Curriculum Ideology and Politics Construction from the Post-Modern on Curriculum of Doll

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Abstract: William E. Doll Jr. is the master of post-modern curriculum theory. Based on the curriculum concepts of openness, dialogue, reflection, experience and self-organization, he proposed 4R standards of curriculum, namely richness, recursion, relationality and rigor. The post-modern perspective on curriculum of Doll will bring new ideas and new perspectives to curriculum ideological and political. However, the post-modern perspective on curriculum has been criticized and questioned by many scholars. We should analyze the post-modern perspective on curriculum of Doll dialectically and absorb its reasonable components critically. In the process of curriculum ideological and political construction, we insist on combining preset goals with generative goals, combining closed content with open content, combining teaching with dialogue, and combining discriminative evaluation with developmental evaluation.

1. Introduction

Since 2016, curriculum ideology and politics has become an important topic for many experts and scholars to study in China. The goal, content, implementation and evaluation of curriculum ideological and political are important aspects of curriculum ideological and political construction. However, there is still a lack of research in this area. The post-modern perspective on curriculum will bring new ideas and new perspectives to curriculum ideological and political. The diversified and open post-modern perspective on curriculum criticizes the western modern curriculum concept dominated by instrumental rationality and highlights the intrinsic value of curriculum in promoting human’s spiritual growth [1]. William E. Doll is the master of post-modern curriculum theory. Based on the curriculum concepts of openness, dialogue, reflection, experience and self-organization, he proposed 4R standards of curriculum, namely richness, recursion, relationality and rigor. However, the post-modern perspective on curriculum has been criticized and questioned by many scholars. We should analyze the post-modern perspective on curriculum of Doll dialectically and absorb its reasonable components critically. In the process of curriculum ideological and political construction, we insist on combining preset goals with generative goals, combining closed content with open content, combining teaching with dialogue, and combining discriminative evaluation and developmental evaluation. It should be emphasized that the
generative goals of curriculum ideological and political must be the educational goals under the framework of ideological and political education.

2. The 4R Standard of Doll’s Post-modern Perspective on Curriculum

The 4R standard is the core idea of Doll’s post-modern perspective on curriculum [2].

2.1 Richness

Richness refers to the depth, level of meaning, multiple possibilities or multiple interpretations of the curriculum. The richness here is emphasized in order to enable students and teachers to transform and be transformed. The course should have certain uncertainty, anomaly, ineffectiveness, fuzziness, imbalance, dissipation and vivid experience. The inherent doubt, interference and possibility of the curriculum not only endows the curriculum with richness, but also brings the meaning of existence and even intimacy. Each subject in the school should explain the richness in its own way.

2.2 Recursion

Recursion is the ability of humans to return thoughts to themselves rather than to circulate in a mathematical sense. This circular motion of thinking is about human consciousness and it’s how we create meaning. Bruner’s “Spiral curriculum” provides a beginning for defining regressive curriculum. Here is no fixed start and end point in a curriculum that promotes, supports, and utilizes regression. Dialogue is the absolute requirement of regression, and without the reflection it induces, regression becomes shallow and not transformational.

2.3 Relationality

The relevance here includes two aspects of the connection which are educational connection and cultural connection. Educational connections are the connections in the curriculum that give the curriculum a rich phantom or network. A focus of educational linkages lies in the linkages inherent in the curriculum structure that develop the depth of the curriculum through regression. Cultural connection refers to the cultural or cosmological connection outside the curriculum, which forms the large model on which the curriculum lives. The idea of cultural connection arises from the cosmology of interpretation. Educational connection and cultural connection are mutually dependent and complementary.

2.4 Rigor

Doll regards rigor as the most important criterion of all. The rigor of modern curriculum view includes academic logic, scientific observation and mathematical accuracy. The rigor in the postmodern framework draws on elements that are foreign to modernism, namely explainability and uncertainty. From the perspective of composition, rigor is a combination of uncertainty and interpretation. The nature of the explanation and its own richness depends on how well we develop the options presented by uncertainty. Uncertainty here does not imply arbitrariness and acknowledges the scope of realisation.

