

The Transaction Position

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I. Introduction

Textbooks for social studies and science have as many as 300 pages, and they are full of detailed facts and information. Teachers usually build their curriculum, with little deviation, around these texts. They mainly rely on transmission position. Thus, it seems that the main objective of social studies and science in Japanese education is to produce many informed and knowledgeable youngsters.

However, as the new softwares for computers which assist in the teaching of basic skills and in content mastery are being made more and more, it is predicted that the teachers, even those in Japan, will be obliged to change their position from transmission position to transaction one in order to facilitate thinking and problem-solving skills.

Yet, there are some serious criticism for the transaction position as follows: "Pragmatism has specific limitations and drawbacks, the most serious, in our view, being that it gives little recognition to the intuitive, imaginative side of human activity. Pragmatists tend to view science as logical problem solving, but even many scientists acknowledge the importance of imagination in scientific discovery. In the social realm, moral vision and imagination may be more important than the commitment to logic."

This same criticism can be applied to the work of Piaget and Kohlberg, who, essentially, present models of development of the rational person. Sullivan (1977) argues that

Kohlberg dismisses the imaginative capacity of human beings:

There is something lacking in all the conceptual elegance of both Piaget's and Kohlberg's structuralisms. One significant gap is in the area of the "aesthetic imagination" and the potential role it may play in the development of intellectual and moral understanding. It can be said of Kohlberg, as it is said of Piaget, that his theory is confined to an analysis of "decentering" in logical and moral structures. The imagination is the thorn in the rosy development of most theoretical rationalists.

In spite of these limitations and drawbacks, I believe transaction position is more preferable and more appropriate to the Japanese education for the 21st century than the traditional transmission position, based on the following four reasons:

(1) Overweighted transmission position in Japanese education:

This overweight is partly shown by the fact that the teachers' excessive dependence on transmission position has often been pointed out and criticized by the Ministry of Education and the mass media. It means that the teachers' faith in transmission position is still prevalent among the Japanese teachers.

The transmission position has the serious drawbacks that knowledge is viewed as being static and that students master a relatively fixed core curriculum^① despite of a pluralistic society.

In addition, overuse of this position leads to make people more homogeneous, so the

Japanese who are already homogeneous country require another position to be introduced as a counterbalance.

(2) Tendency in Japan to separate 'school education' from the society:

As compared with the Western countries, relationship between the society and the content taught at school is weak: the subject matter of instruction is isolated from the needs and the purposes of the learner, and so becomes just a something to be memorized and reproduced on demand.

It is hard and difficult for the Japanese students, during the classes, to reconstruct their own experience or to add new meaning to their own experience ②

The replacement of the transmission position with the transaction position will help restore the relationship between the society and school education.

(3) The disappearance of the method of inquiry from view:

For the last hundred years, to catch up with the West, Japan has tried absorbing the advanced knowledge, especially in science, from the West.

Besides, Japan has a long and rich history to be taught and to be shared among the people. Moreover, as the Japanese think much of public knowledge both in science and in social studies, the teachers feel obliged to cover a large amount of material in a given time period, and they request the students to master the completed theory in science and to memorize facts in social studies.③

This way of instruction gives the students the wrong impression that science consists of unalterable, fixed truths and that science is complete. This method also leaves little time and little opportunity for the students to develop thinking skills. In this respect, the introduction of the transaction position would contribute to lessening this wrong impression

and would help the students to develop more thinking skills.

(4) Preference among the Japanese to foster the students' emotion rather than their rationality:

It is said, basically, most of Japanese education focuses on right-brain, intuitive, synthetic problem solving and ignore left-brain, logical, analytical problem solving. It means that Japanese education gives much recognition to the intuitive side of human activity, and that it gives less encouragement to become a logical and rational person. However, it is expected that we will have much chance to contact with the Westerners who attach great importance to rationality. Thus, in order to effectively and efficiently communicate with logical Westerners, the rationality should also be fostered through the transaction position.

From the four reasons mentioned above, I believe transaction position is preferable and more appropriate to the Japanese education for the 21st century than the traditional transmission position.

II. The Transaction Position^④

In the transaction position, the individual is seen as rational and capable of intelligent problem solving. Education is viewed as a dialogue between the student and the curriculum, where the student reconstructs knowledge through the dialogue process.

In this section, I will discuss the basic elements of the transaction position.

(1) Transaction Position in Contemporary Education:

During the last two decades, the transaction position has been represented by certain elements of the discipline orientation, the cognitive-process orientation, and the democratic-citizenship orientation. Two of them—the discipline orientation and the cognitive-process orientation, which are more useful and appro-

appropriate for the Japanese education—are discussed in detail.

