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Developing an Oral Health Program for 4-5 year old children: promoting health at day-care.

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Developing an Oral Health Program for 4-5 year old children: promoting health at day-care

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Oral affections represent one of the most important problems of health in our society. Early childhood caries can be prevented by healthy habits and the school age is a perfect moment to acquire that knowledge. Various scientists and organizations have determined the need of promoting oral health at a young age and nurses are health professionals who play an important role providing expertise and leading change towards health.

This paper is a health promotion initiative which focuses on creating an oral health program (OHP) for early childhood educators to be used at day-care. The program attempts to improve children's oral health by attractive and fun educational activities. The approach of the OHP is based on social-constructivist learning theories and it is also connected to the Early Years Foundation Stage Framework.

The method used for the design of the OHP was action research and the cycle followed four different phases (1) identification, (2) design of the program, (3) evaluation and (4) implementation. To assess the OHP four early childhood educators (n=4) were selected from two different settings in Helsinki (Finland). The data was collected by worksheets and semi-structured interviews with the participants. The data obtained by the two different methods was analyzed by deductive and inductive content analysis in two different phases.

The most valuable finding was the creation of the OHP itself. In the evaluation of the OHP the results showed that the objectives and activities were appropriate for the children's age, the methods proposed for the evaluation were formal and technical and the program can be implemented either in an intensive week or approached in sessions during some time. Besides that, the educators found very important and useful to go through the contents included in the OHP with the children. Finally, the attributes given to the program were engaging, informative and practical.

Oral health is a topic that should be included to promote health at day-care. Finding the moment when the children are interested and combining adult directed activities with children's exploration is very important. Educators would like that health professionals create health education programs that they can adapt and implement in day-care considering the needs of the children. Working the oral health topic at day care is essential but taking into account that the parents are the main figures to teach good habits and prevent oral diseases.

Key words: Childhood, health education, health promotion, learning, social-constructivist, oral health

Table of Contents

1	Introduction	6
2	Purpose and tasks	7
3	Review of literature	8
3.1	Health	9
3.1.1	Health promotion	9
3.1.2	Health promotion models: Health Action Model	11
3.1.3	Oral health	13
3.1.4	Oral health promotion at schools.....	14
3.2	Childhood and education	15
3.2.1	Early Childhood Education in Finland.....	15
3.2.2	The curriculum: Early Years Foundation Stage (EYFS) as an example in the OHP.....	16
3.2.3	The day-care environment.....	18
3.2.4	The routines.....	18
3.3	Learning theories.....	20
3.3.1	Constructivism and Social- Constructivism learning theories	20
3.3.2	Application of constructivism and social-constructivism theories in the OHP.....	21
4	Methodological background	22
4.1	Action Research	22
4.2	Qualitative data collection methods.....	25
4.2.1	Participants	25
4.2.2	Data collection phases	25
4.2.3	Data Analysis	28
5	Findings	33
5.1	The Oral Health Program	33
5.2	Evaluation of the OHP with the educators.....	33
5.2.1	Feedback of the objectives.....	34
5.2.2	Feedback of the content.....	34
5.2.3	Feedback of the activities	35
5.2.4	Feedback of the evaluation methods.....	36
5.2.5	Feedback of the whole OHP	36
6	Discussion.....	37
6.1	Ethical issues.....	37
6.2	Trustworthiness.....	38
6.2.1	Credibility	38
6.2.2	Transferability	39
6.2.3	Dependability	39

6.2.4 Confirmability.....	39
6.3 Discussion of findings.....	40
6.4 Future challenges	42
References	43
Images	46
Figures	47
Tables.....	48
Appendices.....	49
Appendix 1 Oral Health Program for early Childhood Educators	49
Appendix 2. Permission letter sent to the day-care managers	113
Appendix 3. Invitation letter.....	114
Appendix 4. Evaluation worksheets sent to the educators attached to the OHP for the evaluation	116
Appendix 5. Contents of the interview with the educators	117
Appendix 6. Examples of original quotations	118

1 Introduction

The school age is the perfect moment to acquire knowledge and healthy habits, and it is also the period when children get permanent dentition. The acquisition of healthy habits, the change of harmful life practices and the application of preventive measures are key activities which will benefit the future health.

Oral affections, especially caries and periodontal disorders represent one of the most important problems of health in our society. According to the World Health Organization, dental caries affects 60-90% of school aged children and the majority of adults (WHO, 2012). Early childhood caries is a preventable disease and many activities can be done to anticipate that condition. Various organizations have determined the need of promoting oral health at a young age to prevent oral diseases (National Center for Chronic Disease Prevention and Health Promotion, 2011).

Nurses are health professionals who have the opportunity to promote better health for the global community. They play an important role providing expertise and leading change towards health (National Research Council, 2011). For planning health promotion activities for children is important that nurses collaborate with families and school staff members.

My interest in oral health arose from the importance of the problem in our society. Due to my professional experience in childhood education joined to the nursing background, the objective for this master's thesis was to combine both fields together. This paper is a health promotion initiative which focuses on creating an oral health program (OHP) for early childhood educators to be used at day-care. The target group of the program are children between 4-5 years of age. The program attempts to improve children's oral health by attractive and fun educational activities.

Many authors have written about the different benefits of learning through play. At the same time, constructivist and social-constructivist theories show the importance of children's exploration to enhance the learning process. The OHP contains both adult directed activities combined with opportunities for the children to explore the oral health topic themselves. Furthermore, there is an important amount of children in Finland which attend to public or private day-care prior to school. According to the Finnish Ministry of Social Affairs and Health (2004), the number of children in day-care at the end of 2003 increased from 68.5 percent at age 4 to 73 percent at age 5. Considering this high number and that learning takes place in social settings according to Vygotsky (Phillips & Soltis 2004), day-care is the perfect place to carry out health promotion activities.

The OHP is connected to the Early Years Foundation Stage Framework, which is the curriculum used in United Kingdom and which is the framework that operates in many English day-cares in Finland.

The method used for the design of the OHP was action research and the cycle followed four different phases. In the first stage the need for an oral health intervention at day-care was identified considering diverse reasons. Children eating non-healthy lunches, often with sugary drinks and sweets are behaviours that will have long-term consequences of children's oral health. The second phase involved the planning and preparation of the OHP. In the third phase the aim was to find out whether the proposed program was suitable for teachers and appropriate for children's age. To investigate that question, four early childhood educators were invited to assess the program. Qualitative methods for data collection were applied in the evaluation stage. Later on, the data was analyzed by using content analysis and the results served to improve the OHP and design the last version. The last phase of the cycle is the implementation of the OHP which was not carried out due to time limitations.

The most cost-effective way of improving oral health, and, in turn quality of life, is the promotion of health in the settings where people learn, work or live (WHO, 2010).

2 Purpose and tasks

The purpose of the thesis is to produce an Oral Health Education Program (OHP) for children from four to five years of age, which could be implemented by teachers at day-care.

The specific objectives are (1) to review the educational materials published in Oral Health Education for children (2) to design the specific OHP adapted for the Early Years Foundation Stage framework (EYFS) (3) to evaluate the program designed with early childhood educators.

Therefore, the research tasks are the followings:

1. Find out how children's knowledge related to oral can health be improved.
2. Discover how the content of the program designed, methods and activities are usable for teachers.
3. Detect which changes are necessary to do in the program.

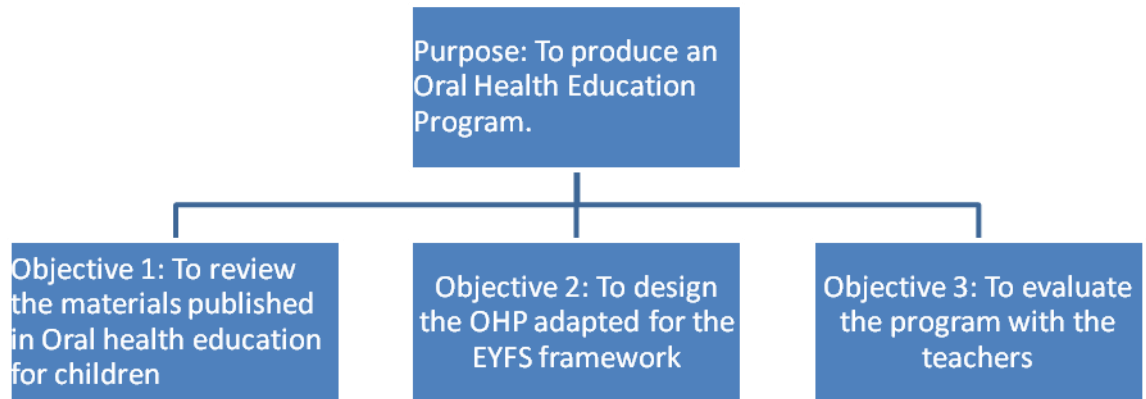


Figure 1: Purpose and tasks

3 Review of literature

In the following chapters the main concepts of the thesis such as health, childhood and learning theories are presented. The figure below identifies the concepts that contribute to the study.

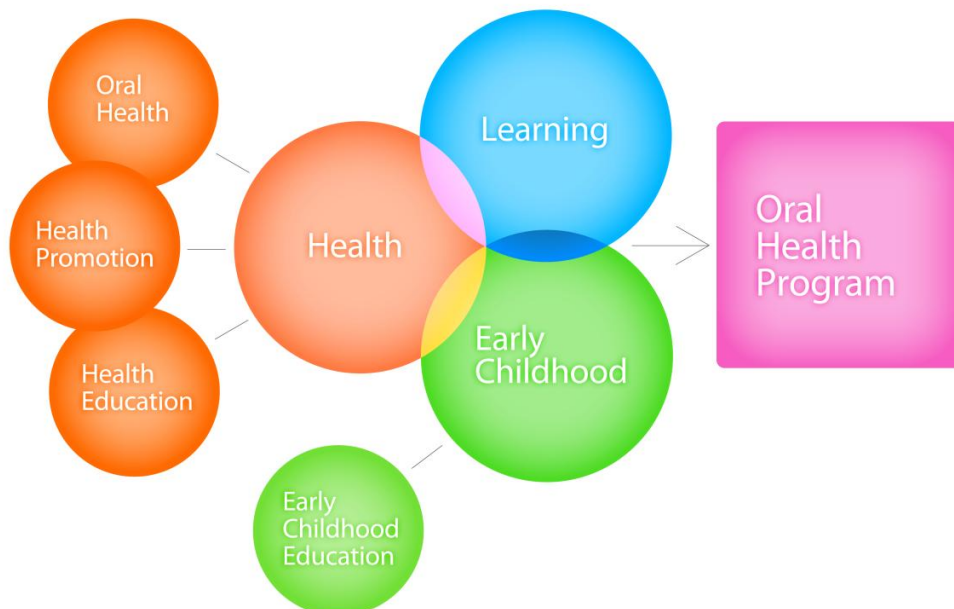


Figure 2: The main concepts of the thesis

3.1 Health

The general goal of this project is to improve the children's oral health. General health is affected directly by oral health, so it is appropriate to start explaining health as a key concept. The World Health Organization defined health in 1946 as "a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity" (WHO, 1946, p.100).

With the publication of Lalonde report in 1974 it was considered that the health level of a population depends on four elements: human biology, environment, lifestyle, and health care organization. The lifestyle category, in the health field concept, consists basically in decisions made by individuals which affect their health and over which they more or less have control. Lifestyle consists of personal decisions and habits which if are bad will result in illness or death (Lalonde, 1981).

This project wants to improve children's oral health, but it is important to determinate whether doing a health education program is the appropriate intervention. As an example, eating healthy lunches will affect positively to oral health. Altering the environment by offering only healthy lunches to the children might be an easier option. The problem is that the long-term behaviour will not be affected by such strategy. The formation of habits in young children depends basically of the parents/main careers, and the school. The acquisition of healthy habits and non risky behaviours is transmitted mainly by the same figures. Unhealthy choices become habits easily in children when they did not get acquainted with them since they are young. Therefore, a health education program is a good intervention to spread healthy messages to the children and expect a change toward a healthier lifestyle. Whether children's lifestyles are modified health will be influenced.

Health is affected by values, attitudes and behaviours and is the responsibility of every person and educators. Jackson, Perkins, Khandor, Kordwell, Hamman & Buasai (2007) described that in settings such schools many topics can be discussed that can reach effectively to a large number of people.

3.1.1 Health promotion

The World Health Organization in 1978 in the Alma-Ata conference considered after defining the Primary Health, that one important issue to be addressed is the health promotion. This was defined in 1986 as "the process of enabling people to increase control over, and improve their health" (WHO, 1998, p.1)

Hall and Elliman (2003, in Moyse 2009, p.xx) defined health promotion as “any planned activity which is designed to improve physical or mental health and prevent disease, disability or premature death”. Reviews of evidence for the effectiveness of health promotion interventions showed that health promotion strategies and actions are effective and cost-effective in preventing a wide variety of chronic diseases (Jackson et al., 2007).

Health education is defined by WHO in its glossary of terms (1998) as “consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health” (p.4). Lalonde (1984) stated that for the Health Promotion Strategy is important the promotion and coordination of school and adult health education programs, particularly by health professionals and school teachers.

Since the 1950s, schools have been a popular setting for health promotion and health education. Most programs focus nowadays in enabling children to develop the skills to resist unhealthy lifestyles (Stewart-Brown, 2006). Registered nurses have the responsibility to develop programs and behavioural interventions which activate communities for health promotion. Undertaking health promotion with children is about working with children, families and care providers. The aim of planning those interventions is to improve children’s health now and for the future well-being (Moyse, 2009).

According to (Tones & Tilford, 2001) education in school environment, activities in the curriculum and school health services influence directly in health. On one hand focus effort in schools is ideal because 80% of the children attend to primary school, at the global level. On the other hand, the earlier the habits are established, the longer lasting the impact. Doing health promotion with the children has the purpose to encourage positive behaviours, laying the foundations for later life (Moyse, 2009).

Furthermore health promotion is an activity commonly associated to health care personnel (doctors, nurses, dentist, etc) but is in fact an activity that many other professionals can do. Health educator is a term which describes the person who helps people to improve and take care of their health. This research focuses on oral health promotion. However the emphasis of the study relies on how should nurses plan health promotion interventions that teachers themselves can implement with children. The figure of health educator in this project is represented by children’s educators at day-care.

3.1.2 Health promotion models: Health Action Model

There are various different models of health promotion and health education to guide practice. The Health Action Model has been chosen for this project, though recently approaches to health promotion have been more empowerment driven rather than directive (Moyses, 2009).

“Empowerment is an approach that is taken in health promotion to help individuals and communities to meet their own perceived needs” (Naidoo and Wills 1994, in Moyses 2009, p.12). The empowerment approach encourages the participants to develop positive attitudes. Rather than directing them, it tries to help them exploring the thoughts and meanings (Moyses, 2009). Hagquist and Starring (1997 in Tones & Tilford, 2001) pointed out that the Empowerment Model in schools is characterised by elaborating work directed by participants, together with producing the necessary knowledge by them. The development of individual capabilities and joint action by pupils are additional features.

The empowerment model is difficult to apply in this thesis considering the underdeveloped capacity of young children to make cognizant choices (Tones & Tilford, 2001) and the children’s need of an adult directing the process.

A different approach is given by the Health Action Model which is a framework which incorporates the large variables influencing health, choices and actions (Tones 1979, 1987, in Tones & Tilford, 2001). Developed by Tones, the Health Action Model takes account of beliefs, normative influences and motivating factors, including attitudes, along with other strong motivating forces, in order to understand behaviour. The model emphasises the need for facilitating factors, to support the translation of behavioural intention into action (Green & Tones, 2010).

The figure below contains the factors which form the system:

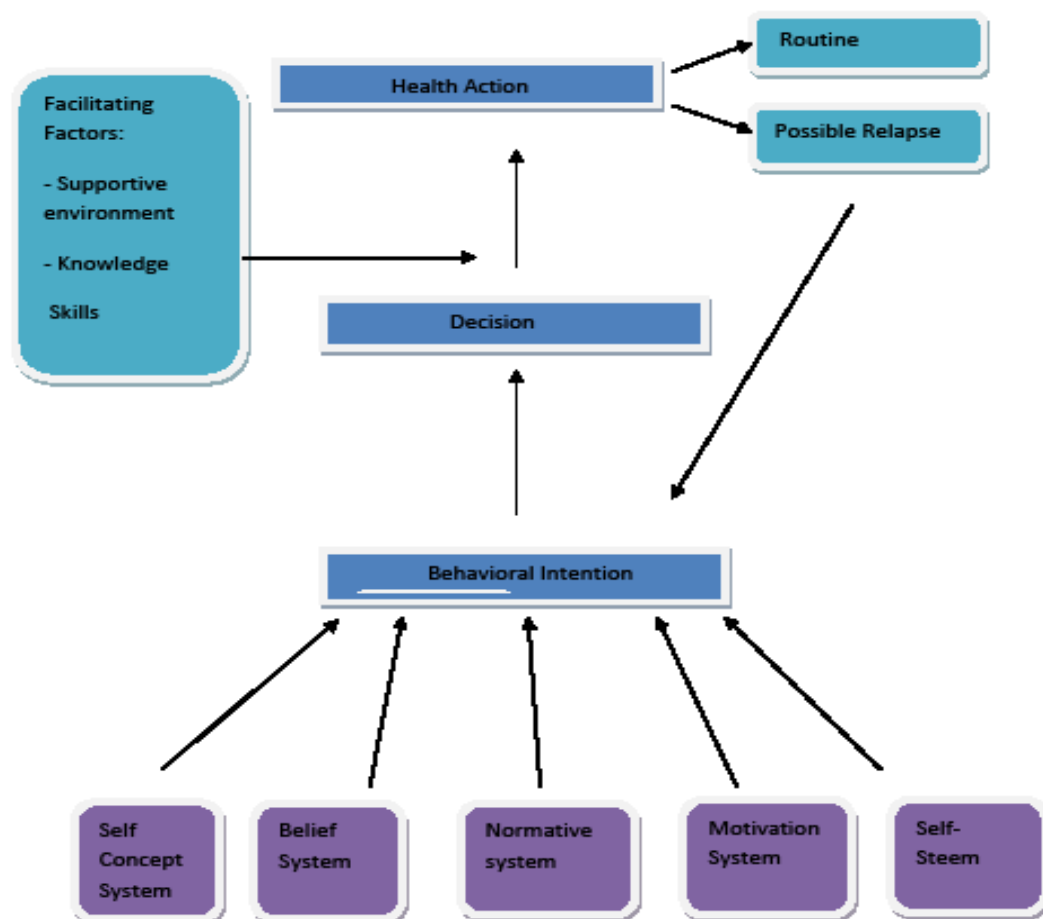


Figure 3 The Health Action model (Adapted from Tones & Tilford, 2001)

The behavioural intention includes cognitive skills and psychological factors linked with attention, perception and the reception of information. The Belief system and the Affective System are related to the motivational state of the individual. Both systems influence the Behavioural intention. The combination of these factors decides whether the intention is transformed into an action or not. Moreover, the facilitating factors could either help to do intention into action or been barriers which block the accomplishment of the action. At the end, the action will become a routine or will be rejected (Tones & Tilford, 2001).

This model has been considered appropriate to plan the OHP for the following reasons:

- The teacher will consider initiating the OHP according to the motivational state of the children firstly.
- Setting up the day-care facilities to provide a supportive environment, joint to the use of adequate materials in the process, will act as facilitating factors.
- The possibility of follow-up the OHP and include the parents in the process may help to translate the action into a routine.

3.1.3 Oral health

This concept was defined as “a standard of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being” (UK Department of Health, 1994).

Oral diseases, caries and periodontal disease are two types of preventable dental diseases and the most common of all chronic infections. The first one is most important during childhood because the highest incidence of caries formation occurs during this period.

