

Constructing of Innovation Teams: The Way of Academic Research Order Rebuilding

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Abstract

The constructing of academic research order is based on effective academic freedom and appropriate academic innovation. At present, the order is in subject dilemma and institutional dilemma, that is, the singularity of research subject, the paradox on academic freedom, the confronting between true fruits and false fruits, and the gap between what it should be and what it is. Reconstruction is necessarily involved for the sustainable development of the academic research. In this article, therefore, innovation team building is proposed. And it is also believed as an effective way to solve the obstacle of the order, for the innovation team can ensure the sound progress of the order with its tensile tension to restrain the academic freedom and its resultant force to promote the academic innovation.

Key words: Innovation; Innovation team; Academic research; Order

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INTRODUCTION

In the dictionary *Cihai*, the word “zhi” means the norms; “order” means the length and it refers to the location where the person or the thing lies. Order can be divided into the natural order and the social order. The natural order is governed by the laws of nature, such as sunrise, sunset, waning, waxing, etc.; while the social order is a relatively stable relationship model which is accumulated by people during their long-term social interaction, and it is built and maintained by social rules. The academic research order, categorized as a kind of the social order, contains at least two aspects: Academic freedom must be worthy of its name and academic innovation must be true and reliable. The absence of either of them will lead the order into an unsound condition. At present, the academic research is in a state of disorder in the dimensions of both freedom and innovation. To solve this dilemma, it is a favorable attempt to build the innovative team which pins the academic freedom by team tension and promotes the academic innovation by resultant force, so as to enhance the ultimate performance of the academic innovation and to achieve the sustainable development of the academic research.

1. THE DILEMMA OF ACADEMIC RESEARCH ORDER

1.1 The Singularity of Research Subject

Vertically the educational system comprises pre-secondary (including secondary school) educational institution and post-secondary educational institution and each perform its own functions. For the former, teachers present objective knowledge in the form of narration, laying a foundation for the knowledge seekers. But in this process, the thinking pattern is relatively traditional. And also such educational institution poses fewer demands for the academic research order. For this reason, the discussion

of the order is naturally attached to the post-secondary educational institution. For the latter, it mainly involves colleges and universities where teachers adopt the elicitation method of teaching while students, especially the postgraduates, abide by the principle of association, deepening and creation, thus making it easier to innovate.

On this basis, universities serve as the axis fields of academic research activities and thereby all the research-oriented teachers in the universities as the discourse subjects. Those teachers, coupled with part of the research-oriented students, given the continuity of the activities, like postgraduates, doctor candidates and postdoctors, combine into the main body to construct the academic research order. However, the fact is that the research-oriented teachers are enjoying overwhelming superiority in terms of their status of being the academic research subjects. This phenomenon lies in two reasons. One is that the teachers are prior to the students in the comprehension of knowledge and the acquisition of academic practice. The students lag behind because of their lack of either internal motivation or external promotion. So there are great gaps between the two sides. Another is Charisma-style academic phenomenon (Clark, 2013, p.126). In other words, partial research-oriented teachers' academic authority develops into a kind of academic power which consumes the students' academic courage and bravery to some degree. Specifically, the students with great self-denial are used to being obedient and submissive in the academic field. Such law of power directly influences the emergence and promotion of the spirit of truth-seeking and novelty-seeking.

On the one hand, innovative thinking is of great necessity for an academic research to yield remarkable fruits. But a singular research subject limits the depth and width of innovative thinking and is less prudent and conscientious than multi-subjects. On the other hand, the academic postgraduates develop so slowly that they are unable to keep up with their teachers' academic research, which in turn negatively affects their own academic development. These difficulties restrict the performance of the academic research together.

1.2 The Paradox on Academic Freedom

Scholars enjoy all kinds of legitimate freedom. But given the cultural capital and academic resources they possess, the public is stricter with them relative to the ordinaries. That is to say, they enjoy the honor and take certain responsibilities as well. And this kind of responsibilities inside the universities is slightly different from that of outside.

