

# Application of Modern Teaching Methods through the Supply Chain Strategy and Integrated Curriculum

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**Abstract** This article examines the relation of integrated curriculum with implementation of modern teaching methods through the supply chain strategy in education. The research method in this article is analytical-deductive. Considering the fact that in order to extract the dimensions of integrated curriculum, its analysis is done in terms of effective factors in the integration of the curriculum, the research method is an analytical type, and considering that the relation between the integrated curriculum and the application of modern teaching methods is examined, it is deductive. The results show that the nature of integrated curriculum, coherence of students' learning in order to learn has been more effective. The main advantages of it includes: Actualization of learners' talents, training creative and critical thinking, problem solving, and, strengthening research oriented. The nature of modern teaching methods indicates the active role and personal experience of learner, the interactive process of learning in order to independence, social adjustment, team working skill, social skill, and, comprehensive analysis. So integrated curriculum by removed barriers restricted of subject-based curriculum such as predetermined content, limited questions, lack of relationship of achieved knowledge with life and lack of interdisciplinary relation requires modern methods to be successful in growing scientific search skill, referring to numerous sources, consultation and participation of learners.

**Keywords:** *Integrated Curriculum, Teaching Methods, Modern Teaching Methods, Integrating, supply chain strategy, education*

## 1. Introduction

The purpose of this paper is to introduce and discuss the concept of supply chain quality management (SCQM) in education. It then analyses a particular country case study in light of the concept, presenting empirical evidence of the challenges and good practices relating to it. Various views are presented for regarding the concept of teaching. "Teaching is an activity designed to make changes expected in the learner's behavior that is planned and performed interactively by the teacher" [1], "teaching methods are referred to a set of actions that, by providing interaction between teacher and student, enables the context and conditions for achieving the objectives of curriculum" [2]. A comprehensive definition presented for teaching that accepted by many teachers is: "The interaction between teacher and student based on the regular and targeted design of the teacher, to change the behavior of the student. Different concepts of teaching includes such as attitudes,

tendencies, beliefs, habits and behaviors, and in general, the kinds of changes that we want to create in students" [3].

According to Eisner, teaching is an art directed by educational values, individual needs and a variety of beliefs or generalizations that is true by a teacher. Gagne & Traverse believe that in present era, all efforts of scholars in the field of teaching have been limited to the "creation of teaching science". Still, most of those who teach, often consider teaching as an artistic activity. Therefore, it can be said that artistic creativity is important because the teachers who work in the classroom artistically not only equip the learners with important sources of artistic experience, but also provide an atmosphere of exploration and risk and foster the willingness to play. Artistic creativity is the ability of non-meaning the word toward of perception, which leads to imagination, metaphor and frivolity of the constructive. Effective teaching benefits from individual flexibility, creativity and initiative [4].

Choosing the best teaching method depends on a variety of factors. A teaching method cannot be effective in any circumstances, and its success depends on a variety of factors, such as the characteristics of learners, the status of resources and facilities, and the subject matter. The teaching method is selected according to the curriculum elements including the target and the content. One of the mistakes in choosing teaching methods is that, regardless of the nature of the purpose and the content is chosen. By examining the resources related to the subject both at the country and abroad, teaching methods and teaching/learning strategies were limited in the past, but now more than 50 teaching methods are known. Curriculum specialists believe that the more teachers are familiar with teaching methods, the power of decision making and their degree of independence in classrooms will increase. A teacher who always used a limited number of methods in teaching will have a different outcomes to another teacher who has more flexibility in learning because of familiarity with various methods. Another viewpoint is the variety of teaching methods at the curriculum design stage. In this way, the component of the teaching method is determined in accordance with the designed curriculum framework. Depending on the type of program, the goals, as well as the active or inactive element of the learner in the classroom, teaching methods are divided into two general categories: inactive and active methods [5]. Therefore, considering the importance of active teaching methods and paying attention to the needs of the teaching audience who have specific characteristics in each period of growth, it is necessary to provide appropriate context in the curriculum of the educational system. The desirable implementation of such

teaching method is possible in the base in which the integrated curriculum is capable of providing it.