Those who brush their teeth more than once a day by 12 years of age are more likely to continue to do so throughout their teenage years and into adulthood. Family factors such as parental modelling, routines and relationships have been associated with tooth-brushing frequency, as have school health-promotion initiatives (Currie et al. 2012). A recent HBSC survey conducted during 2009-2010 in Finland showed that prevalence of tooth brushing more than once a day among 11 year-old was lower in boys (49%) than girls (61%). The results confirm earlier findings that girls brush their teeth more frequently, perhaps due to higher concerns about their health and appearance (Currie et al. 2012). According to this survey, oral diseases can be prevented by limiting the frequency of sugar and brushing teeth twice a day with fluoride toothpaste.

Moreover, Barker (2002) stated that the prevention of the oral disease is related to the factors such as (1) incorporation of fluoride to strengthen teeth (2) efficient tooth brushing (3)

dietary changes and (4) regular dental treatment. Three of the factors described by Barker have been included in the contents for the OHP. Due to the fluoride factor is not controllable from day-care settings has not been taken into account in this health promotion intervention.

3.1.4 Oral health promotion at schools

Schools provide a supportive environment for promoting oral health because they reach over 1 billion children worldwide and, through them, families and community members (Kwan, Petersen, Pine & Borutta, 2005). The school years comprise a period extended from childhood to adolescence. Sustainable oral health related behaviours are developed during this period, and the earlier the habits are established, the longer lasting the impact (WHO, 2003).

There is evidence to support the effectiveness of oral health promotion interventions in schools and day-care worldwide. WHO (2003) stated after reviewing Health-Promoting Schools that a well designed and implemented programme which links with the school curriculum is predisposed to succeed.

In France, an oral health promotion programme and study was performed in nine day-care. The purpose was to promote the improvement of tooth brushing habit and general oral hygiene. After one year of implementation the results showed a significant improvement in children's oral hygiene habits (Tubert-Jeannin, Lecuyer, Manevy, Pegon-machat & Decroix, 2008).

Similar findings have been reported in Nepal, after the accomplishment of a program to improve dental awareness and oral hygiene of Nepalese schoolchildren. The results suggested that the oral health of the examined children was affecting their quality of life in several different ways (Knevel, Neupane, Shressta & de Mey, 2008).

Another recent study published by Mani, Aziz, John & Ismail (2010) assessed the knowledge, attitude and practice of oral health promoting factors among secondary caretakers of children attending day-care centres. Their conclusion was that implementation of nursery-based oral health promotion programs for a secondary caretaker is needed to counteract early childhood caries.

According to Kwan et al. (2005) "providing education on oral health in schools helps children to develop personal skills, provides knowledge about oral health and promotes positive attitudes and healthy behaviours" (p.679). Oral health can be promoted to through many different initiatives and the OHP could be a starting point.

3.2 Childhood and education

The Convention on the Rights of the Child in the article 1 defines a child as “a person below the age of 18, unless the laws of a particular country set the legal age for adulthood younger” (United Nations, 1989, in Office of the High Commissioner for Human Rights (n.d)).

In the same Convention it was stated that “children have the right to good quality health care - the best health care possible - to safe drinking water, nutritious food, a clean and safe environment, and information to help them stay healthy” (UN, 1989, article 24 in Office of the High Commissioner for Human Rights (n.d)).

The oral health education program will provide valuable information to support the children to make healthy choices themselves.

3.2.1 Early Childhood Education in Finland

The term early childhood education refers according to Miles & Williams (2011) to the “group settings deliberately intended to affect developmental changes in children from birth to eight years of age”.

Childhood is important and unique. The early years form the foundation for later development, physically, socially, intellectually and emotionally (Miles & Williams, 2011). For this reason, promoting health in the early years will help the acquisition of healthy habits that may last the entire life.

In Finland the term childhood education and care is applied to the age between 0 and 6 as a whole, including specific pre-school education for 6 years old (Grierson, 2004). Before beginning primary school, young children usually participate in preschool education. Compulsory education starts at the age of seven until children reach sixteen years old. The school years are a time of rapid individual and social development, where many elements of attitude and behaviour, health literacy and skills which impact on future health are formed (National Health and Medical Research Council, 1996). The contact between individual pupils and their teachers is close, and occurs at a formative stage of a child's development.

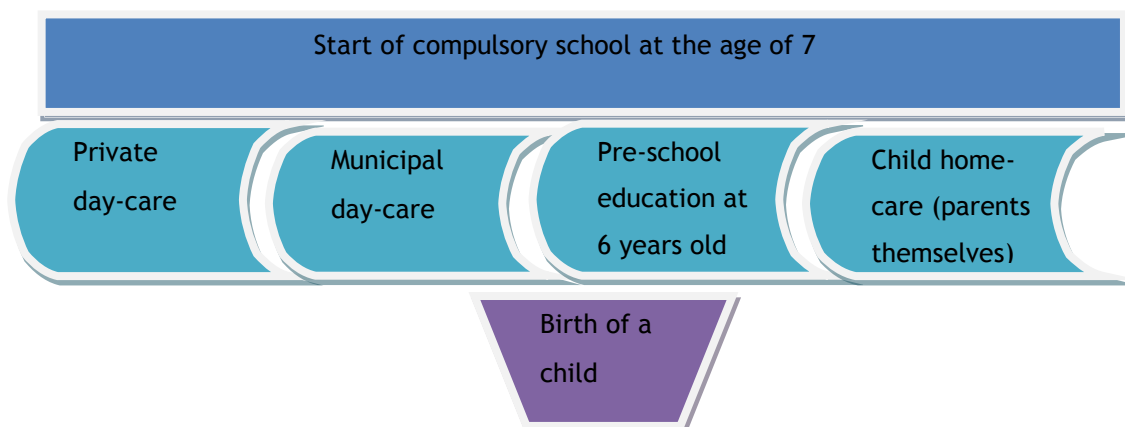


Figure 4: The Finnish system of early childhood education and care (CC) for children aged 0-6 in Finland (adapted from early Childhood education and care Policy in Finland 2000).

3.2.2 The curriculum: Early Years Foundation Stage (EYFS) as an example in the OHP

“A curriculum is much more than a collection of activities. It provides the framework for developing a coherent set of learning experiences that enables children to reach the identified goals. The curriculum must be effective and comprehensive in addressing all the developmental domains and important to content areas” (Cople & Bredekamp 2009, in Essa 2011, p.221).

The EYFS is a single framework to support children’s learning and development from birth to five years. The curriculum was created in United Kingdom (UK) by the childcare act in 2006, coming into force in September 2008 (Department for Education and Skills, 2008). From that date it use is mandatory for all schools and early years providers in UK. It has been chosen as a framework for this thesis because it is the approach used in many English day-cares in Finland.

“Every child deserves the best possible start in life and support to fulfil their potential. A child’s experience in the early years has a major impact on their future life chances. A secure, safe and happy childhood is important in its own right, and it provides the foundation for children to make the most of their abilities and talents as they grow up. (DEfS, 2008, p.7).

The last aim of the EYFS is to help young children achieve the outcomes of (1) staying safe, (2) being healthy, (3) enjoying and achieving, (4) making a positive contribution, and (5) achieving economic well-being.

There are six areas covered by the early learning goals and educational programmes. All these areas are equally important and cannot be delivered in isolation from the others.

1. Personal, Social and Emotional Development;
2. Communication, Language and Literacy;
3. Problem Solving, Reasoning and Numeracy;
4. Knowledge and Understanding of the World;
5. Physical Development;
6. Creative Development

They must be delivered through planned, purposeful play, with a balance of adult-led and child-initiated activities (DfES, 2008).

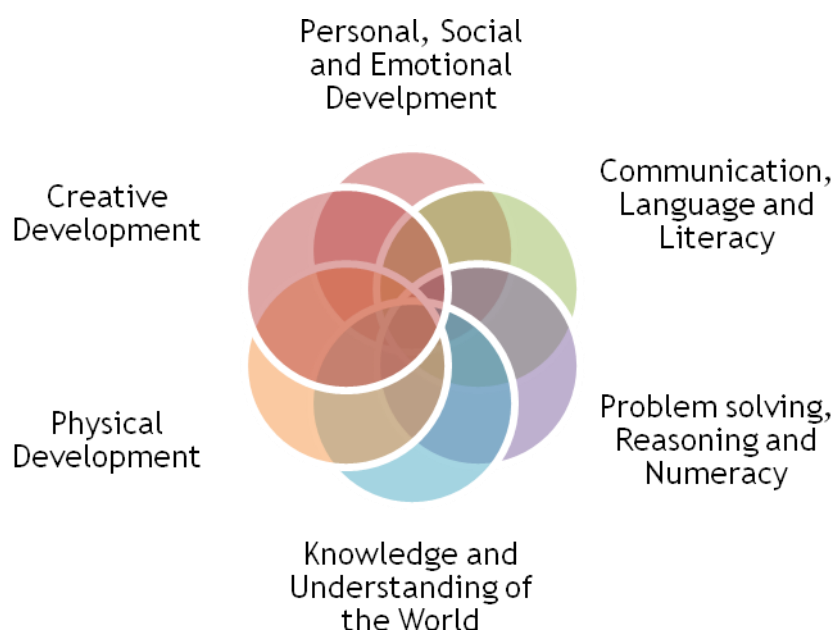


Figure 5: The six areas of development are interrelated

The OHP is a small project which will take a whole week to study the topic in-depth. This project can be incorporated into the early childhood curriculum depending upon the teacher's preferences and type of day-care. Additionally, the idea of the OHP is that teachers experiment it as a small project in the present curriculum context, combining the direction of the activities with a good amount of children involvement.

3.2.3 The day-care environment

The number of children in day-care may vary from one centre to another, and children are divided into groups. These groups are further divided according to age into under 3 years old and 3-6 years old although there is no legislation on the division into groups (Grierson, 2004).

The design of the environment has an enormous impact on children's learning. Children need a stimulating, comfortable and organized environment in order to learn effectively. The next picture shows an example of a classroom, with different spaces where teachers plan and carry out daily routines. The OHP has been created to be undertaken in different areas of the room, to engage the children in different activities and encourage them to explore with different materials.

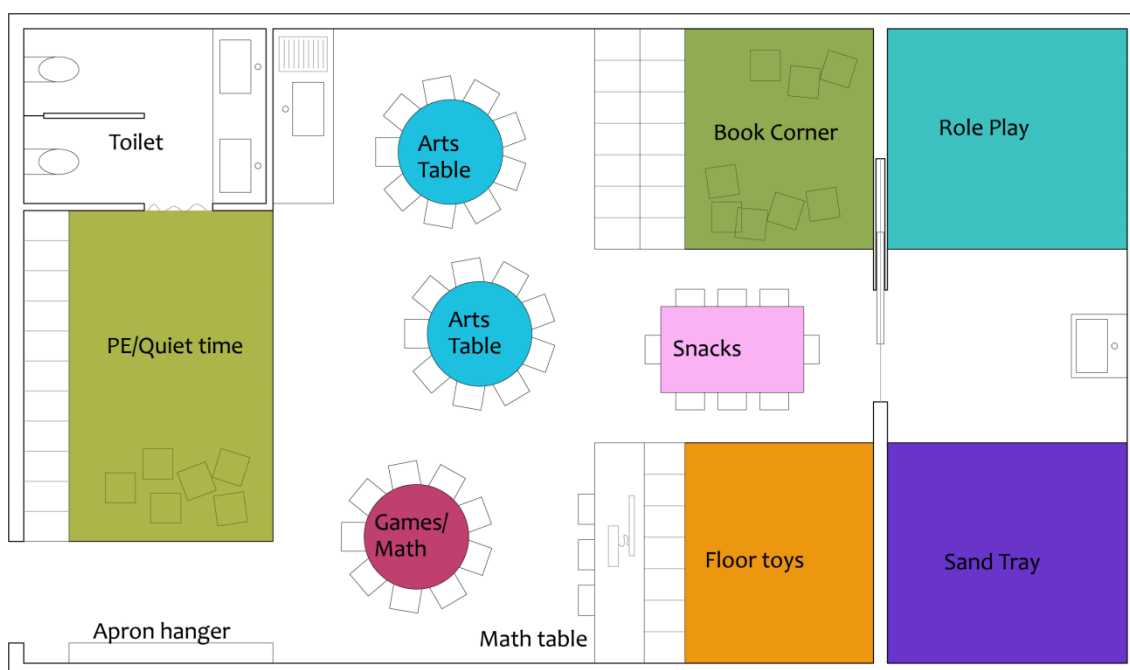


Image 1: Example of the activity areas in a classroom

3.2.4 The routines

Every day-care shares certain basic routines which are included in the children's day. Routines in an early childhood environment include (1) self care (toileting, eating, dressing and resting), (2) transitions between activities, (3) group time, (4) beginning or ending a group session (5) making choices, (6) task completion and (7) room clean up. When these routines

are regularly scheduled in the daily program, children adjust to them (Miles & Williams, 2011).

These activities fit in the daily schedule differently depending on the day-care and country. Therefore, a full school day does not refer only to the instructional sessions. The daily routines provide to the children the internalization of the life lessons when they are done repeatedly and they are positive. Routines are an important part of the day-care life (Koplow, 2002).

	Monday to Friday
8.30 -9h	Free playing
9 - 9.15h	Morning circle
9.15 - 10h	Morning session
10 - 10.15h	Snack
10.15 - 10.30h	Tiding up
10.30 - 10.45h	Story time
10.45 - 11.15h	Toileting and dressing up
11.15 - 12h	Play time in the park
12 - 12.30h	Lunch time
12.30 - 13.15h	Rest time
13.15 - 13.30h	Circle time
13.30 - 14.30h	Afternoon session
14.30- 15h	Snack
15 - 15.15h	Tidying up
15.15 - 15.30h	Story time
15.30 - 16h	Toileting and dressing up
16 - 16.50h	Playing time in the park

Table 1: A sample schedule for full-time day-care

The OHP designed aims to be incorporated in the day care curriculum and be fitted in the school routines. As an example, most of the activities elaborated in the OHP have been planned to be used in circle time, story time or for it use in daily sessions.

3.3 Learning theories

3.3.1 Constructivism and Social- Constructivism learning theories

Constructivist approaches see the children as active learners rather than passive. This model suggests that children make conclusions about their world by exploring (Tassoni, Bulman, & Beith, 2005). This paradigm is represented by authors like Jean Piaget (1896-1980) who worked mainly in the area of cognitive development. Piaget affirmed that children while developing are hectically constructing cognitive structures (Phillips & Soltis, 2004). He distinguishes different development stages: (1) Sensorimotor stage (0-2 years old), (2) preoperational stage (2-7 years old), (3) concrete operations (7-11 years old) and (4) Formal operations (11-15 years old).

The observation of children's behaviour was the base of Piaget's theory. Children behave very differently from adults in many problem-solving undertaking and children's mental abilities cross a regular series of stages as development progresses (Oates & Grayson, 2004). Piaget made some experiments to demonstrate that for young children is very difficult to understand different points of view rather than their own. This process ends out in the last stage of Piaget's developmental model when children have acquire experience and are able to reason hypothetically and systematically (Oates & Grayson, 2004).

Piaget thought that children need to be active learners who interact with the environment but he did not take into account the fact that children belong to social groups (Phillips & Soltis, 2004). Moreover, Oates & Grayson (2004) stated that Piaget's theory describes a child who tackles the problems independently, in solitary. Piaget did not give priority to the social dimension in his theory. For this reason, theories which included the socio-cultural world surrounding the child appeared later on. These theories were framed as social-constructivist theories and highlight the interaction that learners have with adults and peers. The individuals cannot be separated from their socio-cultural environment and learning would not be possible without language (Phillips & Soltis, 2004).

The most representative author of social constructivism was Lev Vygotsky (1896-1934). His theory has three mayor themes: (1) social interaction, (2) the More Knowledgeable Other (MKO) and (3) the Zone of Proximal Development (ZPD). The first theme refers to how social learning precedes development in children. The MKO relates to how other people who have a better understanding about things than the child has about these; it can be a friend, adult, parent or teacher. The ZPD is the distance between the children's ability to solve a problem by an adult guidance, and the ability to solve it independently (Learning Theories Knowledge-

base, 2011). This is the level at which a child finds difficult to complete a task, but which with an adult support, the child will perform it (Essa, 2011).

In contrast to Piaget, Vygotsky conscious that learning takes place in social settings, did not give much importance to the stages of development (Phillips & Soltis, 2004). Moreover, he emphasized that children learn from others and the young person's ability to learn by imitation is a core factor in social learning (Phillips & Soltis, 2004).

Conflict is seen different by both authors. On one hand, Piaget's view of conflict is attached to a challenging task which demands more than a child is able to achieve by using familiar strategies. On the other hand, Vygotsky explained the conflict between people, when a person's approach to a task is different than another's (Oates & Graison, 2004).

3.3.2 Application of constructivism and social-constructivism theories in the OHP.

Both theories can be applied in the OHP as is explained in this chapter. For applying Piaget's theory in school settings, teachers need to take into account the fact that children may develop through stages. The same activity made with different children might have a different result if one of the children has not yet developed the cognitive structures needed to deal with a problem. Furthermore, the role that experience plays in education is very important. If a child has never had certain types of experiences he might not have some fundamental concepts (Phillips & Soltis, 2004).

The teacher should facilitate children's active learning. Is essential to be supportive and set the environments properly to promote the children's development. The teacher should provide different materials for the children to explore and prepare carefully the room providing activities which encourage the children to investigate. Is important as well that the teacher take into account in which stage of the development the children are, before planning the interventions.

On the other hand, from Vygotsky's point of view the school is a setting where children are settled into groups. They socialise in the place with teachers and other children who transmit knowledge to their peers. In fact children need to be taught new concepts which are not easy to learn about in direct ways. Those can be for example, health concepts that the teacher transmit to the children in the school. Teachers should use the language to communicate with the children and remember to adapt the level for the children to understand. Activities that can be referred to this theory are adult-directed activities such as circle time or those activities where the teacher introduces new concepts and conduct the learning process.

4 Methodological background

4.1 Action Research

The researcher chose action research to address the objectives described in chapter 2. It is common that teachers and health care professionals use this approach to improve practice. Action research enables people to find solutions to problems they confront in their everyday life and focuses on specific situations and localized solutions (Stringer, 2007). Through action research, teachers and others working in a practitioner-based environment use their expertise and knowledge to improve conditions and solve problems (Valcarcel, 2009).

According to Denscombe (2003) the action research strategy deals with practical and real issues which consider a change. It is a cyclical process which consists firstly in identify the area to be investigated, secondly think of a solution, thirdly carry through the result and finally change practice considering evaluation.

The researcher in this study has a background in nursing and childhood education, and worked in a day-care when she planned this thesis. She identified that an oral health intervention in the classroom would benefit the children and would probably improve the oral hygiene habits. That was the beginning of the action research cycle. This small research is an example of individual action research which focuses on oral health education to resolve a problem that has been addressed on an individual basis. The final purpose of the health promotion intervention was to encourage positive oral health behaviours among the children.

Action Research has many characteristics which made it perfect for this study. First its practicality is connected to the real world concerns (such as health education in day-care). Second, its logic is connected to the idea of change at micro-level. Finally, an action research project relates to the active participation of the practitioners (Denscombe, 2003).

The study contained 4 cyclical stages which are showed in the picture at the following page.

