

Research on the Requirements and Strategies of Homework Design and Implementation in Elementary Education from the Perspective of Curriculum

Zhaodan Nie¹, Zhenqiu Shu^{2,*}

¹School of Education, Yunnan University of Economics and Management, Kunming, China

²Faculty of Information Engineering and Automation, Kunming University of Science and Technology, Kunming, China

*shuzhenqiu@163.com

Abstract

Homework design and implementation has been one of the core topics in the field of elementary education in China for a long time. The quality of homework profoundly reflects the implementation of subject standards, the effect of curriculum functions and the level of professional development of teachers, and is also an important validity of curriculum reform. However, there are still many deficiencies in the homework design and implementation of elementary education in China, such as quantity, quality and homogeneity. With the improvement of the national elementary education reform, there are still many challenges to solve the problems of homework design and implementation thoroughly. Based on the background of China's "double reduction" policy, this paper analyzes the homework burden of primary and secondary school students, explains the reasons for the problems in homework design and implementation from the perspective of curriculum, and explores the basic requirements and implementation strategies.

Keywords

Homework Burden; Curriculum Reform of Elementary Education; Homework Design and Implementation; Basic Requirements; Implementation Strategies.

1. Introduction

As for the meaning of the word "homework", there has not been a completely unified understanding in the educational field, among which the representative one is as described in the *Concise Encyclopedia of International Education. Teaching (PART 2)*: "Homework" refers to the learning activities carried out by students after class without the guidance of teachers.[1] According to Cooper etc. (2006), homework refers to "tasks assigned by school teachers to be completed during non-teaching time".[2] In the *Dictionary of Education*, homework to complete learning tasks is divided into classroom homework and extracurricular homework [3]. Classroom homework is a variety of exercises that teachers assign students to conduct tests in class, while extracurricular homework is a learning activity independently conducted by students in extracurricular time, which is usually homework. Homework is one of the most important and effective educational activities in the stage of elementary education. In the social attention to elementary education, homework burden has always been a hot topic in society and one of the key issues in the national curriculum reform of elementary education. The ability of homework design and implementation has an important connection with the setting of teaching objectives, classroom teaching, teaching effect evaluation, etc. It is also one of the most important ways for parents, society, teachers and schools to communicate and evaluate teachers' education and teaching ability.

In recent years, in order to reduce the heavy homework burden of primary and secondary schools, the state has issued several students policy, such as The General Offices of the CPC Central Committee and The State Council recently issued by the *Suggestions on Further Reducing the Burden of Homework and Off-campus Training for Students in Compulsory Education* [4] is put forward, in recent years, although during the work achieved positive results, but one of the most prominent problems is that the burden of primary and secondary school students is too heavy, short-sighted, utilitarian problems have not been fundamentally solved. In the aspect of homework burden, some schools still have some outstanding problems such as too much homework, low quality and functional alienation.

The "double reduction" work clearly requires that students' heavy homework burden should be effectively reduced [4]. First, reduce the total amount of homework, and resolutely prevent students from writing too much homework. The second is to improve the quality of work, through the system design in line with the characteristics of ages and learning rules, reflect the quality of education oriented basic work, hierarchical work, flexible work and personalized work, resolutely overcome mechanical, ineffective work, put an end to repetitive, punitive work. The third is to strengthen the responsibility of teachers, teachers should guide primary school students to basically complete written homework in the school, junior middle school students to complete most written homework in the school. Four is to reduce the burden of parents, parents are strictly prohibited to decorate or disguised homework, and parents are strictly prohibited to check, correct homework. This reflects, along with our country to further improve the basic connotation of the education, the curriculum reform of elementary education development needs to be from to pay attention to quality, pay attention to external scale transition from extensive development to fine, from homogeneity to specific development, so teachers for elementary education stage of homework design and implementation are also put forward higher requirements. Therefore, as a teacher, how to reduce the burden of students and protect and even improve the learning effect through homework design and implementation is worth further analysis.

