Constructing an Innovative Model on Knowledge with Deductive Logic Approach

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Abstract

Continuing research as great fervor on group kinetics has been coming to be popular particularly in enterprises and technological colleges. This paper comes out a rational framework of knowledge innovation as deductive logic approach and then forming an innovative model on technological industry after revised from ten enterprises of scientific park in Taiwan. However, this paper focuses on some key points as follow: Exploring the development trajectory of knowledge innovation, developing a model of knowledge innovation with deductive logic, and suggesting with innovative model at enterprise operation.

In addition, it shows how to construct an innovative model in enterprise, a mechanism of team activity, and to promote the performance on production. Finally, this paper brings up some strategies on application of innovative model at enterprise management for reference.

Keywords: deduces logic, innovation, model, knowledge innovation.

I. Introduction

In era of knowledge-based economic, the key strategy which makes highly competence in market is creating working knowledge as well as how to transform those knowledge into enterprise's valuation. In facts, there are some problems on employee's reaction on duty at work come to deadlock while they need to do flexible work. The employees get used to do their work rigidly on working process, it hard to change their mental model to meet the need of enterprise's innovation.

From logical viewpoint, it is an available way that constructs a model of knowledge innovation based on teamwork to form technological innovation with deductive logic approach. However, this paper focuses on a knowledge spiral process and individual interactive between implicit and explicit

knowledge at teamwork.

II. Propose and methodology

The purpose of this study aimed at planning the circumstantial elements that affect the knowledge innovation, exploring the Piaget's deductive logic and theoretical model of knowledge innovation, as well as constructing a model of knowledge innovation for technological industrial organization.

The methodology on this study includes literature reviews, expert consultation, case studies, comparative study as well as deductive constructional approach.

III. Literature review

A. The Piaget's deductive logic

"The world can be regarded as a system of logic- mathematic" as the Jean Piaget said. Human wants to do the lords of creation should make use of this approach of logic- mathematic, and then we can develop more new instruction and technique for the need of human life.

The main ideas of Piaget's psychological logic showed as figure 1.