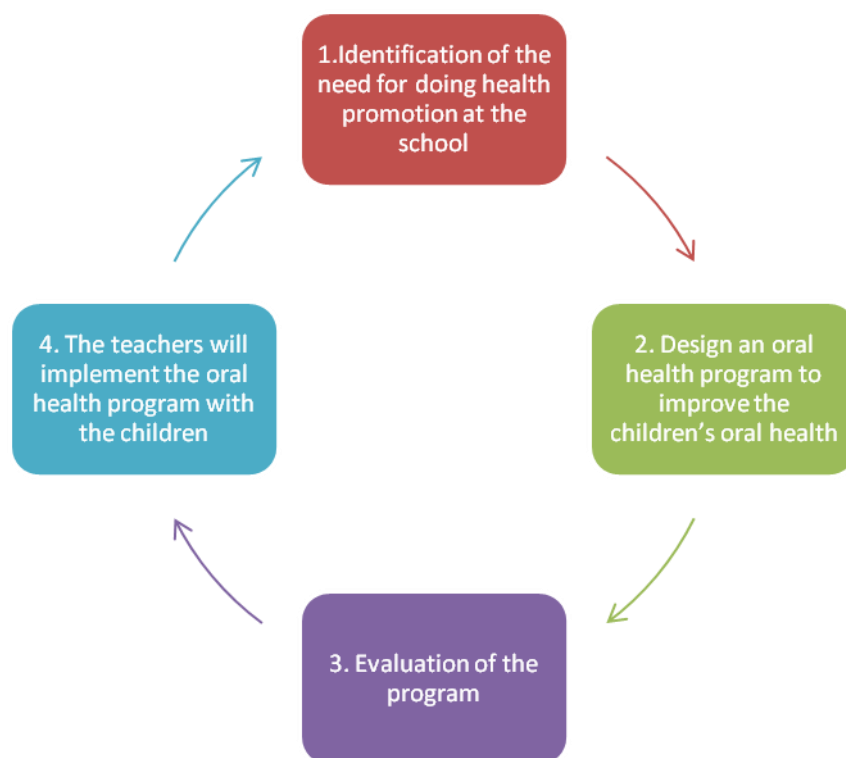


Figure 6 Action research cycle in the thesis project

In the first phase, the idea to plan for a health promotion intervention was clear, but the topic was not decided yet. Two different events brought about the decision of choosing oral health specifically. On one hand, the children used to bring their own food from home for lunch time. After months of observing the type of food parents were offering to the children, the researcher realized that some children did not have healthy lunches at all. Very often they ate precooked food and many times it was accompanied by sugary drinks and sweets. Frequently fresh fruits were not offered either. On the other hand, birthday parties were often celebrated at day-care. Parents brought for that day candies, sweets, cakes and cookies to offer to the rest of the children at snack time. Nobody brought healthy snacks ever. These behaviours will have long-term consequences of children's oral health so the idea to make an oral health program became the priority need.

The second phase involved the planning and preparation of the oral health program (OHP). The perfect program would be one that included children, parents and educators. Children in the first place because they are the subjects who need to change attitudes and make choices. If they learn healthy behaviours early enough, they will be able to keep them later on. Parents in a second place because they will encourage positive health behaviours to children and

give them alternatives that will lead to healthier lifestyles. Day-care educators in the third place as they have the education and resources to implement health promotion activities with the children and are in contact with parents to exchange valuable information.

The option to make a complete oral health program which incorporated all the actors (children, parents and teachers) was an ambitious project not feasible for a master's thesis. It would have needed more research, preparation and specially a large amount of time which was not viable. So, at this stage, the decision to make a program to work the topic only with the children was made. Also it was determined that the oral health program will be written from the nursing point of view, to be a resource that educators can use directly with children at the day-care. Public health nurses in Finland work more with individual clients and not often with the perspective of community (Jakonen, Tossavainen, Tupala & Turunen, 2002). On the other hand, early childhood educators can reach many children together and use the daily routines at day-care for educate in health. For that reason, the goals turned into create a program (by a nurse) for early childhood educator's usage. At the end of this second phase the OHP was designed. The specific steps followed to complete the program are described on the chapter 4.2.2 (stage 1).

Once the OHP was finished, the researcher arrived to the third phase of the study: the evaluation of the program. There are different types of evaluation, but in this project formative evaluation was chosen instead of summative evaluation. According to Crosby, Diclemente & Salazar (2006) formative evaluation focuses on the inputs and activities of the program. Contents, plans or materials are discussed with the target population before the program is conducted to revise the material and make changes.

Evaluate the OHP after the design provided valuable information. At this phase, the first objective was to find out whether the proposed program was suitable for teachers and appropriate for children's age. Second of all it was necessary to detect if the program was feasible before carrying it out in the future. Another benefit from doing evaluation was that participants had a voice in the program. With their expertise in the field they gave ideas and comments to improve the program. The methods used to evaluate the program with the educators are explained in the chapter 4.2.2 (stage 2). At the end of this evaluation phase, the OHP was changed according to the remarks received and the final version is attached into the thesis.

In the concluding stages of the action research cycle it was the implementation phase. Due to the limited time for the research it was decided from the beginning that the OHP will not be implemented in this study. This stage could be carried out as a future challenge for other research in the health promotion field.

4.2 Qualitative data collection methods

This study is qualitative because it focuses on understanding the perspectives of those being studied. There are five aspects of the qualitative research: it is naturalistic, the data are descriptive, there is concern with process, it is inductive and meaning is the goal (Bogdan & Biklen, 1998 in Crosby et al., 2006).

This research is (1) naturalistic because the data were collected in the natural setting such as day-care. The data are (2) descriptive because is not represented in numerical forms and written results contain participant's quotes, interview transcripts, pictures or notes that were analyzed in depth centring in interpretation (Crosby et al., 2006). One focus of this study was (3) the whole process of designing an Oral Health Program and the understanding of which were the best contents, objectives and activities for young children. The approach is (4) inductive because the data were not gathered to confirm or deny a previous hypotheses known in advance. The task of qualitative research is (5) to find meaning in the observations and experiences of participants (Crosby et al., 2006). In this case the perspective of participants was an important concern for the evaluation of the program.

4.2.1 Participants

The participants were four early childhood educators (n=4) which selected from two different settings in Helsinki (Finland). There were two English speaking day-cares which names will not be revealed. The day-cares received a letter asking for the permission to contact with the educators. To participate in the study it was necessary that the educators had a qualification in childhood education and they were familiar with the Early Years Foundation Stage Framework (EYFS).

Later on, the participants selected received an invitation letter explaining the study and containing the consent form. The contributors were from three different nationalities, three women and one man between 28 and 45 years of age. They held different European qualifications in early childhood education but all of them had experience working with the EYFS framework in their workplaces.

4.2.2 Data collection phases

The data collection in the thesis was divided into two stages. The first phase was the design of the OHP and the second phase was its evaluation. The methods used to gather the data were (1) literature review and (2) feedback from the early childhood educators.

Stage 1. Design of the Oral Health Program

The program was designed by reviewing the literature published on the oral health subject in order to elaborate appropriate activities for determinate contents. Literature review was done by the prior collection of some materials published in oral health education for early childhood. The findings were used as a support for the design of the program. There were many resources available about the theme such as books, articles and websites. The aim of reviewing the literature was to guide the design of the OHP but the sources have neither been criticized nor evaluated.

The OHP followed a six-stage planning and evaluation cycle according to the process proposed by Ewles and Simnett (2003).

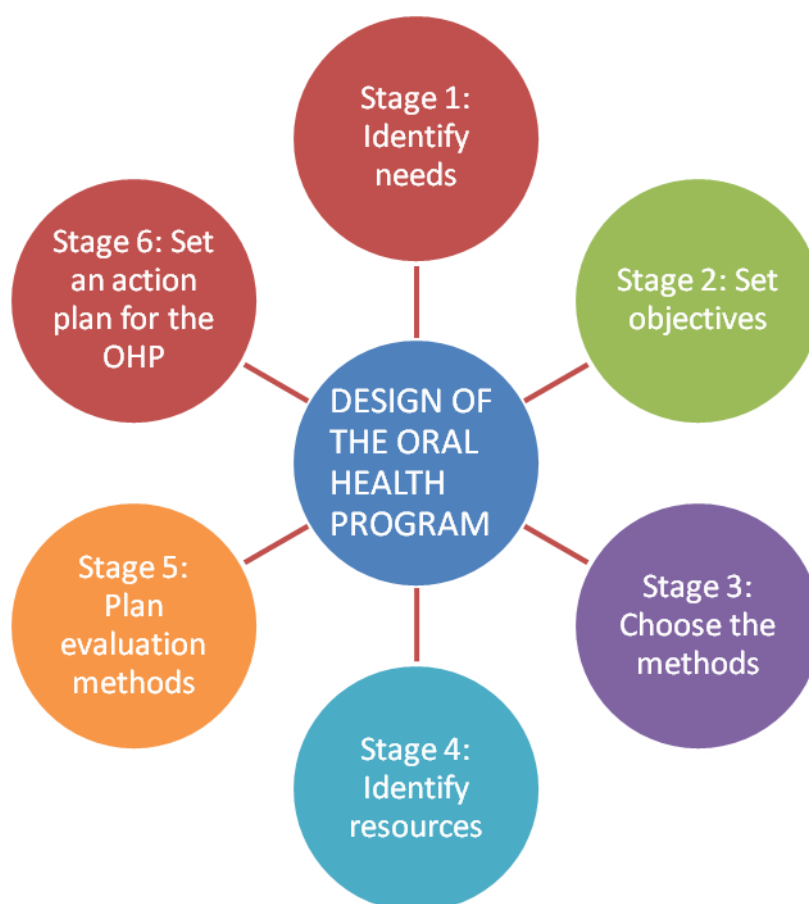


Figure 7 Planning for the OHP

According to Gilbert and Sawyer (2000) the term unit plan describes a collection of activities educationally designed to meet a set of objectives. In this thesis the OHP is considered a unit plan in oral health. The unit plans have different components as (1) overview, (2) purpose, (3) objectives, (4) content, (5) methods and strategies, (6) materials, (7) evaluation activities (8) available resources and materials, and (9) block plan. The OHP was designed taking into account similar headings. Some of the elements mentioned by Gilbert & Sawyer (2000) were selected as categories for doing deductive content analysis later on.

The design of the OHP was scheduled for the first six weeks of the year 2011, but some ideas needed to be re-thought and changed, so it took finally eight weeks to complete the whole process. After the completion of the program, it was delivered to the teachers for starting the evaluation stage in March 2011.

Stage 2. Evaluation of the Oral Health Program

The methods selected for the evaluation of the program were worksheets and semi-structured interviews. Once the participants agreed to collaborate in the study they received a package containing the OHP and the evaluation worksheets.

Evaluation worksheets

The purposes to use the data sheets were (1) helping the educators to organize thoughts about the program and (2) do not miss information in the process. With this material the educators wrote comments at the same time they read document. At the beginning, they were asked to return the worksheets as soon as they finished the evaluation. The plan was analyzing the data obtained from the papers in first place, and scheduling an interview for some days later to discuss the findings. In some cases it was not possible to get the worksheets before the day of the interview (example of the evaluation sheets can be found in appendix 4).

Interviews

Informal interviews were scheduled individually with the participants during the spring of 2011. This method was selected because it provides data based on feelings and experiences. Participants were allowed to designate the place and time most convenient for them. The researcher wanted them to feel comfortable in the contexts attempting for successful interviews.

The interview process was guided by 20 open questions which enabled the participants to describe the phenomenon in their own terms (see appendix 5 for the interview contents). In the

cases where the worksheets had been delivered prior the day of the interview, the findings after the analysis were discussed with the educators. When the participants were not able to deliver the worksheets beforehand, one part of the interview was dedicated to look through the papers together. The duration of the interviews was different in all cases but they lasted an average of 45 minutes. All the interviews were tape-recorded to keep accurate information, with the permission of participants.

4.2.3 Data Analysis

The purpose of analyzing the data was to find answers to the research questions. The data obtained from the different methods of data collection were analyzed by deductive and inductive content analysis in two different phases.

Phase	Data collection method	Content Analysis	Research question
1	Worksheets	Deductive	(3) Which changes are necessary to do in the program?
2	Interviews	Inductive	(1) How can children's knowledge related to oral health be improved? (2) How are content of the program designed, methods and activities usable for teachers?

Table 2: Data analysis phases

Phase 1. Analysis of worksheets

The teachers who participated in the evaluation returned a total of 21 worksheets with comments. The purpose in this first phase of the analysis was to find out how the OHP could be improved and complete the research task number 3. According to Elo & Kyngäs (2008) deductive content analysis is used when the structure of analysis is operationalized on the basis of previous knowledge. The data on the worksheets were analyzed by deductive content analysis according to the components of a unit plan described previously in this chapter. The six

themes were selected before the data were categorized and text that matched into the themes was looked for.

The first step in the data analysis was reading the worksheets several times to understand the meaning. The initial list of categories changed after reading the data and one new category emerged to accommodate the data that do not fit in the existing labels.

QUESTION	CATEGORIES
Which changes are necessary to do in the program?	Objectives (O), Contents (C), Activities (A), Methods & Strategy (MS), Weekly Plan (WP), Evaluation (E), Others (Oth)

Table 3: Code abbreviations designated in parentheses

The next worksheet shows how the label “Activities” was chosen to organize the comments. The text highlighted in yellow is a fragment from the original text.

Evaluation worksheet about:			
Objectives	contents	methodology	methods & strategy
Weekly plan	activities		evaluation
Date: 29.03.2011			
Subject: Objectives			
Comments: “Good idea to include the EYFS-goals but I would have tied your activities more clearly with specific goals”.			

Table 4 Example of labelling data from an evaluation worksheet

All the comments were organized in a table with the category that was assigned to the text and the code given. Examples are showed in the next table:

COMMENTS	CATEGORIES	CODE
“Good idea to include the EYFS-goals but I would have tied your activities more clearly with specific goals”.	activities	A
“I would maybe consider to develop the activities to clarify what the children do during it”	activities	A
“ Need to link theories to practice”	Methods & Strategy	MS
“The index is clearly done and gives a good general idea of what the program is about. So, making a weekly plan would be rather easy with a quick glance...”	Contents	C
About the exclusion of Fluoride from the OHP “ Some settings provide fluoride tablets after meals to all children”	Objectives	O
“The OHP could also be used in Finnish settings following their own Varhaiskasvatussuunnitelma which have been devised according to town guidelines”	Others	Oth
Activity 7 in page 8.” Fluoride suddenly bad?”	Contents	C
“ I loved the weekly plan”	Weekly Plan	WP
“Could the OHP be extended to include children from 2 years onwards as the children over 2 need to brush their teeth twice a day?”	Others	Oth

Table 5: Examples of comments, categories and codes of evaluation worksheets about the OHP

Phase 2. Analysis of interviews

In order to analyze data coming from interviews, inductive content analysis was used at this stage. According to Elo & Kyngäs (2008) inductive content analysis is used in cases where there are no previous studies dealing with the phenomenon or when it is fragmented. The purpose of the analysis was to evaluate the OHP and complete the research tasks 1 and 2.

To become familiar with the data the first task was to listen to all tape-recorded interviews several times. Secondly, interviews were transcribed to the computer, each one associated to a number to keep the data confidential (Teacher 1, Teacher 2, Teacher 3 and Teacher 4). The analysis was focused by question, looking how all the teachers responded to each question. The data from each question was put all together to look across all respondents and their answers in order to identify consistencies and differences (Taylor-Powell & Renner 2003).

QUESTION	CATEGORIES
How do you think this program suits you in your everyday practice?	Appropriate Useful Important Specific Timing
Could you use this program as it has been designed at your workplace or would you need to do changes to use it? Which ones?	Suitable for the age group Adaptable <ul style="list-style-type: none"> • for a different age • for special needs children Reduce it <div style="position: absolute; left: 760px; top: 265px;"> } SUBCATEGORIES } </div>
How do you see teachers doing health education at the school?	Necessary Important Should be extended Teachers are health educators Need to incorporate parents
Will be easier to work health topics with children using specific programs made by health professionals? Or should the teacher carry these plans himself?	Health professionals for planning Teachers for implementation Collaboration with health professionals
This OHP aims to improve children's knowledge related to oral health. Can you think in different ways to approach oral health with children?	Adult directed activities Children exploration Time for consolidate concepts
The EYFS is based in "learning through play", could you think in any other way to do health education with young children?	Planned play opportunities with adults Circle time Story time
How do you think children can learn to brush their teeth?	By practice Starting early enough Playing Making it enjoyable Family time.
Is the day-care an appropriate setting to work this topic?	Day-care is the right setting School is too late Not the first place Collaboration with parents Teachers should explore it more
How do you think the objectives are formulated?	Clear Well structured Good number

	According to contents Linked with activities
Do you see the objectives appropriate for the children's age?	Well-suited Achievable Adaptable Challenging enough
How do you see the contents for the age group of children?	Relevant Based in experiences Interactive
How important you think is working these contents with the children?	Ideal Useful Needs follow-up Teachers should do more Parents will appreciate
How do you see this topic for a whole week, do you think will be needed more or less time? Maybe some sessions but not as a weekly topic?	Split in sessions During a month Coming back later to consolidate Allow spontaneous learning and topics
How do you see the activities proposed to achieve the objectives?	Elaborated Holistic Wide Cover the objectives Well aged orientated
Are the activities attractive and appropriate for the children's age?	Suitable Specific Adaptable
Are appropriate the instruments proposed to evaluate whether the goals have been achieved?	Formal Technical Specific Need follow up
Do you use other non-formal assessments in your everyday practice with the children that can be used in this program?	Learning journeys Observations Incorporating parents
What is your overall impression of the OHP in a short sentence?	Engaging Informative Practical

Table 6 Questions and categories identified in the data analysis

5 Findings

5.1 The Oral Health Program

The first finding of this study is the Oral Health Program itself. The final version of this program is presented in appendix 1, but in this subchapter is explained how the OHP changed after the first phase of the data analysis.

All the comments received from educators in form of evaluation sheets were grouped into the seven categories (objectives, contents, methodology, methods & strategy, weekly plan, activities and evaluation). The observations were analyzed and the OHP was improved taking into account all the participants comments.

On one hand, the activities chapter was the one which suffered the most alterations from the first version to the last one and it needed considerable work. The educators wrote many ideas to improve the activities in order to make them more interesting for the children. They also explained why elaborating the explanations of the activities, would benefit inexperienced educators to carry out the OHP. The additional problem faced was that the activities in the first version were not linked appropriately with the EYFS areas of development. That issue was improved and in the last version all the activities are tied to the curriculum.

On the other hand, in the first version of the OHP the chapter about learning theories contained some mistakes. The differences between the constructivist and social constructivist approaches were not clear. Furthermore, there were not link between the theories and how those theories affected the program. , so the chapter was rewritten explaining both theories in the final version of the program.

To conclude, child-centered approach and adult directed activities were concepts not appropriately used in the program, but were corrected after receiving the feedback..

5.2 Evaluation of the OHP with the educators

The interviews were guided by 20 initial questions that were reduced to 18. The reason to decrease the number was firstly that two questions were very similar and formed one. Secondly, the last question was totally opened to let the participants add something to the evaluation if they wanted, but there were not responses to it. The rest 18 questions were opened and the results fulfilled the expectations of (1) discovering how the content of the program designed, methods and activities were usable for teachers and (2) detecting which changes were necessary to do in the program.

5.2.1 Feedback of the objectives

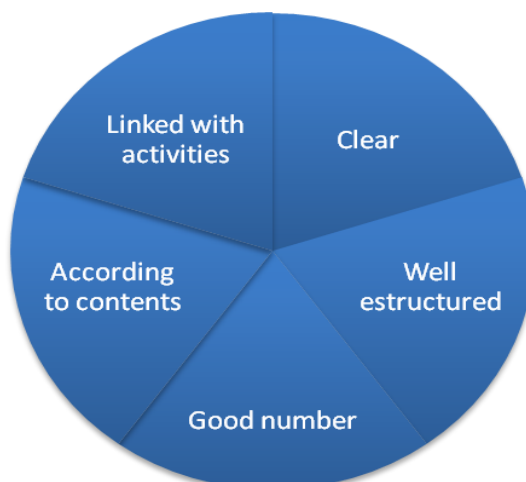


Figure 8: Attributes that the participants gave to the OHP objectives

All the educators thought that the objectives were appropriate for the children age. One educator said that the objectives can also be adapted to the children's level of understanding during the activities.

The objectives were challenging enough, which is important because if the level is too easy the children get bored but if it is too difficult they may get frustrated.