Another issue in this study is the integration. "Integration in general means the combination of content areas or curricular subjects that are included in the curriculum of schools and universities in tradition of educational systems separately from each other. The main purpose of integration is that learning experiences of learners to be exited from disperse as much as possible, to be placed in relation to each other"[6]. Accordingly, the main issue in the present research is to explain an idea that integration of curriculum can be one of the bases for application of modern teaching methods. Therefore, two areas of curriculum integration and its advantages have been studied: the nature and necessity of application of modern teaching methods, the relationship between integrated curriculum and application of modern teaching methods.

### Research questions

1. What are benefits of integrated curriculum in educational system?
2. What is the nature and necessity of application of active teaching methods in educational system?
3. What is the relationship between integrated curriculum and applying active teaching methods?

## 2. Methodology

The present research is qualitative research and is analytical-deductive research. Considering that the purpose of analytical research is "understanding and improving set of concepts or conceptual structures according to which experiences are interpreted, intentions are clearly expressed, issues constructed and researches are carried out" [7], the relationship of integrated curriculum with active teaching methods are deduced in order to provide a detailed view of nature and relevance of the above concepts.

## 3. Findings

Eisner defines curriculum that curriculum for a school, a class, or a course is a series of pre-designed events that seek to achieve educational outcomes for one or more learners. Since one of the main elements of the educational subsystems is curriculum; it is required that schools, universities, and educational institutions to be equipped their curriculum to adapt to existing developments by gaining awareness about the environment and its developments [8]. Also, curriculum consists several components or elements including objectives, content, teaching methods, learning materials, groupings, evaluations, time and space. In addition to the importance of each of these elements, this study examines the importance of teaching method in curriculum in general and in integrated curriculum in particular. Integration in the curriculum is considered as a progressive and yet complicated directions in the design and formulation of curriculum, and "in recent decades, more than ever, it has been paid attention to the debates on it, that's why many resources have been produced and supplied to guide the curriculum's agents "[9]. A comprehensive definition of

integration is the creation of relation and with the goal of coherence of various cases. Definitions that are presented in relation with the integrated curriculum are on a spectrum. One side of the spectrum includes definitions about the description of the teaching-learning process, and the other side of the spectrum involves the formation of new topics using the integration of elements that were previously distinct but related.

Concerning the necessity of the benefit and the importance of the integrated curriculum, the research results indicate that when science is combined with other fields of science, that science and other topics are both learned more effectively by learners. In this way, it is desirable that in the teaching-learning process to be attempted to include other subjects in the study when studying a scientific field is considered [10]. Some factors contributing to the emergence of integrated curriculum and attention to non-discipline systems include the following:

- Human and his complexities;
- Increasing growth of boundaries of science [11];
- Lack of communication between the curriculum and the real life;
- Lack of fostering high-level intellectual skills in learners in the traditional curriculum, on the one hand, and integrated curriculum, which, due to problem-based nature, cause the foster of high-level intellectual skills, on the other hand. In confirming this, [12] argues that effective learning means learning with thought that is enriched by communication, which in turn requires a vivid and flexible application of knowledge. In total, the integrated curriculum is intended to provide appropriate learning opportunities for learners by providing a specific teaching organizing to be familiarized with the principles, basics, methods, and topics in various areas; and this, means neglecting the merits and benefits of disciplinary systems. Therefore, "the integrated direction in scientific studies in the future will no longer be a choice, which will be a compulsion and a requirement; i.e., filling the human knowledge gaps or meeting the new needs of human societies more effectively and satisfactorily doesn't remain a solution for scholars. Politicians of general and supreme education are also not free to enter these discussions" [13].