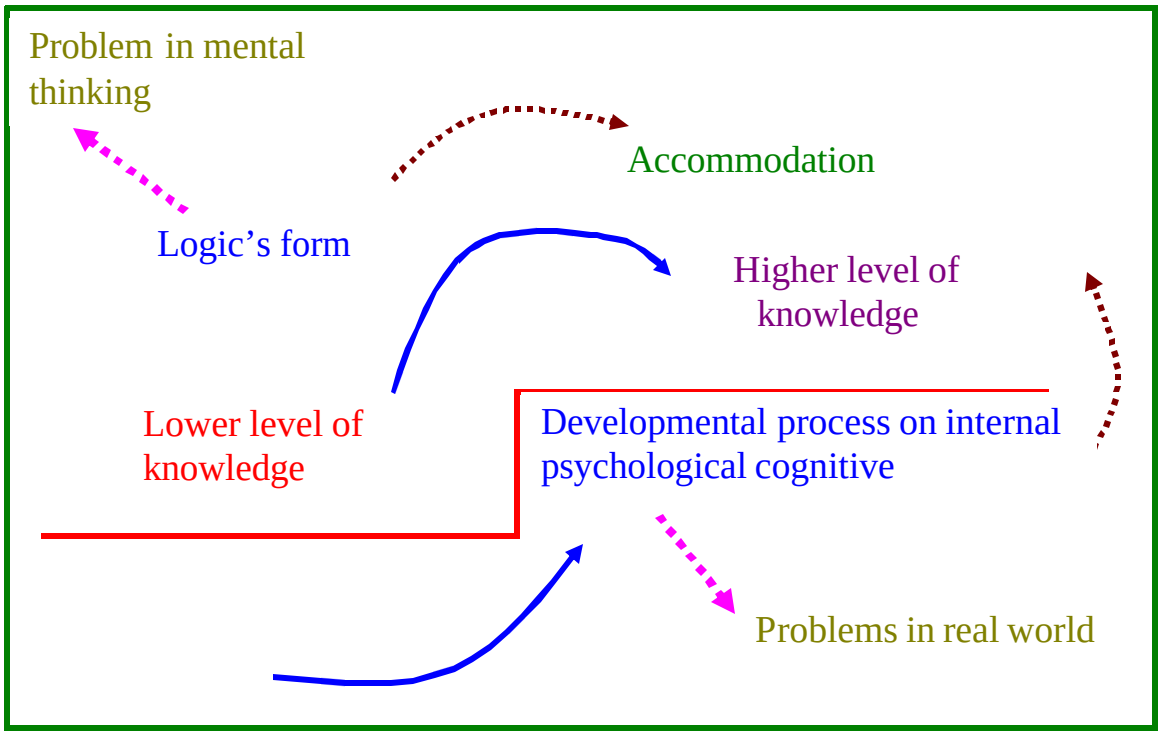

Figure 1. Conceptual thinking of Piaget's logic approach

B. The transition process of Piaget's deductive logic on knowledge innovation

New knowledge can be regard as intact external structure. For easy to learn, individual usually forms those new knowledge into a well-known formative when they do accommodation and assimilation. The meaning of well-known formative represents the learning process of cognition that makes thing into a form of generalization and simplification as well as embodiment into a picture, and then increases the individual leaning efficiency.

In addition, this paper concerns about the psychological process in creation. The hypothesis of knowledge innovation builds in individual transitive and creative technological knowledge when received a new knowledge. For example, individual can get one new ideas when received three hits.

C. The classification of innovation

The technological innovation based on change force and innovation widely in niche market can be divided into 4 categories.

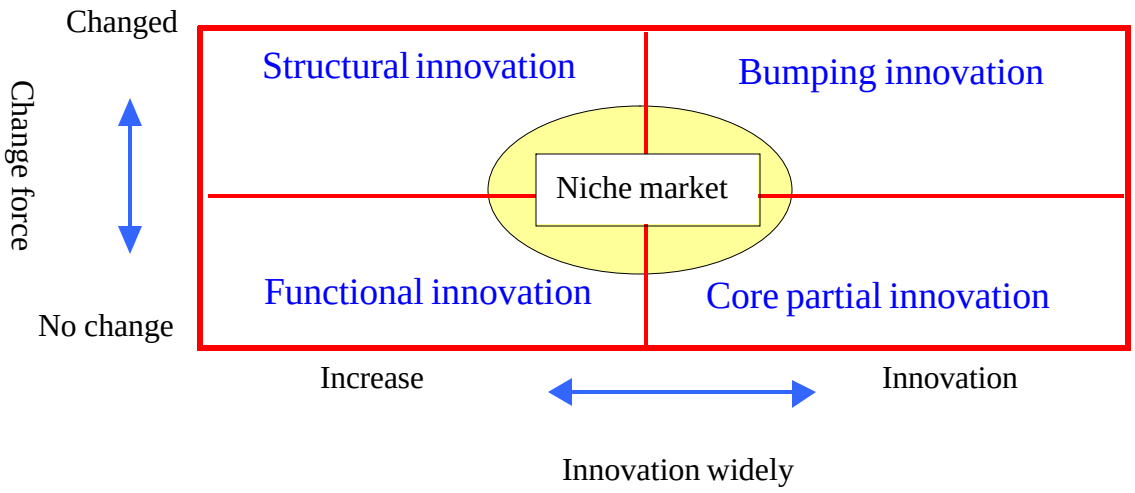

Figure 2. The classification of innovation
Source: Chang (2004).

