A CASE STUDY ON TRANSDISCIPLINARY APPROACH OF INTEGRATED CURRICULUM: PERSPECTIVES OF EARLY CHILDHOOD TEACHERS

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Approval of the Graduate School of Social Sciences

Prof. Dr. Sencer AYATA
Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Science.

Prof. Dr. Hamide ERTEPINAR
Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Science.

Assist. Prof. Dr. Feyza ERDEN
Supervisor

Examining Committee Members

Assist. Prof. Dr. Feyza ERDEN (METU, ECE) _____

Dr. Refika OLGAN (METU, ECE) _____

Dr. Nevzat ADİL (YÜCE Schools) _____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name : Özden ÖZER

Signature :

ABSTRACT

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ÖZER, Özden

M.Sc., Department of Early Childhood Education
Supervisor: Assist. Prof. Dr. Feyza ERDEN

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The purpose of this study is to examine teachers' beliefs and perspectives about an applied transdisciplinary approach of integrated early childhood curriculum. While developing an integrated curriculum for early childhood education, one of the challenges for educators is delivering the themes into different disciplines. For this reason, researchers have developed different models to integrate disciplines in different ways.

Transdisciplinary approach is one of the models developed for integrated curriculum. Transdisciplinary approach, in which activities are complementary, provides different disciplines to be connected through a real life context. That is, the themes or units do not arouse from disciplines, there is a globally significant theme for the thematic teaching units. Furthermore, collaborative planning is another crucial part of transdisciplinary approach for an effective curriculum teachers working together.

International Baccalaureate Primary Years Program is the first and foremost a transdisciplinary curriculum developed for international primary education. To examine teachers' beliefs and perspectives about transdisciplinary approach, collaborative planning, integration of disciplines in a transdisciplinary curriculum and benefits of this curriculum to children and parents in a private kindergarten which is implementing Primary Years Program is chosen.

This study is conducted in a private kindergarten in Ankara with eighteen teachers who teach six-year-old children. In accordance with this thesis, the structure of a transdisciplinary approach of integrated early childhood education curriculum and teachers' beliefs and perceptions about transdisciplinary curriculum are qualitatively determined by the case study approach.

The results reveal that teachers have positive point of view towards transdisciplinary curriculum in early childhood education. They believe that there are positive effects of transdisciplinary curriculum on students and parents. Moreover they point out the importance of collaborative planning.

Keywords: Integrated curriculum, transdisciplinary curriculum for early childhood education, collaborative planning, primary years program.

ÖZ

DİSİPLİNLERÜSTÜ YAKLAŞIM TEMELLİ BÜTÜNLEŞİK EĞİTİM PROGRAMI ÜZERİNE BİR DURUM ANALİZİ: OKUL ÖNCESİ ÖĞRETMENLERİNİN GÖRÜŞLERİ

ÖZER, Özden

Yüksel Lisans, Okul Öncesi Eğitim Bölümü
Tez Yöneticisi: Yrd. Doç. Dr. Feyza ERDEN

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Bu çalışmanın amacı disiplinlerüstü yaklaşımla hazırlanmış bir bütünleşik okul öncesi eğitim müfredatının hakkında anasınıfı öğretmenlerinin inanç ve görüşlerinin incelenmesidir. Okul öncesi eğitim kurumlarında bütünleşik müfredatlar geliştirilirken eğitimcilerin zorlandığı konulardan birisi de konuların farklı disiplinlere nasıl dağıtılacağıdır. Bu nedenle araştırmacılar bütünleşik yaklaşım için farklı disiplinlerin farklı biçimlerden ilişkilendirildiği modeller oluşturmuşlardır.

Disiplinlerüstü yaklaşım bütünleşik eğitim programları için geliştirilen modellerden birisidir. Farklı disiplinlerde yapılan etkinliklerin birbirlerini tamamlayıcı nitelikte olduğu disiplinlerüstü yaklaşım, farklı disiplinlerin birbirleriyle bir gerçek yaşam bağlamında ilişkilendirilmesini sağlar. Yani, temalar veya üniteler disiplinlerden ortaya çıkmazlar; ortada küresel olarak geçerli bir tema ve ünite vardır. Ayrıca, ortak planlama da disiplinlerüstü

yaklaşım ile oluşturulan programların önemli bir parçasıdır, etkili bir öğretim programı için öğretmenler birlikte çalışırlar.

Uluslararası Bakalorya İlk Yıllar Programı uluslararası ilköğretim için geliştirilmiş ilk ve önde gelen disiplinlerüstü yaklaşım ile oluşturulmuş eğitim programıdır. Öğretmenlerin disiplinlerüstü yaklaşım, ortak planlama, farklı disiplinlerin bir ünitede bütünleştirilmesi ve disiplinlerüstü yaklaşımın veli ve öğrenciler üzerindeki etkisi ile ilgili inanç ve anlayışlarını incelemek amacı ile Uluslararası Bakalorya İlk Yıllar Programı uygulayan bir anaokulu seçilmiştir.

Bu çalışma Ankara'da özel bir anaokulunda on sekiz öğretmen ile yürütülmüştür. Bu çalışma ile okul öncesi eğitimde disiplinlerüstü yaklaşımla oluşturulmuş Bütünleşik müfredatların yapısı ve öğretmenlerin bu müfredatlara karşı inanç ve anlayışları niteliksel olarak durum incelemesi yaklaşımı ile irdelenmektedir.

Çalışmanın sonucunda elde edilen bulgulara göre, öğretmenlerin disiplinlerüstü yaklaşıma karşı olumlu bir bakış açısına sahip oldukları disiplinlerüstü yaklaşımın öğrenci ve veliler üzerinde olumlu etkileri olduğu ve ortak planlamanın önemli olduğu tespit edilmiştir.

Anahtar Sözcükler: Bütünleşik eğitim programı, okul öncesi eğitim için disiplinlerüstü eğitim programı, ortak planlama, ilk yıllar programı

TO MY FAMILIY

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IC: Integrated Curriculum

TA: Transdisciplinary Approach

IBO: International Baccalaureate Organization

IB-PYP: International Baccalaureate Primary Years Program

MONE: Ministry of National Education

ICT: Information and Communication Technology

CHAPTER 1

INTRODUCTION

A changing world brings changing approaches to early childhood education. The needs of children, teachers and parents determine how these approaches should be. In order to find an answer to these demands several models have been used in the field of early childhood education. It is a great question to define what, why, how and when to give the right developmental framework to young children. Transdisciplinary approach of integrated curriculum is one of those approaches that tries to give relevant answers within an ongoing process. Different definitions of integrated curriculum have been defined by different researchers.

Etim (2005) claims curriculum integration helps students seeing and making connections between and among subjects. Integrating curricula defined as a pedagogical approach is student centered. Moreover, integrated curriculum focuses on a theme or unit which is organized around real life issues and problems taken from several subject areas. For instance, when a teacher focuses on the theme of "shelters," s/he should use language, math, science subjects and skills on the same theme. By this way, subject boundaries are minimized and students are more encouraged to make connections.

Beane (1997) defines four major parts of curriculum integration as follows: Firstly, integrating curricula constructed around problems and issues are personally and socially significant. Secondly, learning experiences are related to the common theme by minimizing subject

boundaries. Thirdly, knowledge of students is developed and used to address the organizing center, instead of preparing students for tests or exams. Finally, learning experiences are placed on projects and activities that make student learning be used in real life context. Boyer argues that for being truly educated, students must also make connections across the disciplines, discover ways to integrate the separate subjects, and ultimately relate what they learn to life (IBO, 2009).

Beane (1997) points to several advantages of integrated curriculum: Traditional methods have been largely fragmented and not much responsive to student needs. On the other hand, integrated curricula are developmentally appropriate and respect students' needs. Students' learning and achievement are greatly enhanced. When integrated curricula are compared with traditional ones, some research results, which will be referred in the following chapters, show that integrated curricula produce superior learning and attitudinal results. An integrated curriculum enables students be actively involved in their own learning process.

The theory of integrated curriculum claims that students are more at the center of learning process. Teachers become facilitators of students' learning. Through this learning becomes deep and long lasting. Students make connections between school and real life experiences. Students are better prepared to life because of working on social issues as well as having opportunity to decide what they want to learn (Fogarty, 2002).

Some critics point out that besides advantages of integrated curricula; there are some disadvantages about it. They claim that there are not sufficient evidences of student involvement in planning the curriculum; as teachers themselves have more opportunity to be facilitators and they transfer what has been learned to real life context (Hinde, 2005).

Indeed, various researchers have defined categories of integrated curriculum in different ways since the twentieth century. Heidi Hayes

Jacobs (1989) claims knowledge is growing in every subject area. Thus, what is taught to children should be organized and fragmented. She defines a continuum of integrating curricula. This continuum starts with discipline based curriculum then continues by order of parallel disciplines, multi disciplinary, inter disciplinary, integrated day, and complete integration.

Drake and Burns (2004) define three basic categories of integrated curriculum as multidisciplinary, interdisciplinary, and transdisciplinary. This definition emerges from Drake and Burns' findings in the field. The starting point of these categories depends on educators' understanding of integrated curriculum. According to these explanations, multidisciplinary integration approach is organizing standards from different disciplines around a theme. Interdisciplinary integration approach is organizing the curriculum around common learning in different disciplines. Finally, transdisciplinary integration approach is organizing curriculum around student questions and concerns. The significant difference between these three approaches is level of separation among different disciplines.

Fogarty (2009) gives another definition and categorization of integrated curriculum: Each teacher perceives integration differently and there are ten model of integrating the curricula. These are: Cellular Model, Connected Model, Nested Model, Sequenced Model, Shared Model, Webbed Model, Threaded Model, Integrated Model, Immersed Model and Networked Model.

In this study, Drake's (2007) hierarchy of curriculum integration has been considered. According to Drake's (2005) theory of continuum of integration, transdisciplinary approach is the final level of curriculum integration. International Baccalaureate Organization, which is a nonprofit educational foundation, offers a transdisciplinary approach based educational program, which is called Primary Years Program, for ages 3 to 12 (IBO, 2009).

In the curriculum literature the term discipline, used frequently in integrated curricula, refers to subject areas in curricula. The disciplines in early childhood curricula are language, literacy, mathematics, science, social studies, art, movement, drama, and music (Krogh, 1995). In an integrated curriculum with transdisciplinary approach subject areas are organized under a theme or unit, but, the subject areas have significance in themselves (IBO, 2007). In the Turkish Ministry of National Education Curriculum for Early Childhood Education, there are similar subject areas but with similar names. In part two, review of the related literature and the disciplines will be explained in detail.

In integrated curricula themes and units are the crucial elements. A unit consists of materials, activities and techniques that are organized around a theme. A unit helps teachers to relate and connect subject areas to another. Moreover, a theme makes units be relevant and organized (Krogh, 1995).

Assessment is another crucial part of curricula of early childhood education. There are many researches done about standardized tests applied to young children. Most of them point out their disadvantages due to children's increased level of stress-related behaviors during the application of standardized tests. These tests do not significantly address what children are learning (Borugh & Pool, 2005). Fleege (1997) states that alternative and developmentally appropriate methods of assessment have a greater use in early childhood curriculum. Furthermore, assessment in integrated curricula may be formal or informal, but it must be systematic. Assessment in integrated curricula is more authentic than such performance evaluations (Wortham, 1996).

As for planning transdisciplinary approach necessitates collaborative work among teachers who teach a particular class. Grade level meetings and discussions among kindergarten teachers and single subject teachers lead the organization of a transdisciplinary unit. The team creates the

assessment strategies, activities, and how these will be implemented in the classroom (Biro, 2003). Due to transdisciplinary nature of units in the IB-PYP, there is a high level of collaboration between kindergarten teachers and single subject teachers and this collaboration happens in the ways of casual and required (Biro, 2003).

To sum up, transdisciplinary approach of integrated curriculum is a new issue in the field of early childhood education. There is a standart program which has been established under the transdisciplinary approach by International Baccaluarrete Organization in 1997. This study will give detailed information about kindergarten teachers' beliefs and perspectives about of IB-PYP that is based on the transdisciplinary approach.

