

The Rules without Principles
-----The consideration of the assessment of the breakthrough
thinking mode education

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Introduction

Educational assessment serves for the education. The content of education makes a decision on the direction and approach of the assessment, and meanwhile it has been the factor which is directly led by the direction and approach of assessment. Therefore it is quite necessary for us to make a thorough investigation on “what is the real meaning of education? What is the comprehensive way of assessment? And how can assessment more effectively promote the real accomplishment of the real meaning of education?”

Literate Review.

I. The investigation of real meaning of education

a. What is education?

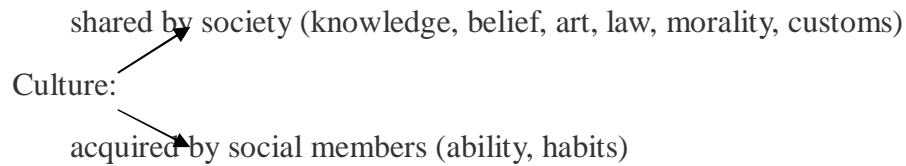
The great Chinese educator Mr. Cai Yuanpei gives such comments about it: education is a process in which assists the persons being taught to put to use his ability, complete his personality and shoulder the responsibility to the whole society. So we can see that education leads the direction of human culture by transmitting, continuing and developing it. Meanwhile, the development of human culture confines the educational value orientation. Both of them create a variety of spiritual treasure by mutual promotion and perfect combination, lead the development of the material treasure and ultimately decide the human progress. In short, education is the dissemination and inheritance of human culture.

b. The essence of culture and real meaning of education

1) The essence of culture

Education is the dissemination and inheritance of human culture. If it is the case, what is included in the culture? Here I would like to extend the definition of culture which is first

proposed by British anthropologist Edward Taylor. It is shown below in the diagram



We can see from above that the so-called culture is a complex of knowledge, beliefs etc. shared by whole society and the ability and habits acquired by social members.

Let's make an analysis for the diagram shown above. The knowledge, belief, art and so on are decided by the combination of the ability and habits etc. of the social members. However, what are the factors deciding the habits and ability of the individual member of the society?

The professor Mr. Agirus of the Harvard University has ever commented like this: although the human behavior is always consistent with the theory they adhered to, their behavior is unavoidably consistent with the theory they employed, which is the intellectual mode. However, and the intellectual mode derives and develops from the thinking mode. All behaviors of us comes come from the thinking mode. These behaviors become solidified when they become habits or customs and then become the intellectual mode of each of us. As a result, it leads our recognition direction somewhat unconsciously in our rest life. From this point, we can define like this: the essence of culture is in fact the intellectual and thinking mode. The previous one is the result and the latter one is the cause. The intellectual mode which comes from the common thinking mode reveals the contents such as knowledge and belief etc, which are shared by society; the intellectual mode which comes from the individual peculiar thinking mode reveals ability and habits etc, which are acquired by individual member of the society. The diagram is shown as below:

Culture= thinking mode — intellectual mode (shared by society (knowledge, belief, art, law, morality, customs)/ acquired by social members (ability, habits))

2) The real meaning of education

Culture is the most important for human kind after long period development other than life. It is even more important than the individual life because the life of human will be exhausted if without culture, which is transmitted by education.

It appears that education is the process involving teaching knowledge, belief, art, law and morality etc. as a matter of fact, behind the appearance reveals the essence of culture that is the thinking mode. Of course, it is imperceptibly influenced, but it is undoubted that only the formation of the intellectual and thinking mode can truly reveal the result of education functions, that is everyone's integrated ability and habits. In other words, our ultimate goal of the "quality" in education. (Einstein ever gave a brief description of "quality", which is the remaining factor after we forgot what we have learned in school.)

c. The classification of thinking mode

a). The generation of thinking mode

The essence of culture, which is also called the thinking mode, is what is taught in education. So how is the thinking mode coming into being? The fundamental factor of the generation of thinking is the recognition. Simply speaking the sense organs, the guidance of knowledge and the inherent quality form one's recognition, it is impossible to talk about Van Gogh and Da Vinci with who are born blind.

Regarding the definition of recognition, "the father of the modern recognition psychologist: Chinsler thinks that recognition is a whole process of how one feels and employs. Recognition is always defined concisely as the acquisition of knowledge. However, we can prove that it is not possible for one to acquire new knowledge if only depending on the employment of feeling rather than the knowledge platform. We can obtain one truth from analysis and synthesis that there is no acquisition of knowledge without recognition, on the other hand, the further acquisition of knowledge is based on the recognition platform which is the combination of the original recognition and the acquired knowledge. The recognition platform is what we indicated for the thinking mode.

