average time that students spend on learning is increased by 30%.
- The efficiency and service quality of LTA management are both increased significantly.

After the five actions taken, not only the problematical situations in LTA management was improved tangibly but also the dominant relationships between stakeholders in LTA management of the college seem to have become closer and more harmonious than before. Through this action research, a new model for LTA management at BCBUU was constructed, which is composed of an articulated philosophy, a solid organisational structure and a set of procedures and regulations as illustrated in Figure 7.





**Figure 7: A new model of LTA management**

## REFLECTION ON LEARNING

Just as the diagrammatic representation of his FMA model in Figure 3 described, Checkland (1985) suggests that after employing a methodology there is reflection on what learning has been achieved from the experiences of AR. He identified the

nature of the learning that could be expected to take place in AR, namely, learning about theoretical basis on which the action is underpinned (F), learning about the way in which the action was undertaken (M), and learning about actions in the concerned area (A). This is a general model of the organized use of rational thinking and is an essential form of reasoning for AR. Checkland and Holwell (1998, p.25) noted that the reflection ‘can yield findings of various kinds, such as learning about F, M and A, or about research themes; or new themes may be defined as a result of the experience’. We reflect on learning in terms of the three elements in order to achieve deep understanding of the research experience, which would inform further studies of our own or others’ in similar situations.

According to Mezirow (1991), three types of reflection are noted in Figure 8, which consists of *content reflection* that examines the issues and events in the area of action (the reflection about A), *process reflection* that examines the methods and processes used (the reflection about M) and *assumption reflection* that examines the underlying ideas and mental models (the reflection about F).

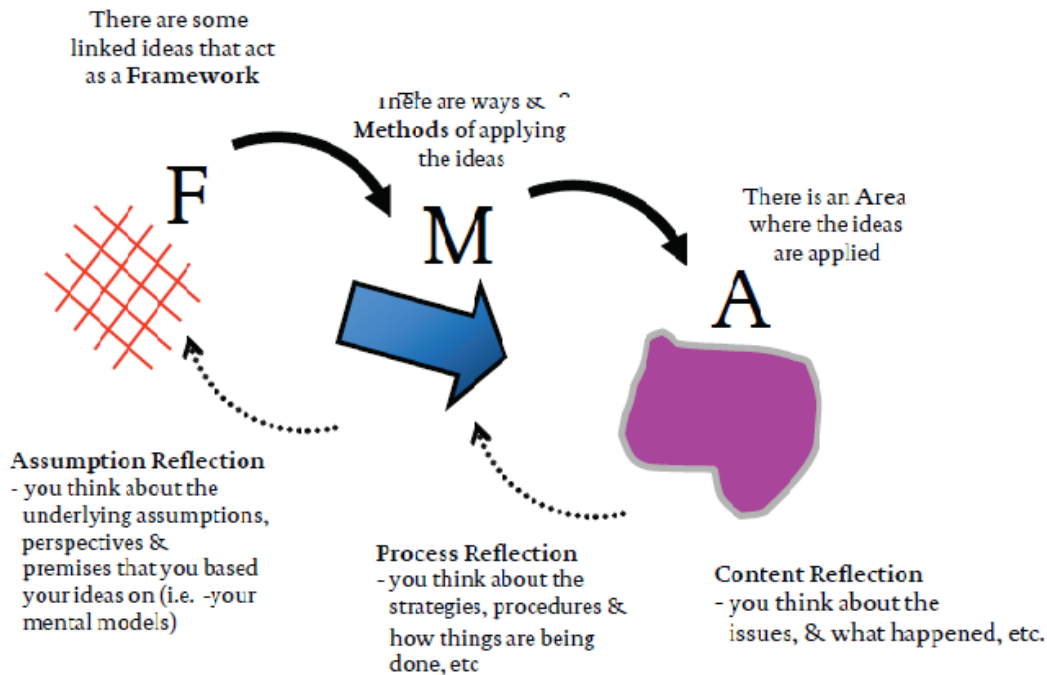
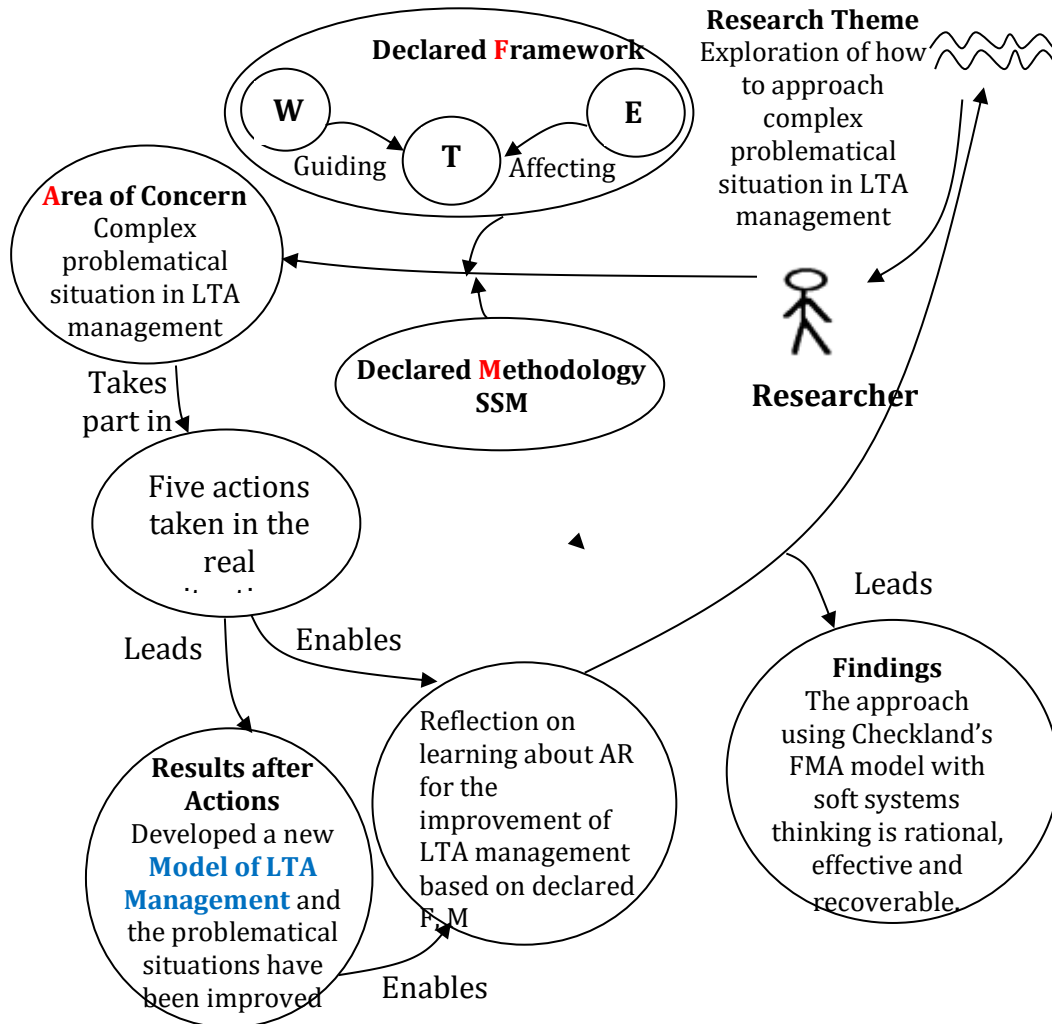