1.1. Purpose of the Study

The purpose of this qualitative case study is to describe teachers' beliefs and perspectives about transdisciplinary approach of integrated curriculum in a setting of collegial planning based on International Baccalaureate Primary Yeas Program. This description focuses on teachers' general perspectives about transdisciplinary approach; how disciplines are connected; if they have trouble while integrating disciplines; and how collaborative planning is made. This study will observe transdisciplinary approach among early childhood teachers who combine multiple disciplines in a common theme.

1.2. Statement of the Problem

Transdisciplinary approach of integrated curriculum in early childhood education is a new issue in the Turkish educational system. Thus, the applications and different models of this curriculum should be understood and studied through researches on integrating different disciplines, collaborative planning, and teachers' understanding of the program. Students may not be fully benefited from transdisciplinary curriculum if incomplete or ineffective planning is used. Thus, teachers' perspectives and troubles about this curriculum should be defined by researches.

1.3. Research Questions

To learn teachers' beliefs and perspectives about transdisciplinary curriculum, different research questions were developed to reach findings. The research questions proposed in this study are as follows:

a. What are the challenges for teachers in designing and implementing a transdisciplinary early childhood curriculum?
b. What are the troubles that teachers face while integrating disciplines in a unit?
c. How collaborative planning is made? What are the teachers' beliefs about collaborative planning?
d. What are the personal reflections of early childhood educators on transdisciplinary approach of integrated curriculum?
e. What are effects of transdisciplinary approach based curriculum on students and parents?

1.4. Significance of the Study

This study is significant to the researcher and the participants since it gives an opportunity for them to reflect on their own practices and perspectives on these practices. It is also one of the pioneering studies conducted to examine early childhood division of an IB-PYP curriculum in Turkey.

There are some studies conducted worldwide about integrating the curricula in education. Hartzler (2000) makes a quantitative research of Meta analysis of studies conducted on integrated curriculum programs and their effects on student achievement. She found that integrated programs were successful in all four major academic areas, language, math, social studies and science.

There are some other researches on International Baccalaureate Primary Years Program. For instance, Biro (2003) conducted a study aiming to explore teacher-teacher interactions during the implementation of IB-PYP by a qualitative study. Biro stated that teachers' interaction in IB-PYP is important because of the nature of transdisciplinary nature of the curriculum. Humprey (2004) researched about the performance of high ability African-American upper elementary grade students in IB-PYP. Humprey (2004) found that the factors contributing to the success of high ability African-American elementary school students are consistent with those of students in other racial groups. Another dissertation was submitted by Hartman (2008), which was a descriptive study of four leadership behaviors that contribute to creating a culture of trust as demonstrated by elementary principals in IB-PYP. She has carried out her study with six IB-PYP schools and found that there is a relationship between trust levels and successful change implementation and that the principals' behaviors influence the level of principal-teacher and teacher-teacher trust.

It is found that there are few researches in Turkey related to International Baccalaureate Primary Years Program. One of them is submitted by Karamanoğlu (2006) entitled "Assessing Primary Students Success in Science Courses via Primary Years Program: Portfolio." She found that portfolio can be used as an evaluation technique; in teaching of "variety of the living things," portfolio is found to be effective on the students' successes; preparing portfolios has positive effect on learning; portfolio improves students' inquiry and communication skills; and finally, preparing portfolio improves students' auto-control. Another study was conducted by Turan (2004) as a master thesis, covering three different IB-PYP schools. This study was a deep inquiry about the curriculum model of Primary Years Program in elementary level.

In most of the studies integration of specific subjects are inquired or and they examined the implementations at higher levels rather than early childhood education. More researches are needed to clarify challenges and contributions of this program. Hence, integrated curriculum would be implemented more effectively in educational settings. Teachers and students would definitely benefit from the results. In addition, perspectives about integrated curriculum would become more abstract and these researches would lead further studies.

Number of schools which are implementing International Baccalaureate Primary Years Program has been increasing yearly in Turkey. In 2006, there were four schools who are implementing IB-PYP; on the other hand in 2009 there are more than ten schools in Turkey. Researches will help to define advantages, disadvantages of this curriculum model, thus, studies will help to increase the quality of this curriculum models This study will bring an insight about the implementation of a transdisciplinary early childhood curriculum from several aspects through teachers' point of views. It will provide a full range of teachers' perspectives on the transdisciplinary approach.

1.5. Definition of Terms

The following terms need to be defined for this study:

Curriculum: Set of courses and their content offered at a school (Wortham, 2006).

Integrated Curriculum (IC): A curriculum that connects the various disciplines in some way.

Disciplines: Each subject area used in an educational setting.

Transdisciplinary Units: Units created under a theme and driven by different disciplines (IBO, 2008).

Collaborative Planning: Team and collaborative work of teachers while creating a curriculum.

Single Subject Teachers: Specialist subject teachers who are not homeroom teachers.

Homeroom teacher: Teacher who is directly responsible from a class; monitoring student learning and is the individual who knows best the personal, social and academic development of a particular student.

1.6. Limitations of the Study

There are some limitations of the study related to teachers' beliefs and perspectives on transdisciplinary approach of IC, consequently the International Baccalaureate Primary Years Program.

Firstly, the study is conducted in only one kindergarten which has a limited number of students and teachers. It is believed it would be better if future researches cover more number of students and teachers in more than one school.

Secondly, because the participants had background information about this approach, this might have affected their reflections positively or vice versa. Therefore, some personal views might be subjective rather than objective.

Another important limitation for the study is that, the Primary Years Program of International Baccalaureate, which is a transdisciplinary curriculum model, has been implemented by private schools in Turkey. Due to annual fees and teacher training fees to be paid to IBO every year; the public schools may not have the sufficient budget. Therefore, the results of the study can not be adapted to all schools in Turkey.

CHAPTER 2

REVIEW OF LITERATURE

Second chapter includes three main parts. In the first part, definitions and theoretical background of integrated curriculum will be introduced and different models of integrated curriculum will be demonstrated. In the second part, transdisciplinary approach of integrated curriculum will be defined. In the third part, a pre-established transdisciplinary curriculum model of IBO will be presented.

2.1 Integrated Curriculum

In this part, definition and theoretical framework of integrated curricula will be defined. Furthermore, different approaches of integrated curriculum will be represented in order to reach the transdisciplinary approach.

2.1.1 Definition and Theoretical Framework of Integrated Curriculum

Curriculum integration, in which students are directly involved in planning as they conduct and evaluate their own learning, is a student centered pedagogical approach that focuses on a theme from real life issues drawn from several subject areas (Etim, 2005).

Integrated curriculum is not a new approach for education. The theoretical basis for integrated curriculum is found in the progressive education philosophy, which is a child-centered approach that emphasizes creativity, activities, naturalistic learning, real world outcomes, and above all, experience (Freeland & Hammons 1998). Progressives such as John Dewey and Jean-Jacques Rousseau claims that to engage the child fully, learning in school should be connected to the real world and school activities should appeal to the child's interests. Another basis of integrated curriculum is pointed out by Ellis and Fouts (2001) who argue that constructivist theory proposes that each student constructs his or her own reality in the learning process, through which they learn best.

Krogh (1995) argues that the integrated curriculum is appropriate for teaching young children. Children's learning in all traditional subject areas occurs primarily through projects. Moreover, learning centers that teachers plan reflect children's interests and suggestions. Teachers guide children's involvement in projects and enrich the learning experience by extending children's ideas, responding to their questions, engaging them in conversation, and challenging their thinking (Vars, 1991).

Drake (1998) states that researches show that academic success of the students in integrated curricula are significantly high. Although there are not many studies on the relationship between integrated curricula and standardized tests, there is abundant evidence of other benefits. Much of these benefits are anecdotal, but the amount is high. Drake (1998) overviewed these benefits through studies on integrated curricula and claimed that integrating curricula; increased learning; led to greater personal growth; boosted self-motivation; increased the ability to apply concepts; led to better understanding of science concepts; increased student motivation; improved the quality of work; led students to become more responsible human beings; fostered better writing skills; increased positive attitudes toward reading; enhanced self-confidence; increased

student cooperation; reduced disruptive behavior; reduced math anxiety; and increased use of higher thinking skills.

Some other educational researchers, too, have found that an integrated curriculum provided greater intellectual curiosity; improved attitude toward school; enhanced problem solving skills and higher achievement at university education (Loepp, 1999). In their views, students do at least as well, or better, on standardized tests than students in regular programs. They believe that added benefits make teaching and learning a more exciting and engaging enterprise. In the era of data-driven decision making, it is expected that more empirical studies will be added to the knowledge base (Drake, 1995).

2.1.2 Models of Curriculum Integration

Several researchers working on the curriculum integration have developed working definitions and categorizations according to the organization, scope, and purpose of the integration (Hartzler, 2000). Most of these models of curriculum integration are developed in order to clarify hierarchies or levels of integration. Many of these hierarchies have common conceptual framework, but they have been defined by different researchers with different titles.

Fogarty (2009), as a teacher and a teacher trainer who has a doctorate degree in curriculum, developed a definition for integrated curriculum in light of brain researches. According to her definition, curriculum integration has ten models:

1) Cellular Model: It is the traditional model of teaching. Separate and distinct disciplines are driven by student learning standards in each discipline area. For example, teacher applies this model for each subject area (mathematics, science, language etc.) separately.

2) Connected Model: In this model, integration occurs with the single subject area. This integration may become topic to topic, concept to concept or one grade to other.

3) Nested Model: Multiple skills are targeted within a single subject area. Based on standards multiple skills like social skills, thinking skills are handled in a subject area.

4) Sequenced Model: This model reorders the topics in different subject areas; so that same time-same ideas are taught.

5) Shared Model: In this model two disciplines share overlapping concepts and skills.

6) Webbed Model: This model represents the thematic approach to integrating subject matter. In other words, there is a varied internal content framed by related topics.

7) Threaded Model: It is a meta-curricular approach in which multiple intelligences are threaded through the content for a period of time.

8) Integrated Model: This model correspond a cross disciplinary approach similar to shared model. The difference is that, in integrated model, there are more than two disciplines.

9) Immersed Model: In this model students integrate the data gathered from different disciplines and field, by funneling the ideas through his or her area of interest.

10) Networked Model: In this model, there is an ongoing external input from other learners and teachers. In the search of knowledge integration happens by self selection of needed networks. Thus, the degree of integration depends on learners and teachers.