From this point, we can comprehend like this: the thinking mode is actually the recognition platform which is formed by the current recognition tool, direction and level, and it has the revelation of the opinion, viewpoint, reaction mode for the surroundings etc.

Note 1: the sense organs perceived by human are: eyes (can see colors), ears (can hear sound), nose (can smell), tongue (can taste), body (refers to skin, can feel and touch), mind (realization, differentiated by mind)

2. Three thinking modes

There is more than one direction or method to feel the surroundings. That is to say the formation of human's thinking mode has not only one type. Different kinds of thinking modes and their combinations derive many intellectual modes, with the factors such as different knowledge learning and various environments, thus forming the great differences of individual quality of human being.

1) The in-depth analytical thinking mode

It is the starting point where we begin to know the world: everything is of linear type. We all know that the light will be bright if we turn it on, the water will come out if we open the tap, also we know hot water is out if we turn the knob to the left and the cold water out if turn to the right. We don't consider too much why it is the case. What we need is to do it better, just like playing the speeding car games on the computer. We could be the experts if with care and devotion. Such a linear thinking mode is analytical. We can disintegrate it in order that we can make it easier for us to solve the complicated things. The maths subject we learn in school is actually training and exercising such ability. Under the thinking mode, the human knowledge will be divided into comparatively independent disciplines, and will be divided into more. In such a condition, the comparative comprehensive study and research is required. It is a kind of segmental in-depth analytical thinking mode, which we are accustomed with the recognition of matters, and the leading direction of modern education and educational assessment.

2) Systematic integrated thinking mode

In our daily life, no one will consider or solve the problem with only one thinking mode, the point is that how he solve and employ as the major approach when facing difficulties. We have benefited more and more from the in-depth analysis and therefore the thinking

mode becomes the leading approach and we have learned how to differentiate ourselves and regard each of us as the separate individuals. We stressed with purpose the individual mind, and emphasize the independent mind, individual need and personal desire. As the evolution of self-consciousness is becoming stronger and stronger, our interwoven system has been disintegrated into pieces. We investigate separately the mental health and physiological health so that we have to sacrifice the overall health condition and social cost for living longer.

School education has been the teaching and learning of segmental knowledge, the insipid academic training, and ultimately run adrift more and more with the individual growth and real learning with less efficiency. (Note 2)

Nowadays someone has been attempting to explore another thinking mode within such a cultural system. They never employ the analytical thinking mode to extend and make use of the knowledge and recognition, but observing all the phenomena in the real life from a macro view. They find the conceiving action mode behind the phenomena are interdependent with each process has is of mutual influence which are hidden behind and hard to perceive. In such a case, only considering overall system instead of any individual part can we get to know the whole system. This is the training of the systematic thinking proposed by the western management expert Peter Senger. We call it the systematic integrated thinking mode, which has been in the process of exploration in modern education and educational assessment.

[Note 2: part of description above are selected from the works of Peter Senger "the fifth discipline"](#)

3) The exploring breakthrough thinking mode

However the two thinking mode illustrated above are within the cultural system based on the current recognition level, no matter it is in-depth analytical one or the systematic integrated one, both of which are confined in the current recognition cultural system. In other words, we are still standing at the recognition level ever reached by epoch-making

masters. Although we have been making great efforts on its depth and width for hundreds or even thousands of years, the real development of the human society actually relies on the appearance of such great people.

We can have a glimpse: after several years' development on the basis of Newton's mechanics theory, Einstein's theory of relativity broadened our spectrum from another point. It is because of them that we achieved great improvement in all aspects such as science, technology and social life etc. They are like a warring vehicle advancing with great power. However, did we achieve real advancement expect for the development in a more comprehensive and broad way since last century? Did we come back to the starting point of all culture and if someone has surpassed Einstein's recognition level?

Chinese culture has such a condition. It has been thousands of years for the long-lasting influence of their thoughts of the great masters in that period such as Confucian, Laozi etc. How can we measure their influence to the development of Chinese culture and society?

“The essence of culture is the thinking mode, which leads all the phenomena of culture. The modern intellectuals with insight have found the multi-faceted culture modes in which culture is in fact multi-faceted and do not confine into one mode. However, the reason we often employ one mode is that we are used to this mode and often describe or judge everything by it. As a matter of fact, it is limited and not comprehensive”. (Note 3)

Now the culture we have been accustomed to is in fact the modern science or science in short. We have felt that modern science culture is progressing following the time at least until now. I wonder if such a character also applies to any other culture.

