A Proposal Of Teacher-Supported Model For Developing Primary School Students' Self-Directed Learning Skills (PTSSDLM) [*]

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Abstract

In this research, it was aimed to develop self-directed learning (SDL) skills of primary school students attending 1st-4th years and to design a self-directed learning model (PTSSDLM) for 4th grades. Action research model was used in this study. Self-directed learning skills were tried to be described through interviews done with students, teachers and parents and observations of students' learning behaviors in classes. Depends on the results of the data obtained from interviews and observations, instructional intervention were done during seven weeks for developing students' SDL planning skills. Data obtained during intervention weeks and at the end of the research were collected with audio records, field notes, researcher daily, students' work sheets, reliability and validity committee's meeting records, self-evaluation form, interviews done with students and class teacher. Findings obtained from data analysis revealed that students' usage level of SDL planning skills were increased during the intervention. Based on findings obtained from the action research, A Teacher-Supported Self-Directed Learning Model was developed for primary school students attending 1st to 4th years.

Introduction

In the 21st century, societies need individuals developing themselves and having lifelong learning skills (Mok & Lung, 2005). Self-directed learning (SDL) is seen as a key of lifelong learning. It is a concept combined educational trends named adult learning, collaborative learning, humanistic learning, democratic learning and critical pedagogy (Saeednia, 2011). Knowles (1975) defines self-directed learning as individuals' taking initiative to define their own learning needs without others' help, determining their learning goals, identifying material and human resources needed for learning and evaluating the outcomes achieved by applying appropriate learning strategies (as cited in Scott, 2006). According to Long (1990), self-directed learning refers to mental processes used to determine

learning objectives and behavioral activities involving the search and definition of knowledge required to achieve these objectives (as cited in Hoban & Hoban, 2004**).** Tough (1979) also defines self-directed learning as learners' taking responsibility in planning and managing their own learning process. Generally speaking, self-directed learning is an approach in which learners assumed responsibility for learning and they decide what, how, where, when and how much they are going to learn (Brookfield, 1984 as cited in Donaghy, 2005; Fisher, King, & Tague, 2001; O'Shea, 2003; Tracy & Tracy, 2005). Although self-directed learning and self-regulated learning are used interchangeably in some studies, there are similarities and differences between these two concepts. When the definitions of self-directed learning are examined in detail, it is seen that they are somewhat related to learners' self-regulatory learning. O'Shea (2003) states that self-directed learning is closely related to certain concepts such as self-regulation, self-efficacy and self-control. The learners who acquire self-directed learning skills need control, regulation, internal and external motivation and achievement while dealing with their learning activities and experiences (O'Shea, 2003). Hoban and Hoban (2004, p. 20), point out that there are two significant dimensions of self-directed learning. The first dimension includes motivation, metacognition and self-regulation while the second one is about self-confidence and self-efficacy. Loyens, Magda, and Rickers (2008), and Bracey (2010) examine the relationship between self-directed learning and self-regulatory learning. The differences and similarities suggested by these researchers clearly show that learners' needs are more important in self-directed learning, more responsibilities are assumed for learning and more emphasis is given to the fact that they are more independent learners who make their own decisions according to their interests and abilities. As we can conclude from the definitions suggested by pedagogues, another concept related to both self-directed learning and self-regulated learning is metacognition. Defined as self-regulation and self-control (Schoenfeld, 1992), metacognition is a metasystem that includes individuals' awareness about events, phenomena and functions in their minds and their purposeful management of mind activities and functions (Crick, 2000 as cited in Polat & Uslu, 2012). It can be said that metacognition awareness involves individuals' being aware of what and how to learn, developing a system of learning; i.e the skills of learning to learn (Çakıroğlu, 2007). In this respect, as Loyens et al. (2008) state, self-directed learning is a more comprehensive concept also involving self-regulatory learning and cognitive awareness. In accordance with these definitions, SDL is defined as a learning type based upon students leading their learning and taking their own learning responsibility in different learning environments, aiming sustainability in learning and requiring students to have affective and cognitive skills for realize this learning process.

       SDL and its principles require certain changes and modifications in all the elements forming a traditional school structure. Such changes mainly occur in teaching and learning processes in terms of time and environment they take place (Fahnoe & Mishra, 2013). First of all, learning environments should be arranged in such a way that learners will feel free, comfortable and efficient. A learning environment that most efficiently supports self-directed learning should be a place where learners are able to reflect on their problems, expectations and concerns with the help of others as well as a place free from judgements and where they feel free, comfortable and effective (Oswald, 2003). It is also important to design active learning environments while designing a learning environment where learners feel comfortable. Based on these basic principles, the characteristics of an appropriate learning environment for SDL can be listed as follows: provision of research-based learning opportunities (Arnoldson, 2013; Martin, Sexton, Franklin, & Gerlovich, 2009); provision of collaboration-based learning opportunities (Pyrini, 2013; Donaghy, 2005); being enriched by employing different learning

resources (Candy, 2004 as cited in Fahnoe & Mishra, 2013; Costa & Kallick, 2004); taking into consideration the individual differences of learners (Wiley, 1983 as cited in Fisher et al., 2001; Costa & Kallick, 2004), and their readiness for SDL (Brookfield, 1986; Candy, 1991; Knowles, 1975 as cited in Oswald, 2003; Grow, 1991; Long, 1990) Transforming school culture from a tightly controlled learning environment to a new one where SDL is well supported requires a series of changes at all levels. It is essential for teachers to guide learners and for parents to support the process when learners become self-directed learners. There are many suggestions offered by experts regarding the responsibilities of teachers during self-directed learning process, which can be summarized under the following categories: planning, managing and evaluating the tasks and responsibilities. The first thing to be careful about in this process is learners' fulfilling their responsibilities while planning managing and evaluating their learning process. Teachers should be supporters and guide of this process rather than employing a teacher-centered approach. The following issues are also important with regards to guidance for the planning of self-directed learning: determining self-directed learning readiness and designing activities suitable for their levels (Grow, 1991; Costa & Kallick, 2004; Liang, Wang, & Tung, 2011); helping learners to identify and be aware of their learning styles (James & Blank, 1993; Canipe & Fogerson, 2006); and motivating learners to learn (Oswald, 2003). As for the management of self-directed learning process, teacher should be a good role model for students (Costa & Kallick, 2004). They should also guide learners in the following processes: determining learning strategies appropriate for their self-directed learning readiness levels (Long, 1990; Liang et al., 2011); using self-regulatory learning strategies (Long, 1990; Vanderstoep & Pintrich, 2003); and transferring the acquired knowledge to new situations (Costa & Kallick, 2004). It is essential for teachers to provide feedback for the completed tasks and activities (Garrison, 1992; Garmston & Costa, 2013), encourage learners to reflect critically on their own learning process (Hammonde & Collins, 1991 as cited in Oswald, 2003); and create opportunities for self-assessment and peer assessment practices (Costa & Kallick, 2004; Wang, 2013) . Self-learning practices are not limited to school environments and they should not be. Therefore; developing these skills does not only depend on teachers' efforts and organization of school and classroom environment in a way suitable for self-directed learning. Parents also should take responsibilities for learning-teaching processes and support the development of these skills. Although there are not many studies in the related literature suggesting certain responsibilities of families in their children's self-directed learning, there are considerable number of studies on families' responsibilities for their children's education in general. First of all, families should be role models for their children with their behaviors and with the use of self-regulatory learning (Hoover-Dempsey & Sandler, 1995 as cited in Kılıç, 2010; Martinez-Pons, 1996 as cited in Üredi & Erden, 2009). In addition, families should encourage their children to do research on a topic of their interests and abilities (Davis, 2006; Saulny, 2006 as cited in Zsiga & Webster, 2007), motivate them (Sebastian, 2010) and to be aware of their problems and take precautions to avoid these problems. They should also help them to develop positive attitude towards learning and acquire study skills and make effective study planning and provide them with necessary equipment (Berger, 2008). Helping them with homework, providing out-of-school and home learning environments (Berger, 2008), collaborating with teachers and participating in educational and social activities at schools (Çelenk, 2003; Cavkaytar, 2008) are also among parents' responsibilities to help their children to realize self-directed learning.

The basic aim of creating learning environment suitable for SDL and defining the duties and responsibilities of teachers and parents is to educate individuals who are life-long learners, responsible for their own learning and able to realize his/her learning without getting any help from others. Although the realization of SDL skills differs according to SDL readiness levels, there are certain related skills that learners are supposed to be equipped with so as to be independent learners. In studies carried out for determining self-directed learning skills (Oddi, 1984; Long, 1990; Carr, 1999; Derrick, 2001; Meyer, 2001; Fisher et al., 2001; Ponton, 2006; Williamson, 2007), it was seen that these skills are formed from cognitive and affective skills. Affective skills named as personal characteristics are also intended to motivate students to SDL, begin SDL process and provide continually in SDL. In literature review; these skills are valuing to learn, being goal directedness, being willingness to learn, being curios to learn, having basic freedoms, taking their own learning responsibility, being entrepreneurship, having self-confidence and being persistent in learning.

In addition to having affective skills, students also have to have cognitive skills. In literature review, these skills are composition of planning, implementing and evaluating of self-directed learning. These skills are determining learning needs, determining learning goals, managing learning resources, managing studying time, managing learning environment, using cognitive strategies, using collaborative learning skills, using communication skills, using problem solving skills, using research skills, using critical thinking skills, making self-evaluation and reflecting of learning. Examining of definitions, researches and scales studies about self-directed learning, it was seen that SDL skills that students should be equipped with were cognitive skills intended to plan and implement self-directed learning and affective skills intended to begin self-directed learning process. According to Raemdonck (2006), self-directed learning is formed from personal characteristics effecting learning process and determining goals, planning, using strategies and reflecting of learning (as cited in Cornelissen, 2012).

