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INTEGRATED APPROACH - CHALLENGES IN PEDAGOGICAL DESIGN OF LEARNING

Veronica Peicu (a)*
*Corresponding author

(a) "Ion Podaru" Technological High School, Națională 114, Ovidiu, Constanța, România, catver99@yahoo.com

Abstract

When the students are taught using a class by class, subject by subject basis, they learn less than using what's called integrated curriculum. An integrated curriculum places less emphasis on teaching just the subject, and more emphasis on the connections that exist among different subject areas. An integrated approach to teaching helps students learn to put a variety of ideas together. Integrated approach to learning involves planning for learning experiences and allow children to explore topics as a whole and in meaningful content and not by subjects. We can say that all the definitions of integrated curriculum or integrated teaching include the following: a combination of subjects, flexible student groupings, more than one curricular subject, an emphasis on subjects, sources that go beyond textbooks. The integrated approach is similar to the unit study approach, but takes it one step further, focusing on thinking skills as well, helping children understand connections between the subjects, and not just focusing on the how or the what, but also on the why. It is necessary to explain the concept of integrated learning, its needs and relevance, to describe different types of integration and their use in meaninful learning, to use the techniques to integrate learning experiences within one subject and integrating different subjects, to identify the characteristics of integrated textbooks and learning materials.

Keywords: Integration, curriculum, interdisciplinary, synergy, learning, teaching.

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1. Introduction

When we try to choose something by ourselves, we find it fixed to anything else in the universe. (Muir, 1911)

Is there really a need to develop an integrated curriculum or is it just another passing trend? This question deserves careful consideration. We live in a global world characterized by more and more changes, advancing technology, an explosion of knowledge, economic and social realities, and perhaps an imminent environmental catastrophe. The education system seems to be constantly attacked. Critics claim that students drop out of school at an alarming rate. Those who stay in school do not do well enough to be able to compete in a global economy and maintain a high standard of living (Drake, 1993).

2. Problem Statement

Efforts to integrate the curriculum have a long history. Stack (1961) followed the philosophical and psychological antecedents of the core curriculum from the writings of Herbert Spencer (1820-1903). Harville (1954) mentioned trends in education, psychology and anthropology. Fraley (1978) described the work of Hollis Caswell and Harold Alberty as regards the integration of the core curriculum. In their vast activity on the core curriculum, Faunce and Bossing (1958) presented a variety of national curriculum reforms between the 1930s and 1940s. The most important of these, progressive education, included a strong emphasis on the student, integrated approaches to education, usually under the name of the core curriculum (Vars, 1972).

The evolutionary concept of the core curriculum was tested in the famous eight-year study of the Progressive Learning Association (Akin, 1942). Since then, over 80 normative or comparative studies have been conducted on the effectiveness of integrated programs (National Association for Nuclear Curriculum, 1984). In almost every case, pupils in various integrated/ interdisciplinary programs responded as well or better to standard purchase tests than students enrolled in the separate, customary themes (Vars, 1991, p. 14).

Today some people criticize teachers because they do not adequately teach basic skills; others argue that the basic skills students need for 21st century are not the same we are teaching now. The component of knowledge, practically of each thematic area, is proliferating at an increasing rate. Paradoxically, as thematic areas become overloaded, a surprising number of overlaps take place in classes. Educators are trapped in a dilemma. Integration by reducing the overlapping of both abilities and content starts to allow us to teach more. It also gives us a new perspective on what constitutes basic skills (Drake, 1993).

3. Research Questions

This study was designed to explore the following questions:

3.1. What is integrated teaching and learning?

3.2. Why is integrated teaching and learning important?

3.3. How does integrated teaching and learning look in practice?

3.4. Which would be the authentic challenges of integrated design?

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4. Purpose of the Study

The purpose of the study was to explain what is an integrated aproach and to find the possible challenges in pedagogical design of learning. From the study, it is evident that, further research in this area is warranted. In particular, insights generated in relation to student engagement and participation through the integration of subject areas demonstrates the value associated with such an approach for student learning and the teachers' professional development.

5. Research Methods

The idea of this work is justified by the theoretical and practical relevance of the integrated approach, not only for the education, but especially for its direct beneficiary, the student. Methodological, the main role of the discourse is to solve the possible options and alternatives to the meaning of messages subject to reflection. In order to facilitate the process of approaching the presented problem, the methods of research I established are: narrative analysis, the content analysis, focused on qualitative aspects of messages, generalization, interpretation, and a descriptive but also hermeneutic intervention, with the intention to develop an analytical, critical approach, capable of generating alternative designs (Berg, 2001).