5.2.2 Feedback of the content

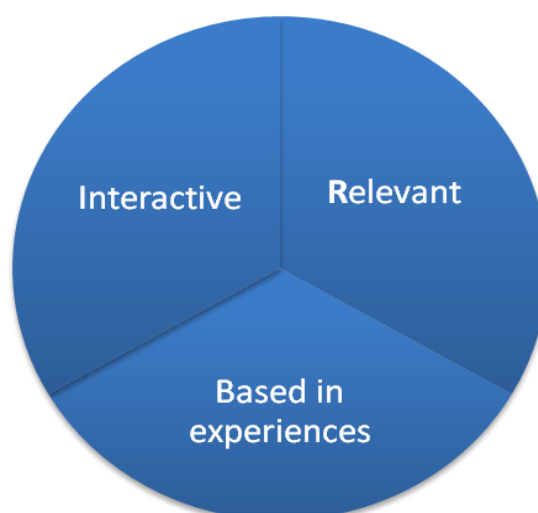


Figure 9: Attributes that the participants gave to the OHP contents

First of all, the teachers stated how important and useful can be working these contents with the children. They believed that they should do more health education at day-care on one hand because they feel they are not doing enough regarding this issue. On the other hand, because the implementation of health education programs in day-care has an additional advantage; children and educator can discuss the issue as a bigger group and children understand better the reasons behind their choices.

Second of all, in the interviews was discussed the duration of the program and how will work having the OHP as a weekly topic. In general the educators thought that the implementation of the program this way would be very intensive. They came up with different ideas like the possibility to split the program in some weeks. Separating the program will allow the possibility to include in the week a different theme than just oral health. As a result, picking only some activities from the OHP will leave some time for spontaneous learning and spontaneous topics that children want to talk about. Another possibility was to approach the oral health in many short sessions during some time (for example a month). Proceeding little by little longer time, will help the children to consolidate the learning.

Another important issue that arose during the interviews was the relevance to share this topic with the parents. It will be essential to comment that educators are starting to talk about oral health at day-care because parents should also dialogue with the children about oral health at home apart from the tooth-brushing.

5.2.3 Feedback of the activities



Figure 10: Attributes that the participants gave to the OHP activities.

The educators thought that the activities were attractive and appropriate for the children's age. They also added that the activities can be adapted very well in case is needed in the group.

5.2.4 Feedback of the evaluation methods

The teachers were familiar with the methods proposed for evaluation and concluded that these evaluations are used generally in day-care. One educator considered the evaluation very formal and technical and said that she would be more interested in knowing if the children enjoyed with the activities rather than evaluating if the objectives have been achieved. The importance of including the parents can be extended to the evaluation too. A good idea to start with is writing learning journeys which are longer subjective descriptions that can be given to the parents. This type of assessment helps the children to consolidate the learning that had happened in the day-care.

5.2.5 Feedback of the whole OHP



Figure 11: Attributes that the participants gave to the OHP as a whole.

The educators considered that the OHP was appropriate and very useful. They liked that it is very specific and it concentrates just in one topic. The most difficult target is to find the time when the children are interested because if the interest comes only from the teacher the children do not follow the program with enthusiasm.

The participants thought that health education is necessary in day-care and talking about health issues with the children should be extended. They manifested that teachers are health educators because they work health topics with the children though they generally do it more casual. They were pleased with the idea to have health promotion programs planned by health professionals. When programs like the OHP are available for teachers, educators will be in charge of implementing them when they find the perfect time to address the topic with the children. The collaboration between health professionals and teachers was seen as the ideal.

Reference to adult directed activities, educators believed that they are necessary for doing health promotion with the children. For this reasons, circle and story time are seen as the best ways to teach them anything. To engage the children props can be incorporated in circle and story time, as well as objects that the little ones can manipulate themselves. However, children exploration is essential and it is required to find the right combination of both. When activities are not child centered and educators start the activities on their own interest, the children need more time to incorporate the concepts. After all, children learn by practice and the tooth-brushing habit needs to be incorporated early enough. Therefore the inclusion of the parents in the program is indispensable.

To conclude, teachers believed that day-care is the right setting to educate in health and the oral health topic should be explored before school. Doing health education in day-care is suitable but need to have the parents incorporated. On the other hand, promoting health at day-care benefit the children because they learn the social component of hygiene and they understand that it is something everybody does.

Based on these findings the OHP was changed and the last version can be found in Appendix 1

6 Discussion

6.1 Ethical issues

According to Stringer (2007) ethical procedures are an important part of the research and it is required to provide the participants with written information about the aims, purposes and processes of the study.

The first step taken prior to the study was obtaining the permission from the manager of the school chosen (appendix 2). The consent was obtained and signed by them, and after that the invitation letters were sent to the teachers with all the details about the study. An example of the letter can be found in the appendix 3 but basically include:

- That the participation in the study is voluntary.
- All the participants have the right to withdraw the study at any time.
- The personal information will not be displayed in the final report of the study and only some information about their background can be displayed with their permission.
- The interviews will be recorded to keep all the information.

An unexpected ethical issue happened when one of the educators who participated in the study finished the work in one of the schools chosen for the study, and started working in a different one. The educator wanted to remain in the study and the consent was asked to the manager of the new school. The permission was given and the educator remained in the study until the end.

The interviews were audio taped with the participants consent, and stored safely without information that could identified the participants (numbers were used instead of names). Only I have had access to the audiotapes and I have transcribed them. All the data used for research purposes is destroyed after the final reporting.

6.2 Trustworthiness

A research is trustworthy when it does not reflect the particular perspectives of the researcher and is neither based on superficial analyses of the issues investigated. Good research is a process systematic and rigorous. Rigor in action research is based on checks to assure that the outcomes of research are trustworthy (Stringer, 2007). Checks for trustworthiness are (1) credibility, (2) transferability, (3) dependability and (4) confirmability (Lincoln & Guba, 1985 in Stringer, 2007).

6.2.1 Credibility

Credibility means the integrity of the study. In this research the credibility is enhanced when various methods to gather the data have been incorporated such as literature review and feedback from the early childhood educators (evaluation worksheets and interviews). The usage of different methods aimed to answer various research questions and give to the study some form of methodological triangulation.

The educators wrote consciously the observations (evaluation worksheets) within two weeks and took notes of the ideas which they thought that needed to be changed in the OHP. This conscious process of taking notes instead of describing the events from memory reinforces the credibility of the research (Stringer, 2007). Besides that, long informal interviews provided

very much information and provided the educators and the researcher with extended opportunities to express their experiences at day-care regarding the oral health education.

6.2.2 Transferability

According to Stringer (2007) action research conclusions apply only to the particular places and people who were part of the study. The OHP has been designed for the use of educators who work with the EYFS curriculum and the day-care is inspired by the social-constructivist approach. However, this does not mean that it cannot be used in any other daycares or by other educators. It indicates that it might need to be adapted to different situations, for example by picking only some activities instead of the whole program, or by changing the weekly plan.

6.2.3 Dependability

Dependability focuses on the extent to which people can trust that the procedures that have been followed during the research process are systematic (Stringer, 2007). This study is qualitative and the conclusions are subjective. The researcher carries her own biases and the OHP is the result of her knowledge, the sources reviewed and her personal experience as early childhood educator. This is a big limitation of the study because a different researcher might have consulted different sources and the OHP would have been totally different. In addition to it, another researcher might have different way to code and categorize the row data, and the conclusions would have been unequal. Against this limitation, the evaluation of the OHP has been done by four different educators. Those people looking at the OHP from their own different perspectives have made possible a unique OHP. The final version of the OHP is the first finding of this thesis, and it is a more dependable conclusion than if only the researcher has arrived to the final version of the program without doing the evaluation with four educators.

6.2.4 Confirmability

At this point is necessary to include the term of neutrality which according to Guba (1981) refers to “the degree which the findings are a function solely of the informants and conditions of the research and not for other biases, motivations and perspectives (Krefting, 1991, p.221). Objectivity is the criterion for neutrality and it also refers to the proper distance between researcher and subject studied. In this case, the participants of the study were childhood educators working in the same company of the researcher. This matter carries its own biases, as the participants or the investigator can be seen as no neutral. On the contrary, Lincoln & Guba (1985) stated the importance of the neutrality of the data rather than the neu-

trality of the investigator. In this research the neutrality is enhanced when various methods to gather the data have been applied, and the participants have participated only in the evaluation of the OHP. But in this case it has to be taken into account that the contact with some of the educators could not be avoided in any case, since the participants and researcher worked for the same organization.

According to Stringer (2007) researchers should be able to justify that the procedures described in the study actually took place. To address the issues of confirmability and dependability researchers usually rely in a professional to audit the research methods of the study. Similarly, Guba (1981) viewed neutrality as data and interpretational confirmability, and described the audit as the best strategy to establish confirmability (Krefting, 1991). Considering that this thesis is a small scale research and a master's thesis the possibility to go through the audit process was not necessary.

6.3 Discussion of findings

The purpose of the thesis was to produce an Oral Health Education Program (OHP) for children from 4-5 years of age, which could be incorporated as part of normal everyday teaching practice. The first version of the OHP was written after reviewing the literature published in the topic. When the OHP was ready it was presented to the selected educators in order to proceed with the evaluation phase. The aim of the evaluation was to detect the changes that were necessary to make in the OHP to improve it. The assessment was done using evaluation sheets and conducting individual interviews to discuss the program with the participants. The changes proposed by the participants to improve the program were recognized and the final version of the OHP is the first and most valuable finding of this thesis.

The OHP is a resource that can be used by the teachers who want to promote oral health among the children at day-care. The participants found the OHP very specific and useful and they thought that it is ready for using it straight away. One important thing that should also be considered is that the OHP can be easily adapted by the teachers to use it with specific groups and in various situations. Despite the fact that the program has been written to use it with the EYFS curriculum, it is possible to use it with different curriculums just arranging some alterations.

The participants recognized that they should include this topic in their practice because not enough health education is done at day-care. If we take into account that education in school environment and activities in the curriculum influence health (Tones & Tilford, 2005), it will be very important to provide to the teachers with programs like the OHP, to benefit children's oral health.

Another important factor to consider is finding the moment when the children are interested in the topic to enhance the learning experience. Adult directed activities are necessary for doing health promotion but they should be combined with children exploration. Piaget thought that children need to be active and Vygotsky stated that learning takes place in social settings (Phillips & Soltis, 2004). In this thesis a social-constructivist approach is recommended because the OHP proposes a combination of both adult directed activities and children's exploration. The OHP will take place in a day-care where children get information from others and learn by imitation (Phillips & Soltis, 2004).

As it has been explained in the literature review, the empowerment model for health promotion is difficult to apply with small children. Instead, for this thesis the health action model was proposed. The educators can apply this model with the children in two different actions. On one hand the teacher will consider initiating the OHP according to the motivational state of the children. On the other hand, the teacher will provide a supportive environment, by setting up the day-care facilities.

One of the proposals to use the OHP was considering it as a small project and take a whole week to study the topic in-depth. That idea was controversial and some educators thought that children need more time for spontaneous learning and an intensive week might not be a good option. For that reason in the OHP can be found the weekly plan, in case an educator wants to try the whole program. But there is also the possibility to take some of the activities explained to approach the topic within many different sessions.

Every day-care shares certain basic routines which are included in the children's day. Creating the OHP, one objective was that the program suited with the routines and could be implemented in a normal day in the school. The participants suggested different ways to improve children's knowledge related to oral health at day care. First of all, the topic can be incorporated in circle time and story time. Second of all, preparing the environment with oral health activities for the kids to explore the topic themselves is another way to do it. Finally, teacher's planned play with children will be also a valuable method for improving children's oral health awareness. It is essential to bear in mind that children learn by practice, and the earliest they are familiar with the idea to take care of their teeth, the better it is. Doing health promotion with the children has the purpose to encourage positive behaviours, laying the foundations for later life (Moyse, 2009).

The educators considered that this kind of health promotion programs should be done by health professionals because they are health experts and have the appropriate knowledge to create them. Then, the educator's job is to put the program into practice and modify it ac-

ording to the children individual's need. The ideal situation will be that one where the nurse and the educator work together and collaborate to create and implement the program. Something that all the participants agreed was the importance to work this topic at day care but not forgetting that home should be the first place to educate such an issue and parents are the main figures to teach good habits and prevent oral diseases.

6.4 Future challenges

There is evidence to support the effectiveness of oral health promotion interventions in schools and day-cares worldwide. This research would well serve as a frame to study how the OHP would work in a real setting, and how its implementation by the educators would be. The performance of the OHP would be necessary to do a real evaluation by the educators and find out if the program is convenient for them.

The OHP has been created to improve children's oral health. Doing health education in day-care is suitable but need to have the parents incorporated. The inclusion of the parents can be done in different ways. First of all, the OHP could be carried out at day-care at the same time that information is sent to the parents. It is important for the parents to know that this matter is going to be taken up at day-care. They will benefit also from advices related to oral health, so the OHP could be developed in a way that includes some sessions to discuss the oral health topic with parents and give them advices.

Another different study that could be accomplished is one which besides day-care, investigates what is happening at home. Such a study could be undertaken to gain insight of the parents and children needs at home. Some questions that could be examined are (1) what are the oral hygiene habits of the parents and children at home? (2) At which age did the parents start with the children's oral hygiene? (3) What kind of food do families in Finland eat? Furthermore, the figures of the health professional (nurse, dentist, doctor, etc.) and early childhood educators could collaborate to create the perfect program for every day-care on an individual basis.

In any case, the implementation of the OHP or a similar program in day-care will benefit the children and increase their awareness of teeth and oral hygiene habits. It will be worth to try the implementation considering that schools remain an important setting, offering an efficient and effective way to reach over 1 billion children worldwide and, through them, families and community members (Kwan, Petersen, Pine & Borutta, 2005)

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Images

Image 1: Example of the activity areas in a classroom 18

Figures

Figure 1: Purpose and tasks	8
Figure 2: The main concepts of the thesis	8
Figure 3 The Health Action model (Adapted from Tones & Tilford 2001)	12
Figure 4: The Finnish system of early childhood education and care (CC) for children aged 0-6 in Finland (adapted from early Childhood education and care Policy in Finland 2000).	16
Figure 5: The six areas of development are interrelated.....	17
Figure 6 Action research cycle in the thesis project	23
Figure 7 Planning for the OHP	26
Figure 8: Attributes that the participants gave to the OHP objectives	34
Figure 9: Attributes that the participants gave to the OHP contents	34
Figure 10: Attributes that the participants gave to the OHP activities.	35
Figure 11: Attributes that the participants gave to the OHP as a whole.	36
Figure 13: The main concepts of the program.....	55
Figure 14: areas of development.....	59
Figure 15: integration of the areas of play.....	61

Tables

Table 1: A sample schedule for full-time day-care	19
Table 2: Data analysis phases.....	28
Table 3: Code abbreviations designated in parentheses.....	29
Table 4 Example of labelling data from an evaluation worksheet	29
Table 5: Examples of comments, categories and codes of evaluation worksheets about the OHP	30
Table 6 Questions and categories identified in the data analysis.....	32
Table 1: List of activities for the content: tooth brushing	66
Table 2: chart to take home	75
Table 3: List of activities of the content "diet"	76
Table 5: List of activities of the content "going to the dentist"	81
Table 6: Check-list example to evaluate tooth-brushing performance	89
Table 7: Combination of activities to form sessions.....	93
Table 8: Weekly Plan.....	94

Appendices

Appendix 1 Oral Health Program for early Childhood Educators

ORAL HEALTH PROGRAM

For Early Childhood Educators

[2012]

[IRENE ARNAU MARTIN]

Abbreviations	52
1 Introduction	53
2 Purpose	54
3 Target group	54
4 Theoretical framework.....	55
5 Methodology	57
5.1 Constructivism and Social-Constructivism learning theories	57
5.2 The curriculum. Early Years Foundation Stage (EYFS) as an example in the OHP 59	
5.3 Learning through Play	61
6 Objectives	62
7 Content	63
7.1 Regular tooth brushing	63
7.2 Diet	64
7.3 Regular dental check-ups	65
8 Activities.....	66
8.1 Activities about tooth-brushing.....	66
1. Activity n° 1. Why tooth-brushing is needed. New vocabulary.....	67
2. Activity n° 2. Tooth brushing technique.....	68
3. Activity n° 3. Tooth brushing practice	69
4. Activity n° 4. Making a display	71
5. Activity n° 5. Puppets	72
6. Activity n° 6. Tooth brushes sizes	73
7. Activity n° 7. Toothbrushes paint	74
8. Activity n° 8. Tooth brushing chart	75
8.2 Activities about diet.	76
1. Activity n° 9. Healthy and unhealthy food	77
2. Activity n° 10. Sorting healthy and unhealthy food	78
3. Activity n° 11. Alternatives to sugary snacks	79
4. Activity n° 12. Make a cookbook with the children	80
8.3 Activities about going to the dentist.	81
1. Activity n° 13. The role of the dentist.....	82
2. Activity n° 14. Receiving the dentist or visiting the dental clinic	83
3. Activity n° 15. Making invitations for the dentist	84
4. Activity n° 16. Setting up the role play area as a dental clinic	85
9 Methods.....	86
10 Materials.....	88

11	Evaluation activities	89
12	List of available materials and resources	91
	12.1 Lists of books	91
	12.2 Lists of songs	91
	12.3 Oral health	92
	12.4 Policies in Finland	92
13	Time Frame	93
	13.1 Sessions	93
	13.2 Weekly Plan	93
14	Coloring Pictures	95
15	Bibliography	107
	List of Figures	110
	List of Tables	110
	List of Images	110
	List of colouring pictures	112

Abbreviations

CD	Creative development
CLL	Communication, Language and Literacy
DfES	Department for Education and Skills
EYFS	Early Years Foundation Stage
KUW	Knowledge and Understanding of the World
MKO	More Knowledgeable Other
OHP	Oral Health Program
PD	Physical Development
PSE	Personal, social and emotional development
PSRN	Problem Solving, Reasoning and Numeracy
WHO	World Health Organization
ZPD	Zone of Proximal Development

1 Introduction

The school age is the perfect moment to acquire knowledge and healthy habits, and it is also the period when children get permanent dentition. The acquisition of healthy habits, the change of harmful life practices and the application of preventive measures are key activities which will benefit the future health.

Oral affections, especially caries and periodontal disorders represent one of the most important problems of health in our society. According to the World Health Organization, dental caries affects 60-90% of school aged children and the majority of adults (WHO, 2012). The connection between oral health and general health has been studied in different researches. As an example, the study of Li, Kolltveit, Tronstad, & Olsen (2000) shows that oral infection, especially periodontitis, may affect the course and pathogenesis of a number of systemic diseases, such as cardiovascular disease, bacterial pneumonia, diabetes mellitus, and low birth weight.

Early childhood caries is a preventable disease and many activities can be done to anticipate that condition. Various organizations have determined the need of promoting oral health at a young age to prevent oral diseases (National Center for Chronic Disease Prevention and Health Promotion, 2011). Doing a health promotion intervention at day-care will involve (1) reaching a significant proportion of those of school age and (2) reaching people at a stage of life whose attitudes and behaviours learnt will influence current and future health (Tones & Tilford, 2001).

This Oral health program (OHP) is a paper for early childhood educators to promote health in the settings they work. According to the World Health Organization (WHO, 2010) the most cost-effective way of improving oral health, and, in turn, quality of life, is the promotion of health in the settings where people learn, work or live. The OHP attempts to improve the oral health awareness of 4-5 year old children by attractive and fun educational activities.

Many authors have written about the different benefits of learning through play. At the same time, constructivist and social-constructivist theories show the importance of children's exploration to enhance the learning process. The OHP contains both adult directed activities combined with opportunities for the children to explore the oral health topic themselves. Furthermore, there is an important amount of children in Finland which attend to public or private day-care prior to school. Considering this high number and that learning takes place in social settings according to Vygotsky (Phillips & Soltis, 2004), day-care is the perfect place to carry out health promotion activities.

The OHP is connected to the Early Years Foundation Stage Framework, which is the curriculum used in United Kingdom and which is the framework that operates in many English day-cares in Finland.

Whether school health policy is combined with health education or healthy-supportive school environment, it will contribute to deal with risk factors and provide increasing control of oral disease (WHO, 2007).

7 Purpose

The Oral Health Program (OHP) for early childhood educators aims to improve the oral health of children aged 4-5 in Finland by integrating oral health in day-care.