3. Curriculum Ideology and Politics from the Post-modern Perspective on Curriculum of Doll

The post-modern perspective on curriculum has been criticized and questioned by many scholars.
Some scholars question the internality of learning evaluation proposed by Doll [3]. Some scholars point out that the post-modern perspective on curriculum of Doll is the whole reflection of the post-modernism trend of thought in the curriculum field, which is inevitably one-sided from the beginning [4]. Some scholars point out that the post-modern perspective on curriculum places too much emphasis on diversity and difference, which is easy to confine students to their own main body [5]. However, the rationality of the post-modern perspective on curriculum cannot be ignored. We should analyze the post-modern perspective on curriculum dialectically and absorb its rationality in criticism. The post-modern perspective on curriculum of Doll will give the curriculum ideological and political construction a lot of beneficial enlightenment.

3.1 Adhere to the Integration of Preset Objectives and Generative Objectives in Curriculum Ideological and Political Objectives

The basic feature of the modern curriculum view represented by Taylor’s curriculum theory is closure. Taylor’s “curriculum principle” can be summarized into four steps which are determining the curriculum objectives, selecting the curriculum content according to the curriculum objectives, organizing the curriculum content according to the objectives and evaluating the curriculum according to the objectives [6]. And every course objective includes “behavior” and “content”. The former refers to the behavior that students are required to show, and the latter refers to the field to which such behavior is applicable [7]. The course goal takes the way of behavior objective and the advantage is its organization and operability. The disadvantage is that it fully exposes the instrumentalist view of education, which is nothing but a tool for training students to become “behavior objectives” prespecified by others, while the value of educational activities itself is ignored [8].

The curriculum objective under the modern curriculum view is preset, fixed and static. At present, the objectives of curriculum ideological and political, the selection of curriculum ideological and political elements, and teaching design of curriculum ideological and political are basically set in advance. Some scholars have proposed a roadmap for designing teaching objectives of the curriculum ideological and political. Firstly, the ideological and political education objectives of the major are developed, and then the ideological and political education objectives of specific professional courses are formed. Finally, the ideological and political education teaching objectives of the classroom are refined [9].

Doll also believes that nothing is more important to human beings than the setting, implementation and evaluation of goals, plans, and goals. This purposeful activity is what sets humans apart from other living things and provides us with the conscious choice to create or destroy. The ability to plan comes with an awesome responsibility to ourselves, to others, and to the circumstances in which we live [10]. But the basic feature of the post-modern perspective on curriculum is openness. Self-organization and transformation are two important concepts in the post-modern perspective on curriculum. In the framework containing self-organization and transformation, the purpose, plan and goal not only precede the action but also arise from the action [11]. Such curriculum objectives are neither precise nor predetermined, but should be general, generative and dynamic [12].

In the construction of curriculum ideological and political, it is necessary to have both preset objectives and generative objectives. We insist on combining static goals with dynamic goals, and combining preset goals with generative goals, which will build an open platform for the selection of ideological and political content and the implementation of the curriculum. There are two reasons as described below.

First of all, at present, teachers of specialized courses have limited knowledge of curriculum
ideological and political construction and insufficient knowing of students, so the specific curriculum ideological and political goals set in advance may become something unsuitable for the actual situation and be imposed on students.

For example, the concept of limit in advanced mathematics not only contains the law of development from quantitative change to qualitative change, but also contains the law of unity of opposites between process and result. Materialist dialectics can lead college students to establish correct world outlook, outlook on life and values. However, when students learn the concept of limits, they do not learn dialectics. If the three laws of materialist dialectics are integrated into the learning of limit concept, it will not only make students feel far-fetched, but also dilute the atmosphere of limit concept knowledge learning, not only the ideological and political goals of the course are difficult to achieve, but also the goal of knowledge learning will be affected.

Secondly, the goals of some ideological and political elements are uncertain and have different effects on different students. For example, the teacher said that the knowledge of advanced mathematics has a high degree of abstraction, strict logic and extensive application and learners are required to have rigorous thinking habits, learning quality of independent thinking and unremitting research spirit to master its knowledge system well. These words should not only become the positive words to stimulate some students to overcome difficulties and strive hard, but also become the negative words to increase some students’ fear of difficulties and discourage some students’ enthusiasm for learning. When teachers find students’ negative expressions, they should timely redesign curriculum ideological and political objectives and contents.