Based on literature review, SDL skills can be categorized in two groups as planning skills and implementing skills. Planning skills consist of preparing learning activities, planning learning process and study time before implementing this process. In order to realizing self-directed learning, students have to be their own teacher, choose and use suitable teaching strategies, methods and techniques that fit with learning task after planning the learning process. These skills are defined as self-directed learning implementation skills.

There are some models suggested by experts to guide in developing skills required to realize SDL (Knowles, 1975 as cited in Oswald, 2003; Long, 1990; Grow, 1991; Brockett & Hiemstra, 1991; Garrison, 1997; Van Deur, 2004; Van Merriënboer & Sluijsmans, 2009). Although most of these models were developed for adults learners, (Knowles, 1975 as cited in Oswald, 2003; Long, 1990; Grow, 1991; Brockett & Hiemstra, 1991; Garrison, 1997), the model designed by Van Merriënboer and Sluijsmans (2009) was developed for secondary school students and by Van Deur (2004) for primary school children. Such models involve certain dimensions such as teacher support, determining learning needs and goals, use of different learning resources, encouraging learners to actively participate in learning process, evaluation of learning process, cooperative learning, learner motivation, willingness to learn, learners' assuming responsibility for learning. There are similarities and differences among these models in terms of the dimensions they mainly focus on.   Some of these dimensions exist in all the models; which are determining learning goals and encouraging learners to actively participate in learning process. Determining learning needs, use of different learning resources, evaluation of learning process and collaborative learning are the dimensions available in most of the models. Some of these dimensions are emphasized more in some "self-directed learning models", that is they are an

important component of the models. To illustrate with, determining learners' needs or weaknesses of learners with regards to his/her abilities are the first important phase in Knowles' (1975) model (as cited in Oswald, 2003). The model based on cognitive load theory and developed by Van Merriënboer ve Sluijsmans (2009), suggests the determination of learners' needs and which tasks to be completed depending on learners' prior knowledge while the load and out-of-topic loads are being reduced. As for the phase when effective cognitive load is increased, the model makes evaluations following each learning task determined by learners, determines the strengths and weaknesses regarding their performances and tries to fix them as much as possible (Van Merriënboer and Sluijsmans, 2009). Garrison (1997), in his comprehensive and interactive Self-learning Model, emphasizes that self-learning should occur in collaborative and constructive learning environments (as cited in Snarski, 2008). The dimensions such as motivation, willingness and taking responsibility for learning are mentioned in these models relatively less than other dimensions. Initial motivation, task motivation and learner responsibility are the basic characteristics of Garrison's (1977) model. Van Deur (2004), in his self-learning model developed for primary school students, suggests that willingness, which is one of the internal factors, affects learner's attitude towards tasks and his insistence, attempts and risk taking. Brockett and Hiemstra (1991), in their Personal Responsibility Guidance Model, include personal responsibility taking skills in the center of self-learning. They deal with self-learning both as a teaching method and personal characteristics of learners. Willingness is highlighted in Long's (1990) and Van Deur's (2004) models. According to Long (1990), self-learning occurs when learner's control over psychological factors and educational situations in an harmonious way and one of the most significant concepts in this process is the willingness of learners to manage his/her self-learning (Oswald, 2003).

When self-directed learning models and researches about self-directed learning were examined, it was seen that the majority of these researches were done on adult learning (James, 2008). Experimental researches for developing primary school students' self-directed learning skills are not sufficient. Similarly, the models proposed by educational specialists to develop SDL skills are mostly appropriate for adult education. Another significant issue in these models is the presence of more emphasis on cognitive skills than affective skills. Developing self-directed learning skills of students is important since early education years. Because of this, developing these skills in primary schools is not only necessity but it is also obligation. Researches (Saeednia, 2011; Van Deur, 2004) showed that the majority of primary school students didn't know what SDL was and its extent adequately. This result also showed that students couldn't realize self-directed leaning adequately. In order to develop their SDL skills, learning environments that create students' awareness about self-directed learning and provide them to use self-directed learning skills have to be organized. Consideringthese problems and needs, researchers aimed to develop self-directed learning (SDL) skills of primary school students attending 1st- 4th year and to design a self-directed learning model for them.

Purpose

The general purpose of this study is developing self-directed learning skills of primary school students attending 1st-4th year and designing a self-directed model for these students. Based on this general purpose, following questions were answered:

1. What are teachers', parents' and students' opinions about SDL?
2. What instructional practices teachers do for developing 1st- 4th year primary school students' SDL skills?
3. How do 4th grade students' use;
    3.1. determining learning needs,
    3.2. managing learning resources,
    3.3. determining learning goals,
    3.4. communication,
    3.5. taking their own learning responsibilities,
    3.6. valuing to learn,
    3.7. winllingness to learn

    self-directed learning planning skills in Turkish lesson?

4. How should be a self-directed learning model for developing 1st - 4th grade students' self-directed learning skills?

Method

The model of this study was action research. Mills (2003) defines action research as a systematic data collection process about school mechanisms, how learning occurs and how learners can learn better. The educational stakeholders of this process are teachers, administrators, counsellors or individuals who are interested in teaching and learning (Mertler, 2006). There are various categories for action research types in the related literature. The main criteria for these categories are the appropriateness of action research to the context where it is implemented, the aims of researcher and the characteristics of the research conducted. The type of action research applied in this study is participatory action research. In this type of action research, researcher explores the practice, identifies ineffective and problematic parts with a critical point of view, changes the theory and implementation or improves them (Hendrick, 2006). In this study, the researcher had a participant role and was responsible for arranging classroom environment, planning the activities, voice recordings of classroom activities, keeping diaries before and after the lessons, analyzing the data collected, preparing new action plans according to the analysis results and making sure that classroom teacher implemented these action plans. In addition, the following people also participated in the study: three instructors who helped with the design and implementation of the study and took part in Validity and Reliability Committee; the members of thesis monitoring and assessing committee; 4-B class teacher of primary school and her students.

Action Research Process

Mills (2003) explains action research process in four main phases; which are deciding on problematic situation, collecting and analyzing data to find solutions to the problem, and finally developing action plans to eliminate the problem (Mills, 2003). Mertler and Charles (2005) (as cited in Mertler, 2006) mentions about action research process in phases such as planning, implementation, development and reflection. Planning phase is about determining and narrowing the topic, making a detailed literature review and realizing the action plan. Implementation phase involves data collection and analysis. In development phase, an action plan is developed based on the results of data analysis. Finally, the results obtained should be shared with other stakeholders in reflection phase. Figure 1 displays the steps followed in an action research.
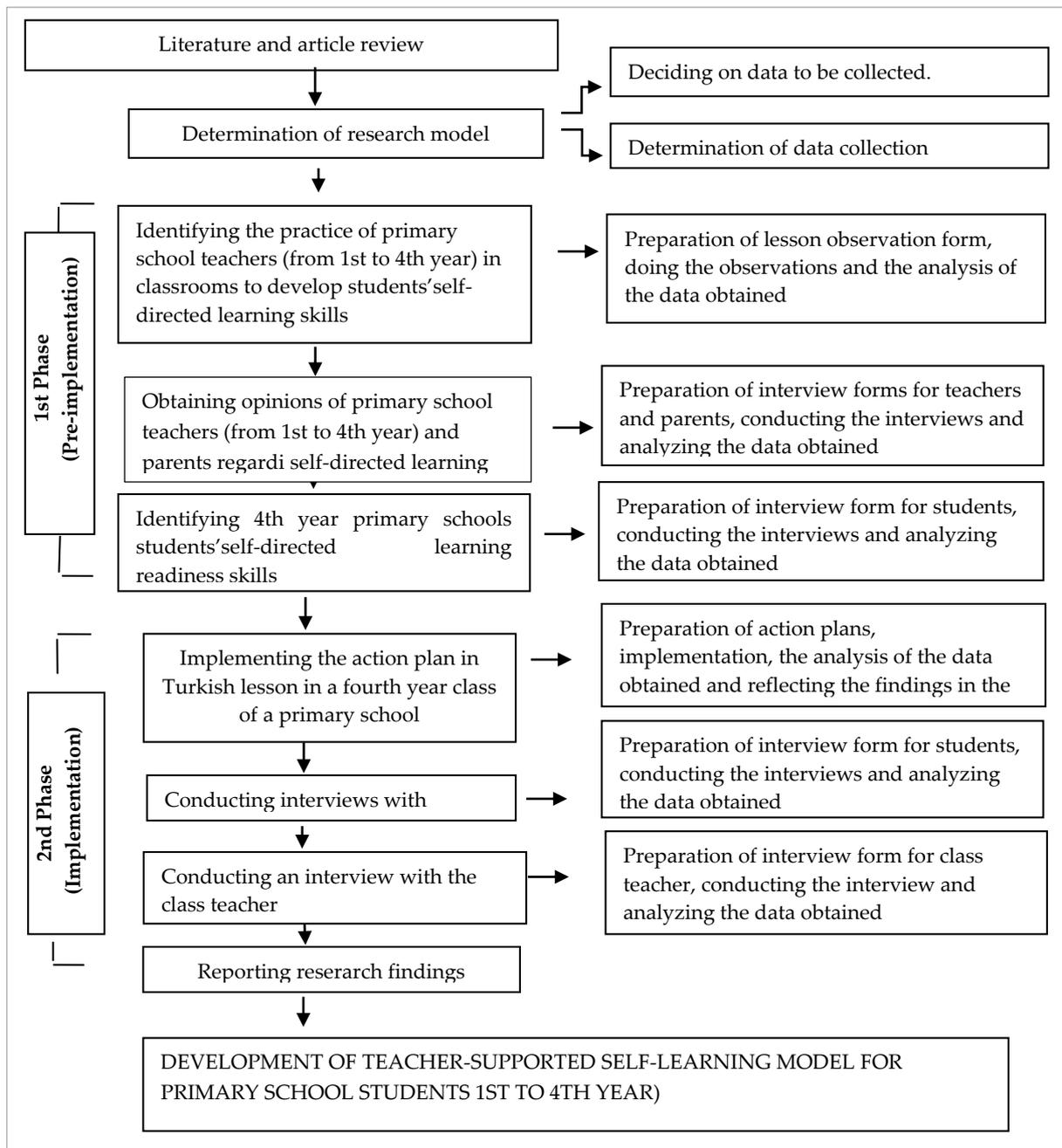
Figure 1. General Diagram for the Action Research Phase of the Study

The researcher examined the following issues in the current study: the scope of self-directed learning approach; theoretical foundations; self-directed learning; the roles of teachers and parents; and the characteristics of learning environments. The review of the related literature done to determine the problem area revealed no research about self-directed learning skills and educational applications to develop such skills. After the literature review, the researcher collected data about the topic. As shown in Figure 1, action research process in this study consists of two phases; pre-implementation and post-implementation.