6. Findings

6.1. What is integrated teaching and learning?

To try to define the integrated curriculum it is necessary to refer to related terms: *interdisciplinary* teaching, *synergy* teaching.

A basic definition is given by Humphreys, Post, and Ellis, (1981): "An integrated study is one in which children explore broadly the knowledge on various topics related to certain aspects of the environment" (p. 11). He sees linkages between the humanities, the art of communication, the natural sciences, social studies, music and art. Skills and knowledge are developed and applied in a larger field of study.

Shoemaker (1989) defines an integrated curriculum as education organized in such a way that it crosses the barriers of the subject in question, bringing together various aspects of the curriculum in meaningful associations to focus on broad areas of study. It refers to teaching and learning in a holistic way and reflects the real world, which is interactive. Dressel's definition (1958) goes beyond linking the domains to creating new models of understanding the world. He states that in the integrated curriculum, planned learning experiences not only endow students with a unified vision of commonly held knowledge (learning models, systems and structures of culture), but motivating them and developing them also the power to perceive new relationships and thus create new models, systems and structures.

Another term that is often used, synonymous with the integrated curriculum, is the *interdisciplinary* curriculum. This is defined in the "Dictionary of Education" as a curriculum organization that goes beyond the barriers of the subject in question, focusing on global life or broad study areas, and brings together various segments of the curriculum into a significant association (Good, 1973). The similarity between this definition and those of the integrated curriculum is clear. Jacobs (1989) defines interdisciplinarity as a vision of knowledge and a curriculum approach that consciously applies methodology and language from more than one discipline to examine a central theme, aspect, problem, subject or experience.

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These definitions support the idea that the integrated curriculum is an educational approach that prepares the child for lifelong learning. There is a strong belief among those who support curricular integration, as a process of developing the skills needed for 21st century life, rather than discreetly, divided the subject. In general, all definitions of the integrated or interdisciplinary curriculum include: a combination of themes, a focus on projects, sources that go beyond manuals, concepts, thematic units as organizational principles, flexible schedules, flexible groups of students (Lake, 2001, pp. 190-191).

This work was also supported by others involved in the implementation of the integrated curriculum (Jacobs, 1989; Shoemaker, 1989) These differentiations can progress from teaching the same subject by two teachers (for example, literature and history teachers to teach about the same period historical), to the project of the thematic units of a team, to courses or to the interdisciplinary thematic units, to a fully integrated curriculum, which is also referred to as *synergic* teaching. Bonds, Cox and Gantt-Bonds (1993) wrote: synergic teaching goes beyond the blurring of the thematic domains to a teaching process in which all school subjects are related and taught in such a way that they are almost inseparable. What is learned and applied in a curricular area is connected and is used to reinforce, to ensure rehearsal and to expand the knowledge and skills learned in other curricular areas. This process of synergic teaching allows the student to quickly perceive the relationships between learning in all curricular areas and applying it throughout each school theme. Synergic delivery makes more than integration; presents content and abilities in such a way that almost all of the learning requires new dimensions, meanings and relevance because a connection distinguishes between abilities and content beyond the boundaries of the curriculum. In a synergistic class, simultaneous teaching of concepts and skills without regard to curricular areas would have a greater effect than the totality of skills and concepts in individual thematic areas (Lake, 2001, p. 192).

6.2. Why is integrated teaching and learning important?

Loepp (1999) stated that regardless of the chosen integration model, there are some common elements that arise: teachers need to change their belief system from one that is primarily of a didactic nature, one who has a foundation in constructivism, need a broad professional development, must become members of study communities, become skilled in facilitating small group learning, manage experience-based training, learn to use authentic evaluation strategies such as portfolios, performance exams, and headings to document student progress; school administrators and councils must be geared to provide teachers with the necessary resources and permanent support; public information strategies require implementation to inform the community and parents about the use of a new educational paradigm. Finally, changing to an integrated curriculum requires systemic reform. This includes how teachers are trained, qualified, and evaluated. Attention should also be paid to national student assessments and the process by which teacher credentials are renewed.

The concern to connect things with ideas of integration into and beyond subjects and with elements of non-school life is inherently a preoccupation to understand in a broader and deeper sense. Consequently, there is a natural alliance between those who make a special effort to teach for understanding, and those who make a special effort to integrated education (Perkins, 1991).

Teachers should continue to create their own models of curriculum integration. The process itself never ends. It is a cycle that offers a renewed energy to each new school year as teachers help the young

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mind to discover ”roots running underground through which contradictory and abstract things bind and bloom from one stalk”(Emerson, 1909; Fogarty, 1991, p. 65).