2. Analysis of Causes of Problems in Homework Design and Implementation

2.1. Homework Design Concept is Greatly Influenced by Traditional Ideas

Homework design concept is closely related to teaching concept. China's teaching concept is mainly influenced by the five-step classroom teaching method of "meticulous teaching -- review of old lessons -- explanation of new lessons -- consolidation of summary -- assignment" advocated by Kailov in the Soviet Union in the 1950s [5]. Under this concept, homework is regarded as an extension of school teaching in the family space, with the purpose of consolidating students' knowledge and improving their skills. Therefore, in China, many schools and parents believe that the more homework, the better. More homework means more strengthening and training of students' knowledge and skills. As a result, the single form of homework emphasizes mechanical recitation, silent writing, exercises and other forms, which greatly limits the function of homework.

2.2. There is no Comprehensive Coordination Mechanism for the Overall Operation Function

In terms of theory, homework should have many functions, such as consolidation and extension, cultivation and development, feedback and communication. It is believed that most teachers have a basic understanding of the importance of homework, so teachers also hope to assign more homework to increase the attention of students and parents to the subject. According to the research results conducted by some scholars, 90.8% of primary school teachers and 89.4%

of junior middle school teachers agree that "doing homework helps students to pay more attention to the subject", and there is a significant positive correlation with "doing more homework helps students to learn better" [6]. Homework often becomes the battlefield of status competition between disciplines, and the lack of coordination of homework content and amount of homework often leads to the accumulation and imbalance of homework between disciplines. Many "main subject" courses even occupy the teaching and homework arrangement of "minor subject" courses. Therefore, it is difficult for students to consolidate and expand their knowledge and skills in virtue, intelligence, body and beauty through homework. In addition, some parents and students will think that only finishing school homework can not open a gap with other peers and form enough competitiveness, so they often find ways to assign extra homework, so it is easy to cause homework burden.

2.3. Teachers Lack Sufficient Awareness of Homework Design and Implementation Ability

On the one hand, in the process of the new teacher training, teaching unit is often a lot of culture will knowledge reserves and teaching skill training is put in the important position, lack of separate operation design and implementation of course of ability training and exercise or practice link, think this is a teaching design and implementation based on the natural formation of the ability; On the other hand, for the post-service training of in-service teachers, the training of homework design and implementation ability is often low in frequency, not high in quality, and not closely related to teachers' professional development, which is difficult to form enough attraction for teachers. In addition, textbooks are often accompanied by teaching guidance books or exercise books, and all kinds of teaching materials on the market are also crowded, so the vast majority of teachers are directly using the teaching materials to provide homework, and they lack the awareness of taking the initiative to design homework for the characteristics of students in their class. In addition, in the aspect of homework statistics and feedback, teachers mainly understand students' academic performance, ranking, proportion and so on through homework, and lack of in-depth analysis of the mastery of more detailed knowledge points, skills and proficiency, as well as the level differences and individual differences further reflected by data statistics.

3. Basic Requirements of Homework Design and Implementation from the Perspective of Curriculum

3.1. Be Able to Implement the Relevant Requirements of Compulsory Education Curriculum Standards

In the each course of the *Curriculum Standards for Compulsory Education (2011 Edition)* [7], although there is no clear requirement for homework, but it set a different training objectives and proposed should be based on the characteristics of each course in the teaching process focus on autonomy, cooperation, explore learning method, cultivating primary and middle school students have various disciplines of quality, and strive to build an open and dynamic education concept. Such as in the *Chinese Curriculum Standards for Compulsory Education (2011 Edition)*, it put forward that "Chinese curriculum is a practical curriculum, which should focus on cultivating students' Chinese practical ability, and the main way to cultivate this ability should also be Chinese practice." "Students should read and write more, accumulate over a long period of time, experience and grasp the rules of using Chinese in a large number of Chinese practice." [7] For example, in the *Mathematics Curriculum Standard for Compulsory Education (2011 Edition)*, it is proposed that "students' innovative consciousness and practical ability should be cultivated" and "hands-on practice, independent exploration and cooperation" are also important ways of learning mathematics. Students should have enough time and space to