As it can be seen in Figure 1, review of literature, interviews with teachers, parents and students and classroom observations were realized . The data gathered from them revealed that there was no sufficient instructional practices done for o determine study subject and problem in detail prior to the application of action plans. developing 1st- 4th year primary school students' SDL planning skills. Considering this problem, action plans were planned and implemented for developing students' SDL planning skills. Action research cycle used in this study was adapted from Mertler and Charle's action research cycle (Mertler & Charle, 2005 as cited in Mertler, 2006) and it was showed in figure 2.
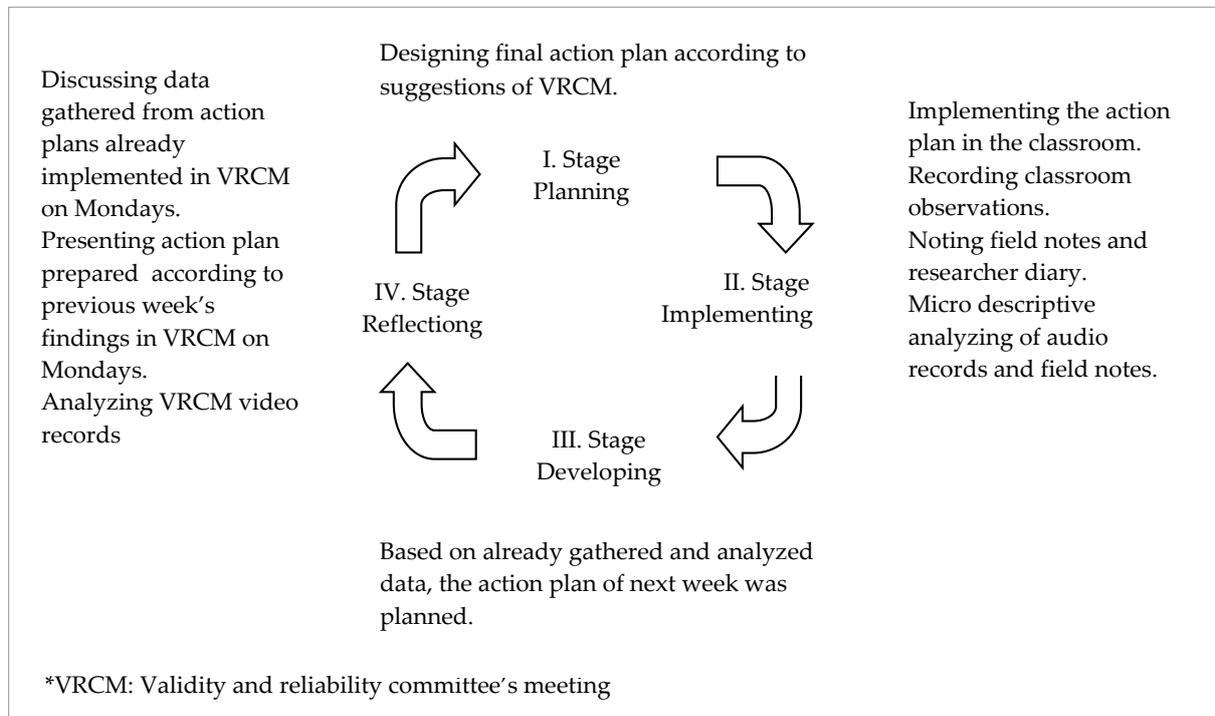

Figure 2. Action Research Cycle of the Study

This implementation of the action research took place in Turkish course lessons in 4-b class of one primary school during the Fall semester of 2012-2013 academic year. The steps taken in this action research between 03.10-28.11.2013, as displayed in Figure 1, were explained below:

Preparation of First Action Plan: In this phase, the course book, student's book and students' activity book used for Turkish course in the fourth year of primary schools during 2012-2013 academic year in Eskişehir were examined. Later, a draft weekly plan for the first week focusing on the development of SDL skills was prepared accordingly by consulting with the class teacher where action plan was implemented and with another primary school teacher.

Validity and Reliability Committee Meeting-1 (VRCM (1): The first meeting of the committee was held on September 23rd 2013 with the participation of three members of the committee and the researcher. In this meeting, the researcher presented and provided information about the following issues and documents: the aim of the study, research questions, first action plans, self-directed learning skills list, the duties and responsibilities of validity and reliability committee, micro analysis forms developed for weekly analyses, the themes to be covered and information about the texts to be used in Turkish course during the implementation, and the first action plan prepared.

Preparation and Implementation of Weekly Action Plan: The first action plan was launched on October 3rd 2013. In the following weeks, regular weekly action plans were prepared focusing on SDL readiness skills that are labeled by the committee as "poorly developed" or "not developed at all". These action plans were implemented during three class hours a week (two hours a week in the last

two weeks upon the request of the class teacher). There were two criteria used while determining the time of action plan implementation; the extent the skills to be developed match with the outcomes of lesson for the week. In addition, Tuesday, Wednesday and Thursday were chosen for the implementations so that the data from these implementations were presented to the committee meeting in time. To avoid any disconnection between the implementations, they were carried out on the successive days.

The Analysis of the Data Obtained from the Implementation of Action Plans: Micro analyses were applied for the data collected and the findings from the analyses were presented to the experts in the committee during the meetings held every week. How the analyses were done was explained in the section titled "Reliability and Validity Studies of the Research"

Validity and Reliability Committee Meetings (VRCM (2-6): Validity and Reliability Committee met on each Monday following each implementation week. The researcher shared the results of micro analyses for the previous week's implementation, mentioned about the problems faced during the implementation and analyses and discussed possible solutions with the members of the committee. Later, the researcher presented the next week's weekly lesson plan prepared based on the analysis results to the committee and received feedback and suggestions. Finally, necessary changes and revisions were made according to the feedback and suggestions.

The Completion of Action Plan Implementation Process: Following the completion of action plan implementation process, post implementation data were collected.

Participants

This study consisted of two stages named pre-implementation and implementation of the action research. In the first stage of the study, the participants were chosen by using criterion sampling method which is a type of purposive sampling method. The schools and students observed were determined on the basis of medium socioeconomic level. In order to respond first and second purpose questions of the study 1st, 2nd, 3rd   and 4th class year were chosen in first stage of the study. According to these criteria 60 students attending in school A and 61 students attending in school B were observed. Eight teachers studied in these schools and eight students attended in these schools were chosen to interview. General academic success level was also determined another criteria in choosing students. The students with high or low level academic achievement were chosen for this current study. While determining the students from 1st year of primary school, their class teacher's opinions were taken. According to their class teacher's opinion, students were chosen. As for those attending from 2nd to 4th year, the criteria for the choice were the opinions of their class teachers and their grades from the previous years. Accordingly, the students in this group with a mean grade between 45 and 60 were labeled as "students with low academic achievement" and those with a mean grade between 90 and 100 as "students with high academic achievement". A certain number of students were chosen among the students with low academic achievement. The criteria for this choice were that these students should not have any problems with reading and writing skills and should not have any difficulties in comprehension when compared to the general level of the class and cognitive capacity of their age. The teachers were consulted in this choice to collect data to determine which students meet these criteria. Although 1st year students have not yet developed reading and writing skills at that level, it was decided to obtain their opinions about self-directed learning as well since they may have self-directed learning experiences that are based on observation and interview rather than reading and writing. Before realizing the interviews with children, the pilot application was done and it was controlled if there was any question that students didn't understand. Interviews were done with the parents of these students. In the second phase of the study (action research process), 4/B class, where the problem situation determined through literature review of action plans, observations and interviews was identified, was chosen as implementation class. Another reason to conduct action research with 4th year students, the last year of primary school education system, is the assumption that they have already developed self-directed learning skills starting from 1st year. Six focus students were chosen from 32-student 4-B class by using criterion sampling method and the criteria for this

choice was academic achievement and class teacher's opinion. To determine whether these focus students meet predetermined criteria or not, the researcher used means grades showing academic success and the opinions of their teacher. Later, the students from other classes who have mean grade of academic achievement of 70-80 were determined and among these students, those who have not realized self-directed learning but are believed to be realizing when correct training is applied were chosen according to class teacher's opinion. In other words, they don't have any obstacle to develop their self-directed learning skills effectively. The class teacher was not sure about only one student thinking that he may not succeed in developing these skills. Although this student developed these skills to some extent, no changes were made in focus students.

Data Collection Tool

Qualitative and quantitative data collection methods were used in this study. In the first stage of the study, self-directed learning skills that primary students have to be equipped with were described through semi-structured interviews done with students, teachers and parents and observations of students' learning behaviors in classes. The data collection tools used in the first phase of the study were explained below:

Lesson observation video recordings: For the purposes of the current study, a series of observations were made and video recorded in order to determine the practices of teachers teaching in the classes ranging from 1st year to 4th year regarding the development of students' self-directed learning skills and the skills developed by the students in these classes. A total of 72 hours of classroom observation were completed for each class; 18 hours of observation for each class (from 1st to 4th year primary school classes). The observations in primary school A were conducted between October 10th 2012 and November 16th 2012, and between November 20th and December 11th 2012 in school B. The observations were made during the following lessons: Turkish, Life Sciences, Mathematics, Social Sciences and Science and Technology.