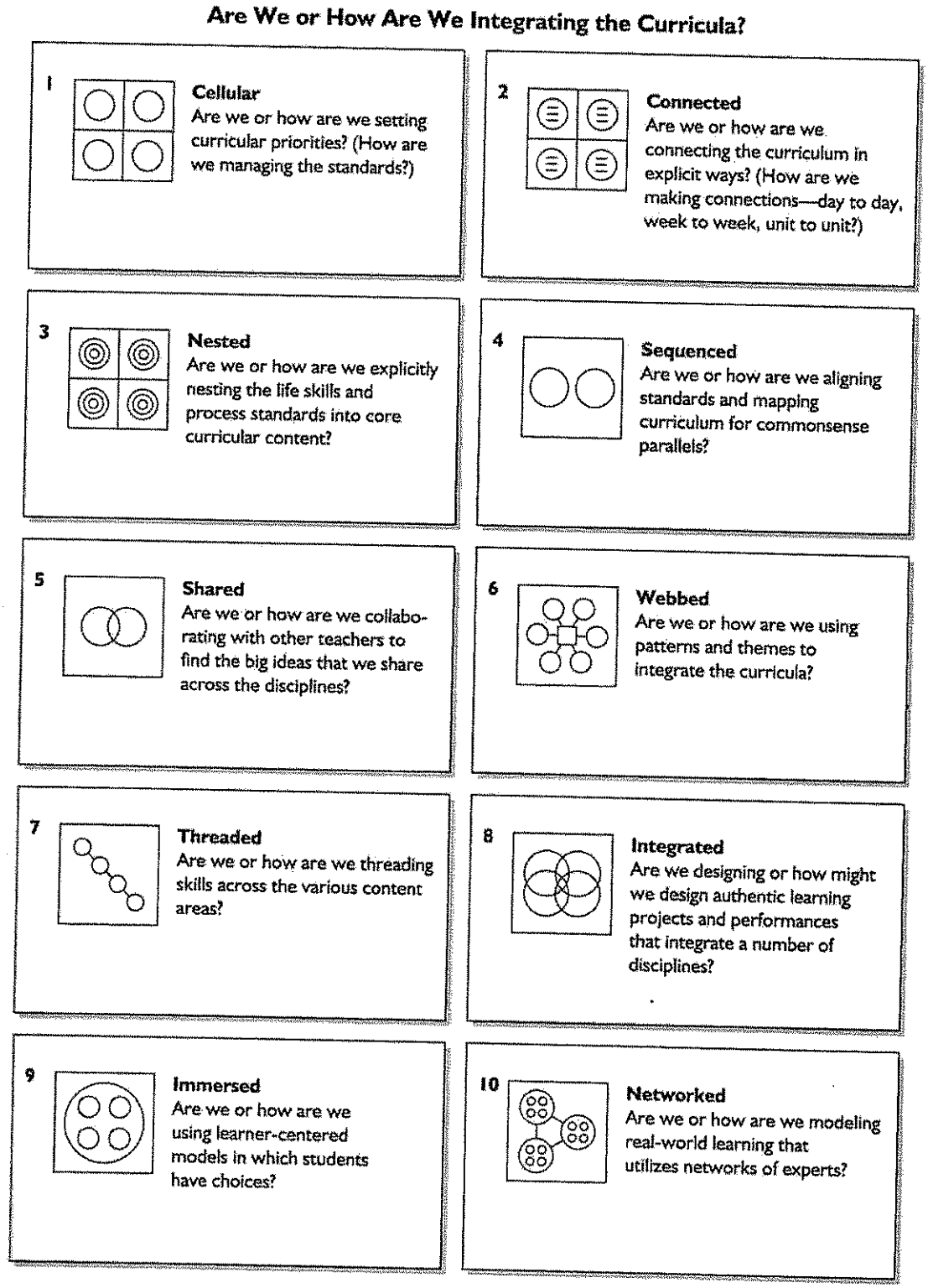

Figure 1. Fogarty's Ten Models of Curriculum Integration

Source: Fogarty, 2009. p. 13

Drake (1998), who has her doctorate degree in curriculum and taught lessons at many different levels, claims that curriculum integration makes the curriculum relevant, so that students will learn. She states that curriculum integration has a hierarchy starting with traditional to transdisciplinary (Drake, 2007):

1) Traditional: In this level, students are taught in each discipline separately.

2) Fusion: This level connects several subject areas using a topic. For example, environmental issues, social responsibility, and social action are fused into geography or English.

3) Within one subject: In this level, sub disciplines are integrated with one subject area. For example, physics, chemistry, and biology are integrated as science.

4) Multidisciplinary: In this level, the disciplines are connected using a theme and this theme is studied at the same time, in different classrooms.

5) Interdisciplinary: In this level, subjects are interconnected on the far side of the theme or issue. Subject areas are connected by guiding questions, common conceptual focus or cross disciplinary standards.

6) Transdisciplinary: This approach differs from others because the starting point is not the disciplines, planning starts with the real life context. The disciplines are engrafted in to the learning and teaching process, but they are not the focus.

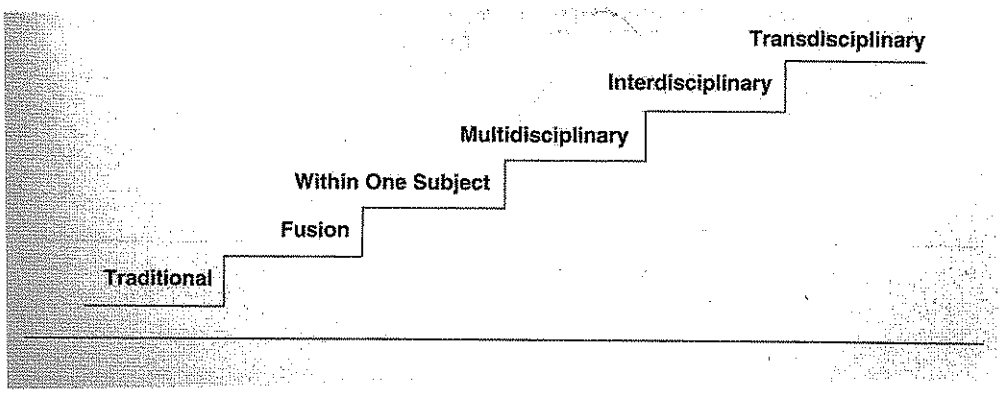

Figure 2. Drake's Hierarchy of Curriculum Integration

Source: Drake, 2007. p. 27

Heidi Hayes Jacobs (1989) presented another comprehensive interdisciplinary concept model that uses theme and curriculum wheel to develop the content. Her levels for curriculum integration consist of six levels and to end, the curriculum becomes more child centered (Jacobs, 1989).

1) Discipline-Based: This design option focuses on separate subject areas in separate time blocks. There is no seek for integration and traditional approaches are implemented to disciplines.

2) Parallel disciplines: In this design curriculum is established in a parallel sequence. Teachers arrange their lessons to same area in other disciplines. The yearly content is not changed for integration. The order of content can be arranged to find similarity.

3) Multidisciplinary: In this design, certain related disciplines are brought together in a formal unit; the focus stays on the prescribed scope and sequence for each discipline.

4) Interdisciplinary: This design connects all the disciplines under periodic units. Teachers can plan their interdisciplinary work around themes.

5) Integrated day: Integrated day is a natural day, structured according to students' needs. The program for this day is based on themes or problems emerging from child's world.

6) Complete integration: In this design life of the student is the focus of the school. Students live in the school environment and create the curriculum their day to day lives.

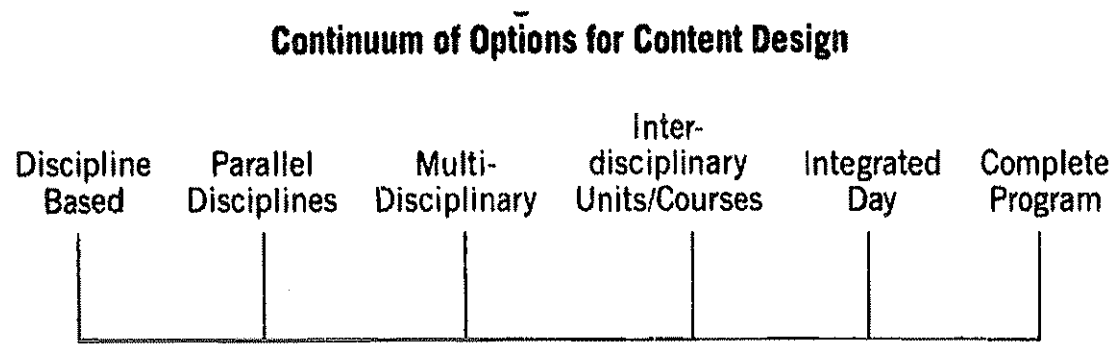

Figure 3. Jacobs' Six Level of Curriculum Integration

Source: Jacobs, 1989. p. 14

In addition to these models including different levels or definitions Drake (1998) points out some other single models developed by educators. Roger Taylor developed a model called "analyzing human activities." In this model themes are used in more than one context. In the organizing center of this model, there are moral and ethical reasoning and critical-creative thinking to integrate the disciplines. Lynn Erickson developed another model called "concept based integrated units with essential questions." This approach has guiding questions which direct the units and they are linked with essential understandings or generalizations (Drake, 1998).

2.1.3. Teachers' Beliefs and Perspectives about Integrated Curriculum

Teachers are the integral part of any curriculum model, since they prepare the curriculum, decide activities, assessment methods and implement what they developed. Thus, their beliefs about a curriculum model are significant for researches.

In integrated curriculum models, teachers carry great importance, because they work collaboratively to develop the curriculum. According to Loepp (1999) teachers who work in an integrated curriculum should believe the nature of constructivist approach in which children work together to discover knowledge to solve real life problems. Moreover, teachers need to attend professional development activities to increase their ability for integration. Furthermore, teachers have great importance on informing parents and community about the curriculum, thus the resistance will be decreased (Barefield, 2005).

Combining disciplines in an integrated curriculum situation, the main role of teachers is to combine disciplines with or among each other. Teachers believe that music and art can be easily connected with other disciplines easily, because music is in the service of another discipline (Snuder, 2001).

Shoham (1998) conducts a study with teachers' needs about integrated curricula. According to this study, teacher's education increases the effectiveness of teachers in integrated curricula. Interdiscipliniarity can be adapted to teachers' education. Moreover, in-service training and guidance also increase teachers' motivation to implement an effective integrated curriculum.

In integrated curriculum models teachers feel their students are more comfortable to explore. Moreover teachers believe that students think more creatively (Vars, 2001).

2.2 Transdisciplinary Approach of Integrated Curriculum

A range of different approaches to integrated curriculum has been established by educators over the years. These approaches represent a very different way of thinking about curriculum integration and all aspects of curriculum planning. In this study, Drake's hierarchy of curriculum integration was taken into account and transdisciplinary approach was chosen to be explored.

According to Drake's continuum of integration (Figure 3), transdisciplinary approach is the final of the evolution of integrated curriculum. Transdisciplinary approach of IC goes beyond the disciplines and is found in many different forms. In this study, teachers perspectives about a curriculum which is developed under the light of transdisciplinary approach (Vars, 2001).

Transdisciplinary approach differs from other approaches, because it does not begin with the subject areas in the planning process; the planning begins with a real life context. Moreover, the disciplines are engrafted in the learning process of children, but the focus does not start from disciplines (Drake, 2007). This approach includes cross-disciplinary outcomes, but often there is a big emphasize on personal growth and social responsibility.

The term 'transdisciplinary' means 'beyond the disciplines'. It begins with a real life context which is meaningful to children. The relevance of the theme to children is very important. The disciplines are not the organizing center; they are embedded within the unit and can be separated when needed. Student input and choice are crucial; they are the researchers of the transdisciplinary unit (Drake, 1998).

An early childhood curriculum developed under transdisciplinary approach has been implemented in many schools all over the world through International Baccalaureate Primary Years Program (IBO, 2009).

2.2.1 Themes and Units in Transdisciplinary Approach of IC

Themes and units are the essential part of transdisciplinary approach, since all the disciplines are organized under a theme and implemented through a unit. A theme is a topic, concept or issue which provides an organizing framework to guide and implement interrelated lessons or activities. Moreover, well established themes have capability of providing deep understandings for children (Ackerman, 1989). Selection of themes affects the transdisciplinary nature of the curriculum. Themes give the general look to the units. But, for special scope and sequences gives detailed information about each discipline.

A thematic teaching unit is a collection of materials, activities, and techniques organized around a theme. A unit allows teachers to relate subject areas to each other. It also gives a chance to students to make connections among understandings, attitudes, and skills, as well as the subject areas. Mostly, all of the disciplines are integrated with in a unit which lasts a preset time line (Freeland and Hammons, 1998).

For young children, using themes has many advantages. Themes make learning fun for students and provide highly visible, all-encompassing umbrellas for curriculum and instruction. Students realize how the subject areas are connected through a theme which is appealing, relevant, purposeful, meaningful, holistic, and contextual to children. Themes make leaning exciting for students and teachers (Fogarty and Stoehr, 2008).

2.2.2 Disciplines and Subject Areas in Transdisciplinary Approach of IC in Early Childhood Education

The term discipline, used frequently in integrated curricula, refers to subject areas in curricula. The disciplines in early childhood curricula are language, literacy, mathematics, science, social studies, art, movement,

drama and music (Krogh, 1995). In an integrated curriculum with transdisciplinary approach subject areas are organized under a theme or unit, but, the subject areas have significance in themselves (IBO, 2007).

Communication needs are the basic of human beings, thus 'language' is one of the first learned subject matters in childhood. Children also like to communicate with others in many ways. If children learn to communicate with others effectively, they need variety of language activities in school. If they have few activities in school, this situation will lead less effective communication. Moreover, children need to learn why we use language (Wortham, 1996). Thus, both mother language and second language are essential subject areas in early childhood curricula. The development of language is essential to that need to communicate and it supports and enhances children's thinking and understanding. Language plays an important role in construction of meaning. Directly or indirectly language is involved in all learning that takes place in a school. It is the most significant connecting element of a curriculum in a transdisciplinary program (IBO, 2009).