IV. Planning the circumstantial affective elements

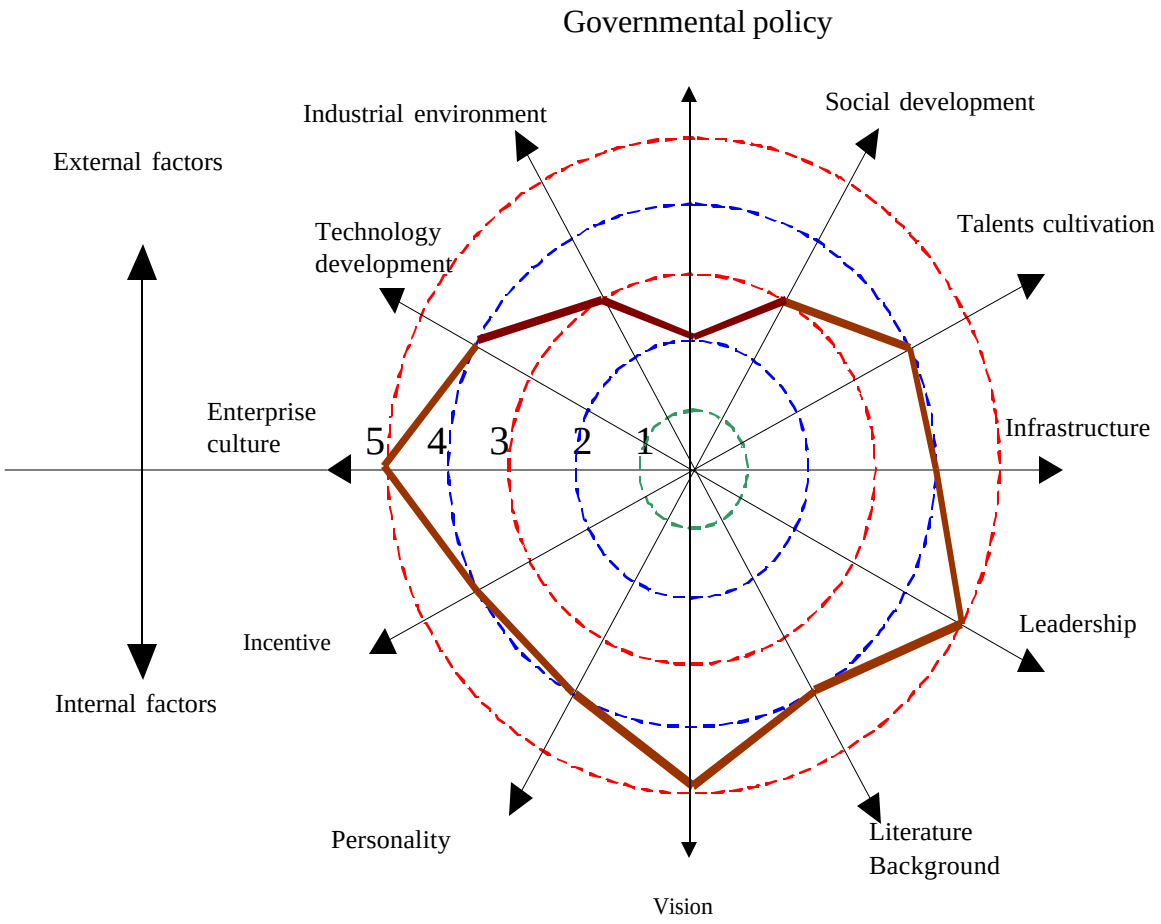

Figure 3. Strategic planning for knowledge innovation

The step on strategic planning should be arranged as two steps:

1. Drawing out an evaluative map to check the impact is reasonable or not.
2. Leading with a systematic thinking mapping to clarify the knowledge innovation activities in organization.

V. Building up the mechanism of teamwork activity

Table 1. The mechanism of teamwork activity

Step	Mental model	Conceptual thinking	Goal and effect
Define problem	Integration		Define and focus on problems
Explore problem	Interpretation		Interpretation from different viewpoints
Create multiple problems	Discussion		Developing reason and unreasonable answer with brainstorming
Making decision	Converge		Analyzing with deductive and inductive approach, and then to find reasonable answer

VI. Leading with a mechanism of action research

Table2. The mechanism of action research

Stage loop	Planning	Action	Observation	Reflection
1st loop	1. Discovery problem 2. Define & analyze problems 3. Literature review 4. Marking a proposal	Action 1 (implementation)	Monitor whole process and result	1. Exploring the cause-effect 2. Reporting
2nd loop	1. Revisal problem 2. Revisal proposal	Action 2	Monitor whole process and result	1. Exploring the cause-effect 2. Reporting
3rd loop	1. revisal problem 2. Revisal proposal	Action 3	Monitor whole process and result	1. Exploring the cause-effect 2. Reporting

VII. Constructing a theoretical model with deductive logic approach

A. Theoretical model of knowledge innovation

In final step of research process, the theoretical model of knowledge innovation we got showed as figure 4.