Field notes and researcher's diary: The researcher also took field notes during observations in addition to video recordings. The researcher did not participate in class activities and sat passively at the back of the classroom during observations not to distract both students and the teacher. He took field notes for every single lesson and kept a research diary at the end of or sometimes prior to the lessons to write about his feelings, opinions and impressions about the lessons.

Teacher interview form: A number of interviews were conducted with teachers within the scope of the study. The questions in the interview form were presented to some experts before they were used during the interviews to ensure internal and external validity. Revised based on the feedback received, the questions were piloted with 5 primary school teachers teaching in the classes ranging from 1st year to 5th year; one teacher from each group. The interview form was finalized by using the feedback obtained during piloting. There are six questions in the form and it aims to collect teachers' opinions about what self-directed learning is, self-directed learning skills their students have and the practices they employed in their classrooms to develop these skills. In additions, there are questions asking their opinions about the factors impeding effective use of these skills and their suggestions for effective development of these skills. The permissions of the participants were taken for voice recording and the interviews were conducted between March 18th - 27th 2013 with eight teachers and total duration of the interviews was 270 minutes.

Parent Interview Form: It is a 6-question semi-structured interview form prepared for parents. It was presented for expert opinion prior to the interviews. Revised according to the feedback received, the form was piloted with parents of 5th year students and later finalized according to the feedback received. The form aims to obtain parents' opinions about what self-directed learning is, what self-directed learning skills their children have and how they support their children in the development of these skills. In additions, there are questions asking their opinions about the factors impeding effective use of these skills and their suggestions for effective development of these skills. The permissions of the participants were taken for voice recording and the interviews were conducted between April 1st – 10th 2013 with eight parents and total duration of the interviews was 170 minutes.

Student interview form: It is a 6-question semi-structured interview form designed for fourth year primary school students. The questions were presented to two experts in the field of educational programs and teaching before they was actually used. They checked whether the questions are clear and covered the research topic or not. Revised following the feedback from the experts, the new form was piloted with 3 fourth year students. According to the feedback received, one question was revised and small changes were made in two questions to make it clearer to understand. The finalized form aimed at obtaining the opinions of fourth year primary school students before the study about what self-directed learning is, whether they realize it or not, the self-directed learning skills they have, the problems they face while realizing self-directed learning and how self-directed learning can be realized effectively. To avoid data loss, the interviews were voice recorded upon the permission of the parents and carried out between May 6th - 14th 2013 with eight students and total duration of the interviews was 220 minutes.

Depends on the results of the data obtained from interviews and observations, instructional intervention were done during seven weeks for developing students' SDL planning skills. In the second stage of the study, data obtained during intervention weeks and at the end of the research were collected with audio records, field notes, researcher daily, students' work sheets, reliability and validity committee's meeting records, self-evaluation form, interviews done with students and class teacher. The data collection tools used in the second phase of the study were explained below:

Voice recordings: Since the teacher of the class where action plans were implemented did not allow video recording, weekly implementations were voice recorded. The recordings were used to monitor students' use of self-directed learning skills, their participation in teaching-learning process and validity and reliability of research data. These recordings were valuable data to be used in the detailed description of lessons, in the evaluation of the implementations during validity and reliability meetings and the preparation of the following action plans.

Field notes and researcher's diary: The researcher took notes during each action plan implementation and kept a diary before and after each lesson. Also participant observer participated in the lessons for 3 weeks during action plan implementation and took field notes.

Weekly lesson plans: A total of 7 weekly lesson plans were prepared to develop self-directed learning readiness skills.

Student work sheets: The researcher regularly prepared activities to improve self-directed learning skills throughout the implementations so as to observe the use of these skills by the students. These weekly activities were collected and filed by the researcher.

Recordings of Validity and Reliability Committee: A validity and reliability committee was formed at the beginning of the implementation process. The weekly meetings held throughout the implementation process with the members of the committee discussed the problems faced during implementation both in theoretical and methodological terms and possible solutions for these problems. The decisions made in these meetings were reflected in the next week's action plan.

Self-directed Learning Readiness Self-evaluation Form: The opinions of the students regarding their use of self-directed learning readiness skills were collected by administering Self-directed Learning Readiness Self-evaluation Form at the end of the process. 43 items in this self-evaluation form were examined by the experts in the committee prior to the administration and necessary revisions were made in terms of clarity and comprehensibility. The finalized version was administered on December 4th 2013 after the implementation.

Student Interview Form: It is a 14-question semi-structured interview form designed for the focus students in the class where action research was implemented. The questions were presented to the members of Validity and Reliability Committee and the form was finalized based on the feedback received. This interview form aimed at obtaining the opinions of focus students about the efficiency of the activities completed throughout the implementation and the presence of certain self-directed learning readiness skills at the end of the implementation. To avoid data loss, the permissions of students and their parents were taken for voice recording and the interviews were conducted between December 12th - 17th 2013 with six students and the total duration of the interviews was 207 minutes.

Teacher Interview Form: It is a 6-question semi-structured interview form designed for the teacher of the class where action plans were implemented. The questions were presented to the members of Validity and Reliability Committee before the interview and the form was finalized based on the feedback received. This interview form aimed at obtaining the opinions of the class teacher about the efficiency of the activities completed throughout the implementation for the development of self-directed learning readiness skills and the characteristics of a teacher-supported model for the improvement of self-directed learning skills of primary school students. To avoid data loss, the permission of the teacher was taken for voice recording and the interview was conducted on January 3rd 2014 and the total duration of the interview was 57 minutes.

Analysis of Data

Class teacher and students' interviews, field notes, audio records and worksheets analyzed with descriptive analyze technique. For reliability of data, 30 percent of each data analyzed by two specialists except researcher based on Miles and Huberman's (1994) formula. To analyze self-directed learning readiness self-evaluation form, mean scores which was one of the quantitative analysis techniques, was used. VRCM notes were used in reporting action decisions about solving problems and supporting results as direct quotation. In SDL self-evaluation form, "yes", "slightly" and "no" options were used for each of form's statements. Options scored as "5", "3" and "1" relatively. Scores which was between 4.00-5.00 interpreted as "use that skill sufficiently"; between 3.99-2.00 interpreted as "use that skill partially" and between 1.99-1.00 interpreted as "not use that skill."

Results

The opinions of teachers, parents and students about SDL

Interviews were done with teachers, parents and students about how they described SDL, what they do for developing SDL skills, what problems impeded the development of these skills and what can be done to develop these skills. The major expressions they stated in interviews and frequencies of them were indicated in table 1. As it is seen in table 1, teachers, parents and students stated using research skills ($f_{teacher}$=3; f_{parent}=2; $f_{student}$=1) and independent learning ($f_{teacher}$=2; f_{parent}=2; $f_{student}$=5) in their opinions about the definition of SDL. Using different resources ($f_{teacher}$=3; f_{parent}=3) and using learning strategies ($f_{teacher}$=3; f_{parent}=3) were the SDL's properties stated by both of teachers and students. Curiosity ($f_{teacher}$=3; f_{parent}=2) was an SDL affective skill expressed by both of teachers and parents.

Table 1.[*] Opinions of Teachers, Parents and Students About Self-Directed Learning

The SDL Properties			
	Teachers (N=8)	**Parents (N=8)**	**Students (N=8)**
Cognitive Skills			
Using research skills	3	2	1
Using different learning sources	3	-	3
Using learning strategies	3	-	3
Affective Skills			
Curiosity	3	2	-
Learning Type			
Independent learning	2	2	5
Practices they do for developing SDL skills			
SDL Planning Skills			
Managing learning sources	5	3	2
Willingness to learn	2	6	-
Taking their own learning responsibilities	3	3	-
Determining learning needs	4	-	-
SDL Implementation Skills			
Research	4	4	3
Collaborative learning	4	1	-
Critical thinking	4	1	-
Problem solving	3	2	2
Creative thinking	1	1	2
Using learning strategies	2	2	3
Problems impeded the development of SDL Skills			
Teachers' impatient behaviors to students	1	1	-
Insufficient learning environments (laboratuar, music rooms, etc.)	3	1	-
The majority of subjects	3	1	-
Parents not taking care of their children	1	3	1
Parents being angry to their children	1	2	-
Students' unwillingness to learn	2	1	-
Suggestions for developing SDL Skills			
Parent-teacher's association	2	3	-
Teachers being patient and tolerant to students	1	2	-
Parents providing flexible and suitable learning environmets to their children at home	2	1	-
Parents checking their children's homework and taking care of them	1	1	2
Students doing research	1	1	3
Sustainability in learning	-	-	1

[*] Majority expressions of teachers, parents and students were showed in table 1, total of the expressions were explained as follows.

In literature review, SDL planning skills are determining learning needs, determining learning goals, managing learning resources, communication, taking their own learning responsibility, being willingness to learning and valuing to learning. As it is seen in table 1 in the *practices they do for developing SDL skills* main theme, managing learning resources ($f_{teacher}$=5; f_{parent}=3), being willingness to learn ($f_{teacher}$=2; f_{parent}=6) and taking their own learning responsibilities ($f_{teacher}$=3; f_{parent}=3) were self-directed planning skills stated both of teachers and parents. Determining learning needs ($f_{teacher}$=4) was another SDL planning skill expressed by teachers. The SDL planning skills named as determining learning goals, valuing to learning and communication skills weren't stated in interviews by parents and teachers. Two students stated that they used only one SDL planning skill named managing learning resources ($f_{student}$=2) in their views. The other SDL planning skills weren't expressed by students.