3.2 Adhere to the Integration of Closed Content and Open Content in Curriculum Ideological and Political Contents

Modern curriculum view relies on a closed and linear way of thinking, and the determined knowledge system is the main content of curriculum. Such curriculum content is conducive to the systematic knowledge of each subject [13]. However, the modern view of curriculum often leads to the instrumentalist view of knowledge. Under this view of knowledge, the existence value of curriculum content is only that it is a means to achieve the goal of the curriculum, while the value of curriculum content itself is almost completely ignored [14].

Constructiveness and nonlinearity are two important characteristics of postmodern curriculum. Postmodernism emphasizes that every practitioner is the course creator and developer, not just the implementor and learner [15]. In this way, curriculum becomes a process of not only transmitting what is known but also exploring what is not known [16]. There is no fixed starting point and ending point in a curriculum with richness, regression and relevance. Every end is a new beginning, and every beginning comes from the previous end [17].

For curriculum ideological and political content, combining closed content with open content should be adhered to, which requires both fixed knowledge selected around predetermined objectives and uncertain knowledge developed freely by teachers and students through interaction. 80% of college teachers are professional teachers, 80% of courses are professional courses, and 80% of students' learning time is devoted to professional learning [18]. Therefore, professional curriculum is the basic carrier of curriculum ideological and political. The problem of exploring curriculum ideological and political elements has puzzled many teachers of specialized courses. The relevance of curriculum proposed by Doll is of great reference significance to the exploration of curriculum ideological and political elements.

According to the relevance of Doll’s curriculum, we can also explore ways to explore curriculum ideological and political elements from the educational and cultural links of the curriculum. In this way, exploring the curriculum ideological and political elements should not only strengthen the
For example, we can explore the ways to explore the ideological and political elements of advanced mathematics curriculum from the perspectives of educational connection and cultural connection.

From the perspective of educational connection, the choice of ideological and political content in advanced mathematics courses can be associated with the history of mathematics. For example, when students study the Fundamental Theorem of Calculus, they are asked to read the literature related to the invention argument of calculus. By comparing the British mathematician's disregard for Leibniz's calculus research with the current world's response to the COVID-19 pandemic, students can be trained on the idea of a community with a shared future for mankind [19].

From the perspective of cultural relevance, advanced mathematics knowledge can be linked with other disciplines to explore the ideological and political elements of advanced mathematics curriculum. For example, we can relate advanced mathematics to physics. Maxwell, a Scotland mathematical physicist, predicted the existence of electromagnetic waves through the application of calculus and realized that light was a kind of electromagnetic wave. His prediction was the basis for the construction of radio communication systems. In a sense, without calculus there would be no television, no computer, no cell phone. Only if students truly understand the social value of the knowledge they have learned, can they have a purest learning motivation and a stronger learning motivation, and can they be more conscious of knowledge acquisition and skill improvement, and the value of education will be increasingly highlighted [20].

3.3 Adhere to the Integration of Teaching and Dialogue in Curriculum Ideological and Political Implementation

The lecture method under the curriculum framework of modern curriculum view regards teaching as a special activity for students to understand the objective world under the guidance of teachers [21]. Lecture method can make teachers through logical analysis, argumentation, vivid description, statement, enlighten and inducement of doubt, so that students in a relatively short time obtain more comprehensive and systematic knowledge [22]. Lecture method is beneficial to teachers’ leading role, but it is not easy to give play to students’ initiative, independence, practicality and creativity in learning [23]. If teachers lack the teaching ability of good “inspiration” and good “guidance”, and students lack learning interest and consciousness, lecture method will inevitably form a rigid situation.

Under Doll’s 4R curriculum framework, teachers’ “teaching” and students’ “learning” are integrated bilateral activities, that is, “teaching is dialogue”. In this teaching process, “no one owns the truth and everyone has a right to be understood.” The teacher is the “chief among equals”, and as the chief among equals, the role of the teacher can be reconstructed. Teachers transform into coexistence with this situation from outside the students’ learning situation, and authority into the situation [24].