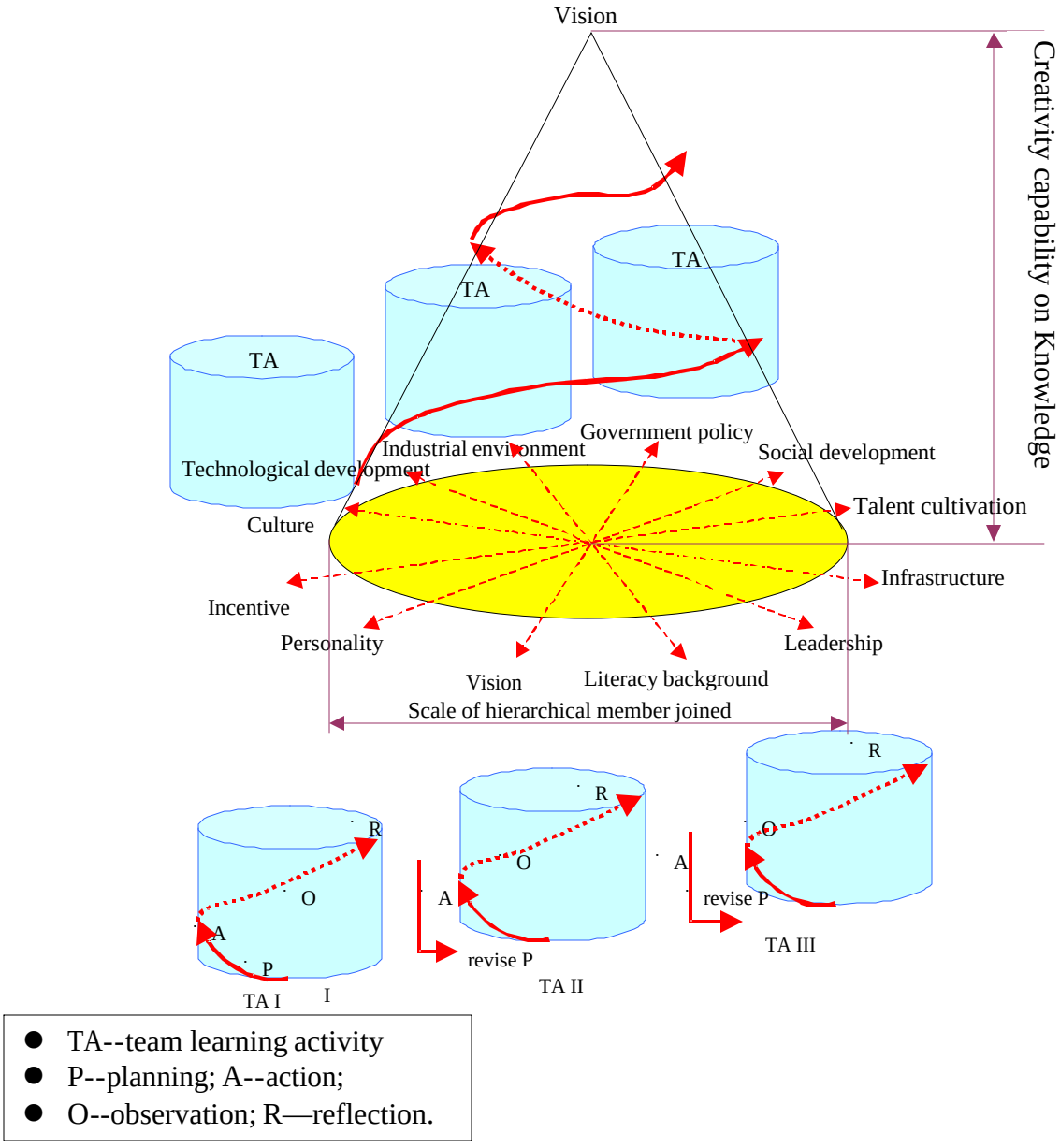

Figure 4: Theoretical model of knowledge innovation
Source: Chang (2002).

B. The mechanism of team learning

Operational mechanism of team learning in organization could be formed into as picture 5.