In literature review, SDL implementation skills are research, collaborative learning, critical thinking, problem solving, creative thinking, using learning strategies, self-assessment and peer assessment. The SDL implementation skills named using learning strategies ($f_{teacher}$=2; f_{parent}=2), creative thinking ($f_{teacher}$=1; f_{parent}=1), critical thinking ($f_{teacher}$=4; f_{parent}=1), collaborative learning ($f_{teacher}$=4; f_{parent}=1), problem solving ($f_{teacher}$=3; f_{parent}=2) and research ($f_{teacher}$=4; f_{parent}4) were implementation skills stated both of teachers and parents. Research ($f_{student}$=3), problem solving ($f_{student}$=2), creative thinking ($f_{student}$=2) and using learning strategies ($f_{student}$=3) were also stated by students. Self-assessment and peer-assessment skills were not stated by teachers, parents and students.

As it is seen in table 1 being impatient ($f_{teacher}$=1; f_{parent}=1) was the teacher behaviors impeded the development of students' SDL skills which stated both of teachers and parents in interviews. Insufficient learning environments ($f_{teacher}$=3; f_{parent}=1) and the majority of subjects ($f_{teacher}$=3; f_{parent}=1) were the most problems stated as the learning environment problem impeded the development of students SDL skill stated by teachers and parents. The other learning environment problems stated by teachers or parents were crowded classes and insufficient time to realize curriculum. Both of teachers and parents stated that not taking care of their children ($f_{teacher}$=3; f_{parent}=1) and being angry to their children ($f_{teacher}$=1; f_{parent}=2) were parents' behaviors impeded the development of students' SDL skills. The other parent behavior was their insufficient income which was expressed by one parent. The most students' behavior impeded the development of students' SDL skills stated by teachers and parents was students' not being willingness to learning ($f_{teacher}$=2; f_{parent}=1). Only three of eight students expressed the problems impeded the development of SDL skills that were derived from themselves. These students stated that they were distracted on learning sometimes and they couldn't determine reliable learning resources. None of the students stated any problems derived from their teachers. Only one student stated that parents' not taking care of their children was the problem impeded the development of students' SDL skills.

As it is seen in table 1, both of teachers and parents stated that parent -teachers association ($f_{teacher}$=2; f_{parent}=3) and teachers have to be patient and tolerant to students ($f_{teacher}$=1; f_{parent}=2) were important in developing students' SDL skills. Teachers and parents also expressed that teachers have to provide active learning environments to students and they have to use different learning resources in lessons. They expressed parents had also important responsibilities in developing their children's SDL skills. They stated that parents have to provide flexible and suitable learning environments to their children at home teachers have to be patient and tolerant to students ($f_{teacher}$=2; f_{parent}=1) and they have to check their children's homework teachers have to be patient and tolerant to students ($f_{teacher}$=1; f_{parent}=1). Both of teachers and parents stated that students have to be willing to learn, they have to be curious to learn, they have to do cause-effect relationship and research for developing their SDL skills. Interviewing with students, they stated that teachers have to use different learning resources, parents have to check their children's homework ($f_{student}$=2). Students also stated learning responsibilities that they have to do for developing their SDL skills. These were doing research ($f_{student}$=3) and sustainability in learning ($f_{student}$=2).

Depends on the results of the data obtained from interviews and observations, it was seen that students had more difficulties in using SDL planning skills rather than using SDL implementation skills. Due to these results, in students' interviews, questions about using SDL planning skills were asked students in more detail rather than using SDL implementation skills. The results obtained from students' opinions about being equipped with SDL planning skills were presented below.

Students' Opinions About Being Equipped with SDL Planning Skills

These SDL planning skills are determining learning needs, determining learning goals, management of learning resources, communication, taking their own learning responsibilities, willingness to learning and valuing to learning. To be equipped with these main SDL planning skills, students have to realize some subskills which are critical in the main skill or prerequisite for realizing one of the other subskills. It was revealed that the students were equipped with some of these skills and not to be equipped with some of these skills. The subskills which were not to be realized by more than half of the students (the frequencies which were low from 4) and the frequencies of these subskills were shown in Table 2.

Table 2. Students' Opinions About Being Equipped with SDL Planning Skills

Determining the learning needs	Frequency (N=8)
Determining his/her learning weaknesses in leaning process	3
Querying what he/she has to know about the subjects which will be learned	2
Estimating the possible future results of the action before realizing that action.	1
Determining what she/he don't know about the subjects which will be learned	1
Determining his/her learning style	1
Making choices in his/her learning according to his/her abilities and interests	-
Reviewing all of the learning preferences before realizing the learning action.	-
Determining the learning goals	
Expressing the subject which will be learned	2
Determining the sufficient time for realizing his/her learning goals	2
Determining achievable and realizable learning goals	-
Managing the learning resources	
Association learning resources with each other	4
Communication	
Expressing his/her feelings and thoughts clearly	4
Respecting the others' feelings, thoughts and acts with his/her speeches and behaviors.	4
Willingness to learning	4
Enjoying reading	4
When encountering a new information trying to learn this information	2
Continuing to learn at the out of school	-
Wondering other people's opinions about the learning subject which he/she interests.	-
Utilizing the opportunities about new learning which he/she encounters.	

Table 2. Continue

Determining the learning needs	Frequency (N=8)
Taking their own learning responsibilities	4
Thinking teachers as facilitators in learning	4
Accomplishing a learning task which he/she takes responsibilities.	2
Being success-oriented in learning	2
Maintaining his/her studies even if he/she encounters problems which prevent his/her learning	2
Maintaining his/her learning firmly and consistently	2
Being awareness about the importance of learning responsibilities in personal development	
Valuing to learning	3
Delaying the other activities which he/she interests until completing his/her learning goals	2
Explaining the importance of information he/she learned	2

According to frequencies in table 2, less than half of the students explained their weaknesses in learning process. Although these students were awareness of their weaknesses in learning process, they couldn't determine the ways of how they develop these weaknesses. As it is seen in table 2, only two of the students can query what he/she has to know about the subjects which will be learned. According to data obtained from students' interviews, it can be said that most of the students weren't equipped with the skill named "determining what he/she doesn't know about the learning subject that will be learned". Except one of the students, the others didn't state their opinions about determining their learning styles. None of the students expressed their opinions about making choices in his/her learning according to his/her abilities and interests. Although five of the students stated that they could make a schedule for their learning activities, only two of them stated that they determined the sufficient time for realizing his/her learning goals. Students controlled the reliability and validity of the learning resources but it can be said that they did these without knowing the meaning of the concepts named "reliability" and "validity". Half of the students expressed that they liked reading and they tried to learn the new information that they encountered. None of the students stated any opinions about wondering other people's opinions about the learning subject which they interests and utilizing the opportunities about new learning which they encounters. Four of them expressed that they thought teachers as facilitators in learning and accomplished a learning task which they take responsibilities. Two of the students stated that they did their works regularly, they maintained they learning firmly and consistently and they were awareness about the importance of learning responsibilities in personal development. Most of the students were equipped with "valuing to learn" subskills. However, only three of them stated that they delayed the other activities which they interests until completing their learning goals and only two of them stated that they explained the importance of information they learned and explained the social utility of their learnings.

Educational Practices by Teachers of Students Attending 1st to 4th Year in Primary School to Develop Self-Directed Learning Skills

Another issue focused in the study is what kind of activities were preferred by teachers of students attending 1st to 4th year in primary school to develop self-directed learning skills. The lessons observed were mathematics, Turkish, social sciences, life sciences and science and technology. Table 3 displays the practices of teachers to develop Self-directed Learning readiness skills as observed in the classrooms.

Table 3.* Educational Practices by Teachers to Develop Students' Self-Directed Learning Readines Skills

Year	Lesson	Managing learning resources	Willingness to learn	Taking responsibility for learning	Commu-nicating	Determining learning needs	Determining learning goals	Valuing learning
1st year	Turkish	5	5	2	-	1	-	-
	Math	5	1	1	-	4	1	1
	Life Sciences	5	-	5	2	2	-	-
2nd year	Turkish	3	3	3	1	-	3	-
	Math	6	4	3	5	1	1	-
	Life Sciences	6	6	3	5	2	2	4
3rd year	Turkish	4	2	4	6	3	1	1
	Math	4	5	4	3	4	1	-
	Life Sciences	2	2	1	3	2	5	1
4th year	Social Sciences	3	2	2	2	1	2	1
	Science	4	2	2	2	2	3	1
	Turkish	4	2	3	4	3	-	1
	Math	3	2	3	-	2	2	-
Sum		**54**	**36**	**36**	**33**	**27**	**21**	**10**

* Each main skill was presented as frequencies for each lesson observed.

According to the results of the analysis, the practices of teachers to develop students' self-directed learning skills were divided into two main categories: "Practices to Develop Self-directed Learning Readiness Skills" and "Practices to Develop Managing Learning Skills". As Table 3 shows, teachers carried out practices to develop managing learning skills in all the lessons observed and in more than half of the lessons throughout the whole process. In almost half of the lessons, teachers used practices to develop skills for the following dimensions: taking responsibility for learning; being willing and open to learn and communicating. Table 3 also shows that insufficient amount of educational practices were carried out in the observed lessons to develop the following skills: determining learning needs and objectives. The fewest practices were done to develop "valuing learning skills".