Let's take arts as an example; can we judge that the culture of art is progressing with the period? We have to admit that the culture in some fields such as music, painting and poetry does not have the linear development rules as science. They usually develop in a non-linear route. There would be a gap of several years or even hundreds of years between the peaks, but the value of one peak is not necessarily surpassing the previous one. One is linear while the other is not. One is developing in a line whereas the other is going in a curve. It is obvious that it is quite different on the layer and mode of the culture.

Apart from the culture is of the two facets, there is another special culture, that is, the ancient culture such as Buddhism. It is at opposite poles with other cultures, particularly the science. Sakyamuni did not predict the discipline he founded would become prosperous. Conversely, he predicted in an unusual mode the three stages in the discipline---Zhengfa period, Xiangfa period and Mofa period. Here we would temporarily not analyze it from a professional angle why such a special knowledge would follow an unusual route. What we need to know is that the phenomenon actually exists. In addition, the modes of Confucius and Taoism cultures are similar to the one of Buddhism. It is in a virtual culmination period shortly after its foundation, and then goes to decay and even the nominal existence until now.

Therefore, culture is multi-faceted and not confined in one regular mode. It is not in conformity with fact if requiring all of us can look at one thing with insight of development. It is therefore inevitable that there will be problems if treating and researching it from one layer.

The development of culture is developing and prospering with the different thinking mode supporting behind. The reason why there exists different or even opposite development modes is the opposite thinking mode. Apart from the regular and accustomed thinking mode of in-depth analytical one, and the systematic integrated one we have realized, another exploring and breakthrough thinking mode is now employed by those epoch-making Chinese and western masters. Standing on the recognition platform formed by the current recognition tool, direction and level, discovering the truth of universe and mystery of life, we are expecting a breakthrough in the recognition to the whole world and human being himself and ultimately approaching the reality and truth.

The thinking mode is different or even opposite with the pervious two. In-depth analytical one is to give a comprehensive analysis on the aspects of social life within current recognition level; the systematic integrated one is also targeting on the macro observation and system within the current recognition level. Exploring breakthrough one firstly

interrogates the current recognition level and then on the basis of it exploring the origin of the universe and life.

Undoubtedly, we are far from the real understanding of the truth. We know little about the world we are living in and have been following its development rules without knowing why it is so. Furthermore, we know even less about the life itself we are using. However all the human culture develops steadily with the premise of these “negligent” assumptions? Encountering such a fact, how can our education neglect such a thinking mode and the cultivation of such masters leading the development of human progress?

It has long been a desire that we expect such talents all the time. However we need retrospection that such a master or the thinking mode is also growing from infants and education as all of us whereas we are not.

When our education acknowledges and inherited from the previous two in the current recognition thinking mode, particularly when the educators themselves only recognize the two thinking modes, how can we cultivate such a thinking mode or the great master to lead the human development? Or even we could imagine how we can give them free space or environment when such children occur.

From this point, the education and educational assessment in the multi-faceted cultural system is not necessarily following only one direction or mode. For example, how can we assess the arts creation in school education? It is only one of the problems. The problem we want to investigate further is how we can deal with, educate and assess those epoch-making masters in school education such as Newton, Einstein, Confucian and Laozi etc?

[Note 3: part of the above are selected from the works by Liu Lihong “Considering Traditional Chinese Medicine”](#)

The real meaning of education is the transmission, inheritance and development of the human thinking mode. There are three basic ones in human thinking mode. We need to investigate the breakthrough type to know the universe; need systematic integrated one to do management and therefore we can be more rational and avoid the obstacles resulting from the instability of mood. Modern science and technology is further interdependent and

interwoven with the in-depth analytical one. It can make us analyze the material more meticulously and the material enables us to live more conveniently. Nevertheless how can we avoid being obsessed in one regular thinking mode, which is the priority we must consider in our modern education.

II. The consideration of educational assessment

The according assessment occurs with the educational tasks. Education is the transmission and inheritance of human culture and assessment also spreads and develops with its educational essence. Only with the route can we realize the comprehensive assessment of the tasks and finally leads education to really transmit and inherit human culture and the healthy development of the future culture.

Thus, we make a series of consideration for educational assessment by involving the educational essence of the three thinking modes.

1. The current situation of assessment of three thinking modes

1) Assessment of the in-depth analytical thinking mode

In-depth analytical thinking mode is mostly employed one in the current educational system. Therefore we have made great improvement in school education either in the setup of the content or the assessment. Schools in different levels in every country have had detailed curriculum in all subjects, and equipped with various relevant objectives and just assessment modes. In addition, we have noticed that such education mode enhance human culture and social life greatly: the sophisticated science and technology, the pleasure and convenience of social life have been the results from such education. It is been well acknowledged that we have done quite well in such education and educational assessment, which we will not investigate in more detail.