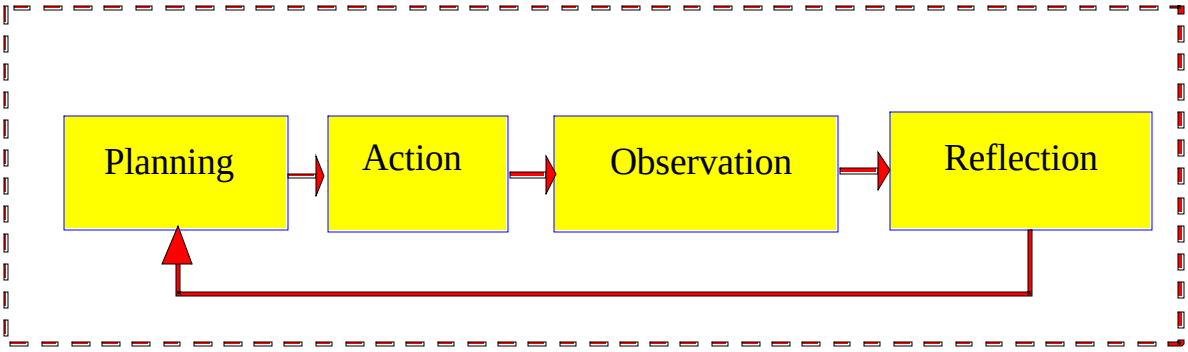

Figure 5. The mechanism of team learning

VIII. Conclusion

The process of this research focused on knowledge innovation, emphases the importance of team learning in the knowledge-creating process and then established a new theoretical model of knowledge innovation. Then ten prestigious businesses in Hsin-chu Science-Based Industrial Park, as its subjects of case studies, were selected. After analyzing and comparing the operations of these businesses and abstracting the similarity of revised opinions through the practical operation of the businesses, the theoretical model was revised.

A model of knowledge innovation in technological industrial organization showed as figure 6.