Although it is observed that teachers carried out some practices to develop students' self-directed readiness skills, these practices are not effective and even impeding such a development since they are mostly teacher-centered and students do not actively participate in these activities, which is a requirement for the development of SDL skills. The role of teachers in the realization of self-directed learning skills is to encourage learners to determine their own needs, goals and learning strategies and to create learning environment where they can communicate and express themselves effectively rather than providing a direct guidance. In other words, teachers should provide make students assume responsibilities for their own learning. Unfortunately, the observations revealed that self-directed learning readiness skills are not provided in the learning environment and the practices done in the classroom are not complementary and supportive of each other. In addition, although teachers stated

that they carry out practices to develop students' certain skills such as determining learning needs, being willing and open to learning and taking responsibility for learning, it was observed that there were practices in half of the lessons observed -or less. Thus, it can be concluded that teachers are aware of the fact they students need to develop these skills to realize self-directed learning; however, this awareness are not reflected well enough in classroom practices. One finding that supports this situation is that determining learning needs, valuing learning and developing communication skills were rarely mentioned by teachers during interviews as well. Moreover, the number of these practices was also very low. In short, we can conclude that teachers are not aware of the importance of these skills in the realization of self-directed learning and do not have adequate knowledge about how to develop them effectively. A similar conclusion might be made for parents since they did not mention about any attempts to develop their children's determining learning needs, valuing learning and developing communication skills.

It is necessary to develop learners managing learning skills to help them realize self-directed learning. Educational practices carried out by teachers to develop managing learning skills were displayed in Table 4 below.

Table 4.[*] Educational Practices by Teachers to Develop Managing Learning Skills

			MANAGING LEARNING SKILLS						
Year	Lesson	Teaching learning startegy	Thinking		Problem Solution	Resaerch	Evaluation		Collaborative learning
			Critical	Creative			Self	Peer	
1st year	Turkish	6	-	-	1	-	2	1	-
	Math	6	-	-	5	-	3	2	2
	Life Sciences	6	6	3	2	1	-	-	-
2nd year	Turkish	6	4	2	1	3	2	4	-
	Math	6	6	1	6	1	1	1	1
	Life Sciences	6	6	1	3	2	3	-	1
3rd year	Turkish	6	5	1	-	3	3	4	2
	Math	6	5	2	6	3	2	2	-
	Life Sciences	6	6	-	3	4	3	1	2
4th year	Social Sciences	4	3	-	-	2	1	1	-
	Science	6	6	-	-	3	-	2	2
	Turkish	4	4	-	1	-	1	2	-
	Math	4	2	1	3	-	-	1	-
Sum		**72**	**53**	**11**	**31**	**22**	**21**	**21**	**10**

* Each main skill was presented as frequencies for each lesson observed.

According to Table 4, teachers emphasize teaching learning strategies the most compared to other self-directed learning managing skills. In all the lessons observed, teachers made students benefit from learning strategies. Table 4 also shows that the practices in the lesson observed to develop critical thinking skills were the highest in number. While teachers preferred practices to develop critical thinking skills in more than half of the lessons, those for developing creative thinking skills were relatively fewer in number. As for the practices to develop problem solution skills, it can be seen that such practices were available in more than half of the lessons observed.

On the other hand, the practices to develop research skills of students were observed in less than half the lessons. In less than half of the lessons observed, teachers carried out practices to develop students' evaluation skills and peer-assessment practices were really insufficient in number. The least preferred practice in the lesson observed was those to develop collaborative learning skills.

Surprisingly, although collaborative learning was often mentioned by both teachers and parents, the practices were rarely observed in the lessons. Therefore; it can be concluded that teachers are aware of the importance of collaborative learning in the development of self-directed learning but they do not reflect this attitude in their classroom practices. The reason for this situation might be that classroom management is more difficult during collaborative learning activities and they take longer time so that teachers are reluctant to include these practices in their classrooms due to the concerns such as staying behind the curriculum and not covering the curriculum topics well enough. A similar situation is valid for the development of research skills and the reason for that although teachers emphasize the importance of these skills in their opinions, they are not eager to employ activities to develop these skills in practice. However, the microanalyses of these observations revealed that teachers do not have any problems with the development of these skills since these analyses showed that all the subskills were introduced by teachers in the classrooms. Generally, the educational practices based on collaboration and research last more than one class hour. The reason for low frequencies of these practices is that researcher counted these collaboration and research practices that take longer than one class hour as one frequency. Just an opposite result occurred for teaching learning strategies. Although only two teachers mentioned about teaching learning strategies in the interviews, the researcher observed teaching of these skills in every single lesson. It can be said that teachers made their students use these strategies without being aware of its meaning and content.

In addition, observations showed that there were not sufficient practices to develop students' self-assessment and peer-assessment skills. None of the teachers mentioned about these skills in the interviews although some practices regarding self-assessment and peer-assessment are already available in the course books used in the lessons observed. This interesting situation implies that teachers and parents do not have sufficient information about the importance of these specific skills in the realization of self-directed learning. In short, it can be concluded that the practices to develop managing learning skills except assessment and creative thinking skills are partly sufficient when compared to other practices to develop self-directed leaning readiness skills. According the data obtained from interviews and observations, it was decided to carry out the action research for developing students' SDL planning skills. The implementation of action research (instructional intervention) was done during seven weeks for developing students' SDL planning skills in 4th year class. The data obtained from action research were presented below.

4th year primary school students using level of self-directed learning skills through intervention (action research)

Results about students using SDL planning skills through action research were reported based on action plans' implementation (intervention) weeks. While each week's results were reported, actions and self-directed learning skills (which were aimed to be developed) took into consideration firstly.

Researchers reported data gathered from activities, voice records, field notes, researcher dairy and VRCM notes (which were gathered during action research) and data gathered from self-assessment form and interviews done with class teacher and students (which were gathered after action research) together. Students' using frequencies of determining learning goals skills which were one of self-directed learning planning skills and which were obtained from one implementation week showed in table 5 exemplary.

Table 5. Students' Using Frequencies of Determining Learning Goals Skills (In 3rd Week)

		3rd week											
		Observation Data						Students' work sheets					
	Skill's Code	S1	S2	S3	S4	S5	S6	S1	S2	S3	S4	S5	S6
Skills aimed to be	B_ÖABB_1	1/1	1	-/-/1	2	2	-/1/1	-/1	-/1	1	1	1	1
	B_ÖABB_2	1	-	-	1	-	1	1	1	1	1	1	1
	B_ÖABB_3	2	-	-	1	-	-	-/-/1	-/1	1	1	-/1	-/1
	B_ÖABB_4	1	-	-	1	-	1	1	1	1	1	1	1
	B_ÖABB_6	1	-	-	1	-	1	-/1	1	1	1	1	-/1
Skills developed casually (without intentions)	B_ÖKYB_1	-	-	-	-	-	-	-	1	-	-	1	1
	B_ÖKYB_3	-	-	-	-	-	-	1	1	1	1	1	1
	B_ÖKYB_6	-	-	-	-	-	1	-	1	-	-	1	1
	B_İKB_1	8	2	-	4	5	1	-	-	-	-	-	-
	B_İKB_2	-	-	-	-	-	-	1	1	1	1	1	1
	B_İKB_3	8	2	-	5	5	2	1	1	1	1	1	1
	B_İKB_4	1	1	1	1	1	1	-	-	-	-	-	-

*Data seen in table 5 were limited with students' behaviors which were observed by researchers and students' right to talk given by their class teacher.

*Frequencies about each of skills seen in table 5 were showed as to be observed completely/to be observed partially/not to be observed. The sign of "-" was used showed that skill couldn't be observed that week.

Using frequencies of determining learning goals skills in 3rd implementation week presented in table 5 exemplary. Through all implementation weeks (7 weeks totally), students' using frequencies of self- directed learning planning skills' and subskills' frequencies were showed like Table 5. In addition to this, skills which were not aimed to be developed but to be developed by action plans casually also showed in frequencies tables. Skills that were decided to be observed sufficiently in present implementation week weren't showed next implementation week. If they weren't observed sufficiently until that implementation week, those skills were continued to be observed.

Results obtained from implementation weeks of action research (intervention weeks) and post-implementation were presented below.

Results About Students' Using Levels of Determining Learning Needs Skills

Students used determining learning needs skills in the first and second implementation weeks mostly. In addition to this, students continued to use these skills through other implementation weeks (intervention). Interview done with class teacher and self-evaluation form filled up by focus students at the end of the intervention supported results obtained from intervention process, too. Students' self-evaluation mean scores about determining learning needs skills were showed in table 6.

Table 6. Students' Opinions About Using Determining Learning Needs Skills

	Determining learning needs skills								
	Items' Mean Score								
Student	I1	I2	I3	I4	I5	I6	I7	I8	Mean
S1	5	3	3	5	3	3	5	5	4
S2	5	5	3	3	5	5	3	1	3,75
S3	3	3	3	5	5	5	3	3	3,75
S4	5	5	5	5	5	5	3	3	4,5
S5	5	5	5	5	5	3	5	5	4,75
S6	5	5	5	5	5	3	5	3	4,5
Mean	4,67	4,33	4	4,67	4,67	4	4	3,3	4,21

As it is seen in table 6, students' mean scores about two determining learning needs skills were lower than other determining learning needs skills. One of these subskills is "predicting actions' possible results before realizing action (I7)". One of focus students (S4) stated her opinion about this skill as follows:

> **S4:** "If my teacher gives homework, I plan to ask my homework to my father or to research it from internet at the moment. When I go to home, I choose one of these ways and implement my choice."

The other determining learning needs subskill is "reviewing all of the learning preferences before realizing the learning action (I8). One of focus students (S4) stated his opinion about this skill as follows:

> **S2:** "If I research my homework from internet, I can obtain more information. But if I ask to my teacher or my friends, I can get different information. I do both of them, I can utilize from each of them in different ways."

Results About Students' Using Levels of Managing Learning Resources Skills

These skills were most used self-directed learning planning skills by students. At the end of fifth intervention week, it was seen that students used managing learning resources skills successfully. Self-evaluation form filled up by focus students at the end of the intervention also supported results obtained from intervention process. Students' self-evaluation scores about managing learning resources skills were showed in table 7.