The OHP has been created for early childhood educators in Finland who use the Early Years Foundation Stage (EYFS) framework as a general curriculum in day-care. Many elements of the content can be used also by other childhood professionals although parts of the program might need changes to suit other curriculums. The OHP contains objectives, contents, activities and other resources for educators to work with the children during a whole school week (when the OHP is combined with the normal school routines).

8 Target group

The target group for the OHP are children from 4-5 years of age who attend to English-speaking day-care in Finland. The decision to focus on this age group was taken because these years are critical for physical and emotional development at the same time they are important for learning attitudes and practices related to healthy lifestyles (Fitzgibbon, Stolley, Dyer, VanHorn, & KauferChristoffel, 2002). It is very important to target children in kindergarten and primary school (WHO, 2003).

Besides that and according to the Finnish Ministry of Social Affairs and Health (2004), the number of children in day-care at the end of 2003 increased from 68.5 percent at age 4 to 73 percent at age 5. The high number of children that attend day-care at ages 4 and 5 was another reason to focus the OHP specifically in this age group.

The group size should not exceed 20 children as is recommended by the Finnish Ministry of Social Affairs and Health (2004). For carrying out the activities it will be necessary to split the group and work with maximum seven children at the time.

9 Theoretical framework

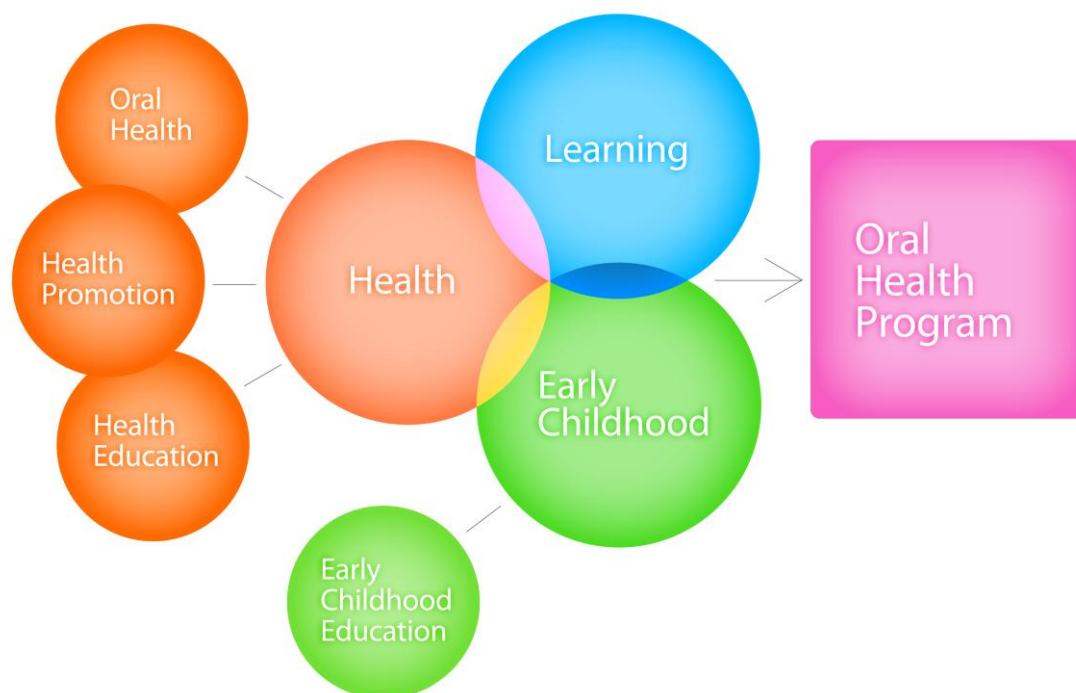


Figure 12: The main concepts of the program

In this chapter the main concepts used in the program are explained.

Child: is “a person below the age of 18, unless the laws of a particular country set the legal age for adulthood younger” (United Nations, 1989, in Office of the High Commissioner for Human Rights (n.d))

Health: as “a state of complete physical, mental and social wellbeing and not merely the absence of disease or infirmity” (WHO, 1946, p.100)

Health is affected by values, attitudes and behaviours and is the responsibility of every person and educators.

Oral health: “is a standard of the oral and related tissues which enables an individual to eat, speak and socialize without active disease, discomfort or embarrassment and which contributes to general well-being” (UK Department of Health, 1994)

Oral diseases, caries and periodontal disease are two types of preventable dental diseases and the most common of all chronic infections. Those who brush their teeth more than once a day by 12 years of age are more likely to continue to do so throughout their teenage years and into adulthood. Family factors such as parental modelling, routines and relationships have

been associated with tooth-brushing frequency, as have school health-promotion initiatives (Currie et al., 2012).

Health promotion: “the process of enabling people to increase control over, and improve their health” (World Health Organization, 1998, p.1).

Reviews of evidence for the effectiveness of health promotion interventions showed that health promotion strategies and actions are effective and cost-effective in preventing a wide variety of chronic diseases (Jackson, Perkins, Khandor, Cordwell, Hamann & Buasai, 2007).

Health education: “are consciously constructed opportunities for learning involving some form of communication designed to improve health literacy, including improving knowledge, and developing life skills which are conducive to individual and community health” (WHO, 1998, p.4).

Lalonde stated that for the Health Promotion Strategy is important the promotion and coordination of school and adult health education programs, particularly by health professionals and school teachers (Lalonde, 1981). Since the 1950s, schools have been a popular setting for health promotion and health education. Most programs focus nowadays in enabling children to develop the skills to resist unhealthy lifestyles (Stewart-Brown, 2006).

The aim of planning those interventions is to improve children’s health now and for the future well-being (Moyses, 2009). According to (Tones & Tilford, 2001) education directly by school environment and activities in the curriculum will influence health. Doing health promotion with the children has the purpose to encourage positive behaviours, laying the foundations for later life (Moyses, 2009).

Early childhood education: refers to the “group settings deliberately intended to affect developmental changes in children from birth to eight years of age” (Miles & Williams, 2011). Childhood is important and unique. The early years form the foundation for later development, physically, socially, intellectually and emotionally (Miles & Williams, 2011). For this reason, promoting health in the early years will help the acquisition of healthy habits that may last the entire life. The oral health education program will provide valuable information to support the children to make healthy choices themselves.

10 Methodology

This chapter contains information about the constructivist and social-constructivist theories applicable to the OHP, as well as the Early Years Foundation Stage curriculum, which give the basis to this work.

10.1 Constructivism and Social-Constructivism learning theories

Constructivist approaches see the children as active learners rather than passive. This model suggests that children make conclusions about their world by exploring (Tassoni, Bulman, & Beith, 2005).

This paradigm is represented by authors like Jean Piaget (1896-1980) who worked mainly in the area of cognitive development. Piaget affirmed that children while developing are hectically constructing cognitive structures (Phillips & Soltis, 2004). He distinguishes different development stages: (1) Sensorimotor stage (0-2 years old), (2) preoperational stage (2-7 years old), (3) concrete operations (7-11 years old) and (4) Formal operations (11-15 years old). The observation of children's behaviour was the base of Piaget's theory. Children behave very differently from adults in many problem-solving undertaking and children's mental abilities cross a regular series of stages as development progresses (Oates & Grayson, 2004). Piaget made some experiments to demonstrate that for young children is very difficult to understand different points of view rather than their own. This process ends out in the last stage of Piaget's developmental model when children have acquire experience and are able to reason hypothetically and systematically (Oates & Grayson, 2004).

Piaget thought that children need to be active learners who interact with the environment but he did not take into account the fact that children belong to social groups (Phillips & Soltis, 2004). Moreover, Oates & Grayson (2004) stated that Piaget's theory describes a child who tackles the problems independently, in solitary. Piaget did not give priority to the social dimension in his theory. For this reason, theories which included the socio-cultural world surrounding the child appeared later on. These theories were framed as social-constructivist theories and highlight the interaction that learners have with adults and peers. The individuals cannot be separated from their socio-cultural environment and learning would not be possible without language (Phillips & Soltis, 2004).

The most representative author of social-constructivism was Lev Vygotsky (1896-1934). His theory has three mayor themes: (1) social interaction, (2) the More Knowledgeable Other (MKO) and (3) the Zone of Proximal Development (ZPD). The first theme refers to how social

learning precedes development in children. The MKO relates to how other people who have a better understanding about things than the child has about these; it can be a friend, adult, parent or teacher. The ZPD is the distance between the children's ability to solve a problem by an adult guidance, and the ability to solve it independently (Learning Theories Knowledge-base, 2011). This is the level at which a child finds difficult to complete a task, but which with an adult support, the child will perform it (Essa, 2011).

In contrast to Piaget, Vygotsky conscious that learning takes place in social settings, did not give much importance to the stages of development (Phillips & Soltis, 2004). Moreover, he emphasized that children learn from others and the young person's ability to learn by imitation is a core factor in social learning (Phillips & Soltis, 2004).

Conflict is seen different by both authors. On one hand, Piaget's view of conflict is attached to a challenging task which demands more than a child is able to achieve by using familiar strategies. On the other hand, Vygotsky explained the conflict between people, when a person's approach to a task is different than another's (Oates & Graison, 2004).

Both constructivist and social-constructivist theories can be applied in the OHP as is explained further. For applying Piaget's theory in school settings, teachers need to take into account the fact that children may develop through stages. The same activity made with different children might have a different result if one of the children has not yet developed the cognitive structures needed to deal with a problem. Furthermore, the role that experience plays in education is very important. If a child has never had certain types of experiences he might not have some fundamental concepts (Phillips & Soltis, 2004).

The teacher should facilitate children's active learning. Is essential to be supportive and set the environments properly to promote the children's development. The teacher should provide different materials for the children to explore and prepare carefully the room providing activities which encourage the children to investigate. Is important as well that the teacher take into account in which stage of the development the children are, before planning the interventions.

On the other hand, from Vygotsky's point of view the school is a setting where children are settled into groups. They socialize in the place with teachers and other children who transmit knowledge to their peers. In fact children need to be taught new concepts which are not easy to learn about in direct ways. Those can be for example, health concepts that the teacher transmit to the children in the school. Teachers should use the language to communicate with the children and remember to adapt the level for the children to understand. Activities that

can be referred to this theory are adult-directed activities such as circle time or those activities where the teacher introduces new concepts and conduct the learning process.

10.2 The curriculum. Early Years Foundation Stage (EYFS) as an example in the OHP

“A curriculum is much more than a collection of activities. It provides the framework for developing a coherent set of learning experiences that enables children to reach the identified goals. The curriculum must be effective and comprehensive in addressing all the developmental domains and important to content areas” (Cople & Bredekamp, 2009, p.42 in Essa 2011, p.221)

The EYFS is an approach to child care and education that was introduced by the Government of England in September 2008 to replace the earlier curriculum for young children settings. The last aim of the EYFS is to help young children achieve the outcomes of (1) staying safe, (2) being healthy, (3) enjoying and achieving, (4) making a positive contribution, and (5) achieving economic well-being (Department for Education and Skills, 2008). This curriculum is based on learning through play, and it is split into six areas of development.

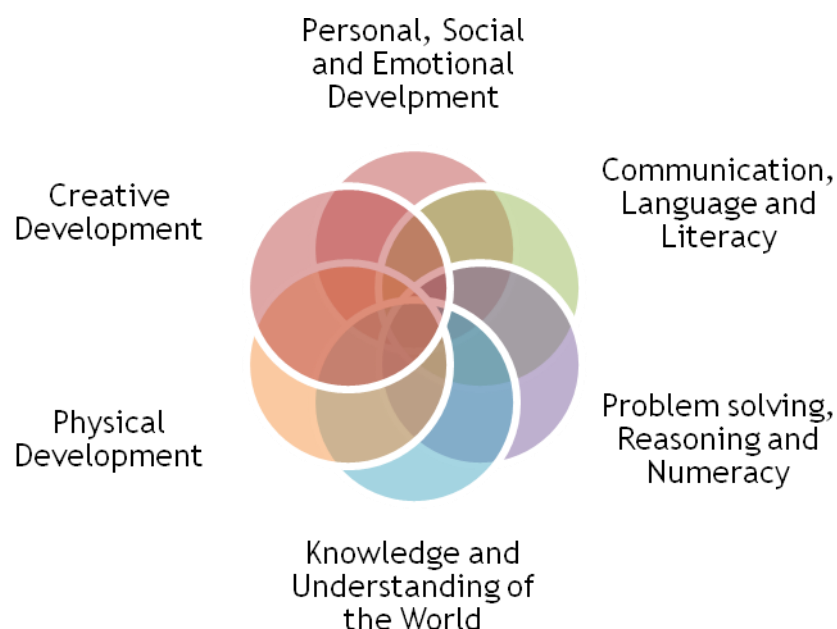


Figure 13: areas of development

According to Beith, Tassoni, Bulman & Robinson (2005) some pointers to good practice when supporting the EYFS are the followings:

- Personal, social and emotional development (PSE)
 - Encourage the children to share and to take turns.
 - Intensify the children's positive aspects.
 - Animate the children to solve their problems.
 - Use positive language.
- Problem Solving, Reasoning and Numeracy (PSRN)
 - Group the children by various criteria (sorting).
 - Talk about numbers (numeracy).
 - Learn about shapes.
 - Count the children.
- Knowledge and understanding of the world (KUW)
 - Talk about healthy issues and personal hygiene.
 - Share personal life and culture with the children.
 - Talk about events in the lives of the children.
 - Learn about the sequence of the day and week.
- Communication, language and literacy (CLL)
 - Extend the children's vocabulary.
 - Read to the children.
 - Promote language development providing activities.
 - Listen to the children
- Physical development (PD)
 - Provide activities to develop manipulative skills.
 - Explain about where physical activities should be carried out.
 - Play games.
- Creative development (CD)
 - Encourage role-play and provide the children with appropriate equipment.
 - Provide a range of artistic media.
 - Play music and sing songs.
 - Provide a balance of activities which do/ do not involve paint.

All these areas are equally important and cannot be delivered in isolation from the others. They must be delivered through planned, purposeful play, with a balance of adult-led and child-initiated activities (DfES, 2008).

10.3 Learning through Play

Learning in pre-school education should be active and a goal oriented process, but knowledge cannot be directly transferred to children through teaching. Learning through play is essential (Finnish Ministry of Social Affairs and Health, 2000) and formal teaching is not considered as a good practice with children.

Children learn when they are playing although child-centered activities in health education should be combined with adult-directed activities. There are two categories of play (1) spontaneous play and (2) structured play. In the first one the children make their own choices and it helps to build their self-esteem. The second one refers to the play that is planned and supported by adults (Tassoni et al., 2005).

This health education program considers and integrates the five areas of play according to Tassoni et al. (2005):

1. Creative play refers to how children are encouraged to experiment and explore in their play.
2. Social play refers to how children learn through play to communicate with peers and adults.
3. Manipulative play involves children using their hands.
4. Imaginative play encourages children to be creative and use their imagination.
5. Physical play makes reference to the development of muscles in their body.



Figure 14: integration of the areas of play

11 Objectives

General goal:

The children will understand the importance of oral health and will be able to manage their oral hygiene with adult support.

Specific objectives:

1. The children will be able to explain why diet is important to take care of our teeth according to WHO's guidelines described in this Oral Health Program.
 - 1.1. The children will be able to tell the difference between food and drinks that are good or bad for their teeth.
 - 1.2. The children will be able to sort some food and drinks (good or bad for the teeth) according to their characteristics into the correct group.
2. The children will be able to explain what plaque is and understand that the way to prevent it is by brushing teeth and eating healthy food.
3. The children will be aware of the importance to look after their teeth and will learn new vocabulary related to oral hygiene.
 - 3.1. The children will get familiar with toothbrushes and toothpaste.
 - 3.2. The children will be able to perform correctly the tooth brushing technique
 - 3.3. The children will be aware of the need to brush the tongue and mouth washing.
 - 3.4. The children will be able to identify how many times per day is necessary to brush their teeth and for how long.
4. The children will be able to describe the role of the dentist according to teacher's explanation.
 - 4.1. The children will be able to explain why regular dental checks-up are needed.
 - 4.2. The children will be able to identify how often they need to visit the dentist.
5. The children will be able to explain the consequences of failing to look after the teeth.

12 Content

Early childhood caries is a serious dental condition occurring during the preschool years of a child's life when developing primary teeth are especially vulnerable (NSW Health, 2009). Dental caries is a bacterial disease that is modified by diet (Featherstone, 2004 in NSW Health, 2009) and the highest incidence of caries formation occurs during childhood. Dental caries can be prevented through changed bottle feeding practices, limiting behaviours which transmit bacteria from parent to child, dietary modification, fluoride delivery, and tooth-brushing (Gussy, Water, Walsh, & Kilpatrick, 2006 in NSW Health 2009).

Moreover, the prevention of decay is related to factors such as (1) incorporation of fluoride to strengthen teeth, (2) efficient tooth-brushing, (3) dietary changes and (4) regular dental treatment (Barker, 2002; The Department of Health UK, 2004). The contents of the OHP have been chosen according to the outlines that facilitate caring of our teeth (quoted above). As a result, healthy eating, regular tooth brushing and ordinary visits to the dentist are the three main contents of the program.

12.1 Regular tooth brushing

Children who brush twice a day with fluoride toothpaste have better oral health than those who brush less frequently (NSW Health, 2009). Tips about tooth-brushing by the National Children's Oral Health Foundation:

- Children of over age two need to brush their teeth twice a day with a pea-sized amount of fluoride tooth paste.
- Flossing is needed once a day.
- Children need to be supervised while they brush teeth to make sure they do not swallow the toothpaste.

The correct toothbrush technique that teachers will show to the kids is the following, according to Colgate (2006):

- Clean the outer surfaces of your upper teeth and your lower teeth. The brush should be held in a 45 degrees angle against the gum line.
- Clean the inner surfaces of your upper teeth and then your lower teeth. The brush needs to be gently moved back and forth against all surfaces of the teeth.
- Clean the chewing surfaces.
- Be sure to brush your tongue.

- Proper brushing takes two minutes.

Children will need their parents' help especially with brushing their back teeth at least until the age of seven (NSW Health, 2009)

12.2 Diet

Snacking is important for infants and young children but it is essential that snacks consist mostly of healthy foods with high nutritional value. Processed snack foods high in added sugars should not form a regular part of a young child's energy intake (NSW Health, 2009). The following tips need to be taken into account when preventing caries (NSW Health, 2009):

- Emphasize the need to restrict the frequency of consumption of sugary foods and sweet drinks.
- Limit sweetened drinks to occasional mealtimes only.
- Encourage children to drink tap water from an early age and especially between meals.
- Eating whole fruit is preferable to drinking fruit juice.
- Sticky sweet foods can cause tooth decay.

The following guidelines for healthy eating can be also considered according to The WHO (2008):

- A variety of vegetables, fruits, whole cereals, bread, grains, pasta, rice or potatoes should be eaten, preferably fresh (for fruit and vegetables) and locally produced, several times a day.
- Fat intake should be limited to not more than 30% of the daily energy requirements and most saturated fats should be replaced with unsaturated fats. Trans-fatty acids should be avoided.
- The consumption of sugar and salt should be limited, while ensuring that all salt used is iodized.
- Sugary drinks and sweets should only be used with limited frequency, and refined sugar used sparingly.
- Fish and low-fat meat should be served according to preference.

According to the Finnish Centre for health Promotion (n.d) chewing gum made with xylitol helps to stop the acid attack after meals and increases the flow of saliva, which is good for your teeth.

12.3 Regular dental check-ups

In Finland oral and dental health services are provided through municipal and private dental clinics. Children aged 0-18 get free dental treatment at municipal dental clinics (Finnish Centre for health promotion, (n.d)).

The dentist during regular check-ups will decide how often a child needs to visit them (Finnish Centre for health promotion, (n.d)). Children's teeth and gums are examined at each check-up, and children get advice on diet and cleaning habits as well.

13 Activities

The proposed activities are separated in different subchapters, organized according to the main three contents (tooth-brushing, diet and dentist).