2) Assessment of systematic integrated thinking mode

It is well known from our observation that Chinese and western educational systems have started investigation and promotion for the systematic integrated thinking mode on the basis of the current in-depth analytical mode. In the curriculum setup of school education, we have started to focus on the relationship and synthesis of different subjects, the cultivation of the students' thinking mode and ability to consider and solve problem

systematically and integrally. And at the same time “quality education” has been the high frequency lexicon in education field, which has shown people’s awareness to such investigation. The related educational assessment is the same. Apart from the pure “know science ” , “do science ” is supplemented, such as knowledge, techniques, methods, investigation and observations on emotions and attitudes in problem solving.

There is such a tendency in the setup of the tasks as well, all of which aims at devoting to the investigation of fostering the ability to think systematically and solve problems integrally.

Although in modern education we take in-depth analytical thinking mode as the main education and educational assessment mode, the systematic integrated thinking mode have also been advocated and researched. All people with insight have been advocating and promoting the cultivation and wide employment of the thinking mode. Meanwhile, related assessment is obviously quite weak in many countries: we still need great effort in more effectively cultivating students’ systematic thinking towards a series of problems in human society development, educational and assessment methods. Therefore it is the topic we should investigate further now and future, no matter from the investigation of those western intellectuals or absorption from traditional Chinese culture treasure house.

3) Assessment of exploring breakthrough thinking mode

Such a thinking mode is nearly absent in modern education. Isn’t it important? In fact, it is actually the invisible power for the direction of human development. The word “invisible” here refers that it is usually in the frontline of science and therefore not perceptible and out of human recognition. Can we say it does not exist at all? The scientists all know that every child could be the talent. When such a mode is absent in our school education, or it is still the one-cut reaping educational assessment, how can we really protect such a child? They are quite similar to the sprouts in the field. Should we protect it or cut it off when facing a sprout without abiding by the rules of growing in a certain height? Human needs development, and the society needs real progress, but the real progress is definitely outside our current realm of recognition. So human development needs such educational assessment with breakthrough-style thinking mode. However, current

education is still within recognition. How can we really protect such talents from being strangled in such environment of education and assessment?

A child once describes the seven wonders in his eyes: eyes can see, ears can hear, nose can smell, tongue can taste, body can feel, mind can think, and "I" am alive... only in children's eyes can be obtain such discovery and recognition. For many years we have used to such recognition approach without questioning or doubts: is it always right to follow the recognition approach? If another child raises the questions like "do we really see with our eyes?" or "is it real for everything outside?" etc. how can we react when suspecting our recognition tools?

How can we assess a child's thinking and curiosity in our school education? I think what we can do now is that we should not evaluate the unknown with what we have known, or we should not deny the opinion outside recognition system with the one in our current recognition system, or we should not strangle the future Newton and Einstein with our status and authority, or should not obstruct the future of human development in our own hands.

2. considerations on educational assessment

So what should we do to deal with educational assessment? It reminds me of the fable in the Chinese ancient works of "Lv Shi Chun Qiu". A man from the State of Chu carelessly dropped his sword into the river when ferrying, he hurriedly made a tick on the side of the boat, saying that his sword was dropping from that place. After he arrived at the bank of the other side, the man looked for the sword into the river by the tick he marked, but could not find it anyway. The story was later condensed as a proverb of "Ke Zhou Qiu Jian". (Having the connotation of taking measures without considering changes in circumstances)

Human is the major constituent in education, who is full of changes in different circumstances. Human is alive in education instead of stagnating. Or it is quite reasonable to produce machinery to inherit our culture. We need standard, but we still bear in mind that the standard becomes stagnated at the time it was set. We can use the standard in a

flexible way; we can decide whether we should succumb to the standard or vitalize the standard, which is the key point. We should not have any standard or not use any standard either. The main point lies in that how we can set up the standard or use it.

The standard can be only evaluated when we are standing outside it. That is probably what we should really think about.

Conclusion:

Education is the transmission and inheritance of culture. However it is multi-faceted for the culture development. Regarding the three thinking modes of “the in-depth analytical, the systematic integrated, the exploring breakthrough”, we should investigate the approach which can most effectively promote the culture development in accordance with our education and educational assessment. Particularly in the last thinking mode, which can really facilitate human progress, we should treat it with care: the best assessment education in our capability nowadays may be that we should abide by the principles without rules as well as encouragement and protection.