Findings for second question show that active teaching methods are referred to methods in which learners play an active role in teaching-learning activity and gain experience through teacher guidance and learning is a two-way process, the teacher has the role of guidance, counselor and facilitator of the learning process, students appropriate to their talents and abilities and interests, and often group, manipulate, study, solve, analyze and synthesize affairs. Learning is consistent and more durable with the needs, the power and their emotional-rational issue; there is a mutual relationship and respect between the teacher and the students. The evaluations are on the basis of abilities and competence of learners, and learners through life learn ways of life for present and future successful life. These methods have specific characteristics that caused to be superior [14]. In other words, the active learning, the learner is involved in the production of the concept of participation. In active learning, the important topic is learning the contents with their understanding. This kind of learning is only achieved through direct engagement with the problem and gaining good experiences. Active teaching methods include: conference method, teacher-student

method, multisensory method (mixed), problem-solving method, project method, rehearsal style, practice method, prospecting pattern legally, self-control learning model, role-play model, workshop method, conceptual model, training model for conception and skill development, and so on.

Also, about the necessity of application of active teaching methods, it should be acknowledged; effective teaching and learning requires the use of appropriate methodologies and pedagogues to be faced with the demands of the current generation of learners, new technologies and changing educational environments. The puzzle is to find new ways to stimulate and motivate the creative abilities of today's generation, which have different tendencies in learning than most of us when we study. The inactive lecture or "chalking and communication" approach treats the learner as the passive receiver of knowledge and is not suited to the present generation alone. The inactive lecture approach has its own capabilities, but teachers need to apply a wide range of pedagogies and strategies to encourage learners' participation. According to that, [15] argue that as a profession, we need to change both viewpoints and practice for teaching at all levels. Whether the new teachers are flexible in their teaching classes or they have the required adoption in facing with new situations, this issue should be considered in the theory and practice of teaching.

The use of active learning techniques in the classroom is essential because of their strong impact on learners' learning. Active teaching with lifelong learning skills is more closely aligned with the labor of information age. By quick changes in history and culture, learning based on textbook and teacher guidebook is outdated. Instead, technology sources are replaced by these approaches to create interactive teaching. The most fundamental justification for adopting an active teaching-learning approach to present lessons is based on a broad agreement that the learners' perception from a concept has a direct relation to the amount of individual energy that they have spent to master it. The second justification for learning in this way is the precise planning of issues that learners need to do when leaving school and entering the workplace [16]. Also, active teaching methods increase the creativity of learners. As the results of a research, there is a significant difference between the mean scores of creativity of the students who are trained by the cooperative teaching method and the mean scores of creativity of the students trained by the traditional teaching method, and this teaching method leads to deeper learning and creativity and innovation of students [17]. Also, other research findings showed that there is a significant difference between the level of creativity of trained students with teaching method of integration and students with passive teaching method. In other words, the teaching method of integration has increased the creativity of students in the experimental group. Also, the ability to initiate and extend the scientific knowledge of trained students through the integration method is significantly higher than trained students in the traditional method [18].

Joyce, Weil and Calhoun, authors of *Teaching Patterns* 2000, believe that by specifying the educational goals and adopting a suitable teaching model and method, active teaching-learning approach can be used effectively. Some

of the appropriate teaching patterns and methods for applying in an active approach are:

1. Developing creative thinking and problem solving by inductive method using the teaching method of concept formation;
2. Understanding concepts and evaluating thinking using the teaching method of receiving concept;
3. Analysis of current issues and other social issues using the teaching method of judicial courts and role-playing;
4. Breaking the templates governing thinking and development of divergent thinking using the teaching method and group research;
5. Collaboration in the process of testing the hypotheses using the teaching method of group research and scientific exploration;
6. Strengthening scientific reasoning by using the teaching method of exploration, group exploration and simulation;
7. Dominating on a complex set of materials using the teaching method of memorial, scientific exploration and group research [19].

For example, in a study by [20], one of the most active and modern methods of teaching, especially for the field of empirical sciences, is the method of hand-made. Using the hand-made in teaching is one of the ways that, in addition to creating creativity and innovation in students, makes teaching interesting and learning easy and exciting. Because this method increases students' understanding and learning by creating a relationship between scientific concepts and real experiences in the life, compensates the shortages of laboratory facilities and causes students' academic achievement. Therefore, in this research, it was tried to be investigated the effect of the use of hand-made on students' academic achievement in the topic of the cell to the biology of the tenth grade. The results of statistical analysis at 1% level showed a significant difference between the control and experimental groups, which indicates that the use of hand-made is more effective on the academic achievement in the topic from the cell to the plant than in the traditional method.