experience observation, experiment, speculation, calculation, reasoning, verification and other activities .[7] In interdisciplinary proposed the goals of training students' practical ability, the work is one of the important practice link and means, this requests the teacher to design the homework to consciously cultivate the students take the initiative to explore, solidarity and cooperation, of innovation ability and the spirit, respect for students in the process of the homework done by unique experience, grasp the enable students to grasp and apply discipline rules in a large number of practices.

3.2. To Play the Curriculum Function of Elementary Education Systematically

Elementary education reform is the core of curriculum reform, the elementary education curriculum reform requires to change of curriculum function, change course too pay attention to the tendency of knowledge, emphasize to form active learning attitude, guide the student to study institute, institute of living, learning life, so that students in acquire basic knowledge and basic skills of learning to learn and form the correct values at the same time. In order to achieve the function of curriculum change, homework design and implementation also needs to be common to cooperate to complete the shift: Firstly, it is should to realize the course angle of view, the homework is as an important part of the course, should with the teaching complement each other, jointly promote the overall course objectives, common implementation under the background of new curriculum advocates the multi-dimensional goals. In the design of the goals of each course in elementary education, such as Chinese subject from the knowledge and ability, process and methods, attitudes and values emotional three aspects to design goals, such as English, Japanese, Russian language class disciplines from the basic language skills, language knowledge, emotional attitude, learning strategies and cultural consciousness five aspects to design goals, Mathematics from the knowledge and skills, mathematical thinking, problem solving, emotional attitude goals design, that four aspect is in progress, etc. other subjects such as Moral Character, Physics, Chemistry, Biology, History, Geography, art, Sports, Music, Art and so on also carries on the system design from the multiple dimensions of course goals, multiple dimensions the goals of mutual penetration, integration, Objectives are designed to improve the literacy of all disciplines. Secondly, it is to need to reflect balanced, comprehensive and selective course structure, change the curriculum content "numerous, difficult, partial, old" and too much focus on the present situation of the book knowledge, strengthen the course content and student life, and the development of modern society and science and technology, pay attention to the students' interest in learning and experience, selection of lifelong learning the necessary knowledge and skills. The third is to change the curriculum implementation too much emphasis on learning, rote memorization, mechanical training, to advocate the initiative of students to participate in, willing to explore, hands-on, training students to collect and process information ability, the ability to acquire new knowledge, analysis and problem solving ability as well as communication and cooperation ability.

3.3. Enrich the Functions and Types of Homework based on Student Development

Under the perspective of elementary education curriculum reform, the homework view should adhere to the people-oriented and student-development-oriented educational concept: First, students are developing people, with sequential, phased, unbalanced, complementary and individual differences and other development laws, are in the process of development with great potential for development. Second, students are unique people. Not only have all the wisdom and personality strength, but also experience all the educational life, and there is a huge difference between adults, has its own uniqueness. Third, the student is the person with independent meaning, the objective existence which is not transferred by the teacher's will, and the subject of learning and responsibility. However, under the current large-scale class teaching management system, individual differences of students are often ignored. In accordance with

the education concept of student development, each student's bearing capacity and requirements for homework goals, content and quantity are actually different, and teachers can not fully preset the formation. Obviously, many teachers also know this, but in view of subjective and objective reasons, it is difficult to fully pay attention to the development of each student's personality in teacher education and teaching practice. Of course, based on the fact that learning itself does not have the property of freedom and happiness, students' development oriented education concept requires students to work hard, diligent, self-discipline and so on in the process of completing homework. Therefore, teachers should pay more attention to the long-term and deep value and significance of learning for students' individual development, and at the same time, enrich the types and forms of homework and improve the design quality of homework to improve students' interest in learning. There are various dimensions of homework type. Homework can be divided into various types from function, duration, content and form. Of course, there is no absolute superiority or inferiority of various types of homework, but should be selected and designed according to the function and goals of homework.