13.1 Activities about tooth-brushing.

	CONTENT	METHOD	OBJECTIVES	TIME	MATERIALS
1	Oral health vocabulary	Circle time	2; 3.3; 5	15'	-Big mouth -Toothbrushes -Toothpaste
2	Tooth-brushing technique theory	Circle time and free exploration	3.4	20'	-Big mouth -Toothbrush
3	Tooth-brushing practice	Exercise in the toilet	3.2	30'	-Individual - toothbrushes -Photo camera
4	Tooth-brushing awareness	Display	3	30'	-Printed photos -Crafts material
5	How many teeth?	Story time	5	15'	-puppets -animal photos -books
6	Vocabulary: Big, small, soft and hard	Free playing	3.1	20'	-different sizes toothbrushes
7	Getting to know toothpaste and tooth-brush	Painting activity	3.1	20'	-Toothbrushes -Toothpaste
8	Practicing tooth-brushing twice a day	Activity at home	3.4	week	-Chart -Stickers

Table 7: List of activities for the content: tooth brushing

13.1.1 Activity n° 1. Why tooth-brushing is needed. New vocabulary

During circle time, introduce the topic to the children and explain them what tooth-brushing is. Ask to them what do they think, how do they do it at home, and let them participate and share their previous experiences. Before the introduction of new concepts you will see what their level of understanding is. You can show to them funny pictures of different mouths, for example one which has been taken care of, and the opposite one. They can describe the differences and talk about them.

After that, explain to the children that plaque is formed by bad germs which if not removed, will damage our teeth. It will make little holes called cavities that make our teeth weak. That is why we need to brush teeth, to remove the plaque. Use this time to introduce new words such as tooth, teeth, toothbrush, toothpaste and floss. You can bring real toothbrushes, toothpaste, etc for the children to manipulate and explore.



Image 2: brushing child's teeth

This activity can be linked with the following EYFS areas of development:

- PSE: encourages the children taking turns.
- KUW: talk about healthy issues and events in lives of the children.
- CLL: extend the children's vocabulary.

The creative and manipulative areas of play are incorporated in this activity.

13.1.2 Activity n° 2. Tooth-brushing technique

Try to get a big plastic mouth and a big toothbrush to explain the correct tooth-brushing technique to the children. Tell them how many times a day they need to brush their teeth and for how long. When you finish, be sure you let them experiment with the mouth and the brush. They will try to copy the movements that you have showed them, while observing how a mouth looks like. You can help them to count teeth (at that age they have twenty teeth) and talk more about properties of the teeth (hard, sharp, white...etc).



Image 3: learning tooth-brushing movements

This activity can be linked with the following EYFS areas of development:

- PSRN: counting and talk about numbers.
- KUW: learn about the sequence of the day.
- CLL: promote language development.
- PE: develop manipulative skills.

The physical and manipulative areas of play are incorporated in this activity.

13.1.3 Activity nº 3. Tooth-brushing practice

The proper tooth-brushing technique will not be learnt unless the children try for themselves. This is probably a messy activity but fun at the same time. Take pictures of the children while you do the activity.

Gather the children in small groups and take them to the bathroom. Provide them with appropriately sized toothbrushes. Start labelling them with their names so you will avoid exchanging brushes by mistake. Explain to them that the toothbrush is personal and should never be shared.

Let the children practice the technique and help them when they need. The teacher should correct them if they are not doing it right. It might be useful to use an alarm clock or an hour glass to help them realise that two minutes is a long time. There is no need to use toothpaste for the activity, water will be enough for practicing and you will avoid swallowing paste accidents.



Image 4: I practice tooth-brushing myself

Tell the children that turning the water off while they brush the teeth is at the same time a good practice for the planet conservation.

This activity can be linked with the following EYFS areas of development:

- PSE: use positive language.
- KUW: talk about personal hygiene & learn about the sequence of the day.
- CLL: promote language development.
- PE: develop manipulative skills.

The physical, imaginative and manipulative areas of play are incorporated in this activity.

13.1.4 Activity n° 4. Making a display



Image 5: crafts materials

Print the pictures that you have got from activity 3 and make a display with the children. You can use any art technique as well as children drawings to make your unique display. It is very important that the children participate in the whole process. Once you have the display ready it is time to hang it up in the bathroom. The children will see it every time that they use the toilet and the display will remind them of the importance of brushing their teeth. Soon they will show an awareness of tooth brushing as a daily hygiene need.

This activity can be linked with the following EYFS areas of development:

- PSE: encourage the children sharing and taking turns.
- CLL: listen to the children.
- PE: develop manipulative skills.
- CD: involve paint.

The social, imaginative and manipulative areas of play are incorporated in this activity

13.1.5 Activity nº 5. Puppets

Story time is good for introducing new concepts and ideas through children stories, rhymes and songs. Use animal puppets to talk about characteristics of animal teeth. For example how many teeth do dogs, cats, rabbits or mice have. You can explain to the children how they keep teeth clean, or talk about how some small birds help crocodiles to keep their teeth clean (National Geographic, 2006). You can sing some songs referring to the animals that you have talked about.



Image 6: puppet

This activity can be linked with the following EYFS areas of development:

- PSE: use positive language.
- CLL: read to the children and listen to them. Extend the children's vocabulary.
- PSRN: talk about numbers and count teeth.
- CD: sing songs.

The imaginative and manipulative areas of play are incorporated in this activity.

13.1.6 Activity n° 6. Tooth brushes sizes

Toothbrushes are available in a variety of sizes and shapes. They even have different bristle types to meet different purposes. Children need small toothbrushes to assure that the toothbrush's head reaches all parts of the mouth. You can keep different sizes of toothbrushes and show them to children. Compare them and talking about big, small, soft and hard.



Image 7: tooth-brushes sizes

After that, give the toothbrushes to the children and put some toys such as building bricks into the water tray. Let them wash the toys with the different toothbrushes. If you add soap to the water to have supplementary bubbles, it will be very fun.

This activity can be linked with the following EYFS areas of development:

- PSE: encourage the children sharing and taking turns.
- CLL: promote language development.
- PSRN: learn about shapes and sizes.
- PD: develop manipulative skills.

The social, creative, physical and manipulative areas of play are incorporated in this activity.

13.1.7 Activity n° 7. Toothbrushes paint

Different shapes of toothbrushes and different colours of toothpaste can be used at the drawing table for the children to make their own pictures. Allow them to play with and manipulate the material. And remember that the toothpaste smells good and the children might try to put the toothbrush in their mouth.



Image 8: painting with toothpaste

This activity can be linked with the following EYFS areas of development:

- CD: involve paint.
- PD: develop manipulative skills.

The social, creative, physical, imaginative and manipulative areas of play are incorporated in this activity.

13.1.8 Activity nº 8. Tooth-brushing chart

You have already told the children that brushing teeth twice a day is needed. This activity consists of giving each child a chart and fourteen stickers (two per day during a week) to take home. They need to hang the chart on the bathroom's wall and they will put a sticker on it when they finish the brushing. The week after, ask the children to bring their charts and look at them during circle time. You will see if they have been consistent and they can share their experiences with teachers and peers.


<p>WEEKLY</p>  <p>CHART</p>	<p>Name: _____</p> <p>Age: _____</p> <p>Date: _____</p> <p>Picture: _____</p>	
	MORNING	NIGHT
MONDAY		
TUESDAY		
WEDNESDAY		
THURSDAY		
FRIDAY		
SATURDAY		
SUNDAY		

Table 8: chart to take home

This activity can be linked with the following EYFS areas of development:

- PSE: intensify the children's positive aspects.
- CLL: promote language development.
- KUW: talk about events in lives of the children. Learn about the sequence of the day and week.
- PD: develop manipulative skills.

The social and physical areas of play are incorporated in this activity.

13.2 Activities about diet.

	CONTENT	METHOD	OBJECTIVES	TIME	MATERIALS
9	New vocabulary: Healthy and un- healthy food	Circle Time	1.1	15'	-Pictures of food -food from home
10	Differences be- tween healthy and unhealthy food	Story time and Display	1.2	20' and 30'	-Pictures of food and drinks -Crafts material
11	Finding alterna- tives to sugary snacks	Chart	1.1	30'	-Junk material -Children's drawings
12	Designing a cook- book with favorite recipes	Sticking activity	1.2	30'	-Card -Pictures of healthy recipes

Table 9: List of activities of the content "diet"

13.2.1 Activity n° 9. Healthy and unhealthy food

During circle time or story time discuss with the children the importance of choosing food that will keep teeth healthy. Explain to them the importance of eating fruit and vegetables as well as milk or cheese which are rich in calcium and help to keep bones and teeth strong. Tell them how sugary food and candies even though they are delicious, contain sugar which attacks our teeth and causes decay. Include pictures to support your explanation or even real food. You can ask them the previous day, to bring some food from home (for example a biscuit, a piece of chocolate, an apple, a tomato, etc). Talking about the differences between the food and which food we considered as healthy or unhealthy will help them to clarify their ideas.



Image 9: healthy food

Image 10: candies

This activity can be linked with the following EYFS areas of development:

- PSE: encourage the children taking turns.
- PSRN: group the food by different criteria (sorting).
- CLL: extend the children's vocabulary.
- KUW: talk about events in lives of the children.

The social and imaginative areas of play are incorporated in this activity.

13.2.2 Activity n° 10. Sorting healthy and unhealthy food

Give the children lots of pictures of foods and drinks and encourage them to sort them according to the ones which will keep teeth healthy and the ones which develop decay. Once they learn which ones are good or bad for the teeth, the children can create a display to decorate your classroom. They will see the display while they play and it will reinforce the newly learnt concepts.



Image 11: choosing healthy food

This activity can be linked with the following EYFS areas of development:

- PSE: encourage the children sharing taking turns.
- PSRN: group the food by different criteria (sorting).
- CLL: promote language development.
- KUW: talk about healthy issues.

The social, manipulative and imaginative areas of play are incorporated in this activity.

13.2.3 Activity nº 11. Alternatives to sugary snacks

Sugary snacks are children's favourites, but you can design a chart with many alternatives such as fresh fruits, fruit salad, smoothies or natural juices. Milk products, such as yogurts or cheese, are a good option as well. Bread and cereals are low on sugar and can be considered healthy. You can use for this activity pictures or children's drawings. Another option is asking the children to bring empty cereal boxes, yogurt's containers or milk cartons from home. Use the chosen materials and stick them in your healthy chart. Once you have it ready, you can hang it up in the wall and find out the top three favourites in the group.

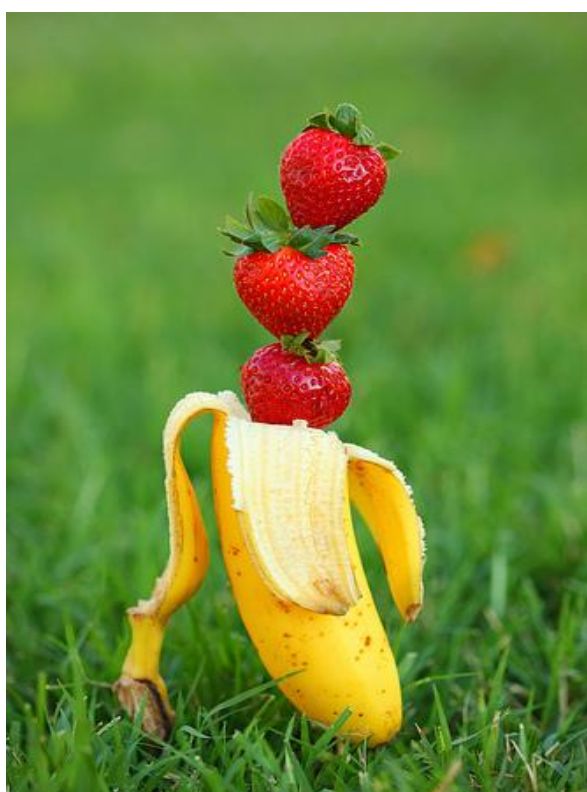


Image 12: fruits are healthy and fun

This activity can be linked with the following EYFS areas of development:

- PSE: intensify the children's positive aspects.
- PSRN: group the food by different criteria (sorting).
- CLL: promote language development.
- KUW: talk about events in lives of the children.
- PD: develop manipulative skills.
- CD: involve paint.

The social, manipulative and imaginative areas of play are incorporated in this activity.

13.2.4 Activity n° 12. Make a cookbook with the children

Try to find easy healthy recipes with pictures. Sort the recipes depending on them being more ideal for breakfast, snack, lunch or dinner. Try to have at least four options per meal so the children can choose their favourite. Provide the children with a card that can be decorated and personalised with children's pictures. Give them the choices to select which one is the favourite menu for the day (four meals) and organise a sticking activity with all the pictures and recipes according to the children's choices.



Image 13: cooking books

This activity can be linked with the following EYFS areas of development:

- PSE: intensify the children's positive aspects.
- PSRN: group the food by different criteria (sorting).
- CLL: extend the children's vocabulary.
- KUW: talk about events in lives of the children. Learn about the sequence of the day.
- PD: develop manipulative skills.
- CD: involve paint.

The social, manipulative and imaginative areas of play are incorporated in this activity.

13.3 Activities about going to the dentist.

	CONTENT	METHOD	OBJECTIVES	TIME	MATERIALS
9	New vocabulary: Healthy and un- healthy food	Circle Time	1.1	15'	-Pictures of food -food from home
10	Differences be- tween healthy and unhealthy food	Story time and Display	1.2	20' and 30'	-Pictures of food and drinks -Crafts material
11	Finding alterna- tives to sugary snacks	Chart	1.1	30'	-Junk material -Children's drawings
12	Designing a cook- book with favorite recipes	Sticking activity	1.2	30'	-Card -Pictures of healthy recipes

Table 10: List of activities of the content "going to the dentist"

13.3.1 Activity nº 13. The role of the dentist

Present the children the figure of the dentist. Though many of them might have been checked by a dentist already, it is important to clarify the role of the dentist. This is a good circle activity where the children can share their previous experiences at the dental clinic and talk about their fears. Show some pictures to them and explain them the basic tools that the dentist might use in the clinic, for them to familiarize with those.



Image 14: dental check-up

This activity can be linked with the following EYFS areas of development:

- PSE: encourage the children taking turns.
- CLL: promote language development.
- KUW: talk about events in lives of the children.

The social area of play is incorporated in this activity.

13.3.2 Activity nº 14. Receiving the dentist or visiting the dental clinic

Organizing a trip to a dentist clinic may be a great idea but you have to do a proper risk assessment. When a visit is not possible you can arrange for a dentist visit your school with the purpose of talking to the children and show them basic material. Encourage them to think of some questions that they would like to ask the dentist.



Image 15: the dentist at work

This activity can be linked with the following EYFS areas of development:

- PSE: use positive language.
- CLL: promote language development.
- KUW: talk about events in lives of the children.

The social area of play is incorporated in this activity.

13.3.3 Activity nº 15. Making invitations for the dentist

To prepare for the visit you can make invitations with the children. Many creative techniques can be used to make your own cards with them. When they are ready put them in an envelope and send them to the chosen dentist.



Image 16: a child doing crafts

This activity can be linked with the following EYFS areas of development:

- PSE: use positive language.
- KUW: talk about events in lives of the children.
- PD: develop manipulative skills
- CD: involve paint

The social, creative and manipulative areas of play are incorporated in this activity.

13.3.4 Activity nº 16. Setting up the role play area as a dental clinic

Set up a dental office in the role play area. Hang on the walls pictures of children visiting the dentist and lots of smiles. You can set it with two chairs, one for the patient and another for the dentist. Needed material should include tooth brushes, empty toothpaste tubes, mirrors, towels, syringes, empty medicine boxes, dental floss, etc. There are many possibilities. If you have a big area you can set a waiting room with lots of leaflets, and even a secretary office to give out checks-up bills and receive the money.



Image 17: Playing to be a dentist

This activity can be linked with the following EYFS areas of development:

- PSE: encourage the children sharing. Encourage the children to solve their problems.
- CLL: promote language development.
- KUW: talk about healthy issues and personal hygiene.
- PSRN: counting.
- CD: encourage role-play and provide them appropriate equipment.

The imaginative, social and creative areas of play are incorporated in this activity.

14 Methods

- **Books:** they are a great learning resource. Children like stories and looking at the book's pictures help them to understand the content and main characters of the story. There are many books about oral health that can be read during the story time. It will help them especially to prepare for the first visit to the dentist.
- **Displays:** they are an attractive tool to grab children's attention. They are usually used to reinforce points and create a positive learning environment. It is important to let the children participate in the creation of the display. This method can be used for example to reinforce the tooth brushing technique, and it can be done with pictures of the process.
- **Role play:** this is a very interesting method that can be used after the explanations. Children are usually participative at the target age and like acting. For example, they are having a circle time and the teacher is talking about healthy and unhealthy food. Different roles can be assigned to some children such as mommy, child and dentist. The dentist is explaining them which food is good or bad for the teeth and the child insists in how much he likes to eat candies. It is important to talk about the play when it is ended, so the teacher can check what they have understood and use it as an evaluation method.
- **Puppets/dolls:** they are an inexpensive resource especially recommended for the young children. They can be purchased at low cost as well or made by children and teachers. Children love puppets because they entertain them whilst being educational. The activity of creating the puppets can be included as a part of the plan in the creative area.
- **Song and poems:** young children love singing songs and poems. There are plenty of songs that can be used for this topic which make the learning process easier and enjoyable. Songs and poems help the children to learn vocabulary, improve their counting skills as well as introduce children to music.
- **Audiovisual materials:** this method includes the use of CD's and DVD's. There are some interesting films and cartoons available with educational purposes. The advantages of using this method are first of all that it includes devices which are very easy to use, inexpensive and available in most of the schools nowadays. The uses of CD's

offer as well many advantages in school settings. It can help teachers to sing songs along with the children, as well as to use them for narrative stories.

- Field trips: a trip to visit a dentist might be a good idea. Trips are always entertaining and exciting for the children and will help the teacher to address the program objectives. It requires to be planned beforehand (risk assessment, transportation, cost) and these issues will be factors in deciding whether is possible or not. Other possibility is to invite a dentist to the school to talk about his work, give some tips about oral care and show the children some of the tools that he uses in the clinic.

15 Materials

- A big plastic mouth
- Big Brush
- Cards with different colors
- Character puppets
- Paints
- Glue
- Stickers
- Weekly charts
- Certificates to give to the children on Friday
- Blackboard
- TV
- CD and DVD player
- Photo camera
- Construction paper to make displays
- Colouring Pictures
- Scissors
- Toothbrushes (different sizes, shapes and colors)
- Permanent marker to put the children names in the brushes
- Rhymes and songs
- Books for story time
- Animals mouth's photos
- Pictures of food
- Food from home
- Junk material
- Children drawings about food
- Pictures of healthy recipes
- Pictures of a dentist and a dental clinic
- Dentist material
- Leaflets of a dental clinic
- Pictures of a dental clinic

16 Evaluation activities

Assessment of learning will be used as the program unfolds. The purpose is to evaluate if the children have achieved the objectives addressed in the program. The documentation that can be used for the assessment is the following:

- Checklist and tick chart: It is a closed method that does not provide as much information as free description, but is more objective and accuracy. Specific activities or behaviours are looked for during the assessment.

This method can be used to evaluate whether the children have achieved the objectives 3.1, 3.2 and 3.3.

Name of the child_____			
Child's age_____			
Date of Observation_____			
Observer_____			
Activity	Yes	No	Comments
Brushes inner and outer surfaces of upper teeth			
Brushes inner and outer surfaces of lower teeth			
The tooth brushing lasts two minutes			
Finishes the tooth brushing by washing the tongue			
Uses only a pea-sized amount of fluoride tooth paste			
Knows that the tooth brushing should be done twice a day			

Table 11: Check-list example to evaluate tooth-brushing performance

- Free description: It is an open method that gives the teacher a lot of information. It is used to record what the child is doing in a short period of time (less than five minutes). This method can be used to evaluate whether the children have achieved the objectives 1, 1.1, 1.2, 2, 4, 4.1, 4.2 and 5.
- Daily diaries: The teacher can make brief notes of the child's day or week, how he found the activities, what comments did he make about food or oral hygiene. The diary is shared with the parents by sending it home. Parents can write also the activities that they are doing at home to improve the children's oral hygiene habits, the food children like, and send it back to the school.