Krogh (1995) states that literacy is the foundation of any civilized society, without success in reading and writing, children are kept away from their rightful membership in the advanced cultures today. However, this is not saying that kindergarten children need to learn reading and writing. They need activities and experiences that show them the importance of reading.

Before 90's, tendency about teaching 'mathematics' in early childhood was "saving it for later years". This point of view has changed over years and teaching mathematics has become a subject from real life. Thus, math is all around us, in every day experiences, waiting to be discovered and explored. Krogh (1995) states that Math is a crucial subject matter in early childhood. In transdisciplinary approach mathematics is seen as a tool which is for describing and analyzing the world around us.

According to IB-PYP, mathematics should be taught through the relevant and realistic context of the units. IB-PYP claims that in a transdisciplinary curriculum the direct teaching of mathematics in a unit is not always feasible (IBO, 2009). However, where appropriate, prior learning or follow-up activities can be executed to make connections within different aspects of the curriculum.

'Science' is another remarkable subject area in early childhood curricula. Krogh (1995) believes that if children have little or no experience with science in the early years, they may never develop an interest in science, or worse yet; they may develop negative perspective or fear toward science. For little children, science is exploration of the world. According to Primary Years Program, teaching science as a subject matter is not adequate but necessary. Learning science helps students to develop research, inquiry and observation skills, all of which can be used in other subject areas. By this way, science goes beyond a traditional subject area. In the PYP, the transdisciplinary themes provide the framework for a highly defined, focused and all planned science teaching (IBO, 2008). Science is relevant to all the transdisciplinary themes. In return, science knowledge and the application of that knowledge will enhance inquiries into the central ideas defined by the transdisciplinary themes (McKenna, 2007).

'Social studies' is, too, an important subject area for early childhood education in order to teach children about themselves and others. Learning to participate in their society is one of the most important reasons for children to be educated. Children can learn their past from social studies. In order to make decisions about future social studies, it must be a part of the curriculum (Wortham, 1996).

When we look back to the history, the 'art' was produced by all society or culture to express something and tell about things. For children, art adds beauty and richness to live and it provides skills in observation, hand-eye coordination and methods of communication. Art makes early

childhood curriculum away from dryness (Krogh, 1995).

When children are occupied in an unsupervised play, they can be observed naturally and unconsciously singing, humming, and chanting. Thus, 'music' is a natural part of children's life and learning. Music is also an important part of early childhood curriculum (Krogh, 1995). The integration of music into the curriculum helps learners with one more way to construct meaning. Furthermore, integration of music into the curriculum is mostly done by singing. However, other musical skills should be taken into account (Kenney, 1997).

Movement is the nature of young children, they learn through their entire bodies. Throughout the early years, physical experiences are crucial to children's social, emotional, intellectual, and physical growth. 'Physical education' can be integrated in to the curricula around a thematic center. The content area can be integrated into learning experiences primarily through physical education, or physical education can be used to support other content areas (Payne and Rink, 1997).

Expressing themselves through 'drama' is a part of children's self expression. Sometimes young children cannot verbalize what they think or feel, they can act it out. In a curriculum for young children lack of drama eliminates children communication method (Krogh, 1995).

2.2.3 Assessment in Transdisciplinary Approach of IC

All quality kindergartens have a system for assessment that evaluates all aspects of the program to include child progress, teaching effectiveness and program quality (Wortham, 2006, Bradekamp & Copple, 1997). There is not a significant definition on assessment in transdisciplinary approach of integrated curriculum. Still, assessment of children's development on learning is important for planning and

implementing an appropriate curriculum. In developmentally appropriate early childhood programs, assessment and curriculum are integrated to each other.

Transdisciplinary approach's starting point is real-world context, student questions, and life skills, thus assessment in this approach should be authentic. Furthermore, standardized tests are as important as performance demonstrations (Drake, 2007).

Formative assessment and summative assessment refer to assessment that is ongoing during learning and assessment of a completed segment of learning. The summative assessment of a learning activity may be a part of the formative assessment of a unit. Moreover the summative assessment of a unit may be a part of the formative assessment of a theme study. Formative and summative assessments incorporate with the theme studies (Martinello and Cook, 2000).

When student accomplishment with high-level student reflection is a part of integrated curriculum, assessment becomes a powerful learning tool for both students and teachers. Authentic assessment encourages students to take academic risks, to analyze their own strengths and weaknesses. Moreover, this type of assessment in integrated curricula helps teachers to know much about individual child. Successful assessment helps students to make connections about learning (Borugh and Pool, 2005).

In integrated curricula, any type of student product can be used to demonstrate learning. These products can be performance assessment or can be combined with other measures of assessment. Some choices for assessment are standardized tests, teacher created tests, scoring guides or rubrics, journals, portfolios, interviews, conferences, observation, self-assessment, peer assessment, video, or performance assessment (Drake, 1998).

2.2.4 Collaborative Planning in Transdisciplinary Approach of IC

Integrated curriculum creates changes on both students and teachers. If in a school, integrated learning is happening, there will be increased interaction among teachers because their role changes from total autonomy to collaboration with other teachers (Fogarty and Stoehr, 2008).

Dukewits and Gowin (1996) conduct a study about collaborative teaming. According to this study, teams should share common beliefs and attitudes, the members of the team should trust each other in order to have open communication, respect and enthusiasm to work. Meetings are also very important in teaming because it gives opportunity to share rules, plans, and timing arrangements. In addition, the team's functions and effectiveness should be followed by continuing assessments. There are several types of teaming in a school. In elementary schools, horizontal and vertical teaming is mostly seen. Horizontal team members are all the teachers who teach same grade, vertical team members are the teachers who teach same subject in different grades (Dukewits and Gowin 1996).

Teaming is an essential part of integrated curricula. In schools, teaming has many advantages: it improves school climate, work climate; increases parental contact and job satisfaction (Biro, 2003). These advantages lead to better opportunities for creative teaching and learning activities, time to provide for individual differences, greater security for the student, and more opportunity for teacher student planning and cooperative evaluation. Biro (2006) points that administrators, principals, policy makers, teachers, and scholars work together in cooperative relationships in order to develop interdisciplinary curriculum.

2.3 International Baccalaureate Organization Primary Years Program

Transdisciplinary approach of integrated curriculum in early childhood can be found systematically in a pre-established curriculum model served by the International Baccalaureate Organization.

The International Baccalaureate is a non-profit organization aims to develop inquiring, knowledgeable and caring young people who help to create a better and more peaceful world through intercultural understanding and respect. To achieve this goal, the organization works with schools, governments and international organizations to develop challenging programs of international education. Aim of these programs is to bring up active, compassionate and lifelong learner students across the world. The Primary Years Program (PYP) is introduced in 1997; The Middle Years Program (MYP) is introduced in 1994; The Diploma Program (DP) is introduced in 1969.

These programs have specific age ranges, Primary Years Program is for ages 3 to 12, Middle Years Program is for ages 11-16, and Diploma Program is for ages 16-19. In all of these programs, the development of a child having the concept of international mindedness is focused for teaching and learning.

IB's each program has its own features and curriculum materials because there is not a requirement for schools to offer all programs. However, if a school offers more than one program, children will have a chance to attend a continuous international educational experience from early childhood to high school graduation. The IB's mission statement and the IB learner profile connect the three programs. IB has standards and practices with a set of criteria, against which both the IB World School and the IB itself can measure success in the implementation of the three programs.

IB wants to educate people who have the elements of student profile as briefly explained below (IBO, 2007):

Inquirers: They develop their natural curiosity. They acquire the skills necessary to conduct inquiry and research and show independence in learning. They actively enjoy learning and this love of learning will be sustained throughout their lives.

Knowledgeable: They explore concepts, ideas and issues that have local and global significance. In so doing, they acquire in-depth knowledge and develop understanding across a broad and balanced range of disciplines.

Thinkers: They exercise initiative in applying thinking skills critically and creatively to recognize and approach complex problems, and make reasoned and ethical decisions.

Communicators: They understand and express ideas and information confidently and creatively in more than one language and in a variety of modes of communication. They work effectively and willingly in collaboration with others.

Principled: They act with integrity and honesty, with a strong sense of fairness, justice and respect for the dignity of the individual, groups and communities. They take responsibility for their own actions and the consequences that accompany them.

Open-minded: They understand and appreciate their own cultures and personal histories, and are open to the perspectives, values and traditions of other individuals and communities. They are accustomed to seeking and evaluating a range of points of view, and are willing to grow from the experience.

Caring: They show empathy, compassion and respect towards the needs and feelings of others. They have a personal commitment to service, and act to make a positive difference to the lives of others and to the environment.

Risk-takers: They approach unfamiliar situations and uncertainty with courage and forethought and have the independence of spirit to explore new roles, ideas, and strategies. They are brave and articulate in defending their beliefs.

Balanced: They understand the importance of intellectual, physical and emotional balance to achieve personal well-being for themselves and others.

Reflective: They give thoughtful consideration to their own learning and experience. They are able to assess and understand their strengths and limitations in order to support their learning and personal development.

The Primary Years Program (PYP) is first and foremost a transdisciplinary program organized around six themes which have global significance. Additionally, there are six defined subject areas that have value in themselves and provide students with knowledge and skills to explore the six transdisciplinary themes. Students should be made aware of the links across the curriculum in order to understand the interconnected nature of the subject areas, both with one another and with the transdisciplinary themes.

The constructivist approach is the base of the PYP curriculum model's perspective about children's learning. The approach acknowledges that the learners have beliefs about how the world works based on their experiences and prior learning. In the light of new experiences and further learning those beliefs, models or constructs are revisited and revised. As we attempt to make meaning of our lives and the world around us, we travel constantly on the repeated path of constructing, testing, and confirming or

revising our personal models of how the world works.

PYP's educational perspective abides by the theories of Vygotsky, Bruner and Gardner (IBO, 2008). According to IB-PYP, learning happens when new knowledge is linked with exciting ones. This tie between prior knowledge and new knowledge happens well by planning, thus curriculum should give opportunity to children and provide experiences to them to test and revise their learning, allowing them to make connections between their previous and current perceptions, while giving them the freedom to construct their own meaning.

In PYP schools, the teachers' structuring of new experiences, and the support they give to students ideas about new experiences, are essential to students' knowledge, understanding, and conceptual development. In the PYP it is recognized that development and learning are interrelated, and the PYP curriculum framework allows for concept development that applies across and beyond subject-specific areas (IBO, 2008).

The program supports the student's effort to gain understanding of the world and to learn to function comfortably within it, to move from not knowing to knowing, but to identify what is real and what is not real, to recognize what is appropriate and what is not appropriate. To do this, the student must integrate a great deal of information, and apply this accumulation of knowledge in a cohesive and effective way (IBO, 2008).

In the PYP, early childhood period has a crucial importance, because it is acknowledged that experiences during the early years lay the foundations for all future learning. Research indicates that the rapid rate of development that occurs in the physical, social, emotional, intellectual and aesthetic domains is particularly significant. It is our responsibility as educators to recognize and maximize this crucial stage of learning (IBO, 2008).

Although development usually occurs in recognizable and predictable directions, it is unique in each child, occurring at varying rates from child to child, and inconsistently for each child. For many children, these early years also mark the first transition from home to group experiences outside of the family and to new physical environments. The school must strive to make this adjustment as successful as possible by encouraging the development of secure and trusting relationships with new adults and peers (IBO, 2007).

Teachers of students in the early years are encouraged to support students' interests, build up their self-esteem and confidence, and respond to spontaneous events, as well as support the development of skills in all cognitive areas in relevant ways. Children, from birth, are full of curiosity, and the IB-PYP provides a framework that gives crucial support for them to be active inquirers and lifelong learners (IBO, 2009).

An aim of the IB-PYP is to create a transdisciplinary curriculum that is engaging, relevant, challenging and significant for learners in the 3–12 age range. In developing a curriculum of international education for primary school students, the IB-PYP definition of curriculum is broad and inclusive. The IB-PYP believes that all students should be supported to participate in the program to the fullest extent possible; the school's curriculum includes all those student activities, academic and non-academic, for which the school takes responsibility, since they all have an impact on student learning.