Inside, the scholars take the work of teaching, scientific studies and academic researches to which they devote whole-hearted research enthusiasm and academic loyalty. And to ensure high efficiency in the work, they must be offered adequate and legitimate freedom including the freedom of teaching and doing scientific researches, the

freedom of publishing their research fruits, the freedom of reasonably expressing or communicating their own legal opinions and the freedom of academically getting promoted or further employed and so on (Shils, 2007, pp.279-280). Once such kind of freedom is preserved in the form of written words, it will provide guarantees for all the academic activities as long as these activities are positive and valid, especially for those academic innovations which make great contributions to the updating and extending of knowledge and the exploring of new truth though running counter to traditional academic researches.

Outside, similar to average citizens, scholars enjoy political liberty such as the freedom of speech and the freedom of assembly and so on. But such liberty is intangibly inhibited because of their status of being scholars which are an invisible mark engraved on them. We may as well call it "conditional political liberty." For instance, in terms of the public affairs related to their research, the opinions the scholars air are oriented and representative. They are demanded, as a result, to take a more prudent attitude towards their opinions. And this kind of freedom is like that enjoyed by all the public intellectuals.

As for the nature of the academic research, universities should return to the age of being in "ivory tower". Currently, knowledge is increasing sharply and society is making its great headway in development. And under such atmosphere, impulsiveness and utilitarianism are prevailing, the previous peaceful state of mind in the research totally broken. Consequently, there have been appearing various distorted interpretations of the academic freedom among the academic research subjects, even a series of chaotic phenomena which impact the normal academic ethics: shoddy research, plagiarism and multiple-publication. For the scholars, they are reasonable to enjoy the legitimate freedom to keep their academic research in regular progress. But on the other hand, some scholars to misunderstand and abuse such kind of freedom. Thus, this pair of contradiction causes the academic research into a dilemma to which degree the freedom should be.

1.3 The Confronting Between True Fruits and False Fruits

One of the results of the positive academic research is to interact with the social development. This is the embodiment of the value of the academic research as well as the necessary requirement for the development of human society. For the natural science, the most direct manifestation is to apply the research fruits into the social production and re-production and to develop new products into the market with the employment of new technologies and inventions, directly contributing to the development of economy and the prosperity of life. Additionally, for the humanistic and social sciences, its effects are intangible

and indirect. To be specific, its theoretical paradigm and construction of value system directly provide theoretical guidance and value support for the production and re-production of all industries.

All the outcomes, whether being the implicit productivity improvement or the explicit value construction, are dialectical. For the natural science, not all the achievements in the scientific researches of each field can be accepted by the public and this depends on the individuals' value. For the humanistic and social science, each new theoretical paradigm is constructed to solve certain problem. As time goes on, fruits will alternate and paradigms will evolve. In a society where the moral system of the subjects is being in sound progress, the public judgement of value is directly dependent on the practical value of the results of an academic research and indirectly on its ethics. On this point, with reasonable and adequate academic freedom and the performance of innovation teams as its core, a good academic research order will ensure the sound development of academic ecology, thus indirectly guaranteeing the validity and value of the academic achievements.

The problem is that for one thing, both sides discussed above are trying to maximize their "true fruits" to meet the demands of public value and their own academic development; and for another, some people take such shortcuts as cheap copy and piracy to yield "false fruits". It is a truth that all those false fruits will finally fade away from the stage of development. But regardless of the results, such slipshod and shoddy behaviors to cater to the social demands, reducing the cycle of achievements and the cost of production, take up a great deal of social resources and do harm to the innovation teams' faith and initiative of working for a "true scientific research". That is a kind of intangible loss and this paradox is always used to test the sustainable development of the academic research order in the dimension of its innovation.

1.4 The Gap Between What It Should Be and What It Is

No matter what kind of idea about academic research is held, one point is always concerned. That is to what degree the practical academic freedom falls behind what it should be. Innovation is necessarily connected to freedom. Without freedom there will be no foundation to develop the innovation.

Ideally, a sound academic research order is firstly bound on the academic freedom under the effective academic ethics. In this sense, academic freedom is neither exclusive to a certain scholar nor the freedom in any dimension, but a kind of freedom for all the scholars in the academic dimension. The scholars enjoy positive and effective freedom and as a result, they can dedicate themselves to their academic research, heart and soul, without the fear of their academic right being infringed just because the discoveries or findings break

the traditional thinking. And also they can be frankly and magnanimously publish or press their achievements without the fear of being revenged because of their violating the illegal profits of some people (Ibid.).