3.4. Be Able to Improve the Learning Effect According to the Results of Homework

From a curriculum perspective, both teachers and students should be able to diagnose, evaluate, improve and perfect their academic performance based on the results of assignments. For example, the *Mathematics Curriculum Standard for Compulsory Education (2011 Edition)* put forward that the main purpose of learning evaluation is to comprehensively understand the process and results of students' mathematics learning and motivate students to learn and improve teaching.[7] An evaluation system with multiple objectives and methods should be established. The evaluation should pay attention not only to the results of students' learning, but also to the process of learning. We should not only pay attention to students' mathematics learning level, but also pay attention to students' emotion and attitude in mathematics activities, help students to know themselves and build confidence. Cooper put forward six basic principles for homework design and implementation in 1989 [8], among which the improvement of homework effect is as follows: evaluation of students' performance and timely feedback to students, evaluation of teaching achievements, and distribution of homework completed with evaluation to students as soon as possible. Based on this, so teachers should make students feel when homework assignments, and the relationship between the classroom teaching, also need corrections in a timely manner to assignments, evaluation and feedback, need through the diagnosis analysis of students' academic master student work results, at the same time as a result of student's homework design a new starting point of teaching task, target and content. Therefore, teachers' homework design should focus on quality rather than weight. Only high quality homework design can help teachers, parents and students find students' learning problems and give play to the function of evaluation and diagnosis.

3.5. Meet the Professional Development of Teachers

Teacher professional development is a process in which teachers continuously receive new knowledge and increase their professional skills. It is also a process in which teachers' professional belief is established, their educational wisdom is constantly improved, and their educational thinking is constantly innovated. In the curriculum standards of various subjects, the requirements for teachers' professional development are also put forward. As mentioned in *Physics Curriculum Standards for Compulsory Education (2011 Edition)* [7], "To build a diversified and developmental evaluation system" to promote "the development of teachers' professional quality and the improvement of physics teaching", *Chinese Curriculum Standards for Compulsory Education (2011 Edition)* puts forward more detailed requirements: "Teachers should establish the concept of Chinese education based on social development and students' needs, pay attention to absorbing new knowledge and constantly improve their comprehensive

quality. We should study the textbook carefully, understand and grasp the content of the textbook correctly, and use the textbook creatively. Carefully designed and organized teaching activities, pay attention to heuristic, discussion teaching, enlighten students wisdom, improve the quality of Chinese teaching." Therefore, the teacher should realize homework is an important organic component of the education teaching activities is the foundation education course reform under the advocacy of the important way to achieve all-round development of students, teachers' teaching work, not just for homework design and implementation can cultivate the students' learning ability should also conduct research. Teacher research is not only to solve the practical problems highlighted in the process of homework design and implementation, but also the basis of teacher professional development and an effective way to improve the level of teacher professional development.

4. Basic Strategies of Homework Design and Implementation from the Perspective of Curriculum

4.1. From the Schools Practices

4.1.1. The Schools Shall Control the Total Amount of Homework and Monitor the Quality from the Perspective of Curriculum Management

About homework burden problem, subjective education administration has issued a number of specific policy rules to work, schools as the most basic unit of implementation, in order to be able to effectively relieve students homework and improve operation quality, teachers can adopt comprehensive, teaching and research section, such as led spot check form for production control and coordination between different courses. For homework quality, the school also homework quality inspection shall be incorporated into the overall goals of course construction and daily education teaching management, the quality watchdog group operates through specific work teams to the homework content and curriculum standard, the matching degree of teaching plan, homework questions whether after serious consideration, questions whether diversification, homework design is embodied with the students for this education idea, whether teachers give timely and effective feedback on homework, whether to assign punitive homework to carry out inspection, so as to form an effective operation monitoring mechanism.