The curriculum of IB-PYP model includes five essential elements. According to IB-PYP, 'knowledge' is significant, relevant content that we wish the students to explore and know about, taking into consideration their prior experience and understanding. Knowledge is distributed around six transdisciplinary themes. 'Concepts' are powerful ideas that have relevance within the subject areas but also transcend them and that students must explore and re-explore in order to develop a coherent, in-depth

understanding. IB-PYP states the development of transdisciplinary 'skills'. Skills are the capabilities that the students need to demonstrate to succeed in a changing, challenging world, which may be disciplinary or transdisciplinary in nature. 'Attitudes' are a significant element of curriculum. According to IB-PYP attitudes are dispositions that are expressions of fundamental values, beliefs and feelings about learning, the environment and people. Finally, 'action' is the demonstration of deeper learning in responsible behavior through responsible action; a manifestation in practice of the other essential elements (IBO, 2007).

The IB-PYP acknowledges the importance of particular subject areas: language, mathematics, social studies, science, arts, personal, social, and physical education. The knowledge, concepts and skills that constitute each of these subject areas are documented in detailed frameworks, 'scope and sequences', that set out the overall expectations for each subject within age ranges, or as a developmental continuum. These documents are provided to schools as exemplar material. While some IB World Schools offering the IB-PYP may adopt these scope and sequences, others may be required to accommodate a locally or regionally determined subject-based set of learning outcomes or standards.

As shown in the Figure 4, the program defines transdisciplinary themes that identify areas of shared human experience and have meaning for individuals from different cultures and ethnicities. These themes are part of the common ground that unifies the learning in all IB World Schools offering the IB-PYP. The program of inquiry is a matrix made up of the six transdisciplinary themes running vertically, and the age groups running horizontally. Organizing the curriculum around the six transdisciplinary themes contextualizes the learning for the students. It enables them to experience a balance of subject-specific knowledge, concepts and skills in order to develop an understanding of the transdisciplinary themes.

Each transdisciplinary theme is accompanied by an extended description that explains what students will be inquiring into under this theme. There are six transdisciplinary themes. Who we are; where we are in place and time, how we express ourselves; how the world works; how we organize ourselves; and sharing the planet.

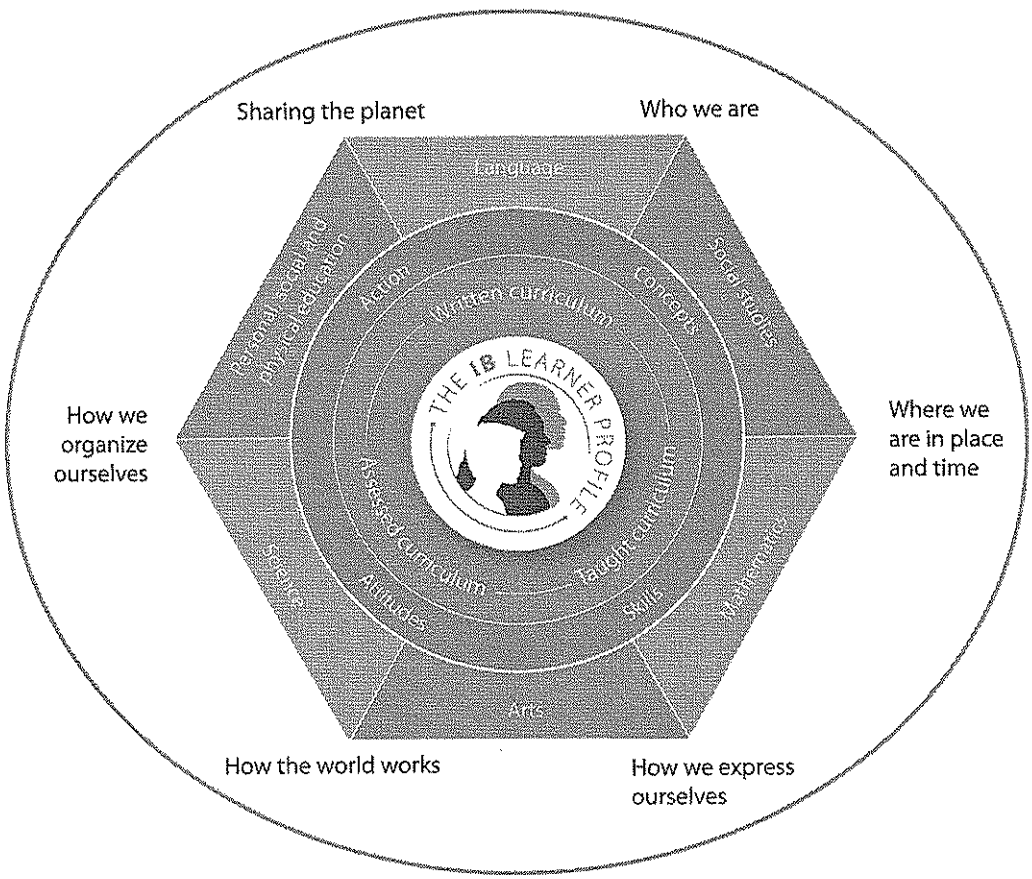

Figure 4. Primary Years Program model.

Source: www.ibo.org

The importance of the traditional subject areas is acknowledged. Indeed, the subject areas of language, mathematics, science, social studies, arts, and personal, social and physical education are specified as components of the IB-PYP curriculum model. However, it is also recognized

that educating students in a set of isolated subject areas, while necessary, is not sufficient. Of equal importance is the need to acquire skills in context, and to explore content that is relevant to students and that transcends the limitations of the traditional subjects.

In IB-PYP a high level of collaboration is required when planning transdisciplinary units of inquiry. The planning teams, usually consisting of teachers at each year level, need to plan the units together with the remainder of the curriculum for the year. However, a whole-school approach should be taken when developing and refining a complete program of inquiry. The proposed units of inquiry at each year level need to be articulated from one year to another. This will ensure a strong program of inquiry that provides students with experiences that are coherent and connected throughout their time in school (IBO, 2008)

Assessment in the IB-PYP is integral to all teaching and learning. It is central to the IB-PYP goal of thoughtfully and effectively guiding students through the five essential elements of learning: The acquisition of knowledge, the understanding of concepts, mastering of skills, development of attitudes and the decision to take action. The prime objective of assessment in the IB-PYP is to provide feedback on the learning process (IBO, 2007)

Everyone concerned with assessment, including students, teachers, parents and administrators, should have a clear understanding of the reason for the assessment, what is being assessed, the criteria for success, and the method by which the assessment is made. The entire school community should also be concerned with evaluating the efficacy of the program.

Student learning is promoted through planning and refining the teaching and learning process to meet individual or group needs. Assessing the students' prior knowledge and experience as well as monitoring their

achievement during the teaching period will enable teachers to plan and refine their teaching accordingly. Teachers should keep in mind that a well-designed learning experience will provide data on students' knowledge, skills and conceptual understanding, and is consequently a vehicle for summative or formative assessment (IBO, 2007).

'Summative assessment' aims to give teachers and students a clear insight into students' understanding. Summative assessment is the culmination of the teaching and learning process, and gives the students opportunities to demonstrate what has been learned. Formative assessment' provides information that is used in order to plan the next stage in learning. It is interwoven with learning, and helps teachers and students to find out what the students already know and can do (IBO, 2009).

According to IB-PYP, effective assessment should help students to share their development with others; students could be demonstrating both the knowledge they gain and skills; students should use a variety of learning styles, multiple intelligences and abilities to express their understanding; student should be informed about the importance of a quality product or performance. Moreover, in IB-PYP self and peer assessments are also an important part of assessment, children should be given opportunity to reflection and expressing themselves from different points of view and interpretations (IBO, 2009).

Furthermore, from the view of IB-PYP effective assessment practices have some benefits for teachers. Firstly, teachers follow every stage of teaching and learning process and manipulate the learning experiences according to students' responses. Teachers can gain evidence to draw conclusions about the teaching and learning process. Moreover, effective assessment provides evidence that can be effectively reported and understood by the whole school. Finally, teachers can review and reflect on student performance and progress collaboratively and take into account a

variety of learning styles, multiple intelligences and abilities including different cultural contexts (IBO, 2009).

Teachers and students have benefit from effective assessment, also parents of the students benefit from effective assessments. Firstly, they can easily see evidence of their student learning and development. Then, they understand their student's progress and provide opportunities to support and celebrate student learning.

2.4 Summary of Literature Review

Reviewing previous literature not only provides background knowledge for this study of but also helps to identify the gap to be further examined. Through this literature review it can be seen that the interest in the integrated curriculum, which connects disciplines in some way, has increased since the last decades.

Many researchers developed definitions for integrated curriculum. These definitions were including levels, hierarchies according to their approaches to curriculum integration. Thus, there are different types of curriculum integration models which are used by schools around the world.

Transdisciplinary approach is one of the models of integrated curriculum. It differs from other models, because it does not begins with a discipline in the planning process. The planning in transdisciplinary approach begins with a real life context.

To sum up, it can be pointed out that The Primary Years Program (PYP) is first and foremost a transdisciplinary program organized around six themes which have global significance. In IB-PYP, every academic year six thematic teaching units are being established and implemented through disciplines. Each discipline has its own scope and sequence.

CHAPTER 3

METHOD

This chapter describes the methodology employed in the study, including the research design, participants, school setting, and data analysis.

This study aims to determine the teachers' beliefs and perspectives about transdisciplinary approach of integrated curriculum in a private kindergarten in Ankara during the 2008-2009 academic year. In order to find the answers of research questions, qualitative research procedures are followed and case study was selected as research design. The research questions for the study are,

a. What are the challenges for teachers in designing and implementing a transdisciplinary early childhood curriculum?
b. What are the troubles that teachers face while integrating disciplines in a unit?
c. How collaborative planning is made? What are the teachers' beliefs about collaborative planning?
d. What are the personal reflections of early childhood educators on transdisciplinary approach of integrated curriculum?
e. What are effects of transdisciplinary approach based curriculum on students and parents?

A questionnaire, interviews and document analysis have been used during data collection process. Eighteen kindergarten teachers participated in the study. Details about data collection will be presented in this chapter.

3.1. Methodological Approach

In order to determine the effects and practices of transdisciplinary approach of IC in early childhood education qualitative research method is used. Qualitative research helps the researcher to become a part of the culture of the setting. Case study design has been chosen for this study comprising a kindergarten.

A case study is set apart from other qualitative research because it involves issues that demand the attention of stakeholders of the study area (Lancy, 1993). A case study can be useful by offering descriptions of innovative practices while interpreting or theorizing about a phenomenon (Merriam, 1998). A case study starts with defining and clarifying research questions. It is important to develop some understanding of the focal domain of the research topic by embarking in the field of study. Researchers use multiple data collection and analytic procedures. While analyzing data gathered from field researchers have opportunity to compare and contrast interpretations, enlarge on the relevance of the project by developing unexpected findings and interpretations, and explore findings which are relevant or irrelevant to current impressions (Freebody, 2003).

According to Merriam's (1998) explanations, the case study approach is chosen as research methodology for two reasons. Firstly, case studies permit the study of process from the starting point which is construction of the curriculum to the end of the process when the academic year ends. Secondly, case studies are reflective, allowing the participants to develop individual perspectives regarding the process (Merriam, 1998).

This study is unique to the teachers of single kindergarten. Since this study is focused on the implementation of transdisciplinary approach, its effectiveness and challenges for teachers, case study is thought to be an appropriate method to analyze the process.

3.2. School Setting

The school in which this study conducted is a private kindergarten in Ankara, capital city of Turkey. There are nine six-year-old classes. The school was established in 1996. It serves children of ages 5-6.

Study is done with eighteen six-year-old students' teachers. There are 156 six-year-old children in the kindergarten when the study is conducted. Families of the students have high socio economic status.

Kindergarten has an administrator who is responsible for executive duties. Educational preparations and curriculum development are done by teachers. School has an IB-PYP coordinator who facilitates the academic organization of curriculum. School is open from September to June. At the beginning of September and end of June, there are in-service trainings and provision time for teachers.

The school consists of several classrooms based on different disciplines and they are used by all age groups with rotation. These classrooms are categorized as science and technology, social studies, art and music, drama, English, German, language, computer, and physical activity. All the classrooms are furnished with developmentally appropriate equipment and furniture. In addition there is a semi-olympic swimming pool, open amphitheaters and a large play ground.