17 List of available materials and resources

17.1 Lists of books

Bell-Rehwooldt, Sheri: "You think it's easy being the tooth fairy?" ISBN 10-0-8118-5460-40

Brown, Marc: "Arthur's tooth" ISBN 0-316-11245-3 / 0-316-11246-1

Keller, Laurie: "Open wide: tooth school inside" ISBN 0-8050-7268-3

Mayer's, Mercer: "Just going to the dentist" ISBN 0-307-12583-1

Miller, Edward: "The tooth book. A guide to healthy teeth and gums" ISBN 978-0-8234-2092-6

Ricci, Christine: "Show me your smile" ISBN 0-689-87169-4

Dr Seuss: "The tooth book" ISBN 0-375-81039-0

Showers, Paul: "How many teeth?" ISBN 0-06-445-098-8

Wing, Natasha. "The night before the tooth fairy" ISBN 0-448-43252-8

17.2 Lists of songs

Brushing teeth twice a day (Author: Irene Arnau) *(Sung to: Baa Baa black sheep)*

Brush your teeth

Brush them everyday

Brush, brush, brush them twice a day

Once in the morning, they will shine

Once in the evening, before you sleep at night.

Brush them for two minutes

Every single time,

Brush them in the morning

And always at night.

Got my toothpaste (Author: Unknown) Download the lyrics from

<http://www.preschooleducation.com/sdental.shtml>

Sparkle (Author: Unknown) Download the lyrics from

<http://www.preschooleducation.com/sdental.shtml>

There is a hole in your smile (Author: Unknown) Download the lyrics from

<http://www.preschooleducation.com/sdental.shtml>

17.3 Oral health

- Children's health Alliance of Wisconsin <http://www.chawisconsin.org/oralhealth.htm>
- Colgate
- <http://www.colgate.com/app/BrightSmilesBrightFutures/US/EN/Educators/Teachers.cvsp>
- National children's Oral Health Foundation <http://www.ncohf.org/>
- Pre-school education <http://www.preschooleducation.com/sdental.shtml>

17.4 Policies in Finland

- Ministry of Social Affairs and Health (2000) Early Childhood Education and Care Policy in Finland. 2000:21
- Ministry of Social Affairs and Health (2002) • the Government Resolution Concerning the National Policy Definition on Early Childhood Education and Care. 2002:9
- Ministry of Social Affairs and Health (2004) The National Curriculum Framework for Early Childhood Education and Care in Finland
- National Board of Education (2000). Core curriculum for pre-school education in Finland.
- The Basic education Act (628/1998).
- The Act and Decree on Children's Day Care (36/1973).

18 Time Frame

The OHP is a flexible program that can be used either as separate lessons (one or more) or to work intensively the topic in a whole week.

18.1 Sessions

Independent activities can be fitted in one session to supplement the teacher curriculum. However, to achieve all the proposal objectives in chapter 6, it is recommended to have minimum three sessions about the topic. Obviously a childhood educator can freely choose and include any of these activities in her own weekly plan following her preferences. But in order to achieve better results it is recommended to choose at least one activity of each one of the three key contents (tooth-brushing, diet and dentist).

Beneath there is, as an example, one combination of activities which will cover most of the objectives in three sessions:

Session 1	Session 2	Session 3
Activity 1	Activity 2	Activity 3
Activity 11	Activity 9	Activity 10
Activity 13	Activity 14	Activity 16

Table 12: Combination of activities to form sessions

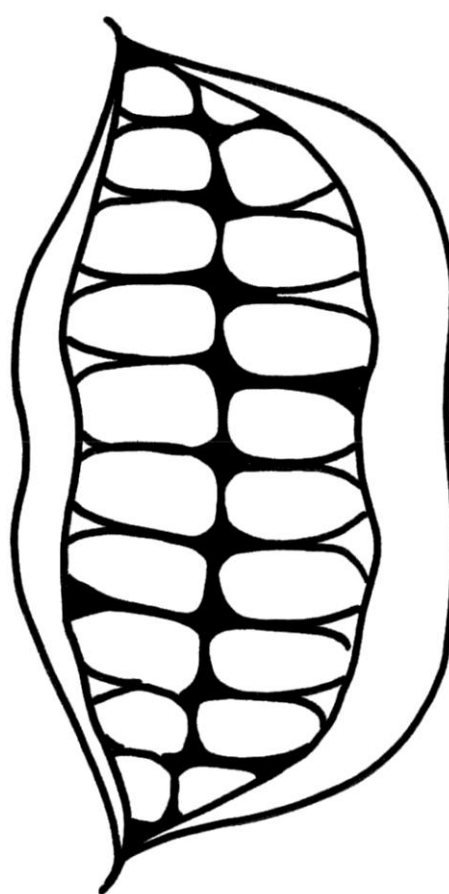
18.2 Weekly Plan

The example below shows a weekly plan according to the EYFS curriculum. The topic of the week is Oral Health. Please be aware that this is only an example, and the teacher should be flexible in its use. It is always recommended to allow spontaneous learning and keep an eye on children interests that may affect the plan.

	Communication, language and literacy	Physical development	Knowledge and understanding of the world	Creative development	Personal, social and emotional development	Problem solving, reasoning and numeracy
	activity	activity	activity	activity	activity	activity
Monday	Circle time: new vocabulary teeth, toothbrush, toothpaste, floss plaque, cavities	Tooth brushing practice with the plastic mouth	Tooth brushing twice a day. Talking about morning and night	Create a dental office in the home corner	Making invitations for the dentist	One tooth, two teeth... How many teeth do children have?
Tuesday	Healthy and unhealthy food. What is the difference?	Practicing tooth brushing technique in the toilet	Compare old and new tooth brushes	Song: Brushing my teeth twice a day	Make partners and play to look at the others teeth with the dentist material	Sorting recipes for breakfast, snack, lunch and dinner.
Wednesday	Alternatives to sugary snacks.	Toothbrushes paint with toothpaste	Making a cookbook with the children	Role play: going to the dentist	Healthy snacks chart. Finding children's top three	Observe various sizes of toothbrushes, adult and children and talk about big/small, hard/soft.
Thursday	The role of the dentist	Making a display: healthy and unhealthy food	Characteristic of teeth (hard, sharp, white...)	Making a poster with the pictures for the toilet	How the animals keep the teeth clean?	Different toothbrushes shape. Compare adult with children's tooth brushes
Friday	Trip to the dentist					

Table 13: Weekly Plan

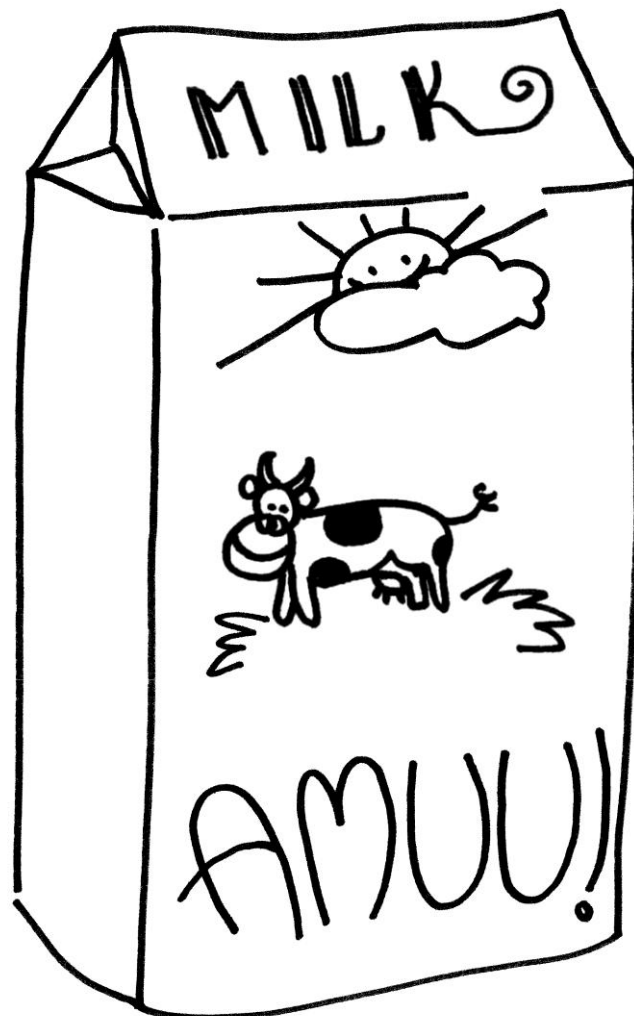
19 Coloring Pictures



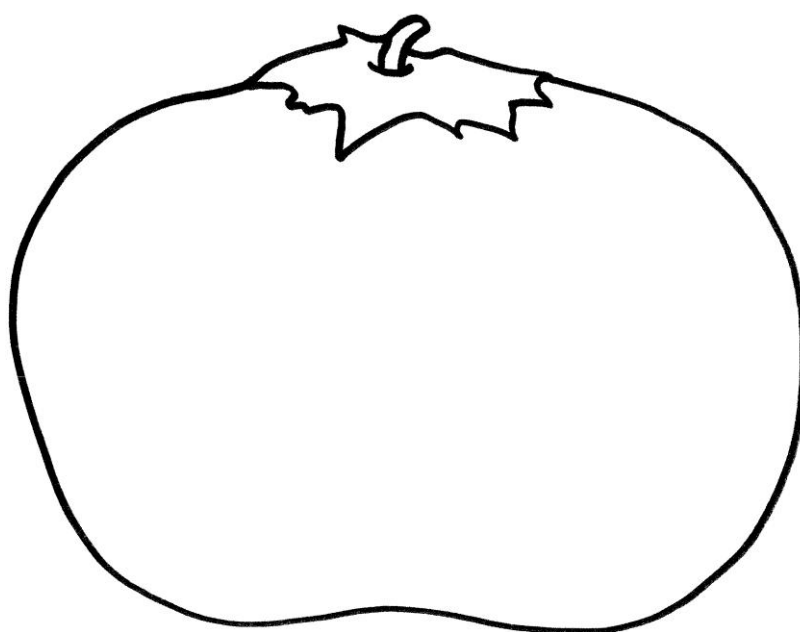
Coloring picture 1: I have 20 teeth (by Eva Picallo)



Coloring picture 2: Ice cream has sugar (by Eva Picallo)

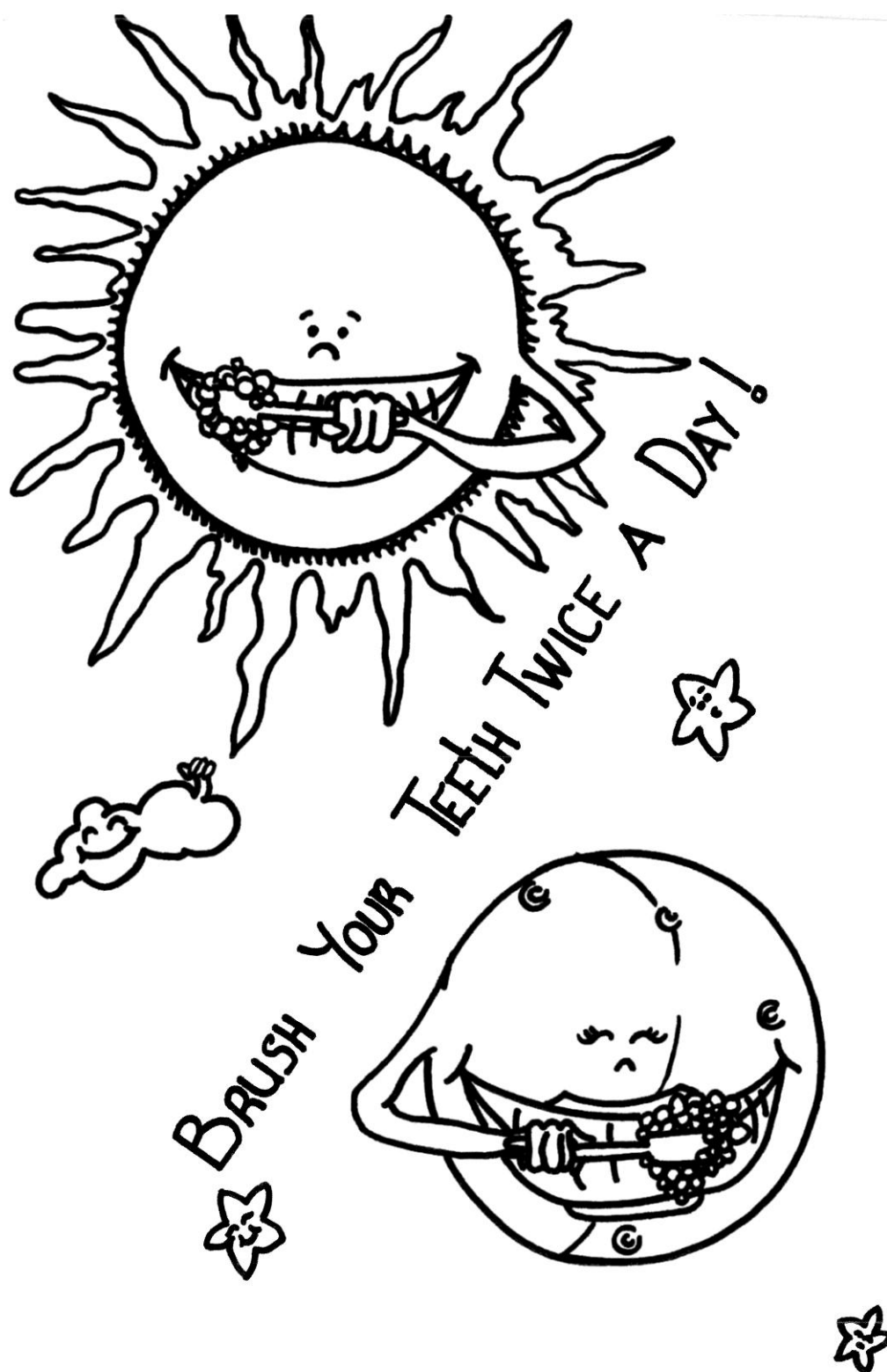


Coloring picture 3: A healthy drink is milk (by Eva Picallo)

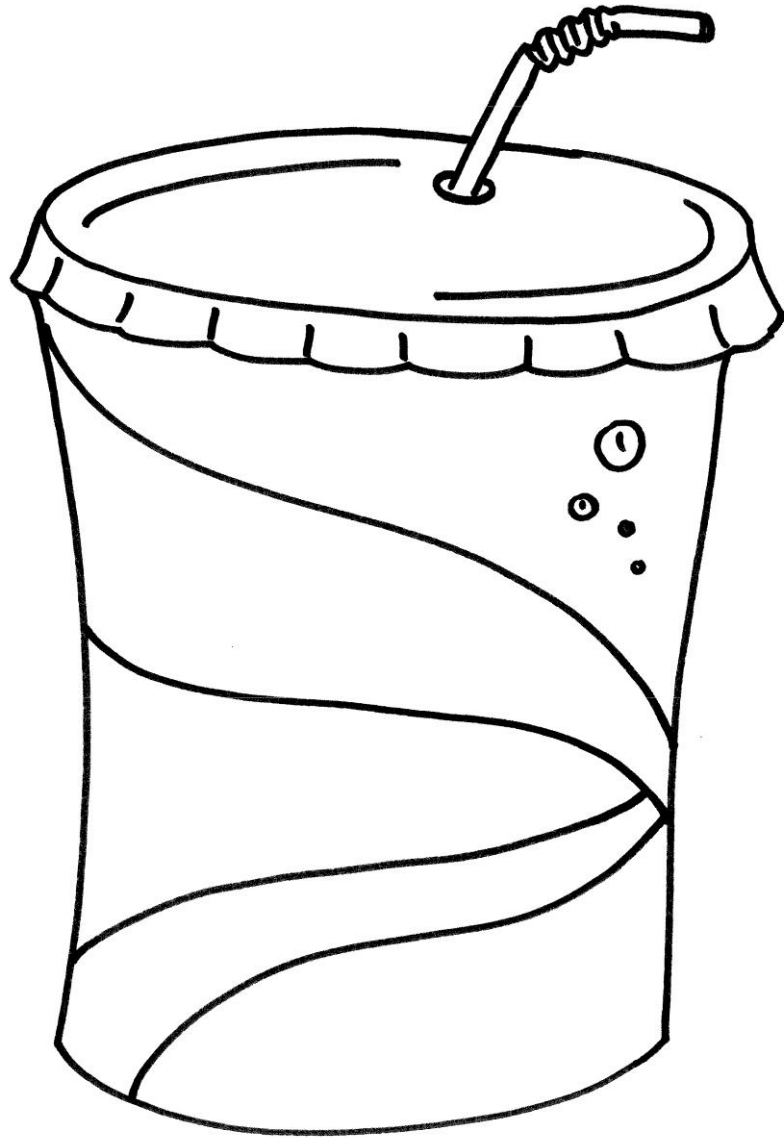


Coloring picture 4: Tomato is delicious (by Eva Picallo)

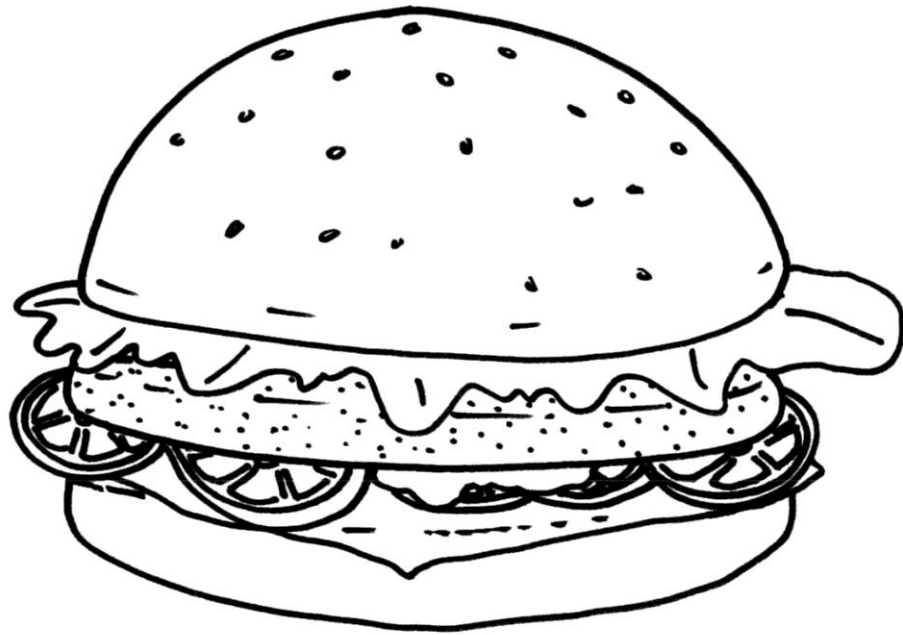
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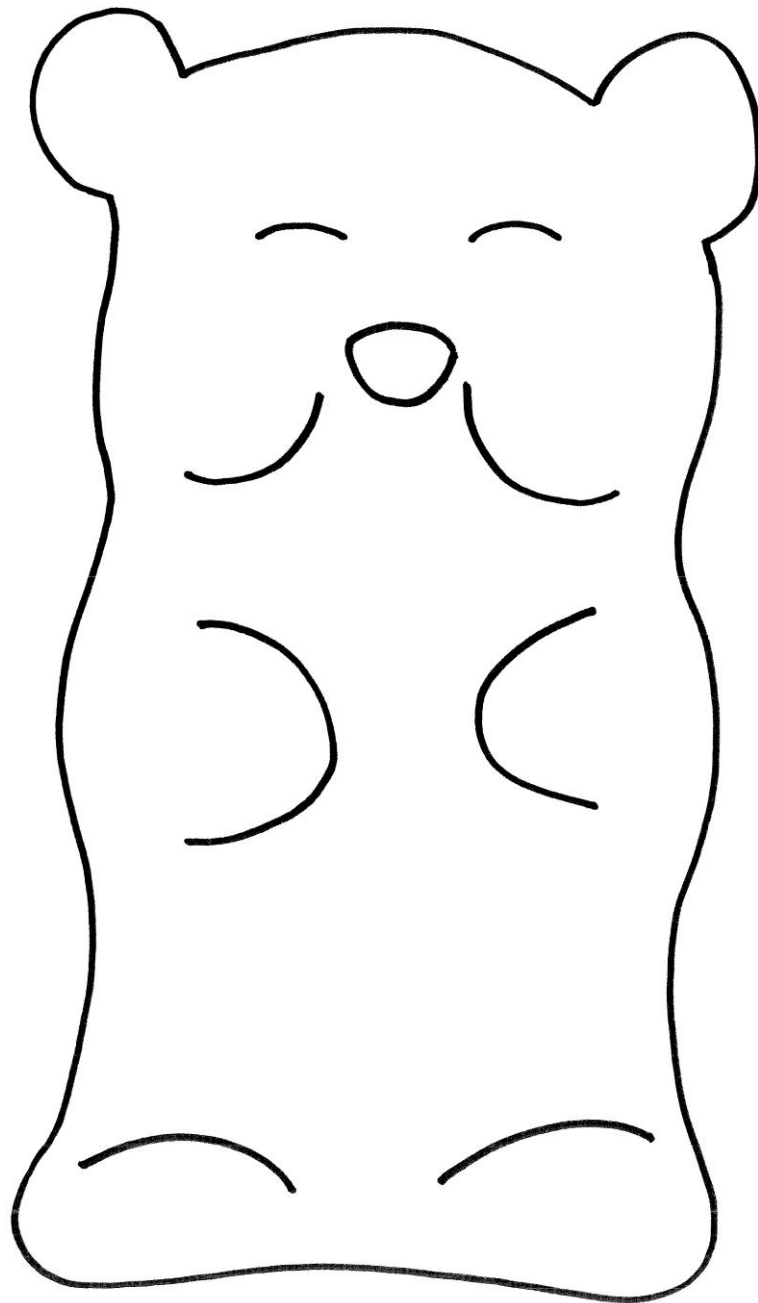
Coloring picture 5: Brushing teeth twice a day (by Eva Picallo)