Also, [21] in his research found that learning and understanding of mathematics in each grade requires direct student engagement with the subject and involves active participation, the use of hand-made as one of the active teaching methods are effective in enabling students. The results of the research showed that there is a significant effect between education of integers, volume training, probability education and teaching of geometric drawings with the help of hand-made compared to their teaching using traditional methods of teaching on the amount of students' learning. Of course, it should be noted that among the teaching methods, some are more appropriate to the teaching / learning approach and some of them are limited in terms of use, but it can be used the combination of several methods to use the benefits of the teaching methods mentioned above. For example, using group research methods, exploratory training, role play and simulation in an active approach of science education is very effective; of course, this does not mean that methods such as group discussion and question and answer are not used.

Findings for third question show that although teaching begins with essential concepts and goals, sometimes it requires methods that can easily realize goals efficiently

and effectively for different ages and psychological conditions. Therefore, good teachers are able to arrange attractive learning experiences for their learners. They coordinate their teaching methods with the needs of learners. According to the upstream documents of the educational system, one of the most important tasks of the educational system is the development of the thinking power in the learners, which is realized by using the integrated curriculum. By determining a suitable curriculum, such as an integrated curriculum, planners' decision making is closer to the implementation. At this stage, teachers should play a more effective role. Because teaching methods are implemented in the classroom and the teacher is also the executive of the curriculum. Between the decision makers and teachers, a meaningful and effective relationship must be created to be implemented the designed curriculum appropriate to the classroom accurately. Of course, it should also be noted that the position of teaching-learning strategies in curriculum and the relationship between the decision making of curriculum planers and the teacher's role depends on the type of curriculum implemented in the educational system of each country. By using the active teaching methods in the integrated curriculum, it can:

- Equip learners to live in their broadest sense.
- Use valuable forms of knowledge.
- Require the teacher to scaffold of learning.
- Congruent measurement with learning.
- Increase learner activity.
- Develop individual and social processes and results.
- Acknowledge the importance of informal learning.
- Emphasize the increase of teacher information by holding workshops.

By using this curriculum, to create an effective and active learning position in the classroom, you need to consider the following:

- Applying collaborative approaches
- Rewriting curriculum components, considering its integrated nature
- Ensuring access to learning resources and educational facilities
- Providing workshops and appropriate training courses for teachers on active teaching methods.
- Emphasizing on continuous measurement. [22]

The findings of the research are consistent with the findings of the research of [5]. In comparative evaluating of the quality of the integrated and discrete curriculum of the sixth-grade elementary school based on the Klein model, he found that in the elements of purpose, content, teaching methods, time, learning activities, evaluation; the average integrated curriculum has been more, and it has a significant difference from the discrete curriculum. But in the classifier element, the average of the discrete curriculum was more and it has a significant difference from the integrated curriculum. Also, there was no significant difference in the educational materials and sources and educational site between the integrated and discrete curriculum. [23]

On the other hand, the role of education as one of the factors improving living standards and the development of human societies is not overlooked by anyone. With the full expansion of sciences and communication and the development of new knowledge and technologies, the younger generation enters into new realms of life that

cannot rely on their traditional knowledge to solve problems. Therefore, it needs to develop skills and training in more efficient ways, in order to adapt more fully to the world of technology. For example, in the modern educational system, the use of information technology and the active and innovative teaching methods increases the effectiveness of teachers and their achievement to educational goals. The findings of the research are consistent with the findings of [6] research. He had examined the relationship between information technology and active teaching methods with the effectiveness of first-grade high school principals.