Figure 8 : Checkland-Mezirow template (Sarah et al, 2002)

### *Brief review of the cycle of our AR*

Before making reflection on learning about our research experience for the improvement of LTA management, it is helpful for readers to take a brief review of the cycle of our AR according to Checkland's FMA model (See Figure 9) so that they can have a bird's-eye view on the research.



**Figure 9: A review of the cycle of our AR**

### ***Reflection on learning about F, M and A***

After taking a brief review of the cycle of our research, we will make three types of reflection in the following sections.

#### ***1) Content reflection on learning about the concerned area (A)***

- After the five actions, the problematical situations of all issues are improved, which results in the feelings about LTA management from stakeholders being more comfortable than before. Furthermore, three reform projects based on Actions 2, 3 and 4 were awarded prizes by the Beijing Municipal Government and our university. But there was a big disagreement between the LTA manager and senior academics on the worldviews of two issues, namely the reduction of credits for modules and the module coordinator system. The LTA manager believes that it would help students and academics alike to reduce the total credits of the course modules and to implement the module coordinator system for core modules because this is conducive to mobilizing students' autonomy and ensuring teaching quality, and at the same time, reducing academics' workload. However, both these changes affect immediate financial interests of a group of academics represented by programme leaders, and thus they may resist these changes in the implementation of Action 1 and Action 3, which would hamper the improvement of both issues. This means that in taking actions for changes, the similarity or the lack of it between stakeholders' 'appreciative settings' (Vickers, 1970) is highly relevant. In general, using FMA model for approaching problematical situations in LTA management appears effective overall when stakeholders' appreciative settings are similar or have much in common. In Gadamer's (1975) term, the 'fusion of horizons' would be easier. As a result, the formation of consensus and the process of reform would be smooth and the effect obvious. However, for those actions that requires the accommodation of stakeholders' different worldviews, there was a big difference. Despite that we managed to accommodate different interests of stakeholders in defining feasible changes, there is resistance in practice, both in the process and in the result. This is indicated by the fact that actual improvement did not meet expectations. This fully demonstrated the necessity to conduct cultural and political analyses in SSM stage7 in looking for desirable and feasible changes. It is only by understanding the norms, values and powers of the stakeholders in the problematical situation for which we have a deep understanding of how their power works in the situation, can we find the 'greatest common divisor' of changes for improvement, so as to make the reform process smoother and the results of the reform more effective.