A. The discipline orientation

This orientation gives a useful suggestion to the Japanese education. The discipline orientation focuses on development of students' inquiry skills within a specific academic discipline. Schwab insists that disciplines should center mainly around conceptual and syntactical structures.

(a) Conceptual Structures

Schwab defines conceptual structures as the general conceptions that guide inquiry and determine what will be studied in a discipline. In Schwab's view (1974), general conceptions lead to emphasis on the study of pattern and process rather than the cataloging of information.

This shift from catalogues to patterns in the disciplines means, in turn, that teaching and learning take on a new dimension. Instead of focusing on one thing or idea at a time, clarifying each and going on to the next, teaching becomes a process of focusing on points of contact and connection among things and ideas, of clarifying the effect of each thing on the others, of conveying the way in which each connection modifies the participants in the connection—in brief, the task of portraying phenomena and ideas not as things in themselves but as fulfillments of a pattern. (p.163)

(b) Syntactical Structures

Schwab (1974) defines syntactical structures as the “operations that distinguish the true, the verified, and the warranted in that discipline from the unverified and unwarranted.” (p.173)

The disciplines orientation found its realization in various curriculum projects, many of which began in the early 1960s and some of which are still in use today. One such project, the Biological Sciences Curriculum Study (BSCS) is discussed here.

The BSCS was critical of many texts in biology that focused solely on exposition of scientific conclusions, arguing that these texts give students the impression that science consists of unalterable, fixed truths and that science is complete.

The BSCS® attempted to show students how knowledge is developed from raw data, in contrast to most texts, which ignore the scientific process and also the fact that scientists do much of their work by trial and error.

In this project, to facilitate academic inquiry, an emphasis is placed on problem-solving in addition to the traditional problem doing. Besides, the teaching pattern, the curriculum, the kinds of instructional materials all tend to stress conceptual schemes and concepts—rather than memorization and recall-on-demand. Books are chosen for their tendency to organize content around major concepts. The texts that organize their content around an anthology of topics are not in favor.

I believe the discipline orientation represented by BSCS can give a good suggestion to improve Japanese education.

B. The Cognitive-Process Orientation

This orientation also gives a useful suggestion to the Japanese education. The cognitive-process orientation focuses on how people think and solve problems. Curriculum programs based on this orientation facilitate thinking and problem-solving skills.

The particular approach is presented below, which has been developed by Robinson and his associates at O. I. S. E. and described by Ross and Maynes (1982). Ross and Maynes (1982, pp.5-7) outline and 11-step process that clearly define the problem-solving sequence.

- 1) Defining the problem: to narrow his or her focus of concern to a definable problem
- 2) Establishing a framework for the inquiry: to develop an overall conception of the problem

- 3) Determining sources of data: to identify resources
- 4) Obtaining data at source: to select the relevant information from the sources
- 5) Judging the adequacy of the data
- 6) Putting data into a framework: to organize the relevant data
- 7) Reducing data to summary form
- 8) Observing relationships in data
- 9) Interpreting data: to record the relationships observed
- 10) Extrapolating the interpretation: to generalize and apply the conclusions to different contexts
- 11) Communicating an inquiry: to report the results

I believe this approach is useful and should be adopted, especially in social studies' education in Japan, because this approach helps students aware of their own thinking process and helps to facilitate thinking and problem-solving skills.^⑥

(2) Developmental Psychology:

Central to the transaction orientation is the idea derived from developmental psychology. Applications of the developmental orientation to the classroom generally involves the following steps:

- 1) Sensitivity to developmental differences
- 2) Presentation of task or dilemma
- 3) Student interaction with the task or dilemma and teacher follow-up

The particulars of the steps are as follows:

First, the teachers should identify the approximate levels of reasoning in the classroom and then try to match the stages in student groupings so that each student is exposed to one level higher than his or her own.

Then the teacher should present the student with a task or problem that stimulate cognitive conflict.^⑦ An important factor in dealing with cognitive conflict is the opportunity to act on the task or dilemma. Kohlberg sug-

gests that as the student interacts with the problem or dilemma, the teacher should ask questions that help the student to clarify his or her thinking and thus stimulate development. In sum, teachers who use a developmental orientation do not work in a *laissez-faire* manner but actively intervene in the learning situations to stimulate interaction leading to growth.

To effectively give a lesson on discipline orientations and cognitive orientations, the understanding of developmental psychology is indispensable and is required to master.

III. Difficulties in Changing Positions

In order to help the transaction position take root in Japan,

- 1) new educational material must be made.
- 2) new teaching approach must be contrived.
- 3) new evaluation method, which allows the teacher to diagnose deficiencies in student performance and to determine the effectiveness of instruction, must be devised.^⑧
- 4) educators' fundamental conviction and standpoint must be changed.