6.3. How does integrated teaching and learning look in practice?

There are different levels of integration, illustrated by Palmer (1991, p. 59), which describe the following practices:

- Develop inter-curricular sub-objectives within a given curricular guide
- Developing lesson models that include cross-curricular activities and assessments
- Development of improvement and development activities with a cross-curricular focus including suggestions for cross-curricular ”contacts” after each goal
- Developing cross-curricular evaluation activities
- Inclusion of sample planning mechanisms in all curriculum guidelines (Lake, 2001).

Several authors have gone from a single definition of integrated curriculum to an integration (Lake, 2001). The ten visions of Fogarty and Stoehr (1995) for curriculum integration are the most commonly used plans in this field. They define different types of integration examples and varied configurations for designing the integrated curriculum. For the teacher, the teaching team or the entire staff, the models are a means of assessing the current practice, drawing a course of action for future integration and evaluation of a new class or unit (Merickel, 1998).

Thus, if the integration takes place within a single discipline, there are three models: *fragmentated*, *connected*, and *nested*. *Fragmented* methodology is a traditional curriculum project that separates themes and courses into distinct disciplines. In this model, courses are separated into traditional study areas: mathematics, science, social studies, arts, etc. Each area is defined by an independent study discipline. In this case a clear and discreet view of the discipline is an advantage, but connections are not clear to students, and there is a less transfer of learning. Important for the concept of integration is that the *connected* methodology should relate ideas directly within a discipline. Teachers help students make connections by explicitly linking themes, skills, and notions. The benefits are that key concepts are linked, which leads to the review, reconceptualization and assimilation of ideas within a discipline, but at the same time disciplines are not linked, and concentration of content remains within the discipline. In terms of the *nested* type, concentric integration takes advantage of natural combinations. It is done by creating connections and combinations directly. This can be done in a lesson on the circulatory system by concentrating the lesson on both the circulatory system and the concept of systems. Paying attention to several areas simultaneously, and leading to enhanced learning are the pluses of this approach, but students may be confused and lose sight of the main concepts of activity or lesson.

When the integration takes place by crossing disciplines, are presented five examples of integration: *sequenced*, *shared*, *webbed*, *threaded*, and *integrated*. In the *sequenced* model themes and units are taught independently, but they are arranged and sequenced to provide a framework for related concepts. Teachers arrange themes so that similar units can articulate. ”The manual is not a moral contract that teachers are required to teach... teachers are required to teach [the students].” (John Adams) An advantage is that it facilitates the transfer of learning between the content of the domains. As a disadvantage it requires continued collaboration and flexibility, as teachers have less autonomy in curriculum sequencing. In the

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case of the *shared* type, the common model brings two distinct disciplines into one goal. Common methodology overlaps notions as an organizer. In this common methodology, teachers in two disciplines need to plan their teaching, which will take place in the individual classes together. The two members of this ”partnership” (eventually trans-departmental) plan the unit of study by focusing on common themes, concepts and abilities. The strong points are represented by the common training experiences, with two teachers in a team being less difficult to collaborate, but it requires time, flexibility, commitment and compromise. *Webbed* curricula typically use a thematic approach to integrate the topic in question. General themes such as change, culture, discoveries, environment, interaction, inventions, power, systems, time and activity provide a greater opportunity for teachers from various disciplines to find common themes, concepts and abilities. Topics can be created that relate to different concentrations. The advantages - motivating students, helping them to see the links between ideas, but at the same time we must be careful and select meaningful, relevant and rigorous content. The *threaded* approach to integration is a metacurricular approach in which large ideas are expanded. This methodology encompasses cognitive abilities, learning abilities, graphic organizers, technology and the approach to multiple intelligences (Gardner, 1993) to think through all disciplines. It suppresses the entire content of the subject, it leads to learning at a level of synthesis. This is because teachers incorporate techniques such as research and self-reflection into their teaching strategies. The benefits are that students learn how to learn, facilitating the future knowledge transfer. However the disciplines remain separate. The *integrated* process combines disciplines by finding skills overlaps, concepts and attitudes in disciplines. More than common methodology, integration is a result of changing ideas related to the subject’s content. An important process of integration methodology is that teachers collaborate on themes as common symbols emerge. Thus it encourages students to see the interconnection and modern interrelations between disciplines, motivating them, but requires interdepartmental teams with joint planning and teaching time.