- There is a need for both powerful support from the LTA administrative leader and relevant policies for encouraging participants to take actions for the changes defined in stage 6 of SSM. The five actions for improvement described above mainly focused on procedural changes of LTA management. This means that most of the academics must change their teaching practice to which they have become accustomed for many years. So, the difficulties when such changes were introduced were great. We find that it is necessary for the LTA administrative leader to provide powerful support for such changes through special funding and policy guidance to encourage active practitioners, which further led to a wider range of participation during the actions being taken. Our research practice shows that this seems to be a relatively successful action model, that is, to make changes gradually starting from core activists with a strong support from the LTA administrative leader. This can be explained by using the ideas on 'Analysis Three (Political)' (Checkland and Poulter 2006, pp.35-38): Any swiping and 'global' change for an organization affects and is affected by the disposition of power in a situation and the processes for containing it.

## 2) *Process reflection* on learning about methodology (M)

- SSM is not a specific problem-solving method in the sense that it cannot directly bring a specific solution to a problematical situation for its users, but provides a set of principles for them. As Checkland noted in his review of 30 years of systematic thinking and practice (1999, pp.33-34), when a user of SSM sees a problem, 'consider what I can do about it', and then choose a methodology appropriate to his or her problems and generate an application that promotes and encourages learning. This learning may allow the user to bring about beneficial changes to the problematic situation he/she sees, or to facilitate the occurrence of beneficial changes. This learning may also bring changes to the user, including his/her appreciation of the methodology adopted. So, from the perspective of the methodology, SSM enables a learning process, and this learning process is a cycle. The cycle rotates and completes one after another. The user faces a new problem situation after one cycle is completed. Through about seven years' research, we are fully convinced that SSM embodies a new way of thinking about interventions in social problematical situations. With SSM, one creates conceptual models for human activity systems relevant to a particular problematic situation. Such a model is not one of the real world, but a thinking model of people about the real world. It focuses on how to appreciate the problem situation, and gradually transforms a messy problem situation into certain 'structure' or 'expression' based on recognition of the complexity and diversity of the real world. So, SSM is a methodology for

learning and appreciation. We understand that the purpose of building conceptual models is not for forming an implementation framework of action, but for motivating and structuring discussions about the problematical situation and its improvement.

- Reflection about the process of SSM seems to show that the power that the LTA administrative leader holds plays a crucial role in defining what is seen as feasible changes. As for many years LTA management in Chinese universities and colleges follows the administrative model, so LTA administrative leaders have great powers of discourse to make decisions and distribute resources. With such a management model, stakeholders that are involved in problematical situations such as academics and students, even though with different worldviews, would not put forward their own ideas strongly in cultural discussion. Although such a situation makes the process of finding an accommodation among them with a common concern to run relatively smoothly in practice, it affects the effectiveness of the implementation as those participants with different worldviews will not participate in the actions whole-heartedly. This means that in the real areas where the administrative powers have supremacy, if the researcher or the principal participant is a person that holds considerable managerial powers, then it would be relatively easier to find an accommodation by using SSM-based AR for improving the problematical situation in an organization. Therefore, it would seem important to strike a balance between using managerial power and listening to stakeholders with different worldviews in such a study. This shows that the disposition of power in an area affects how people behave including how they construct their social world. Combined with the previous reflection, it can be seen that if it is based on the worldviews of the researcher or the principal participant with great managerial power, a process of building models and using them to structure discussions for defining actions, namely the process of stages 5 and 6 of Mode 1 SSM, would be smooth and efficient.
- Checkland and Poulter (2006, p.50) claims that although it is very difficult to answer questions derived from the measures of performance in a conceptual model due to its complexity, it usefully draws attention to the need for organized processes of monitoring. From our practice of taking actions, we can see that if we are able to define specific criteria for efficacy, efficiency and effectiveness when using models to structure discussions about a real-world situation, then in the process of taking actions, we may use these criteria to monitor the changes in order to ensure that they meet the requirements. In this study, evaluation criteria on how to measure the performance of changes for action 2, action 3 and action 4 were designed in the discussion prior to the actions, and from the results achieved after action,

we can see that the effectiveness of these three actions is close to expectations and the effectiveness seems to be obvious. Due to two successful actions of the actions mentioned above, two teaching achievement awards were obtained respectively: one on the municipal level and one the university level.