The results of this research showed that there is a positive and significant relationship between information technology and the effectiveness of the teachers of physical education in first-grade high school and between active teaching methods with the effectiveness of these teachers. Also, the results of this study showed that information technology and active teaching methods have the potential to predict the effectiveness of teachers of physical education in first-grade high school. Therefore, according to the results of the research, it was suggested that the system of education by holding courses would increase the knowledge of its teachers about the information technology and the active and modern methods of teaching. [24] In other words, according to [25], we are seeing amazing developments in this age of information and communication. Technology has influenced all aspects of life and caused inevitable changes and progresses in each area. Naturally, the world of science is benefiting from this change and development. As a result, the rapid flow of information and technology in the scientific world has increased collaboration among scientists. This collaboration strongly helps research and studies on language, history, literature, education, economics, social and cultural life, politics, sports, media and communications. Therefore, there are new horizons in the educational system. In this area, curriculum includes education in classroom and in particular active teaching methods.

Finally, in order to complete the answer to the third question of research, it is pointed out that in the educational system with integrated curriculum and innovative and creative teaching methods, learner goes to school to actualize their potential skills and abilities. The learner is involved in the learning process, as learning is begun from his interests, desires and perceptions. In this way, because of the self-esteem and dare to express, question and comment of learner, his anxiety is reduced and allowed to be criticized. As a result, his creativity and innovation grow and the class's return increases. For this reason, educational systems in the new arena have to turn their state from the traditional to the creative and dynamic system. Therefore, using the integrated curriculum in the educational system, along with active teaching methods, it can be considered the realities, needs, and also the comprehensiveness, thereby helped increasing the capabilities and skills in learners.

#### 4. Conclusion

Regarding the discussed issues and considering the two slogans of activation and participation of learners in supply chain and teaching how to learn, it can be said that active teaching methods are the most appropriate methods of teaching in different educational periods. None of the

teaching methods is good or bad, but the way and the conditions of use of teaching methods cause strength or weakness. In other words, the teacher chooses the most appropriate method for teaching appropriately according to educational goals, teaching content, needs and interests of learners and available facilities. In a teaching session, we should not only use one method, but, depending on the situation, we can use a combination of teaching patterns and methods, which can be implemented in the integrated curriculum. In order to accomplish this, in educational system, integration should be done in the curriculum in order to provide the teacher with the necessary background for applying various teaching methods and patterns.

The components of this curriculum are also arranged with rational microscopy and provide an effective teaching field. Also, each of the different forms of teaching involves the use of different skills. The criteria that are appropriate for the assessment of the quality of one type of teaching are not necessarily appropriate for assessing the quality of the other type. Finally, considering the principle of choosing the fittest approach to the present, integrated teaching-learning approaches should be selected in teaching. i.e, it has to be achieved a comprehensive, fault-free, and efficient manner and considered the criterion for choosing the appropriate approach to the active learning pole. In this way, the new teaching approach has only one message for all teachers: At any point you are, try to take at least one step from passive learning to active learning. The active teaching method is an approach in which the learner will interfere in some way in the process of teaching and learning. Therefore, when the teaching is organized in such a way that, to engage him in the beginning of work with the subject in proportion to the learner's interests, and continues throughout the teaching process in accordance with the learner's abilities. In this method teaching, active approach is used. Therefore, this approach seeks to somehow combine the strengths of different approaches and methods, and thus cover the weaknesses and shortcomings of each approach and method with the help of other methods.

It is also important to note that various causes and obstacles cause the incorrect use of active teaching methods, which in a general categorization, these factors include the type of teacher, the type of learner, the type of the course, the objectives and content, the type of facilities and educational assistance, type of educational environment and type of educational achievement evaluation methods. According to the explanations presented and according to increasing growth and spread of sciences and the changes that have taken place in all aspects and areas of human life, the topic-based curriculum that is the common curriculum in most educational systems in the world, including our country; It is no longer responsible for such diverse changes and does not remove the growing needs of learners. Based on researches and studies carried out on the basis of the results of this study, through the integrated curriculum, it is possible to facilitate the realization of changes, needs and goals of the 21st century.

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