School has nine six-year-old classes and each class has two kindergarten teachers. Social sciences, language, literacy, math, science

and technology, physical education, drama, music, and art are driven by kindergarten teachers. Six-year-old classes have English, German, Swimming and Chess subjects which are driven by single subject teachers. Computer lessons are conducted with both kindergarten teachers and a specialists ICT teacher.

Transdisciplinary approach of integrated curriculum has been used as the educational method in the school since 2006. Moreover, school has been implementing International Baccalaureate Organization's Primary Years Program since 2006. Moreover it has the implementation accreditation of this program as a candidate school since January 2008.

All of the students are Turkish and the medium of instruction is Turkish. Students are also taught English and German. School's English language education has been accredited by EAQUALS (The European Association for Quality Language Services). The English curriculum has been approved by the Ministry of National Education Academic Board.

3.3. Participants

This study is conducted with eighteen kindergarten teachers who teach six-year-old children. Before beginning to the study, an interview is conducted to the teachers to get basic information, demographic data and their initial perspectives about integrated curricula.

There are nine classes in the school. Each class has two teachers. Four of these teachers are graduates of department of child development of vocational high schools. Fourteen of the teachers are graduates of universities' early childhood departments.

Four of the participants have attended IB-PYP training conducted by International Baccalaureate Organization. All of the teachers have attended

in-service training workshops and seminars within the school. Thus, all of the teachers had background information about the curriculum before the study. All of the teachers have minimum one year experience on IB-PYP.

3.4. Procedure of Data Collection

In the nature of qualitative researches, data is collected from a participant's perspective, in a naturalistic setting and over an extended period of time (Wiseman, 1999). Based on the purpose of this study, the present researcher collects basic information about teachers and their general background information on early childhood education and their knowledge about transdisciplinary approach. For this purpose, a questionnaire, which includes questions about teachers' age, experience on the field, experience on transdisciplinary approach and their initial perspectives about integrated curricula, and their school of graduation, is applied to them.

In qualitative researches interviews are special kinds of conversations that are used by researchers to explore informant's experiences and interpretations (Hatch, 2002). For this reason, eighteen teachers are interviewed at the end of the academic year. These interviews consist of questions inquiring detailed information about teachers' practices and interpretations on transdisciplinary approach of integrated curriculum. While questions are developed, their effectiveness is taken into consideration. For this purpose some guidelines defined by Hatch (2002) are followed. Interview questions are open-ended; the language is familiar to informants; questions are as clear and neutral as possible; questions respect informants and presume they have valuable knowledge; and questions aim at generating answers related to the objectives of the research (O'Donoghue, 2007).

Documentation is a significant part of a curriculum because documents reveal what people do or did and what they value. This occurs in a natural setting so the data is presumed to have strong validity (Freebody, 2003). Another primary data collection method for this study is document analysis. In document analysis unit plans, parent bulletins, meeting minutes, program of inquiry, school's and IBO's standard documents are examined. Through this way implementation of the approach are analyzed in detail.

Table 1: Timeline of Data Collection

Time Line	**Collected data**
September 2008	Initial studies for curriculum development
September 2008	Basic in formation about teachers
	Demographic data
	Their initial perspectives about integrated curricula
November 2008 – May 2009	Implementation of the curriculum
	Document analysis
June 2009	Interviews
July 2009 to November 2009	Decoding and data analysis

As shown in Table 1, in the study data collection took an academic year. At the beginning of the academic year teachers started to make initial studies about curriculum. At the same time a questionnaire was given to the teachers to learn about their basic and demographic information and also their initial perspectives about the curriculum. While teachers were implementing the curriculum, document analysis was done. At the end of the academic year, a comprehensive interview was done with the teachers to get information about transdisciplinary approach from different aspects. Finally, data gathered from different sources were decoded and analyzed.

Table 2: *Data Collection Techniques*

Main Data Sources	**Participants**	**Purpose**
Questionnaire	Teachers	Basic in formation about teachers Demographic data
Interview	Teachers	Their initial perspectives about transdisciplinary approach from different aspects
Document analysis • Program of Inquiry • Six thematic teaching units' plans • Parent Bulletins • Meeting minutes of teachers		Detailed information about curriculum

Table 2 Continued: *Data Collection Techniques*

Secondary Data Sources	Participants	Purpose
Curriculum documents published by International Baccalaureate Organization		Inquiry the relevancy of the curriculum according to IBO's standards.

As shown in Table 2 different data sources were used to increase credibility of the study. Teachers' answers about the curriculum are compared with the data gathered from document analysis.

3.5. Data Analysis

Data analysis in educational researches is a systematic search for finding the meaning. It is a way of processing data to make it understandable for others (Fraenkel & Wallen, 2006). Analysis means organizing and interrogating data in ways that allow researchers to see patterns, indentify themes and discover relations between subjects by detailed inquiry of data (Hatch, 2002). In this study, data is analyzed to get deep understanding of teachers' beliefs and implementation on transdisciplinary approach of integrated curricula.

In order to analyze data to reach the answers of research questions, interpretive data analysis method is used. Interpretation is a defining element of all qualitative research and is about giving meaning to data (Hatch, 2002).

CHAPTER 4

RESULTS

In chapter four, the results from questionnaire will be presented, then document analysis result will be presented, after all interview findings are presented through five aforementioned research questions regarding beliefs and perspectives of kindergarten teachers on transdisciplinary approach of integrated curriculum.

1) Questionnaire:

At the beginning of the academic year, a questionnaire is given to get demographic information, background information of teachers about IB-IB-PYP and their first beliefs about this program.

The first question is about teachers' experience on the field. All of the eighteen participants have been working as a kindergarten teacher for at least one year. Two of the teachers have two years of experience; three of the participants have seventeen years of experience and other thirteen participants have four to six years of experience in the field. Then, their educational background is inquired. Four of the participants are graduates of vocational high schools; other fourteen teachers are graduates of universities' faculty of education, department of early childhood education.

The school started to implement IB-PYP in 2006. Except two teachers who have teaching experience for two years, all of the participants worked in this school since the beginning of the IB-PYP. Before the academic year, through which this study is conducted, two of the teachers

have already worked with both five and six years old children, other sixteen participants have been working with only six years old children. This study covers the six year old children's kindergarten teachers during 2008-2009 academic year.

Other question is related to teachers' first perspectives about transdisciplinary approach. Sixteen of the participants say that they have doubts about the program. One of the teachers says:

> At the beginning, before we got the in-service training, I thought that integrating subject areas under a theme would be impossible, because we were working with young children, and their needs change unexpectedly. Such a programming would be influenced from these sudden changes.

One teacher says that 'My initial opinion about the program was very different. I was anxious about the transdisciplinary program. I used to think that I will not be able to manage the integration of subject areas'.

Most of the teachers state that they use to have some common questions in their mind before they know about this program. These questions are "How will the subject areas be integrated?", "How will single subject teachers work with us?" "How families will be integrated to their children's learning?"

Two of the participants mentioned that they have a positive point of view about this program. One of them has a teaching experience in a transdisciplinary approach based curriculum and she believes in advantages of the transdisciplinary approach. The other teacher had prepared a project during her university education, and hence she had theoretical background information about the integrated curriculum. She stated that

> It was a take home project of mine when I was at the university. I made a short research about integrated curriculum and wrote a report about it. I searched about the

schools implementing integrated curriculum all over the world. I was very excited about the integrated curricula. Thus I was happy when I heard about transdisciplinary approach.

2) Document Analysis:

During the academic year, document analysis is done to get information in depth about structure of the program. As a starting point program of inquiry is investigated to see the overall look of six thematic teaching units. By this way, titles of units, main ideas, inquiry lines, and durations of the units are noted. Then, each unit is deeply investigated through unit plans. The school has six unit plans for thematic teaching units, which are formatted in nine sections. The nature of these nine sections is defined. In addition, by investigating unit plans, the integrated disciplines are brought forward. Moreover, parent bulletins are probed in order to realize parent-school interaction. Finally, meeting minutes of grade level meetings are studied to find out evidence of collaborative planning.

At the beginning, the school's 'program of inquiry' is analyzed. Every academic year, teachers develop a program of inquiry in order to plan and organize their thematic teaching units. According to the school's program of inquiry, there are six thematic teaching units in an academic year. These units are developed under the six transdisciplinary themes defined by the IB-PYP.

Each unit lasts four to six weeks, and all of the planned lesson activities are directed to reach the main idea. Inquiry lines help to define the main idea more accurately.

First Thematic Teaching Unit:

Transdisciplinary Theme: Who We Are

Definition of the Transdisciplinary Theme:

An inquiry into the nature of the self; beliefs and values; personal, physical, mental, social and spiritual health; human relationships including families, friends, communities, and cultures; rights and responsibilities; what it means to be human (IBO, 2009).

Unit Title: Healthy and Happy

Duration: Five weeks

Main Idea: We are healthy by knowing about and protecting our body.

Inquiry Lines:

Our body and its parts

How our bodies work

Things we need to do to stay healthy

Second Thematic Teaching Unit:

Transdisciplinary Theme: Where we are in place and time

Definition of the Transdisciplinary Theme:

An inquiry into orientation in place and time; personal histories; homes and journeys; the discoveries, explorations and migrations of humankind; the relationships between and the interconnectedness of individuals and civilizations, from local and global perspectives (IBO, 2009).

Unit Title: Young Inventors

Duration: Four weeks

Main Idea: Inventions are the results of needs and demands.

Inquiry Lines:

Inventions that make our lives easier

Past and present of inventions

Inventions and inventors

Third Thematic Teaching Unit:

Transdisciplinary Theme: How we express ourselves

Definition of the Transdisciplinary Theme:

> An inquiry into the ways in which we discover and express ideas, feelings, nature, culture, beliefs and values; the ways in which we reflect on, extend and enjoy our creativity; our appreciation of the aesthetic (IBO, 2009).

Unit Title: Colors

Duration: Four weeks

Main Idea: While painting we convey our emotions, thoughts and imaginations.

Inquiry Lines:

> Painting techniques
>
> What we say with our paintings
>
> Painters and their art

Fourth Thematic Teaching Unit:

Transdisciplinary Theme: How the world works

Definition of the Transdisciplinary Theme:

> An inquiry into the natural world and its laws; the interaction between the natural world (physical and biological) and human societies; how humans use their understanding of scientific principles; the impact of scientific and technological advances on society and on the environment (IBO, 2009).

Unit Title: Space track

Duration: Five Weeks

Main Idea: We explore space through researches.

Inquiry Lines: What is there in space?

Secrets of space

Space journeys

Fifth Thematic Teaching Unit:

Transdisciplinary Theme: How we organize ourselves

Definition of the Transdisciplinary Theme:

> An inquiry into the interconnectedness of human-made systems and communities; the structure and function of organizations; societal decision-making; economic activities and their impact on humankind and the environment (IBO, 2009).

Unit Title: Our Needs

Duration: Five Weeks

Main Idea: We go to different places for different needs.

Inquiry Lines: Places we go for social and cultural needs

Places we go for security needs

Places we go for educational needs

Places we go for health needs

Sixth Thematic Teaching Unit:

Transdisciplinary Theme: Sharing the planet

Definition of the Transdisciplinary Theme:

> An inquiry into rights and responsibilities in the struggle to share finite resources with other people and with other living things; communities and the relationships within and between them; access to equal opportunities; peace and conflict resolution (IBO, 2009).

Unit Title: Amazing Animals

Duration: Five Weeks

Main Idea:

Animals, we share our planet with, have similarities and differences.

Inquiry Lines: Animals and their babies

Where animals live and what they eat

The things we share with animals on our planet

As a second step, the 'unit plans' are analyzed. These unit plans are main evidence of the transdisciplinarity program. All of the activities of the subject areas are written on the same unit plan. IBO has developed the format of unit plans (IBO, 2009).

According to this format of plan, teachers follow nine steps below for each thematic teaching unit and write specific information to these sections. Common use of planners is given below:

a) What is our purpose?

A transdisciplinary theme and a central idea are written in this section. In the collaborative planning time, teachers share the definition of transdisciplinary theme's definition and create a globally significant main idea. There is an obvious link between transdisciplinary theme and main idea. Main idea is written in one sentence.

Summative assessment task is also given in this section. In IB-PYP, backward design is used. After writing the main idea, teachers write the summative assessment task to evaluate children's understanding of central idea. The articulation between the central idea and the summative assessment task resolves before further planning takes place.

b) What do we want to learn?