As far as the text of the dialogue is concerned, a good text should have enough uncertainty to encourage teachers and students to participate in the dialogue. Learning and reflection are created when teachers talk to students, students talk to students, and teachers and students talk to texts. The dialogue between teachers and students and the text is a two-way process, both of which have their own voices, in which certainty and uncertainty are combined [25].

Metaphor is more effective than logic in stimulating conversation. The metaphorical approach is interpretive and less formalized. Interpretation is the reconciling of information between what
teachers and students understand and what they do not understand. Therefore, Metaphors are productive can help teachers and students see what they don’t. Metaphors are open, enlightening, and conversational. Logical analysis consists in “proving” whether an idea, law, theorem is true or false. The logical approach can help teachers and students see more clearly what they already see. Logic is designed to end and exclude [26].

As far as the environment for dialogue is concerned, an important condition is equality. The equal and harmonious teaching atmosphere can not only narrow the friendliness between teachers and students, but also fully mobilize the enthusiasm, initiative and participation of students. If there is no equal right to dialogue, people’s words will often be distorted by the unequal relationship. The establishment of equal dialogue can create open space for human freedom [27].

In the process of Curriculum ideological and political implementation, we insist on combining teaching with dialogue. According to the students’ cognitive law, the characteristics of professional curriculum knowledge and the curriculum ideological and political elements, we can flexibly choose the appropriate teaching methods. In the application of dialogue teaching, we should closely combine the needs of the country and society, closely combine the needs of students’ growth stage and all-round development, so that we can set the topic scientifically.

The following is a conversation between teachers and students in an introduction to advanced mathematics class.

The teacher said that college is a new starting point on the journey of life and today is the first lesson of advanced mathematics. May I ask you, what is your ambition or ideal?

Yan Wang said that I will earn money to honor my parents.

Wenbin Li said that in the college entrance examination, I did not play well. After graduating from college, I want to take a postgraduate exam to prove my strength.

Miao Ma said that I hope to become a qualified socialist builder after graduation.

The teacher went on to say that we are bound to meet all kinds of difficulties and twists and turns because the realization of any kind of ideal is not easy, and we should have the confidence and ability to overcome the difficulties.

Shen Yang said, teacher, what is your ambition?

The teacher smiled and said that I hope to give people around me a warm, give the society a positive energy and train a batch of outstanding socialist builders and successors for country.

The students responded with warm applause.

Albert Einstein once said that education is what remains after one has forgotten everything he learned in school. Will such conversations become what is left after students forget all their advanced mathematics knowledge? I hope this kind of dialogue between teachers and students can accompany the healthy growth of students.

3.4 Adhere to the Integration of Discriminative Evaluation and Developmental Evaluation in Curriculum Ideological and Political Evaluation

Taylor regarded evaluation as an integral part of curriculum development and runned through the whole course development process and believed that the evaluation process was the process of determining the degree to which curriculum and teaching plan actually achieved educational goals. Each step of this evaluation is closely related to the goals that are mainly measurable behavioral goals concretely expressed in students and can be used as the basis for revising the curriculum plan or curriculum objectives in turn [28]. Under the framework of modern curriculum view, the evaluation purpose is mainly used to distinguish winners from losers. The evaluation takes the goal as the center and the basis, ignores the appeal to the rationality of the goal. In this way, the preset course objectives are elevated above or outside the teaching process itself [29]. The evaluation of
students’ learning is also based on their test scores, rather than on their personal thinking achievements after reflecting on their experiences. This way of evaluating students is easy to ignore some unmeasurable results that are often the most valuable things for education such as personality characteristics, emotional characteristics, interest and attitude [30].