Practically, there is still much room to be improved for the academic research order. The pursuit of stability leads the majority of scholars into the traditional way to do researches. But in this case, academic freedom cannot afford any valuable protection; instead, it only serves for the minority of scholars who are brave and delighted enough to seek truth, novelty and difference in their academic thinking. Being against traditions means the risk of being questioned or even being negated. And it is only in this way that the value of academic freedom presents so particularly prominent. Though the exact proportion of the scholars pursuing innovation in the field of academic research is still unknown currently, it is sure that the smaller the proportion is, the less significant the order will be for the whole academic ecological cycle and vice versa. In a word, the voice of striving for freedom under the thought of keeping steady is nothing meaningful and even may bring other barriers to innovation.

On the one hand, academic research should be allowed full and legal academic freedom, which is based on the demands of innovation in the research. In fact, on the other hand, the academic subjects fail to make use of such freedom and to yield the correspondent academic innovations. Simply speaking, the scholars are seeking to keep steady while holding the flag of freedom. This situation exposes the flaws and shortcomings in the institutions of the academic research order.

2. THE LOGIC RELATIONSHIP BETWEEN ACADEMIC RESEARCH ORDER AND INNOVATION TEAM BUILDING

2.1 The Relationship Between Academic Research Order and Innovation Team Building

Academic research order involves two factors: freedom and innovation. Without the freedom, the order will be conservative; without innovation, the order will be ineffective. The logic relationship between them is elaborated as follows,

To begin with, academic research order is a relatively stable and regular set and under its norms the academic freedom is a kind of dynamic right. The order will make accordant adjustments with the development of the academic research to coordinate its relationship with the academic freedom. Concretely speaking, the order can be defined as a set generated in the academic interaction of the group of academic researchers, including the academic norms in written forms and the conceptualized academic ethics. And the academic freedom, as the main manifestation for those two aspects, expresses the

discourse appeal of the group. To sum up, the freedom is the presupposition of innovations. Since academic researches aim to seek innovation and excellence, it is safe to say that the academic research will be in vacuum without freedom. And the difficulties will be triggered easily if both sides get discordant with each other. A good interpretation and grasp of the dynamic relationship between them are a major premise for the academic research activities.

Secondly, the dynamic relationship is demonstrated in the following two aspects. For one thing, the development of the academic research order promotes the building of innovation team while a fixed order plays the role to the contrary. For the other, the team will in turn boost the updating and progress of the order. Academic research is ever-changing, so joint efforts should be made dynamically by the researchers and institutions related. At present, the blocks in the academic research order are mainly the singularity of subject and the ignorance of academic freedom, which indirectly influences the development and performance of the innovation team. Therefore, for the development of the team and the improvement of the research institutions' abilities of innovation in the academic and scientific research, it is of great significance to distinguish the linkage logic between the order and the team construction.

2.2 The Present Studies of Academic Research Order and Innovation Team Building

Firstly, there have been abundant studies about academic freedom. But the existing researches are mainly concerned with the academic ethics and the academic freedom under the academic norms. In these researches, the academic freedom is seldom studied from the perspective of academic order and merely six related articles are published. Secondly, since the very beginning of the 21st century, with the incessant appeal for innovation and innovation team, the researches correlated with innovation team building have been gradually increasing. However, the researches available are mainly conducted vertically, with the focus on the questioning of the lack of innovation and on the pattern construction of innovation team. There are few researches connecting innovation team construction and the dilemma of academic order. At last, seldom researches are on the relationship between innovation team building and academic order reconstruction. So far there have not been any related findings published yet.

In this article, the study of the academic order only from the dimension of freedom is believed to be incomplete and the sheer discussion of innovation to be of no academic significance. Therefore, when it comes to the research on the academic order, both the two dimensions should be included. Though aiming to improve the institutions' abilities of innovation in scientific research, the building of innovation team entails other profound

implicatures. To be more exact, the team is constructed in the form of cooperation, fully reaching a sound academic cycle in which the freedom advances and is advanced by the innovation. Consequently, the existing dilemma in the academic research order can be solved, its ecological environment be ameliorated, and the overall strength of academic research be enhanced in all aspects.