Another situation, where integration takes place in and between students, includes two other integration models: *immersed* and *networked*. Integration, in the case of the *immersed* type, takes place inside students, with little or no intervention from outside. This immersed study is often undertaken in a field of intense interest or passion. This is a normal behavior that is often viewed by teachers as obsessive and therefore hijacked. As most artists and writers have a passion for their field, immersed students continuously make connections between themes of interest and other themes. Although integration takes place inside the student, it can limit the student’s attention. *Network* methodology is totally centered on the student and promotes the fact that only the student can direct the integration process. It also requires that the student learns his/ her topic and directs his/ her goals to the necessary resources. Networks are created between student and various information systems, experts of the subject in question, and others who have an interest, experience, knowledge of the topic or theme. The advantage is that it is an active approach, stimulating the student through new information, skills or concepts, and the disadvantage is that the student may be spreading too superficially, making efforts ineffective (Merickel, 1998, p. 183-188).

6.4. Which would be the authentic challenges of integrated design?

In the opinion of the founder of ”Khan Academy”, Salman Khan (Khan, 2015), education does not happen out of the blue, it does not take place in the empty space between the teacher’s lips and the student’s ears; it is born in the minds of each of us. It’s not a metaphor but a reality. It seems that the optimal way in

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which the human brain retains information in the long term and certainly seems to suggest that the best teaching method is one that highlights the continuity of a subject, the chain of ideas that associates two or more concepts. Unfortunately, however, the standard teaching model does exactly the opposite.

This can best be seen in the artificial separation of traditional materials. We separate them arbitrarily; we isolate them. All these divisions limit understanding and transmit a false image of how the universe actually works. Connections between concepts - or rather their lack - are what separates students who memorize a formula for an exam and forgets it until next month and those who internalize concepts and are able to apply them at the required time and ten years later. In our misguided efforts to create well-defined categories and teaching modules perfectly compatible with the length of a course, we refuse pupils the benefits - the physiological benefits - of recognizing connections. The traditional approach tends to be frighteningly consistent; takes a piece of a subject and treat it as if it were in a vacuum: teaching the subject for two, three or six weeks, passing a test and moving on. No wonder the students say they forgot a topic as soon as they passed the exam.

Given that learning produces physical changes in the structure of the brain and that the idea of knowledge does not imply a linear evolution, but a gradual understanding of an extensive network of concepts and themes, a surprising conclusion emerges: each education is different. Although we have standardized our curriculum, we cannot standardize learning. No brain resembles another; no way through this tremendously subtle network that is knowledge does not resemble the next. Even the most standardized tests recognize that there will inevitably be a set of ideas that every student understands according to their own intellectual structure. Individual responsibility for knowledge goes hand in hand with the recognition of the uniqueness of each student.

In the traditional school curriculum, vast and miraculous aspects of human thinking are artificially condensed into pieces called ”school disciplines”. Concepts that should otherwise be intertwined as marine currents are separated into ”lessons”. The classic model is extremely schematic and masks or even deny the infinite possibilities of teaching and learning.

School learning involves responsibility for involving students in a transformative approach permanently regulated by predetermined endpoints (skills). From this point of view, the key role of the teacher, teaching, is resized at the level of significance and, implicitly, of practice. Teaching will become an act of delegation. Responsibility, first of all. And awareness of this responsibilities (Petre, 2016).

7. Conclusion

The conclusions that can be drawn are the following: during the first years, teaching should take advantage of the child’s natural curiosity, the active search for knowledge should result from projects or subjects of interest to him and an integrated and suitable thematic approach. In addition, because not all children develop at the same rate and do not have the same curiosities, working in small groups - and sometimes individual work - normally associates with an integrated approach to the program, allows the process to be carried out educational experiences that correspond to the needs of each child and take advantage of their curiosities whenever they occur. Thus, the child can develop a sense of trust and security, since he can discover what he can do, instead of being discouraged by constantly being reminded (as in teaching traditional school) which he is not able to do.

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In the classroom we have the opportunity to unite the disciplines in what they have simpler and clearer. If one provides students a sufficiently rich experience and if they are encouraged to consider the relevant phenomena from very different angles, to explore and examine them without the shackles of traditional subject-matter definitions, one can create in them the ability to look beyond the interdisciplinary barriers and to recognize the relationships and associations that exist between them. If this faculty is properly developed, it will be able to withstand the rigorous systematization, overabundance and complexity of the data and experience that will inevitably arise as the process of education unfolds.

The complexity of the mass of knowledge and capacity implied by such an approach, represents in a way a condense of everything human knowledge as it is reflected in the lives of children. If we will succeed in showing children from a young age that we can look at the same phenomenon from all angles, we will come to a better understanding of the world through cooperation instead of continuing a dialogue where everyone speaks without understanding what the other person is saying.

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