Table 7. Students' Opinions About Using Managing Learning Resources Skills

	Managing learning resources skills						
	Items' Mean Score						
Student	I1	I2	I3	I4	I5	I6	Mean
S1	3	5	5	5	3	5	4,33
S2	5	5	3	5	5	5	4,67
S3	5	3	5	5	3	5	4,33
S4	5	5	5	5	5	5	5
S5	5	5	3	3	5	5	4,33
S6	5	5	5	5	5	5	5
Mean	4,67	4,67	4,33	4,67	4,33	5	4,61

As it is seen in table 7, analyzed students' managing learning resources skills mean scores, it was seen that all of the students used these skills successfully (sufficiently). Analyzed students' subskills mean scores, it was seen that students used these skills sufficiently, too.

Results About Students' Using Levels of Determining Learning Goals Skills

Beginning from third intervention week, it was planned to develop students' determining learning goals skills and activities were prepared for developing these skills. In the third intervention week, students had difficulty in using these skills firstly. At the end of the fifth intervention week, it was observed that students used these skills sufficiently (successfully). Interview done with class teacher and self-evaluation form filled up by focus students at the end of the intervention also supported results obtained from intervention process. Students' self-evaluation means scores about determining learning goals skills were showed in table 8.

Table 8. Students' Opinions About Using Determining Learning Goals Skills

Student	Determining learning goals skills						
	Items' Mean Score						
	I1	I2	I3	I4	I5	I6	Mean
S1	3	5	5	5	1	3	3,67
S2	5	3	5	5	5	5	4,67
S3	5	5	3	3	3	5	4
S4	5	5	5	5	3	5	4,67
S5	3	5	5	5	3	5	4,33
S6	5	5	5	5	5	5	5
Mean	4,33	4,67	4,67	4,67	3,33	4,67	4,39

As it is seen in table 8, when analyzed students' determining learning goals subskills mean scores, students' mean scores about one of these skills was lower than others. This skill was planning learning activities based on a schedule (I5). Focus students' opinions were taken about this skill at the end of the intervention. One of focus students (S3) who stated that she used this skill partially in the self-evaluation form expressed her opinion about this skill as follows:

> **S3:** "In this planning process, we were determined our learning resources, firstly. Then, we planned our working times. Then, we decided to share our information about our research on Saturday and Sunday. Then, we planned our research delivery date. …"

In interviews, researcher wanted focus students to imagine planning a performance work (research project) that they had to deliver their teachers in 10 days. Then, asked them how they could plan their project in that situation. One of the focus students (S3) who stated that she used this skill partially in the self-evaluation form expressed her opinion about this skill as follows:

> **S3:** "For example, we have a performance work (research project) from education of religion and ethics lesson…we have to delivery this project until Wednesday. I began to prepare this homework. Firstly, I determined my learning resources and learning goals on Saturday. For example, maybe I can research information about whet religion is in one day. But I think I can't plan the studying time in my schedule, exactly. "

Based on results gathered from interviews with focus students and class teachers, it can be said that students can plan their schedules but they have difficulties in planning their exact studying times in that schedule.

Results About Students' Using Levels of Communication Skills

Other most used skills during intervention period were communication skills. Until fifth intervention week, one communication skill named expressing oneself with speaking and respecting others' feelings and thoughts with his speeches or behaviors were less used subskills rather than other communication skills. At the end of sixth week, it was seen that students used this skill sufficiently (successfully), too. Students' self-evaluation mean scores about communication skills were showed in table 9.

Table 9. Students' Opinions About Communication Skills

Student	Communication skills				
	Items' Mean Score				
	I1	I2	I3	I4	Mean
S1	5	3	3	3	3,5
S2	5	1	5	5	4
S3	3	5	3	4	3,75
S4	3	5	5	5	4,5
S5	3	5	3	5	4
S6	3	5	3	5	4
Mean	3,67	4	3,67	4,5	3,96

As it is seen in table 9, analyzed students' mean scores about using communication skills, it can be said that two focus students used these skills partially and four students used them sufficiently. Analyzed communication subskills' mean scores, communication skills named as expressing themselves verbally (I1) and expressing their feelings and thoughts clearly (I3). At the end of intervention period (action research), questions were asked to students about these skills. In interviews, researcher wanted students to tell a book that they read. It was seen that all focus students told the book subject, their feelings and thoughts about the book clearly. One of focus students (S5) stated her opinion as follows:

> **S5:** "In the book that I read, İpsiz Recep lives in Blacksea and one child named Abdullah lives with him. All of them are Turk. Abdullah say that foreigners come there. Foreigners are getting in Recep's ship and they are laughing loudly. They are angry with Abdullah. When İpsiz Recep see them, he is angry with foreigners, too. Abdullah and Recep make a plan for killing them. … I liked the book. It told about how Turks bite foreigners"

Results About Students' Using Levels of Taking Their Own Learning Responsibilities Skills

At the end of the seventh intervention period, it was seen that all focus students used these skills sufficiently (successfully). Students' self-evaluation mean scores about taking their own learning responsibilities skills were showed in table 10.

Table 10. Students' Opinions About Taking Their Own Learning Responsibilities Skills

	Taking their own learning responsibilities						
	Items' Mean Score						
Student	I1	I2	I3	I4	I5	I6	Mean
S1	5	5	3	3	5	5	4,33
S2	5	5	5	5	5	5	5
S3	3	5	3	5	5	5	4,33
S4	5	5	5	5	5	5	5
S5	3	3	5	3	5	3	3,67
S6	3	5	5	5	5	5	4,67
Mean	4	4,67	4,33	4,33	5	4,7	4,5

As it is seen in table 10, analyzed students' mean scores about taking their own learning responsibilities skills, it was seen that all focus students, except one of them, owned this skills sufficiently. Similarly, analyzed students' mean scores about taking their own learning responsibilities subskills, it was seen that they also used these skills sufficiently.

Results About Students' Using Levels of Valuing to Learn Skills

In the first two intervention weeks, students had difficulties in using valuing to learn skills, but at the end of sixth week it was seen that students used all of these skills sufficiently. Students' self-evaluation mean scores about valuing to learn skills were showed in table 11.

Table 11. Students' Opinions About Valuing to Learn Skills

	Valuing to learn skills				
	Items' Mean Score				
Student	I1	I2	I3	I4	Mean
S1	5	5	5	5	5
S2	3	5	5	5	4,5
S3	3	5	5	3	4
S4	5	3	5	3	4
S5	3	3	5	5	4
S6	5	5	5	5	5
Mean	4	4,33	5	4,33	4,42

As it is seen in table 11, analyzed students' mean scores about using valuing to learn skills, it was seen that all focus students used these skills sufficiently. Similarly, when analyzed students' mean scores about using valuing to learn subskills, it was seen that students used these skill sufficiently, too.

Results About Students' Using Levels of Willingness to Learn Skills

At the end of the seventh intervention week, it was seen that students used willingness to learn skills sufficiently. Students' self-evaluation mean scores about willingness to learn skills were showed in table 12.

Table 12. Students' Opinions About Willingness to Learn Skills

	Willingness to learn skills									
	Items' Mean Score									
Student	I1	I2	I3	I4	I5	I6	I7	I8	I9	**ORT.**
S1	5	5	5	3	3	5	5	5	3	4,33
S2	5	5	5	5	5	5	5	5	5	5
S3	3	5	5	5	3	5	3	5	5	4,33
S4	5	5	5	5	5	3	5	5	5	4,78
S5	3	5	3	5	5	5	5	5	5	4,56
S6	5	5	5	5	5	5	5	3	3	4,56
Ort.	4,33	5	4,7	4,67	4,33	4,67	4,67	4,67	4,33	4,59

As it is seen in table 12, analyzed students' mean scores about willingness to learn skills, it was seen that all focus students used these skills sufficiently. Similarly, when analyzed students' mean scores about using willingness to learn subskills, it was seen that students used these skill sufficiently, too.

Data obtained from implementation of the action research and post-implementation of the action research revealed that the action plans were effective in developing students' self-directed learning planning skills. Based on data obtained from the research, researchers developed a teacher-supported self-directed learning model for primary school students. The model was presented below.

A Teacher-Supported Self-Directed Learning Model for 4th Grades Primary School Students