4.1.2. Curriculum Groups should Form a Working System and Discuss Homework Problems

Some studies have shown that reflection on homework design and implementation among curriculum groups is of great help to teachers. Therefore, the school should perfect the teaching and research system of the curriculum groups, strengthen the discussion, evaluation, study and negotiation of homework design and implementation among the curriculum groups. Teachers can learn advanced homework concepts and homework design experience at home and abroad, strengthen the connection between homework design and implementation, curriculum construction and subject teaching, and promote teachers' professional development, and provide institutional guarantee for teachers to improve their homework design and implementation ability from the overall perspective of curriculum construction.

4.2. From the Teachers Practices

4.2.1. Overall Design of Homework Objectives based on Curriculum Objectives

According to the view of homework design from the perspective of curriculum, homework, teaching and activities are all important ways to achieve curriculum objectives, and only the design of homework objectives based on curriculum objectives can reflect the scientific nature of homework. Homework objectives should be determined according to the goals and requirements of the established curriculum standards, rather than simply based on classroom

teaching objectives. In general, the task objective description should clearly reflect the following four basic elements: subject of behavior, verb of behavior, condition of behavior and degree of performance. In a word, homework objective design needs to pay attention to: First, it should have a high degree of correlation with curriculum standards and teaching objectives; The second is to meet the learning needs of students of different levels, pay attention to the foundation, reflect a certain degree of selectivity; Third, it should be testable, helpful to understand and diagnose students' overall learning status and common problems, and timely feedback to teachers' teaching; Fourthly, it should reflect the three target dimensions of knowledge and skills, process and method, emotion and attitude and values, and pay attention to the guidance of learning strategies. Fifth, it should show different clarity according to the situation, and properly grasp the generality and meticulousness of the operation objectives.

4.2.2. Homework Contents and Objectives should be Consistent and Structured

Generally speaking, the homework content does not correspond to the homework objective one by one. Some homework objectives need to be achieved by multiple homework contents, some homework contents may achieve multiple homework objectives, and only a few homework only achieve a single goals. In addition, some homework contents are partly consistent with the homework objectives, and some are inconsistent with the homework objectives. Therefore, it is possible to evaluate whether the homework contents are consistent with the homework objectives through disciplinary analysis and judgment. Therefore, teachers should design homework contents one by one according to the set homework objectives and conduct a reflection analysis on the homework contents as a whole. They can also improve the consistency between homework objectives and homework contents by statistics and analysis of students' actual situation. In the homework content, there are some key factors, such as homework design, homework function, homework objective, homework amount, homework level, homework difficulty, homework time, homework content, homework type, homework source, homework type, homework stratification, etc. Homework implementation includes homework arrangement, homework correction, homework guidance, homework evaluation, homework statistics, homework completion environment, parents' participation, homework interest, homework burden and so on. The horizontal and horizontal structure of homework. From the horizontal perspective, the key elements of homework content should reflect the internal horizontal structure of each dimension of homework. In addition, the horizontal connection of homework also includes the connection of homework content between different disciplines. From the vertical, assignments from time dimension longitudinal content should reflect the work systematic, developmental problems, besides the time dimension on the overall design of homework, such as the overall design of a semester or a week homework, at the same time should be emphasized in a certain period or the overall design of a grade homework, such as unit operation overall design.

4.2.3. Pay Attention to Students' Differences and Set Personalized Homework

Differential homework includes students' different learning basis, ability, interest, motivation, style, tenacity, gender differences and so on. The differential homework design that pays attention to individual learning needs to be implemented in the whole process and every strategy of homework design. Teachers must pay full attention to the differences in students' abilities and cognitive styles. Learning does not require all children to reach the best level, but requires each student to reach the level required by the curriculum standards through different efforts. The problem of homework difficulty and homework type reflects the difference of homework. The former Soviet Union educator Shatarov thought to assign two kinds of homework: one is all students must complete that is suitable for all students cognitive level of homework, relatively easy ;The second type is slightly more difficult, in order to meet the students who are interested in the subject and have the ability to learn, to meet their curiosity