It is no doubt that the research-oriented universities are bound to make the choice of building innovation teams. And this is also the only way to protect academic research order from becoming mechanical for the realization of its reconstruction. Innovation team is constructed with the team as its academic subject and innovation as its academic appeal. In this way, appropriate academic freedom can be ensured by its tensile tension and academic innovation achieved by its resultant force. Such advantages will fully guarantee the academic researches' pursuits of freedom and innovation. And in this case, a sound development of the academic order will be fulfilled.

3. ORDER RECONSTRUCTION: STRATEGIES OF ACADEMIC RESEARCH INNOVATION TEAM BUILDING

The Top-notch Innovative Talents Training Project, launched by the Ministry of Education in 2004, involves the training of talented people and the supportive system in three levels. The first is the Program for Cheung Kong Scholars and Innovative Research Team. This program is established to form a group of outstanding innovation teams, with the focus on attracting, selecting and creating a quantity of academic leaders of internationally advanced abilities (Tang & Huang, 2004, p.1). In 2006, the State Council promulgated *the Implementation of National Mid-long Term Plan Outline of Scientific and Technological Development (2006-2020) Affiliated with A Number of Supporting Policies*, emphasizing "the importance of training a number of high-level academic leaders with strong abilities of innovation to formulate a group of excellent innovation talents and innovation teams with Chinese characteristics". And innovation team building is mentioned in all the policies stated above. Thus, with the universities as the starting point, great efforts will be made to strengthen innovation team building and bring the initiative of the excellent talent team to full play. And then the overall scientific research abilities of the related institutions such as universities will be improved.

Human and institution are two major decisive factors for development. To break through the dilemma of academic research order, these two factors must be taken into consideration as long as the reform and the regulation of freedom and innovation are implemented. On this basis, the initiative and resultant force of human can be maximized. Meanwhile, a sound system will lay solid grounds for individuals to conduct researches. In terms of

the human factor, one is to emphasize the core role of the leaders and another is to construct a true multi-element team structure. In terms of the institution factors, one is to perfect the disciplinary convergence platform; another is to set up a kind of free but also restrained mechanism. Specifically, the current situation of the academic order can be changed from the following four aspects with the help of innovation team building:

3.1 Improving the Selection Mechanism of Leaders With the Emphasis on Their Authority Charm and Coordination Ability

Authority is a neutral noun. In terms of its formation, Max Weber thinks that authority can be divided into legal authority, traditional authority and charismatic authority. Legal authority, formed through the legal procedures, is viewed to own the character of rational authority. Traditional authority is based on such reasons as hereditary; its power characteristics are showed by the subordinates' obedience and loyalty to the superior. Charismatic authority originates from individuals' unparalleled talents. The establishment of a team needs both the leadership of the authority and the hierarchical cohesive force.

In the modern society, legal authority is dominant. But the case is different in the academic research organization. Based on its nature of freedom and innovation, it is better to choose the leaders with charismatic authority for an innovation team.

The authority of the leaders in an innovation team mainly comes from their professional knowledge in a certain field. On this basis, they are able to guide the whole team and stimulate the knowledge faculty into a more positive attitude to learn new technologies. And they, together with the team members, make the goals and tasks for the team's development. (Liao, Ji, & Zhang, 2004)

Since the authority in the academic research lies in the individual's academic abilities, the research ability of the team members, especially the team leaders, is the foundation to operate an innovative team. Without sharing, culture and projects, the team will find no possibilities to operate well. And all those three factors need to be appropriately regulated and managed under the leaders' authority.

Sharing, as a concept of team operation, is the foundation of team communication. Domestic relevant researches have analyzed the factors influencing the knowledge sharing in an innovation team. Five types of knowledge were discovered. According to the top-to-down linear of the degree to which the influence is, they are the subject of knowledge sharing, the internal environment of the team, and the platform of knowledge sharing, knowledge property and incentive mechanism (Sun, Yang, & Lang, 2012). All the five factors can be adjusted and regulated by the leaders within the team.