Next I will discuss some of the serious difficulties which might be encountered.

(1) Cultural Difficulty:

The average number of the students in each class in Japanese high school is as many as 40, which only transmission position can serve properly and effectively. Second, the Japanese society is not individual-oriented as in the West, but group-oriented where conformity to others is thought highly of. These two things make it difficult to give a lesson based on transaction position, because this position is based on individual instruction and individual thinking. Moreover, the curriculum in high schools has been designed around the subject matter, and the teachers have used the transmission position for this curriculum framework. As both the teachers and the parents

are familiar with this position, the change will encounter much resistance from them.

(2) Limited Knowledge of Developmental Psychology:

The Japanese teachers' knowledge about developmental psychology is limited. It is true that a would-be teacher is required to take some course for developmental psychology at a university, but its content is limited and it is not necessarily based on theoretical ground. Besides, once graduating from a university, there is little chance to deepen their understanding about it. Without good understanding of developmental psychology, it would be difficult to make sure that the materials be matched to the child's stage of development[®] and it would be difficult to make a growth scheme consisting of a detailed sequence which facilitates students to grow toward more sophisticated and complex levels of problem solving. Besides, most of the Japanese teachers have not mastered the method of causing students' cognitive conflict. (If a student were presented with a good task or dilemma that stimulate cognitive conflict, the student conceptual frameworks could be changed and developed through this dilemma.)

Thus, because of the teachers' limited knowledge on developmental psychology and because of their few trainings of presenting a student with an appropriate dilemma, the Japanese teachers has some difficulty in identifying the approximate levels of students' reasoning and in asking questions that stimulate the students' cognitive development.[®]

IV. Conclusion

Because the fundamental educational belief and system is geared to the traditional transmission position, to change educational positions in Japan would bring about such trouble as I mentioned above on III.

However, I believe, for the reasons referred

to on I, transaction position is worth being introduced into Japanese education. Further study in this field is expected to be done.

NOTE

- ① Bobbit compares the process of teaching to the making of industrial products: therefore, in his opinion, education must focus on creating a product—the students' mind—which should be shaped according to uniform standards. What is needed is to develop and introduce appropriate standards.
- ② There is a danger that transmission orientation can become divorced from social concerns. As Smith, Stanley, and Shored (1957) state, subject matter specialists can lose themselves in an area of study and ignore problems of poverty, racism, and economic decay:

The products of the subject curriculum know more about the crusades than they know about the management of modern industry; more about the structure of the earthworm than about their own bodies and the status of public provisions for their health; more about the exploits of Napoleon than about the nature and workings of their own economic and political systems. (p248)

- ③ Though the textbooks have a few exercises which help the students to develop their thinking skills, even these few exercises are not always used by the teachers.
- ④ The philosophical roots of the transaction position:

The philosophical roots of the transaction position can be traced to Dewey's experimental pragmatism—his belief that the scientific method can be applied to a broad range of problems. According to Dewey, intelligence is developed through the individuals' interaction with the social environment, particularly through solving problems. In Dewey's overall concept of education, problem solving plays a central role. He

believed that problem-solving activities in the school not only develop intelligence and facilitate growth, but also that the skills developed in problem solving should transfer to society at large. Dewey argued that, instead of organizing school around traditional subjects, topics should be problem-centered. With his focus on problem solving, Dewey laid the theoretical ground work for many inquiry approaches in curriculum.

The psychological roots of the transaction position:

The transaction position has psychological roots in the cognitive developmental theories of Piaget and Kohlberg. Piaget's work advances the view that development results from interaction between the student and a stimulating intellectual environment: Kohlberg argues that cognitive developmental theory is an extension of Dewey's conception of growth.

⑤ There are some opponents to the BSCS:

Tanner and Tanner(1980) argue that these projects were too narrow in focus, as they were essentially geared to those bound for university, and that most general students found the new projects such as the BSCS too abstract.

⑥ Ross and Maynes(1982) and Robinson, Ross, and White(1985) have demonstrated how problem solving and content mastery can be integrated in productive ways.

In recent years, the cognitive-process orientations and the disciplines orientations have become interrelated.

⑦ Producing changes in student frameworks through cognitive conflict is a technique which is similar to Piagets' "equilibration" concept and Festinger's concept of "cognitive dissonance."

⑧ Ross and Maynes (1982) acknowledge that

problem-solving skills are difficult to measure.

⑨ Content should be related to the internal frameworks held by students. These frameworks are related to stages of cognitive development. Therefore, teachers need skills in diagnosing student frameworks and readiness level.

⑩ Effective staff development strategy must be created in the near future: the staff should be assisted in acquiring the new skills and information necessary to the implementation based on the new position.

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