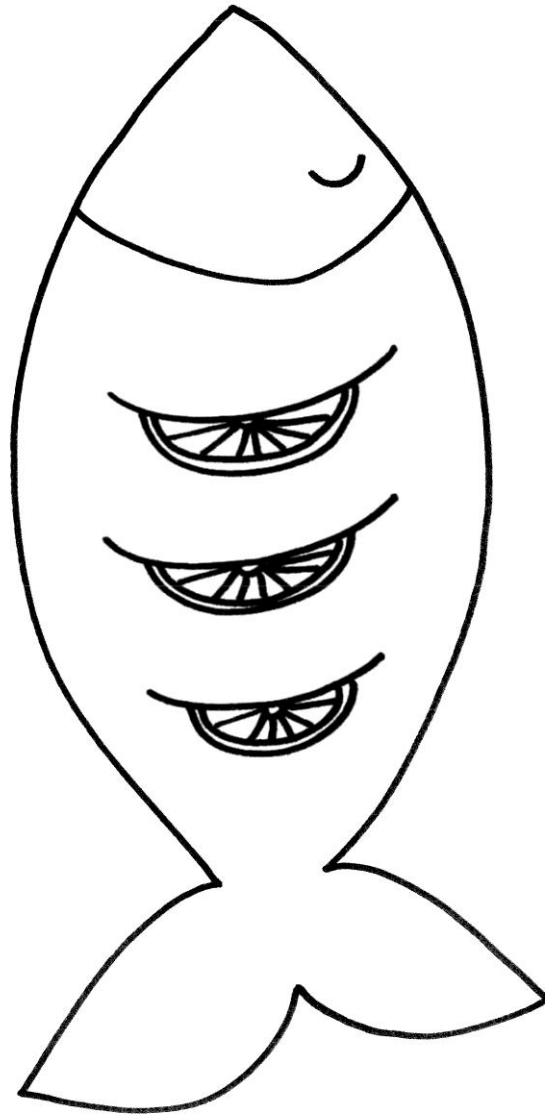
Coloring picture 6: Sugary drinks are not healthy (by Eva Picallo)



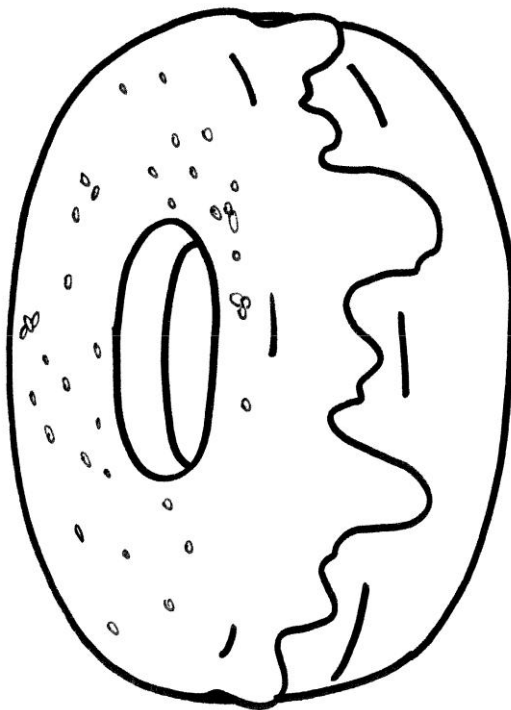
Coloring picture 7: Homemade hamburguers are just better (by Eva Picallo)



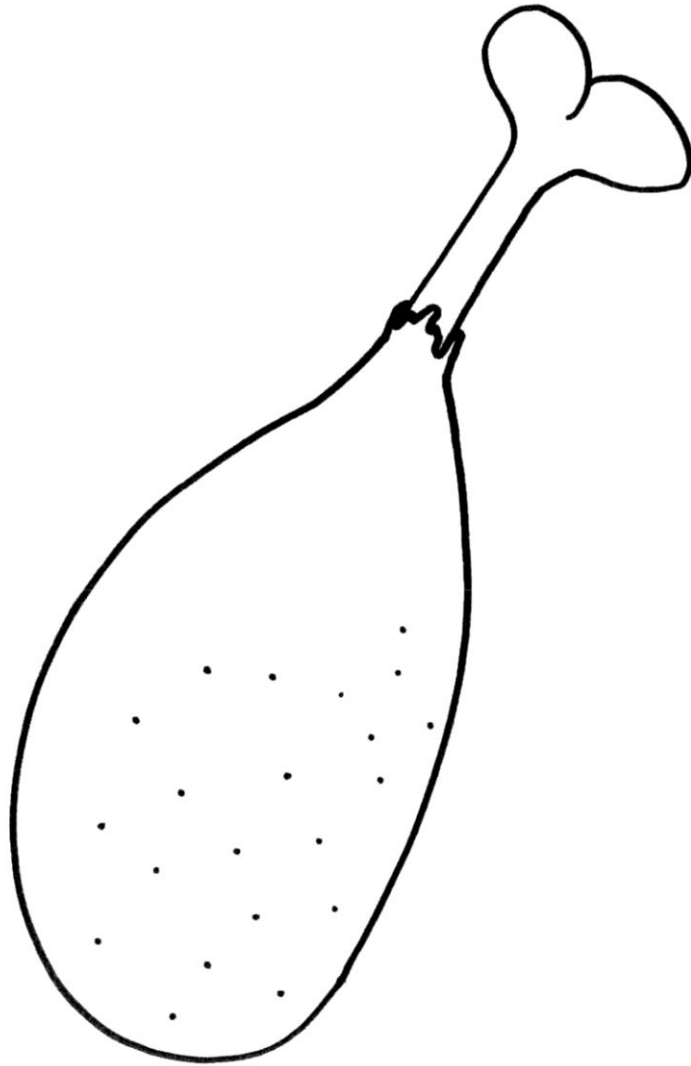
Coloring picture 8: Candies NO, thank you (by eva Picallo)



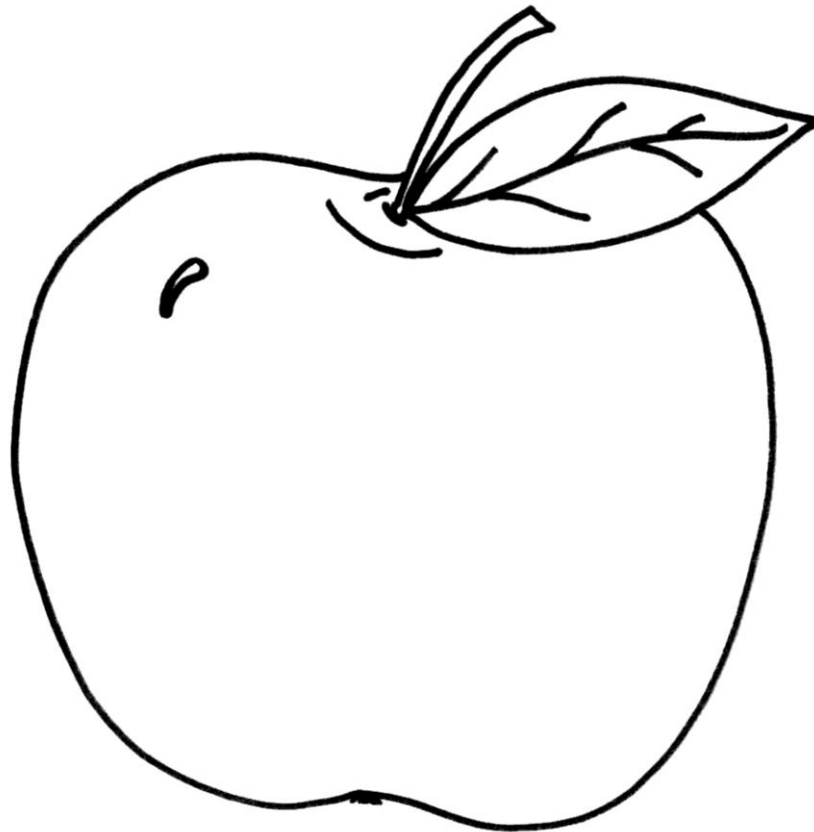
Coloring picture 9: I love fish (by Eva Picallo)



Coloring picture 10: Doughnuts contain too much sugar (by Eva Picallo)



Coloring picture 11: Chicken is good (by Eva Picallo)



Coloring picture 12: Apples are always a good choice (by Eva Picallo)

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List of Figures

Figure 1: The main concepts of the program	55
Figure 2: areas of development	59
Figure 3: integration of the areas of play	61

List of Tables

Table 1: List of activities for the content: tooth brushing	66
Table 2: chart to take home	75
Table 3: List of activities of the content "diet"	76
Table 5: List of activities of the content "going to the dentist"	81
Table 6: Check-list example to evaluate tooth-brushing performance	89
Table 7: Combination of activities to form sessions	93
Table 8: Weekly Plan.....	94

List of Images

Image 1: brushing child's teeth	67	
Image 2: learning tooth-brushing movements	68	
Image 3: I practice tooth-brushing myself.....	69	
Image 4: crafts materials.....	71	
Image 5: puppet.....	72	
Image 6: tooth-brushes sizes.....	73	
Image 7: painting with toothpaste.....	74	
Image 8: healthy food	Image 9: candies	77
Image 10: choosing healthy food.....	78	
Image 11: fruits are healthy and fun	79	
Image 12: cooking books.....	80	
Image 13: dental check-up	82	
Image 14: the dentist at work	83	
Image 15: a child doing crafts	84	
Image 16: Playing to be a dentist.....	85	

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List of colouring pictures

The coloring pictures belong to Eva Picallo who voluntarily designed them for this Oral Health Program and gave her consent to include the pictures here.

Coloring picture 1: I have twenty teeth

Coloring picture 2: Ice cream has sugar

Coloring picture 3: A healthy drink is milk

Coloring picture 4: Tomato is delicious

Coloring picture 5: Brushing twice a day

Coloring picture 6: Sugary drinks are not healthy

Coloring picture 7: Homemade hamburgers are just better

Coloring picture 8: Candies no, thank you

Coloring picture 9: I love fish

Coloring picture 10: Doughnuts contain too much sugar

Coloring picture 11: Chicken is good

Coloring picture 12: Apples are always a good choice

Appendix 2. Permission letter sent to the day-care managers

To whom it may concern:

Sir/Madam:

My name is Irene Arnau Martín. I am a nurse and childhood educator, studying at the moment a Master's Degree in Health Promotion at Laurea University of Applied sciences.

I kindly request permission to conduct my Master's thesis research at your school.

The purpose of my thesis is to produce an oral health education program for children from four to five years of age, which could be used later by teachers in their practice.

To answer my research questions, I would need the help of some teachers to assess my program.

The information gathered from teachers, would be used only for research purposes. The name of the participants as well as the day-care name (company) will not be published in any report of the study.

I hope that you grant me the consent in conducting my research and I thank you in anticipation.

Yours faithfully

Irene Arnau Martín

CONSENT

I _____ (name and surname) give the consent to Irene Arnau Martín to conduct her research in this school (name of the school and company)

_____.

Appendix 3. Invitation letter

Dear teacher,

My name is Irene Arnau Martín. I am a nurse and childhood educator, studying at the moment a Master's degree in Health Promotion at Laurea University of Applied sciences.

In this letter, I would kindly like to ask you to participate in my Master's thesis research. The purpose of the thesis is to produce an oral health education program for children from four to five years of age, which could be used later by teachers in their practice. To achieve the purpose I have design an Oral Health Program (OHP) for young children by reviewing the literature published in the topic. The OHP has been designed using the Early Years Foundation Stage as a framework. At the same time, the learning approach has been given by the constructivist theories of learning.

By taking part in the study, you will participate in the assessing step of the research, giving me feedback of the program with the only purpose of improving it.

You were selected as a possible participant in this study for having a qualification in Early Childhood Education.

PROCEDURES

If you volunteer to participate in this study, you will receive the Oral Health Program (OHP) and you are asked to read it. Attached to the OHP you will receive some evaluation worksheets. The idea is that you take notes and write on them when you see the need of making a comment about something.

You will have two weeks for reading the whole program. After that, you need to return me the evaluation worksheets for them to be analyzed.

You will be invited to a semi-structured interview after the analysis, to discuss together the OHP and receive your feedback. The interview will be recorded in audio-tape but the record will be used only to facilitate the transcripts and the content analysis.

The duration of the interview may vary but approximately will be 30 minutes.

The participation on the study will not have economic compensation.

POTENCIAL RISKS AND DISCONFORT

I anticipate minimal risk to participate in this research. You may find that you feel uncomfortable by answering any question, so in this case you may choose not to answer certain questions or terminate your participation.

CONFIDENCIALITY

Your name or further information which could identify you will not be revealed in any report on this study.

The information which might be displayed (if you agree) is taken from the background information given by you (age, gender, type of qualification and years of experience). Your name or nationality will not be disclosed in any report on this study.

PARTICIPATION AND WITHDRAWAL

You can choose whether to be in this study or not. You have voluntarily decided to participate in this study and you may withdraw at any time without consequences of any kind. You may also refuse to answer any question during the interview and still remain in the study.

In case you would like to participate in this study you will contribute to the improvement of children's oral health and I would feel very grateful.

Please, fill the form below and return it to me before the 6th of April 2011.

If you have any further questions on the research please contact me.

BACKGROUND INFORMATION OF THE PARTICIPANT

Name of subject _____

Age _____

Gender _____

Nationality _____

Qualification in childhood education (specify) _____

Years of experience working with children _____

Place _____

Date _____

CONSENT

I hereby certify that I was informed about the process of the study, which I will participate in. I further certify that I allow Irene Arnau Martín to use of the data deriving from my participation in her Master's thesis research.

I consent that some background information that I have given to you might be displayed in any report on this study (age, gender, type of qualification and years of experience) Yes

No

Signature _____

Appendix 4. Evaluation worksheets sent to the educators attached to the OHP for the evaluation

Evaluation worksheet about:

Objectives

contents

methodology

methods & strategy

Weekly plan

activities

evaluation

Date:

Subject:

Comments:

Appendix 5. Contents of the interview with the educators

General:

1. How do you think this OHP suits you in your everyday practice?
2. Could you use this program as it has been designed at your workplace or would you need to do changes to use it? Which ones?
3. If you want to include health education in your practice, would this OHP be usable for you?
4. How do you see teachers doing health education at the school?
5. Will be easier to work health topics with children using specific programs made by health professionals? Or should the teacher carry these plans himself?
6. This OHP aims to improve children's knowledge related to oral health. Can you think in different ways to approach oral health with children
7. The EYFS is based in "learning through play", could you think in any other way to do health education with young children?
8. How do you think children can learn to brush their teeth?
9. Is the school an appropriate setting to work this topic?

Specific:

10. How do you think the objectives are formulated?
11. How do you see the objectives appropriate for the children's age?
12. How do you see the contents for the age group of children?
13. How important you think is working these contents with the children?
14. How do you see this topic for a whole week, do you think will be needed more or less time? Maybe some sessions but not as a weekly topic?
15. How do you see the activities proposed to achieve the objectives?
16. Are the activities attractive and appropriate for the children's age?
17. Are appropriate the instruments proposed to evaluate whether the goals have been achieved?
18. Do you use other non-formal assessments in your everyday practice with the children that can be used in this program?
19. What is your overall impression of the OHP in a short sentence?
20. You have written your suggestions to improve the program; Would you like to add something else?

Appendix 6. Examples of original quotations

- 1 a. "I think it will suit the practice very well".
- 1 b. "It puts you first into the basic knowledge, and then specifies activities and examples"
- 1 c. "It is nice that it concentrates one specific health topic, like teeth".
- 1 d. "More often the interest come from the teacher and it is necessary to be sure that the children follow that interest".
- 2 a. "I could use it easily and already".
- 2 b. "You need to do some little alterations and use many of the activities".
- 2 c. "But that will be the work of a teacher to do, to adapt the program to the group".
- 2 d. "Because it has 20 activities and is quite a lot".
- 3 a. "We will need it because we do not really go that deep in the topic".
- 3 b. "It will be very interesting to include".
- 3 c. "It is not an area that is explored and extended as it should".
- 3 d. "We do some hygiene and hand washing" and T2 clarifies that "we talk about health and safety".
- 3 e. "I see teachers as health educators".
- 3 f. "It is not promoted to the extent as it should be in early years".
- 3g. "It helps to have the parents incorporated".
- 4 a. "It is always better to have a professional in the field to do such a thing".
- 4 b. "A teacher will adapt the plans to individual children".
- 4 c. "A nurse might find difficult to make a plan for children but the difficult thing for a teacher is to have the knowledge".
- 4 d. "There are many opportunities that we miss if we do not have these programs".
- 5 a. "It is important to do some adult directed activities but also to provide those activities for children to act actively".
- 5 b. "The approach with children should be in a fun and experimental way".
- 5 c. "The adult directed activities are very good but they need to be consolidated later and let the children explore a little bit more".
- 6 a. "An adult would be the dentist in a role play, and promote the learning in that play situation".
- 6 b. "I guess some should learn from play and through play and have an active part in the learning process".
- 6 c. "Is the best way to teach anything but with very young children educate through play and games might be the only option".
- 6 d. "The actual words that are related to the subject rather than try to go around the way".
- 6 e. "You place the history with characters with something as likable for the children as cats".

6 f. "The ideal will be to brush teeth children in smaller settings and the activity should be integrated in the school".

7 a. "I think just brushing-using a tooth brush in general, even just like in art activities as a different kind of painting method".

7 b. "Start with babies but then towards when they start having the fine motor skills to be able to do it".

7 c. "Take it as a positive thing not as a compulsory thing".

8 a. "The earlier it becomes the better it is".

8 b. "Because school is already a little late".

8 c. "Is appropriate as long as it links with home.

8 d. "We do not enough regarding that"