Culture is the driving force for team operation. Apart from striving for external resources and support, the

disciplinary leaders are also responsible for the role of the spiritual leaders and the lubricant. Specifically, on the one hand, the team strength and influence should be enhanced. On the other hand, the team internal execution and coordination should be shaped. This requires the team leaders to set up good team culture within the team. As a result, the team culture with tensile force can influence the team members in different disciplines and the resultant force of the team will be generated among the team members

Project is the platform of team operation. In addition to the adjustment and regulation of those shared factors, the team leaders should be explicit the specific project objectives.

In the process of the evolution of science-technology innovation team in the university, the team members have been exerting their potentials to achieve project goals by the integration of their wisdom and ability. At this time, the combination of motivation, need, driving force and endurance will produce a special force to promote the development of the team. (Zhu, 2009)

3.2 Strengthening the Engagement of Academic Postgraduates and Building the Pluralistic Academic Research Echelon

Diversification and integration is the unchangeable law of development. Diversification is the joint force and integration is the driving force. The building of innovation teams should also obey this law. Building the pluralistic academic research echelon, on the one hand, can subvert the existed singular structure, letting in newcomers to the team. On the other hand, it can realize the inheritance and development of the subject structure and the education related structure in the academic research, eventually laying the foundation for the sustainable development and unity of the academic research echelon. In addition, the status quo of knowledge differentiation and specialized disciplines makes it harder for individual researcher to handle all the knowledge. The individual heroism type research cannot fit the general situation of the academic research. So it is high time to build the innovation team with the same goal, education related complementation, collaboration and responsibility sharing.

Pluralistic academic research echelon can be classified into two types. One is the top innovation team made up of the scholars of master level leading the young and middle-aged teachers. The other is the teacher-student symbiotic innovation team. It is made up of the backbone of science and technology represented by the young and middle-aged teachers and the high-level postgraduates committed to the academic research. The first type realizes the academic sublimation of the young and middle-aged teachers on the basis of the masters' brilliant achievements. The second directs the postgraduates' academic development on the basis of the young and middle-aged teachers' academic accumulation.

The academic circle needs the young to harmony the authority in order to better pursue excellence. That is to say, the postgraduates with academic potentials can reconcile the authority. Besides, they can lead the prevailing tendency of enterprising spirit in the academic research, setting good examples for the fellows. And this is the self-evident motive force for cultivating the postgraduates' academic passion. Of course, the realization of such vision on the one hand relies on the institutional support; on the other hand, it depends on the guidance and support of the research-oriented teachers with authority. Also it needs the postgraduates' endogenous academic force. All these are extremely necessary to motivate the academic circle to build the belief of remaining realistic and creative.

3.3 Encouraging the Innovation Team of “Disciplinary Convergence” and Creating Heterogeneous and Multi-Disciplinary Platforms

Human is the main body of all innovation-oriented academic activities.

From the point of view of activity theory, the nature of disciplinary convergence is to gather all the individuals of different disciplinary knowledge, thinking patterns and values, thus forming an innovation team with the abilities of completing the complex, difficult but significant task of innovation in science and technologies. (Liu & Chen, 2007)

Disciplinary convergence requires combining different disciplines and breaking the fixed barriers in the development and research, for the realization of disciplinary convergence and integration. An effective convergence will be obtained with the academic activities as its platform and the heteroplastic knowledge as its surface form. It is not just the combination of the simple knowledge of a single discipline, but a deep-seated communication in which technologies are exchanged, thinking patterns are intersected and values are blended. For this reason, it is safe to say cross-disciplinary innovation team bears two unique features: disciplinary convergence and heteroplastic knowledge.

With the advance of the division of labor in society, it is a further trend that knowledge differentiates. American scholar Derek John de Solla Price even proposed the word of “mega-science” to describe the prospect of contemporary science.