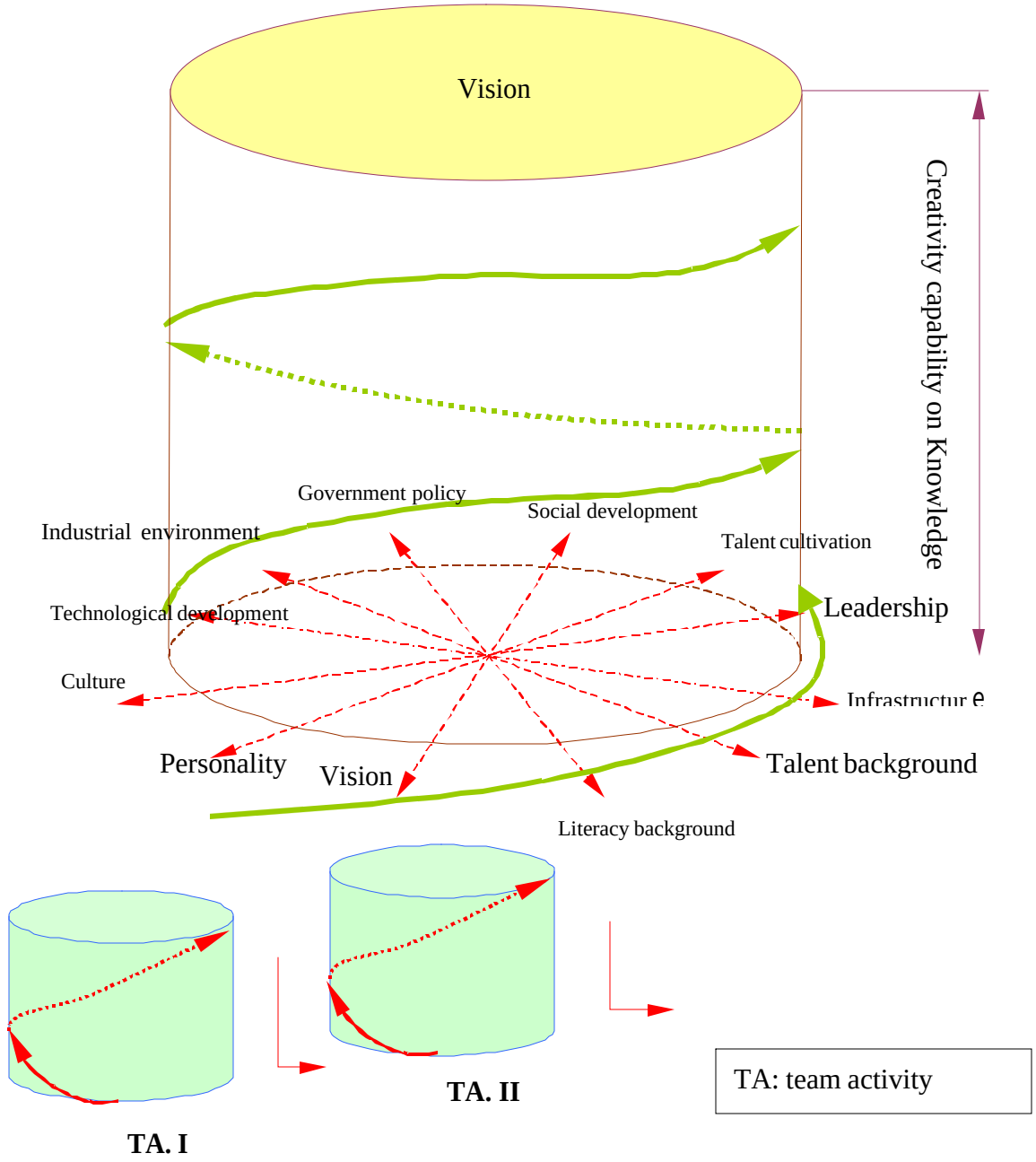

Figure 6. A model of knowledge innovation in technological industrial organization
Source: Chang (2002).

Finally, logical procedure was adopted to perfect the model of knowledge innovation as well as explain its concepts, method, mechanism and steps.

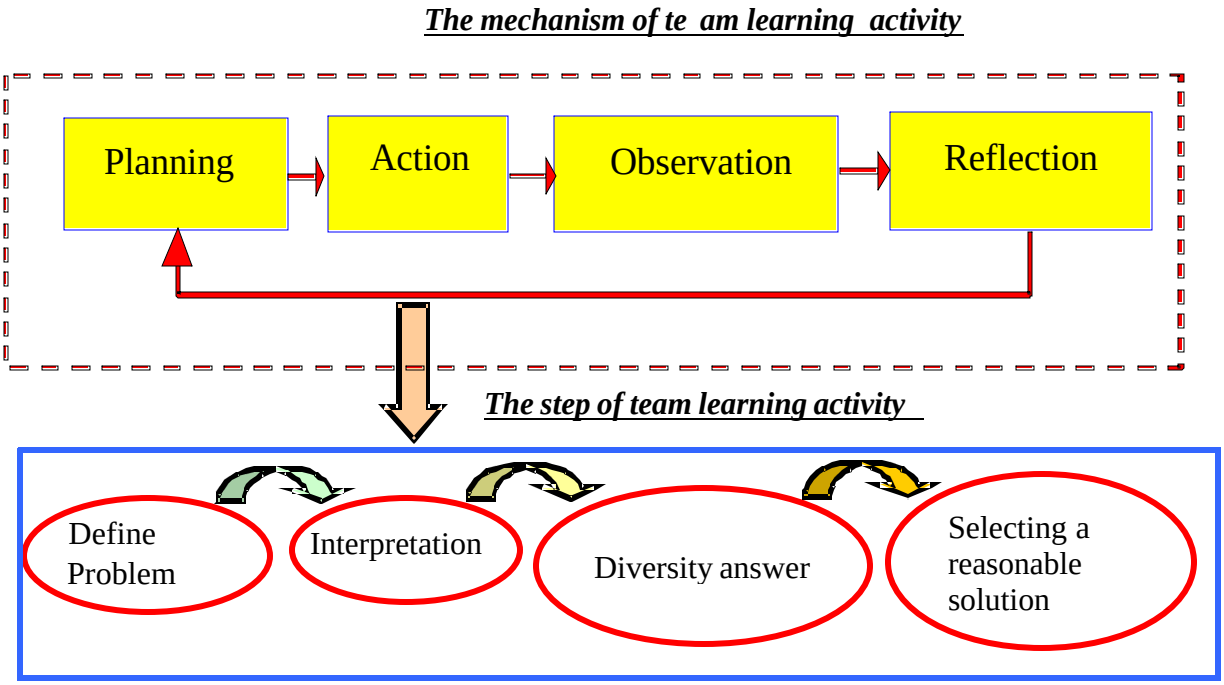

Figure 7. Hierarchical of mechanism & step in team learning activity

IX. Suggestion

This paper provided some results, related to circumstantial planning, theories of knowledge innovation, conducting model of knowledge innovation. All of them would enforce the innovational capability and increase competitiveness for business. Furthermore, suggestions were proposed to interviewed businesses, employees in the Hsin-chu Science-Based industrial Park and the Park Administration for their future reference.

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