Under the 4R framework of the post-modern perspective on curriculum, the evaluation is outlined from the perspectives of generation, reflection and transformation. Firstly, the evaluation subjects under the 4R framework are diversified. The evaluation is carried out through the common judgment of all aspects of personnel. Among them, teachers are important evaluation subjects, because teachers are most aware of the deviation and problems in the practice of theory, and teachers’ participation in curriculum evaluation can highlight the authenticity and context of curriculum evaluation. The evaluation is carried out through the common judgment of all aspects of personnel. Teachers are important subjects of evaluation, because teachers are most aware of the deviations and problems arising from theory in practice and teachers' participation in curriculum evaluation can highlight the authenticity and context of curriculum evaluation. If teachers can get the guidance of evaluation experts and describe, explain and evaluate the process they have experienced with a broader vision, teachers will be more able to approach the truth of education and make curriculum evaluation more real and effective [31]. Secondly, evaluation is a coordination process with the purpose of transformation in a common background. Evaluation should be regarded as a feedback and a component of the cycle of doing, criticizing, doing and criticizing [32]. This evaluation not only strengthens the richness and regression of the curriculum, but also strengthens the relevance and rigor of the knowledge. This kind of evaluation not only has the discriminative function, but also has the incentive function.

The ideological and political evaluation of curriculum mainly includes the evaluation of teachers’ teaching and students’ learning. This paper mainly discusses the evaluation of students’ learning. Comprehensively promoting the curriculum ideological and political construction is a strategic measure to carry out the fundamental task of cultivating morality and talents and cultivating students’ emotions, attitudes and values is the main appeal of the curriculum. In view of the implicit and ambiguous nature of ideas and values relative to cognition and ability, the influence of ideas and values on students in teaching is often not as clear as cognitive and operational knowledge and ability [33]. In addition, each student is different in terms of experience, knowledge base and construction ability. They have different levels of understanding of the ideological and political content of the same course, and their performance in action will also be different. In this way, any objective of evaluation in a precise or stable sense loses its meaning. The curriculum ideological and political evaluation should adhere to combining discriminative evaluation with developmental evaluation, rationally choose the evaluation subject, scientifically design the evaluation dimension, and effectively determine the evaluation method.

In terms of the evaluation dimension, the evaluation of the curriculum ideological and political teaching should focus on the changes of students’ attitudes towards professional learning and achievements, their recognition of teachers’ teaching style and teaching process, and their attention to national development and political identity. As for the evaluation method, the curriculum ideological and political evaluation method integrated with the professional assessment can be adopted. For example, in the exam of "microbiology" course, the following exam question can be designed, “Our government began to completely ban the use of antibiotics in the feed side of aquaculture industry in 2020. Please explain the starting point of our government's promulgation of this regulation, and analyze the scientific basis of this regulation from the perspective of microbiology specialty?” The test question not only examined the student's understanding of the government’s concern about people’s livelihood, but also examined the students’ ability to use the professional knowledge of microbiology to analyze the real social events deeply. By analyzing
students’ answers to such test question, teachers can not only master students’ understanding and acceptance of the curriculum ideological and political elements, but also make relatively objective teaching evaluations [34].

However, portfolio method, critical incident method and evaluation scale method can also be used. Archive method refers to the establishment archive of curriculum ideological and political for students [35]. Portfolio evaluation method gives more autonomy to the evaluation object, hoping that students can carry out self-reflection and self-evaluation by recording and sorting out their own learning process. At the same time, the portfolio evaluation method also guides teachers to constantly reflect on the evaluation process and play a good role in the education of evaluation.

4. Conclusions

The post-modern perspective on curriculum of Doll will bring new ideas and new perspectives to curriculum ideological and political. However, the post-modern perspective on curriculum has been criticized and questioned by many scholars. We should analyze the post-modern perspective on curriculum of Doll dialectically and draw its reasonable components from the criticism. In the process of curriculum ideological and political construction, we insist on combining preset goals with generative goals, combining closed content with open content, combining teaching with dialogue, and combining discriminative evaluation with developmental evaluation.

However, this paper is only a brick to attract jade. There are still many problems in the process of curriculum ideological and political construction. For example, how to fully explore the curriculum ideological and political elements? How to integrate the curriculum ideological and political elements into the teaching of professional courses? How to develop the examination questions of the specialized course that can integrate the curriculum ideological and political elements into the course organically? How to develop the ideological and political evaluation standards of different professional courses? These problems need further study and discussion by experts and scholars.

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