and thirst for knowledge. Teachers can reflect the difference in one of the following three ways: First, the amount of homework and the difficulty of homework; Second, by providing students with different amounts of structural materials or scaffolding; Third, different homework types are used to meet different learning styles or interests of different students [9]. At the same time, it is possible to explore a rich subject based on multiple entry points, including narrative, numerical, logical, existential/foundational, aesthetic, practical experience, and interpersonal relationships. Attach importance to individuality and personalization, and try to understand the inner image of each student [10].

4.2.4. Continuously Reflect and Improve the Design and Implementation of Operations based on the Results of Operations

At present, teachers generally lack the habit of evaluating, analyzing and statistical results of students' homework, so it is difficult to accurately judge the real problems of students, let alone take targeted improvement measures. However, statistical analysis of operation results plays a key role in operation diagnosis and improvement. Homework design and implementation from the perspective of curriculum not only emphasize goals orientation and overall design, but also emphasize feedback adjustment. According to Taylor's curriculum development model, curriculum objectives themselves need to be feedback and adjustment according to evaluation results. Taylor curriculum research mode, emphasize from "homework target homework content one by one - work - the result feedback" self circulation and perfect, should according to the actual operation results of the student, find the problems existing in the students' learning, and according to different students, have certain specific teaching, and improve and perfect the homework design itself. Of course, the habit of analysis and statistics of homework results is not easy to do, which requires teachers to have persistent perseverance and professional behavior quality. Teachers should carry out formative evaluation, multiple evaluation and tracking evaluation on the process of students' homework, timely statistics and analysis of students' homework results based on the objectives of homework design, and systematic improvement through teaching, homework, individualized learning guidance and other ways to jointly play the value of homework.

4.3. From the Parents and Students Practices

4.3.1. Parents Should Establish a Correct View of Homework

Homework is an important link for children to complete the course learning tasks. Parents should first establish the concept of actively participating in their children's homework process and enhance the learning value of homework. Of course, effective participation is emphasized in the process of participation, rather than just monitoring the completion of students' work. Parents should work together with their children to establish clear rules for completing homework. They can also communicate various goals about homework tasks, such as self-improvement (mastery of the goals) or outperformance (performance goals), making homework more challenging and interesting. In addition, during the implementation of homework, parents should hold a correct attitude. Parents' attitude towards students' homework will affect students' learning results and attitudes towards parents themselves. In operation target, parents should help children better understand the relationship with the course objectives, based on the analysis of course perspective to help their children study effect, and consistent emphasis on mastery goals, stressing the importance of self-improvement rather than the performance goals, emphasizes even make a mistake is also a kind of learning opportunities, avoid comparisons or promote competition among children, the happiness of ascending children finish the homework.

4.3.2. Parents Should Actively Cooperate with the School and Participate in Homework Evaluation

Parents should master scientific education methods, actively cooperate with the school, and jointly reduce the burden for students. Take the initiative to understand the educational information of the school; communicate with teachers actively and feedback information timely; actively participate in school parent activities; reasonable arrangement of extracurricular time, reduce students' extracurricular burden, cultivate students' independent learning ability. Parents should not only pay attention to whether students finish their homework or not, but also find problems in the process from the perspective of supervisors and companions. Homework reflects students' learning attitude towards the subject, and the quality of homework reflects students' learning interest in the subject. In order to better improve the children's language learning, parents should take the initiative to understand the basic knowledge of children's education and teaching, to the children's language homework more professional answers and evaluation.

5. Conclusion

Homework design from the perspective of curriculum has multiple influences on education and teaching, involving many factors, and is never a simple activity. At present, the homework design and implementation of compulsory education in China needs to be further explored both theoretically and practically. The quality of homework design and implementation has a great impact on the play of homework functions and the realization of homework effects. Therefore, high quality operation design and implementation is becoming more and more important.

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