Key concepts are written in this section. Teachers choose three key concepts that are relevant to the main idea. These key concepts can be related to form, function, causation, change, connection, perspective, responsibility, and reflection.

In addition, four lines of inquiry are written here. Their aim is to clarify central idea. Furthermore, teacher questions are written. Teachers provide provocations to students about the main idea. This enables children to have enthusiasm to explore and learn.

c) How might we know what we have learned?

Assessment ways is written in this section. Pre-assessment and ongoing assessment ways and tools are defined to determine the progress of children. Many different assessment tools like rubrics, exemplars, checklists, anecdotal records, continuums, and variety of strategies like observations, performance assessments, process-focused assessments, selected responses, and open ended tasks are used.

d) How best might we learn?

Pre-designed learning experiences are prepared according to the main idea and they are written in this section. All activities from all subject areas are given. This protects the transdisciplinarity of the program.

Learning experiences to develop transdisciplinary skills and learner profile are given. The skills, attitudes, and profile elements are developed in different subject areas.

e) What resources need to be gathered?

People, places, books, audio-visual materials, related literature, music, art, classroom environment can be resources for learning.

f) To what extend did we achieve our purpose?

This section is for the assessment after the unit was studied. All of the teachers' reflections about teaching are stated here. The evidence for students' learning that is summative and formative assessment results are told in this section.

Moreover, the connection between transdisciplinary theme and main idea is analyzed here for upcoming years.

g) To what extend did we include the elements of the IB-PYP?

This part is for assessment of the essential element of IB-PYP. Key concepts, skills, student profile and attitudes are evaluated in this section.

h) What student initiated inquiries arose from the learning?

Students' questions, wonderings are recorded during the unit and at the end they are written in this section. Sometimes, student initiated activities become very determining; they are highlighted for further studies.

Teachers expect students to act as they learn. The action of students is also written here.

i) Teachers' notes:

The last part is for the further reflections and connections of different units' central ideas. Moreover, reflections about connection between single subject areas are stated here.

First five sections in the planning, construct the preparations of the transdisciplinary teaching unit. Sixth, seventh, eighth and ninth sections are filled after the unit is implemented. These are the assessment sections. Teachers assess both students' learning and their unit. Unit plans are stored at the school, the following year plans are revised and according to the suggestions teachers make changes on unit plans.

At the third step, after investigation of the six unit plans, a table about the integration of subject areas to a unit is made:

Table 3: Distribution of Subject Areas to Units

Transdisciplinary Theme and Unit Name	**Subject Areas which are integrated to the unit**
Who We Are **Healthy and Happy**	Science and Technology Social Sciences Turkish English German Literacy Art Drama Music ICT Physical Education
Where we are in place and time **Young Inventors**	Science and Technology Social Sciences Turkish English German Literacy Art Drama Music ICT
How we express ourselves **Colors**	Science and Technology Social Sciences Turkish English German Literacy Drama Art Music ICT
How the world works **Space track**	Science and Technology Social Sciences Turkish Literacy Art Drama Music ICT

Table 3 Continued: Distribution of Subject Areas to Units

Transdisciplinary Theme and Unit Name	Subject Areas which are integrated to the unit
How we organize ourselves **Our Needs**	Social Sciences Turkish English German Literacy Art Drama Music ICT
Sharing the planet **Amazing Animals**	Science and Technology Social Sciences Turkish English German Literacy Art Drama Music ICT

At the fourth step, meetings of teachers are analyzed as a part of document analysis. The unit plans are created through a collaborative planning. All kindergarten teachers and single subject teachers use the same planner. Teachers make collaborative planning at the beginning of the academic year. They prepare all of the unit plans together with single subject teachers.

Teachers have a weekly meeting hour throughout the academic year. When the meeting minutes are investigated, it is found that kindergarten teacher attends almost all meetings in an academic year. All of these meeting minutes are kept in administrator's files.

At the fifth step, parent-school interaction is checked during the document analysis. At the end of the each week teachers send parent bulletins to parents. This bulletin consists of the following week's activities,

subject by subject. Moreover, teachers recommend parents on what they can do at home about their units.

Interview:

At the end of the academic year, the teachers are interviewed individually to get information about their beliefs and perspectives about the transdisciplinary approach, circumstantial IB-PYP. The findings of the interviews are clarified in the light of five research questions.

Research Question 1: What are the challenges for teachers in designing and implementing a transdisciplinary early childhood curriculum?

In order to find out the challenges of designing and implementing a transdisciplinary curriculum from teachers' perspective, they are asked about the negative points of the curriculum for teachers and children. Teachers mainly state that they do not face many challenges during designing and implementing the transdisciplinary curriculum. Yet, some common challenges are noted by teachers.

One of the challenges is studying with single subject teachers. Teachers state that collaborative planning becomes hard with single subject teachers from time to time. One of the kindergarten teachers says:

> Collaborative planning works well among kindergarten teachers. We teach nearly all subjects. The subjects that we teach are science and technology, social sciences, math, drama, art, music, Turkish and literacy. We can manage the units ourselves more easily.

Ten of the teachers state that when the subjects are taught by kindergarten teachers, integration becomes more effective. They state that opportunity for scheduling and integration of subject areas become easier when all the subjects are taught by kindergarten teachers.

One teacher says:

> We do plan our units among kindergarten teachers; single subject teachers are involved in our planning process. At first, I used to believe that children are better known by their own homeroom teachers. We know their developmental properties, as well as their needs. Thus I used to think that we can adapt what will be taught easily.

Another teacher states that she could not imagine the transdisciplinarity of the program when she first heard of it. She used to believe that only some of the applied subjects could be integrated to a general topic.

Two of the teachers state that they thought the planning process will be hard to overcome. One of them says that

> In traditional program, each kindergarten teacher plans her own plan. When we first learn that all kindergarten classes will work on the same unit, I thought that it would not work and our creativity woul be limited. But now, I realized that we can expand the unit according to our children's needs and we can use our creativity to implement the unit.

Research Question 2: What are the troubles that teachers face while integrating disciplines in a unit?

In order to learn the troubles that teachers face while conducting integrating disciplines in unit, teachers are asked following questions: "Which disciplines are easy or not easy to integrate? Which disciplines are mostly integrated to units?"

During the interviews, most of the teachers state that it is not possible to integrate mathematics into all transdisciplinary units. One of the teachers says:

> Mostly we integrate all the subject areas into a unit. But when it comes to mathematics, integration to the unit directly might be next to impossible. We have sub-learning outcomes in math. They are data handling, measurement, shape and space, pattern and function, and numbers. We prepare stand alone units for mathematics according to these sub-learning outcomes. Integration of mathematics develops spontaneously during the unit. But at the beginning we do not plan it.

Teachers state that they develop separate unit plans for mathematics. About the mathematics unit plan, one teacher said:

> We plan separate units for math. But we choose transdisciplinary skills from the on going thematic teaching unit. By this way we invigorate the thematic unit.

Another teacher states that they integrate math by the transdisciplinary skills, not with the theme or context.

Moreover, teachers state that some subject areas do not suit every theme. One of these subject areas is science and technology and the other one is physical education. One teacher stated:

> We could not integrate science and technology to "Our Needs" unit. When this unit goes on, we prepared a stand alone science unit about water. Moreover, we could not integrate physical education to all of the units.

Teachers state that social sciences subject area is integrated to all of the transdisciplinary units. Because all the concepts that are relevant to early childhood education can be a part of social studies. Furthermore teachers say that applied subject areas which are art, drama and music are integrated to all thematic teaching units. One of the teachers said:

> We do rhythm and singing activities in music lessons. So, we can find activities about the main idea of the thematic teaching unit easily. Art and drama can also easily be integrated to our units.

For language lessons, teachers state that Turkish is integrated to all thematic teaching units. But, integration of German and English is very difficult hence these subject areas are taught as second languages. Because children are young, some topics can be hard to understand in a second language.

Research Question 3: How collaborative planning is made? What are the teachers' beliefs about collaborative planning?

To learn teacher's perspectives about collaborative planning and how planning is made in their school they are asked some questions about single subject teachers, unit assessment and planning procedures.

As in the nature of integrated curricula, in this school teachers make collaborative planning. At the end of each academic year in June they have two weeks to study. During these two weeks teachers evaluate the finished academic year, join in-service training sessions and make preparations for the next year. Teachers have another two weeks before the academic year starts in September. These two weeks are for preparation of unit plans, activities, and worksheets.

During the interviews teachers state that they have round table discussions about units with all of the teachers. In these discussions they share main ideas of the units. Kindergarten teachers present the integrated subjects areas to the group. Then, single subject teachers share their ideas in units they integrate.

After deciding on thematic teaching units and their integrated subject areas, all of the teachers in this level work on the skills, student profile and attitudes that are aimed to be developed throughout unit. All teachers work one the same skills, profile and attitudes. About this issue, one teacher stated:

> It is very useful to work collaboratively. For example, we plan to do an origami activity in the art lesson, but in the same unit English teacher plans a similar origami activity. In the round table discussion hour, we share our activities, so that we abstain from repetitions.

Teachers state that they use same unit plans during the implementation of thematic teaching unit. One of the teachers points out:

> We have to work with single subject teachers because we work on same unit and we work with same children. Also we should know what each of us is doing.

Teachers state that they share much more time than single subject teachers. One teacher stated that 'Our students attend school for 40 hours per week, as kindergarten teachers 25 of these hours are driven by us'. Teachers point out that they share all they know about children with single subject teachers. They believe that this is another part of collaborative planning.

Collaborative planning was another issue and long conversations are carried out about it. Most of the teachers believe the effectiveness of the collaborative planning.

At the end of the unit, all teachers share their own opinions about the unit and assess the unit in means of implementation, integration, relevancy to children and effectiveness of the unit. These opinions give light on the upcoming units.

In addition, teachers may use same units every year. According to the evaluations of teachers during collaborative planning, they make some changes to a unit for the following year. One of the teachers said:

> After the implementation of the unit we evaluate it. If the evaluation is positive, we use the same unit next year with minor changes. These minor changes are mostly in activities or inquiry lines. But sometimes teachers may decide that a

> unit is not effective in some ways. This time we have important changes; sometimes we even change the main idea. At this point, we find another topic from the transdisciplinary theme of IB-PYP.

Some teachers declare that in some units they do not have enough time to work with single subject teachers. When the meeting minutes are examined, it can be seen that single subject teachers may not be able to attend all meetings. One kindergarten teacher says;

> As kindergarten teachers we can manage department meeting times. But, sometimes single subject teachers cannot join our discussion groups. Then, we share our plans and decisions taken with them.

Most of the teachers state that the transdisciplinarity of a unit is also an important criterion. If they cannot integrate some subjects to a thematic teaching unit, they believe that they should make changes on units' main ideas and inquiry lines. In other words, teachers point the common planning, if a unit is not mostly integrated by different disciplines, they choose another context to study on for next year. One teacher says 'If a unit is not driven by many subjects, we believe that this unit is not an effective transdisciplinary teaching unit. We change this unit to be more integrated to integrate different subjects. We do these changes collaboratively'.

Research Question 4: What are the personal reflections of early childhood educators on transdisciplinary approach of integrated curriculum?

In order to learn personal reflections of the teachers, they are asked some questions at the end of the academic year. According to the answers of teachers, it can be seen that there is a positive behavior of teachers towards transdisciplinary approach. Their answers to the question of "What is transdisciplinary approach?" are as follows:

"It is a child centered approach".

"It is a part of life. Children learn aspects from real life".

"Children can adapt everything they learn to their lives easily. We teach them from examples of real life".

"Transdisciplinary approach makes teachers as researchers. It forces us to use different resources".

"Through transdisciplinary curriculum students' awareness of their strengths and weaknesses increases; because they are in the center of the curriculum, have a say and they are given chance to take part in ongoing learning process."

"It is the connection of the subject areas under a unit."

"It is a result of work done by all teachers."

"Students play an important role in their learning process."