Since the present science is far beyond before, apparently we have entered a novel era, an era where all the obsolescent but the fundamental tradition are removed...The large scale, new look and powerful force of modern science make it reasonable enough to win the reputation of “mega-science. (de Solla Price, 1982, p.2)

In this era, given the exponential increase of human knowledge, it is not easy for an individual to find enough time or energies to get proficient in or to obtain multi-disciplinary knowledge, thinking patterns and values. So a proper division of labor is the inexorable choice to improve the efficiency of scientific research. For this reason, the contemporary

disciplinary convergence is viewed to emerge in the interaction of the group of academic researchers. (Liu & Chen, 2007)

Disciplinary convergence is not only the demand based on the amount of knowledge, but also the demand for the cross-disciplinary inspiration and achievements. So far, the cross-disciplinary innovation team mainly occurs within either the science and engineering discipline or the humanities and social science, but very few happen cross the two fields. The non-interdisciplinary innovation team merely fulfills the feature of disciplinary convergence, and in terms of the heterogeneity, it is only about the explicit knowledge to the exclusion of the implicit knowledge. Thus the performance of innovation is restrained.

Indeed, under the context of “mega-science”, to effectively break the academic barriers, the small-span disciplinary convergence within the first level disciplines should be maintained; the large-span disciplinary convergence cross the first level disciplines of the art and science should be encouraged, thus creating a platform for the logic of instrumentality and the dialectical logic to interact with each other. This kind of large-span convergence indicates the heterogeneous nature of the knowledge, which is more advantageous to arouse different conflicts. Besides its negative sense, the word of “conflict” also means a kind of creativity, even a part of the final innovation resources. This depends on the different observe perspectives (Harris, 2005, p.242).

3.4 Implementing Cooperating and Sharing Mechanisms and Pursuing Effective Monitoring and Benign Freedom

Max Weber believes that it is only when the extended confidence and trust is available that individuals can find possibilities of cooperation and trade. One of the important ideas to ensure the orderly running of innovation team is sharing. Sharing expresses differently on the two stages: the pre-achievement stage and the after-achievement stage, whose classifications are based on the transiting point of achieving the achievements.

Firstly, the academic research should be carried out according to the primary resource of the knowledge, skills, ideas, values and experience of team members at the pre-stage of achievements. By this kind of sharing, it can optimize the allocation of the overall knowledge and skill possessed by the team, creating the effects of one plus one being more than two. On the other hand, it can promote the accelerated improvement of personal knowledge of the team members, which cannot be completed by the force of a person alone. “Knowledge sharing is the essential premise of cooperatively finishing the academic project by the innovation team. The crossed multi-disciplines and multi-fields academic task of the team can only be accomplished when the high level sharing of the team knowledge has been ensured.” (Wang, Guo, & Sun, 2010) The conduct of an effective academic research on the basis of sharing involves the issue of division and

cooperation. To be specific, the achievements fulfilled by the team members in their respective sub-teams are finally integrated into the overall academic achievements of the whole team.

Secondly, the academic research should be carried out on the basis of the organization, analysis, testing, publishing and feedback of the academic achievements at the after-achievement stage. The academic achievements of the innovation team are completed upon the sub-achievements of each smaller team whose strict meticulous and benign integration are the power guarantees for the performance of the academic research. Under this circumstance, all the innovation team members share the honor of team achievements. However, the sharing of the overall honor is relative, for the reason that upon the problem of one sub-achievement's or more failing the standard of the academic order, the overall achievements of the whole team will be diversely affected. At this time, the "co-honor" will turn into "co-injure", impacting all the team members and their overall achievements. The trapping mechanism of consequence which involves more than one research subjects exactly makes the issuing of the team members' own sub-achievements and the checking of other team members' sub-achievements more careful than the case when only one single research subject is involved. It is also the organizational trapping of the innovation team building to the academic research freedom as a powerful representation of academic rigor.

CONCLUSION

Freedom and innovation are the two wings of a sound academic order. The research freedom should be affirmed and restrained to ensure its adequacy but without abuse; meanwhile, the innovation should be encouraged and be offered a good platform to guarantee its nature of being true not false. For the academic innovation team, not only the supervised and valid freedom is defined based on the internal interaction. Besides, its pattern of disciplinary integration provides the environment of

growth for innovation. This is a novel interpretation of innovation team building as well as a new way to solve the present dilemma of the academic order. Finally, it is also an exploration of great significance for improving the level of academic research and building the top-ranking research-oriented universities.

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