3) *Assumption reflection* on learning about framework (F)

- The most important component of the framework is ‘value orientation’ in LTA management transformation because it belongs to the worldview category. The worldview plays a crucial role in the SSM-based AR in a human activity system because where there is a different worldview there will be a different approach. Vickers’ concept of ‘relationship maintenance’, which this study follows, appears to suit the Chinese higher education environment in which the current stage of LTA management transformation lies, as can be seen from the transformation process described above. We take this view with the intension to guide this study on how to improve the problematical situations and we find that this view is highly insightful. Its value is reflected in this study, and we take the establishment of dominant relationship among academics, students and administrators, and the formation of relevant norms as the fundamental and guiding thinking for the LTA management. The actions that were taken to improve existing LTA management are focused on how good the relationship is between LTA management and its environment. The results of the AR seem to show that it is the value orientation in terms of worldviews that guides the changes and enables the latter to have improved the problematic situation tangibly.
- The ‘basic pathway’ in the framework may be seen as a way of elaborating the ‘transformation’ element of the CATWOE in an SSM-based AR for our study. The idea of basic pathway of LTA management transformation by means of a combination of internationalization and localization is also consistent with the thinking of defining desirable and feasible changes. To seek desirable changes through learning advanced management experience from Western universities is undoubtedly a shortcut. The defined desirable changes formed in this study are mostly inspired by Western universities.
- In the framework of this study, there is an important element namely ‘environmental factors’. Our study shows that the administrative/managerial powers from external governing authorities and the regulations from the internal personnel management (human resources) system impose great constraints on this study. For example, as described in the ‘Analysis Two’ of SSM, academics in each role should have their respective norms and values. However, some roles cannot be implemented in accordance with their own norms, and the evaluation of their values is

therefore only a formality. Finally, some desirable changes are not culturally feasible, thus affecting the effectiveness of the action research. Similarly, as described in the 'Analysis Three' of SSM, the administrative power from external governing authorities cause some desirable changes to be politically infeasible. Therefore, to further the changes for the better in LTA management, it is necessary to promote the reform of internal personnel management and to obtain approval from external governing authorities.

## FINDINGS

Through an SSM-based AR that is grounded on soft systems thinking for developing a new model of LTA management to improve a problematical situation in real LTA management, we obtained several interesting findings, which we describe in this section.

- 1). The problems that exist in current model of LTA management are complex, messy and ill-structured against the background that Beijing's high education is moving into a popularized and international stage. The stakeholders with different appreciative settings involved in the problematical situation all hope to take purposeful actions to improve it. So, it is rational and appropriate to use Checkland's FMA model of AR and instantiate it with soft systems thinking for approaching the problematical situation of LTA management in Chinese higher education.
- 2). It would appear to be necessary for us to have declared in advance an intellectual framework in the process of AR that is comprised of three main blocks, namely value orientation, basic pathway, and environmental factors of LTA management transformation for this study, and it turns out to be helpful, fundamental and effective for making sense of and then improving the problematical situations in a real-world area of concern through the study. Vickers' concept of relationship maintenance and the basic pathway following a theory-to-practice track by a comparative study on LTA management in Chinese and British universities would seem to have proven as an appropriate, insightful and enabling guide in general for the LTA management transformation in Chinese universities and colleges.
- 3). The cycle of AR for improving problematical situations in LTA management by using SSM as a declared methodology is well-structured and seems to have made the learning process of AR rigorous.



4). SSM Model together with “Three Analyses” (which is part of SSM Mode 2) enables the users to identify themes of a problematical situation, structuring discussions about the situation and understanding insightfully the different interests of stakeholders involved in the situation. These help us make sense of the messy and complex problems that we face in LTA management, and based on this, we effectively defined systematically desirable and culturally feasible changes for improving the problematical situation in LTA management, and the situation is indeed greatly improved.

5). Under the guidance of the declared-in-advance framework and the methodology for the action research presented in this paper, the carefully conducted research through seven years has brought us very positive results in the real-world field of LTA management, which is significantly beneficial for BCBUU, and we indeed have achieved a great deal in the practice of LTA management.

## CONCLUSIONS

In this paper, we introduce a case study of how to approach complex and problematical situations in LTA management. We used Checkland’s FMA model to help organize our research through declaring a particular intellectual framework (F) and selecting SSM (M) to investigate the research themes within the problematic situation of LTA management (A). Through this substantial study we made sense of and improved the problematic situation and one tangible result is the development of a new model for LTA management at BCBUU, which is composed of an articulated philosophy, a robust organizational structure and a set of procedures and regulations. We learn lessons through this study. It is found that AR grounded on soft systems thinking provides LTA managers with an innovative and fundamental approach to appreciate otherwise seemingly unapproachable and unmanageable complex and ill-structured problem situations that they face. It is also proven that our instantiation of the general FMA model for AR in the context of LTA management in a Chinese university college is practically effective and may be seen as substantiation of it.

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