Indeed, the teachers are primarily asked about their first impression of transdisciplinary approach at the beginning of the academic year. When their first impressions before starting to use this curriculum are compared with their comments at the end of the academic year, it can be seen that there is a positive attitude towards transdisciplinary approach. Most of the teachers state that they formerly had an anxiety about this curriculum, but as time goes by, they feel more comfortable. It can be resolved that the reason of this positive change is due to education of teachers about the transdisciplinary approach and its implementation. When teachers get in-service training and attend to workshops, the sources of doubts in their minds seem to disappear.

Research Question 5: What are effects of transdisciplinary approach based curriculum on students and parents?

To get information about effects of transdisciplinary curriculum on students and parents from teachers' perspective, they are asked some questions during the interview. According to these interviews, teachers believe that transdisciplinary curriculum has positive effects on children's development. Firstly, they say that through transdisciplinary curriculum children make connections more easily with what they learn. They learn how to make connections among subject areas, thus they can easily adapt their learning to real life situations. One of the teachers said:

> In the traditional way of teaching, we used to teach same subjects but each of them had different topics and goals. Now children are aware of the unit and main idea. They do activities at home, bring it to school. They do not forget our focus till the unit comes to an end.

The same teacher also emphasizes that transdisciplinarity of the curriculum causes deeper learning on children. This opinion depends on working on the same theme for weeks and with different subject areas. Another teacher stated:

> Students are aware of the main idea. Their curiosity is increased amazingly, because the activities, bulletin boards, field trips are all about the "topic". Thus, they are prompted naturally. They create their own products and bring them to school and share them with their friends.

Teachers also give information about the role of family in the transdisciplinary curriculum. They state that families give positive feedback about the curriculum. Teachers believe that the reason for this is the family involvement. They state that if the families are aware of what is going on at school, they can follow and support the program easily. One teacher stated:

> We send parent bulletins every week. By this way, families know about our curriculum, they can do follow up activities at

> home. Moreover this gives responsibility to families for tracking their child's learning.

More experienced teachers state "While we were following traditional model, it was hard to get the support of the families for each subject area. But now, parents can easily follow units and this enhances success."

In the school, authentic assessment methods are used. Products of the students are kept in portfolios. Students present their portfolios to parents twice in an academic year. These meetings are called as student led conferences. A teacher said:

> Parents like to attend student led conferences. They learn a lot about their children's development at these meetings.

It can be concluded that the teachers' views are more positive rather than negative, regarding the implementation of transdisciplinary curriculum.

CHAPTER 5

DISCUSSION

The final chapter is organized as two sections. First each of the research questions is examined in the light of the data analysis. Next, suggestions for further researches are made. The findings from this study are compared with the literature to see if findings are parallel or not. Moreover, the findings will be presented according to the research questions.

Research Question 1: What are the challenges for teachers in designing and implementing a transdisciplinary early childhood curriculum?

This question is inquired through the interview questions. Based on the beliefs of teachers about collaborative planning of kindergarten and subject teachers, it can be stated that in a transdisciplinary curriculum working with single subject teachers is a requirement to implement a common unit. As stated in the study of Biro (2003), due to transdisciplinary nature of units in the IB-PYP, there should be a high level of collaboration between kindergarten teachers and single subject teachers. To increase the effectiveness of this collaboration in schools, all of the teachers who teach the same grade level may be given more non-teaching time.

Another challenge for kindergarten teachers is subjects that are taught by single subject teachers. According to the answers of the teachers, the more the subjects are taught by the same teacher, the more transdisciplinary curriculum becomes effective. The reason for this may be

that following the thematic teaching units and doing follow up activities are easy by one kindergarten teacher. When all the subject areas are taught by one teacher, scheduling can be more flexible, and hence the combination of different subject becomes easier. As stated in IBO (2009) effectiveness of the transdisciplinarity of curriculum will be increased when the subjects are taught by few teachers. The school that the study was conducted has advantages about this challenge, because most of the subjects are taught by the kindergarten teachers. However, some subjects require special education. Thus single subject teachers are used.

Research Question 2: What are the troubles that teachers face while integrating disciplines in a unit?

As can bee seen from the Table 3 in the results chapter, in which each unit's integrated subjects are given, mathematics is not integrated into every unit. According to IB, mathematics cannot be integrated into units all the time (IBO, 2009). Wherever possible, it should be taught through relevant and realistic context of units. It is important to keep in mind that the skills like analysis and synthesis gained through mathematics will help students to make their inquiry into units (IBO, 2009). It can be noted that, mathematics may be integrated to transdisciplinary units by activities. At the same time, a stand alone unit may be implemented. Lack of continuous professional development opportunities and insufficient resources might have caused this difficulty within the school. Shoham (1998) states the importance of teachers' training in integrated curricula. If the teachers are taught about integration of mathematics, they can manage this trouble easily.

According to the Table 3, units are developed from a globally significant real life context. None of the units is specific to one subject area. Language is integrated into almost all of the units. Turkish as a mother

language is also integrated into all units. However, second languages English and German are integrated into five thematic teaching units. The unit that is not integrated into second languages is "Space Track". The reason of this might be that level of vocabulary is high for six-year-old children.

Moreover, art, drama, music and ICT are integrated into all units. As mentioned in the literature review, these subjects are easy to integrate into a unit. ICT is mostly used as a tool to facilitate learning experiences, thus, ICT can be defined as a transdisciplinary subject area, because it can be used in all subject areas as a tool of learning. It can be argued that integration of applied subject areas is easier than doing it in science, math and social sciences. The reason for this may be that art, drama, and music are skill based subject areas in early childhood education; therefore skills can be adapted to any theme or unit. This result is supported by the literature. According to the study of Snuder (2001), teachers believe that music and art can be easily connected with other disciplines easily, because music is in the service of another discipline.

Science is not integrated into the unit titled "Our Needs" , as this unit is a more social science related. Social sciences can be integrated to all subjects because the themes chosen for six-year-olds can be inquired through social sciences. On the other hand, science cannot be integrated into all units. Some units may not include scientific concepts. This time, science can be implemented as stand alone unit.

Research Question 3: How collaborative planning is done? What are the teachers' beliefs about collaborative planning?

The teachers make horizontal collaborative planning as stated in Dukewits and Gowin's (1996) study, which refers to the work of the teachers who teach in the same grade level.

Teachers claim that there are advantages of collaborative planning in transdisciplinary approach. They hold meetings about thematic teaching units frequently, once a week. It can be said that these meetings help them to implement transdisciplinary curriculum because they share activities, plans and implications in these meetings.

On the other hand, teachers claim that working with single subject teachers may be hard to carry out round table discussions. Sometimes they have difficulties while arranging meeting times. It can be noted that, this trouble may be over come by giving priority to these issues during in service trainings. If the teachers have more planning and preparation time, they can deal with such problems more easily.

It can be stated that, collaborative planning is an essential part of transdisciplinary curriculum in early childhood education. Administrators can arrange common times for teachers' round table discussion time once a week. By this way, each teacher will be aware of what is going on in the school for improving an effective transdisciplinary curriculum

Research Question 4: What are the personal reflections of early childhood educators on transdisciplinary approach of integrated curriculum?

According to personal reflections of teachers, it can be claimed that transdisciplinary curriculum has a positive impression among kindergarten teachers. However, at the beginning of the implementation, when teachers do not have much information about transdisciplinary approach, they have some concerns. Prior to in-service trainings, they are anxious about collaborative planning and integration of subject areas into thematic teaching units.

According to beliefs and perspectives of the teachers, it can be said that education of teachers before the program implementation is very

important. This can be done through in-service training hours in schools. Shoham (1998) conducts a study with teachers' needs about integrated curricula. According to this study, teacher's education increases the effectiveness of teachers in integrated curricula. Interdiscipliniarity can be adapted to teachers' education. In addition, in-service training and guidance also increase teachers' motivation to implement an effective integrated curriculum.

Research Question 5: What are the effects of transdisciplinary approach based curriculum on students and parents?

Teachers state that transdisciplinary curriculum has many advantages to children's learning as compared to the traditional curriculum models. The most frequently stated advantage is that children can make connections of different subject areas on a common theme. This statement can be absolutely found in the definition of transdisciplinary approach (Drake, 2007). Furthermore, as in the unit plans, learning activities are student centered and aim to develop the whole child. According to Vars (2001) in integrated curriculum models teachers feel their students more comfortable to explore.

Likewise, teachers point to the advantages of transdisciplinary curriculum on the part of the families. It can be argued that, families more easily follow their children's school life through transdisciplinary approach, if they are informed about the thematic teaching units. In integrated curriculum models, teachers carry great importance, because they work collaboratively to develop the curriculum. According to Loepp (1999) teachers have great importance on informing parents and community about the curriculum, thus the resistance will be decreased.

To sum up, this qualitative case study supports the argument that IB-PYP, a model of transdisciplinary approach, has positive effects on the

development of child from the point of view of teachers who implement it at a private primary school in Ankara.

Primary Years Program has been implemented by schools all over the word, and the number of schools is increasing day by day. Academic studies will determine the needs and consequences about the transdisciplinary approach, like IB-PYP. This will result in the quality of the early childhood curricula. Moreover, IB-PYP has a continuum in it self that is in elementary grade and high school children have chance to continue IB programs, which promise children a life long learning journey.

Recommendations for Further Research

This study aims to explore teachers' beliefs and perspectives about transdisciplinary approach of integrated curriculum. This study is aligned with the International Baccalaureate Primary Years Program, because IB-PYP curriculum model is established according to transdisciplinary approach.

In this study, kindergarten teachers' beliefs and perspectives are inquired by interviewing with them. Further similar researchers are suggested to cover more than one school as settings in order to avoid misleading ideas which arise from the common institutional climate. It is clear that the more number of schools, teachers, students, and parents are involved, the more objective judgments can be made. A larger sample population and observational data would also provide more sound generalizations.

Further studies about the structure of the curriculum could be done in order to find out qualitative data about the curriculum. In Turkey, structure of the curriculum can be analyzed through comparing with national curriculums in both early childhood and upper grades.

In addition, the academic success and development of students among standardized tests could be quantitatively studied. In Turkey, to evaluate the success of IB-PYP in standardized tests, level assessment test scores can be compared within IB-PYP students and traditional method students.

Moreover, single subjects can be analyzed from different aspects. Each subject's integration can be examined in a transdisciplinary curriculum; likewise, single subject teachers' beliefs and perspectives about transdisciplinary approach can be examined.

Whereas transdisciplinary approach is a new model in education, many studies could be done to examine the model from various aspects.

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APPENDICES

A. ÖĞRETMENLERE UYGULANAN ANKET SORULARI

QUESTIONNAIRE FOR TEACHERS

- Kaç yıldır öğretmenlik yapıyorsunuz?
- Mezun olduğunuz okul?
- Bütünleşik eğitim programını kaç yaş grubu ile uyguladınız?
- Kaç yıldır Bütünleşik eğitim programı uyguluyorsunuz?
- Bütünleşik eğitim programını ilk uyguladığınızda ne düşünmüştünüz?

B. INTERVIEW QUESTIONS FOR TEACHERS

ÖĞRETMENLER İLE YAPILAN RÖPORTAJ SORULARI

- Sizce Bütünleşik eğitim programı nedir?
- Bütünleşik eğitim programını ilk uyguladığınızda ne düşünmüştünüz?
- Öğretmen açısından Bütünleşik eğitim programının olumlu yönleri nelerdir?
- Öğrenci açısından Bütünleşik eğitim programının olumlu yönleri nelerdir?
- Öğretmen açısından Bütünleşik eğitim programının olumsuz yönleri nelerdir?
- Öğrenci açısından Bütünleşik eğitim programının olumsuz yönleri nelerdir?
- Bütünleşik eğitim programında aile katılımını nasıl sağlıyorsunuz?
- Bütünleşik eğitim programının aileye ne gibi katkıları vardır?
- Ünitelerinizi hangi ders veya dersleri odak alarak kurguluyorsunuz?
- En çok hangi dersleri odak ders olarak alıyorsunuz?
- Hangi dersleri birbiri ile ilişkilendirmenin kolay olduğunu düşünüyorsunuz?
- Hangi dersleri üniteniz ile ilişkilendirmekte zorluk yaşıyorsunuz?
- Değerlendirme uygulamalarınız nelerdir?
- Planlama süreciniz nasıldır?
- Ünitelerinizi nasıl değerlendiriyorsunuz?
- Branş öğretmenleri ile nasıl bağlantı kuruyorsunuz?