While developing this model, the literature related to the SDL models, teachers, students and parents' role in SDL and the action research period of this study were taken into consideration.
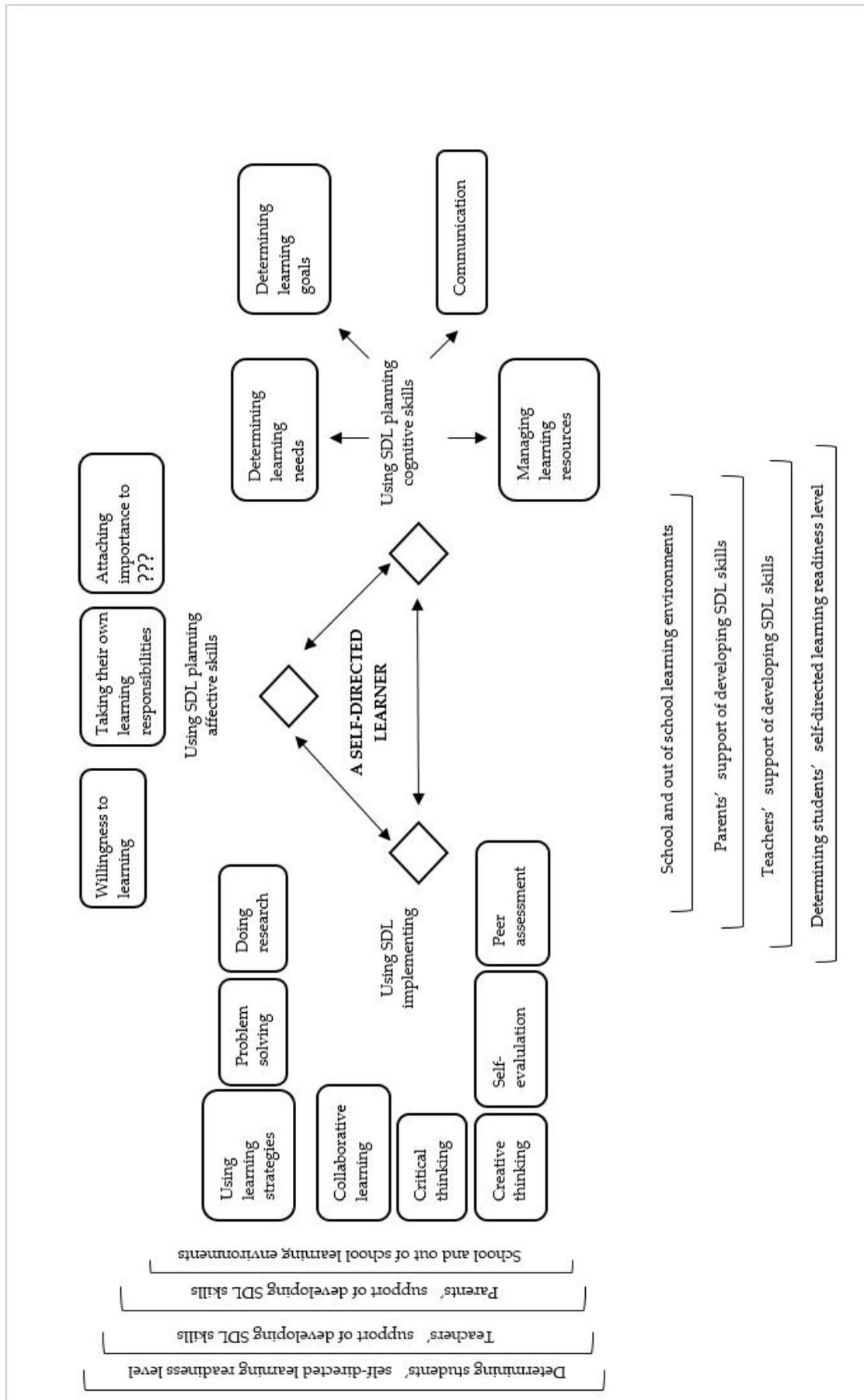
Figure 3. A Teacher-Supported SDL Model For Primary School Students Attending 1ˢᵗ-4ᵗʰ Grades

The model is formed from two components named implementing conditions and dimensions of model. The model was showed in Figure 2.

In implementing conditions, students' using levels of SDL skills have to be determined firstly. Teachers have to encourage students to use SDL skills. Teachers have important roles and responsibilities to encourage students to use SDL skills. Teachers have to use teaching approaches, strategies, techniques and learning resources that are appropriate to students' SDL readiness level, do learning activities and exercises sufficiently and give enough time to students for doing these activities and exercises, present them concrete samples, be role model to students, motivate them to learning and provide feedbacks to them. The "teacher" concept placed in model's name does not only mean teacher but it also means parent. Parents' role in developing their children's SDL skills is more related to affective skills rather than cognitive skills. Parents have to be role model to their children, motivate them to learn and provide them learning resources that they want. In addition to this, parents have to associate with teachers properly and coordinately. Children's self-directed learning shouldn't be limited with school learning. It has to be continued out of school. Out of school learning environments consist of learning activities done with guidance of teacher or activities done independently. Whichever learning environment (at school or out of school) is selected, it has to be comfortable and flexible for students to express their thoughts and feelings freely and be appropriate for students to make their choices according to their interests and abilities.

The dimensions of model are *SDL planning affective skills, SDL planning cognitive skills* and *SDL implementing skills.* SDL planning skills are doing plans and motivations before implementing learning process. SDL planning skills form from two main skills named SDL affective skills and SDL cognitive skills. SDL planning affective skills consist of students' attitudes about learning and their personal characteristics. These skills are taking their own learning responsibilities, valuing to learn and willingness to learn. SDL planning cognitive skills are plans and preparations done by students about a learning task or activities before implementing learning process. These skills are determining learning needs, determining learning goals, managing learning resources and communication. SDL implementing skills are necessary for students to realize learning process after planning learning task. These skills are using learning strategies, collaborative learning, critical thinking, creative thinking, problem solving, doing research, self-evaluation and peer assessment.

Discussion, Conclusion and Suggestions

Data obtained from this research showed that the definitions of teachers and parents about self-directed learning are insufficient. The results obtained from this research is similar with the results Waeytens, Lens and Vanderberghe's (2012) research investigating teachers' views about what the self-directed learning was. They stated that teachers' definitions about self-directed learning weren't sufficient and clear. Ewijk and Werf (2012) research about self-regulated learning which was related to (with) self-directed learning closely, the results showed that teachers couldn't define self-directed learning sufficiently, too.

The interviews done with students also showed that they weren't required with self-directed learning skills. Saeednia (2011) carried out a research about 3rd, 4th and 5th year students' SDL skills and she expressed that student were willingness to learning and they like doing research but they didn't find themselves sufficient in realizing SDL.

The other important point in interviews, both of teachers' and parents' definitions about SDL and their opinions about the instructional practices they did for developing students' SDL skills, teachers and parents stated SDL implementing skills more than SDL planning skills in their views. Analyzing data obtained from students' interviews, their opinions were similar with parents' and teachers' opinions. While teachers and parents were explaining their opinions about the SDL planing skills that students required with, none of determining learning goals and valuing to learning skills stated by parents and teachers. Only two teachers stated determining learning needs. Similarly, when the data obtained from observations were analyzed, it was seen that most of the subskills of SDL skills weren't developed and the instructional practices realized for developing these skills were based on teacher-centered instruction. The reasons of these problems impeded the development of SDL skills can stemmed from teachers' unawareness about the importance of SDL and insufficient knowledge about how SDL skills can be developed. The other reason of teachers' insufficient instructional practices for developing determining learning needs and learning goals skills can be teachers' beliefs that primary school students are unskillfull in determining learning needs and learning goals because of their insufficient cognitive development level depends on their ages and these skills have to be presented to students pre-prepared by teachers. Costa and Kallick (2004) also stated that one of the teachers' problems in school was teachers being incognizant about what have to extent the students' control in their own learning responsibilities. In the "Analyzing and Evaluation New Curriculum" report carried out by Sabancı University for contributing to Education Reform Initiative, it is stated that some learning goals and learning activities in curriculum are teacher-centered and based on memorization. Data obtained from interviews done with students supported that teachers didn't do enough instructional practices for developing students' determining learning goals skills. It is seen that when teachers and parents determined SDL and SDL skills that students equipped with, they emphasized research skills in their opinions mostly. The reason of determining learning resources skills to be stated in interviews done with teachers and parents and to be observed in class observations mostly can be their thoughts about these skills used in research studies usually. The primary school curriculums can be influential in teachers' thoughts in this way. Demiralp and Kazu's (2012) study carried out for determining teachers' opinions about primary school curriculum revealed that this curriculum directed students to use research skills.

According to results obtained from intervention (the implementation process of action research), it can be said that presenting learning activities according to students' interests and abilities, doing research and doing activities for providing students to identify themselves are effective in developing students' SDL skills. In literature, education specialists emphasized that students doing choices according to their interests and abilities is important in SDL (Costa & Kallick, 2004; Schwartz, 2006; Sellars, 2006). In literature, the importance of students' researches is also stressed by a lot of researchers (Van Deur, 2004; Van Deur & Murray Harvey, 2005; Birenbaum, 2010; Bagheri, Ali, Abdullah, & Daud, 2013). It can be said that gaining attention and motivational activities are effective in students' willingness to learn. In literature, it is stated that students' intrinsic and extrinsic motivation to learning provides students being willingness to realize a learning task in SDL (Costa & Kallick, 2004; Van Deur, 2004; Van Deur & Murray Harvey, 2005). During intervention process, students had difficulties in realizing some SDL skills in the beginning weeks of intervention but it was seen that they used these skills in progressive weeks. It can be said that intervention duration, doing exercises and giving concrete samples were effective in using these SDL skills. Leidinger and Perels (2012) also stated that intervention duration was effective in developing primary school students' SDL skills. As it was expressed by Long (1990) and Grow (1991), students who have low SDL readiness level need informative and explanatory speech and demonstration. Westwood (1997) stated that in this situation proceeding basic steps, using appropriate teaching strategies, doing exercises, repeating learnings and giving enough time to do a learning task were important in developing SDL skills (as cited in Van Deur & Murray Harvey, 2005).

In order to develop students' SDL skills successfully, it can be said that it is important to be equipped with these skills. It can be said that it is very important to develop SDL skills in early school age. It is necessary to provide learning opportunities to encourage and guide students in determining their learning so that they can develop self-directed learning skills. In addition, certain facilities such as library and laboratory should be established and technical equipment should be available and ready to use to help students' develop their "managing different learning resources" skills. Besides, organizing field trips to encourage and motivate students to do research and observation is a good idea for teachers and schools. Teachers also should be role models for his/her students with his attitudes and behaviors while students develop especially the following skills: assuming responsibility for learning; being open – willing to learn; and valuing learning. Similarly, teachers and parents should be provided necessary knowledge about self-directed learning. The following steps might be taken to achieve this goal effectively: organizing seminars for teachers and parents; including some information in the curriculum and course content in education faculties about what self-directed learning is and how it can be improved; and giving more emphasis on the activities and outcomes to develop such skills in primary school educational programs and course books. The most and the first important step to take to develop students self-directed learning skills is to determine to what extent students use these skills. The further research might focus on developing self-directed learning skills scales to determine to what extent students use these skills, their readiness level for self-directed learning and finally the skills used to manage self-directed learning. It is thought that teacher-supported self-directed learning model developed in this study might contribute to the field more by being implemented to larger participant groups in primary schools in an experimental study as well.

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