A Competence-based Approach in Portuguese Early Childhood Education

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ABSTRACT

This paper reports on a Portuguese study in a teacher education context (Polytechnic Institute of Leiria) which, in Portugal, takes place in universities and educational institutes. It aims to reflect on a competence approach in the context of early childhood education. Starting from a concept of competence that considers the subject, action and context, students in the teacher education course (the Degree in Early Childhood Education) made lesson plans (termed, Pedagogic Practice Unit) during the academic year of 2008/2009 in accordance with the Portuguese national guidelines (PT, 1997). These curriculum guidelines do not identify the competences that children should develop. However, the competences identified by students in their lesson plans concerning the curricular areas (area of personal and social education, area of world knowledge, area of expression and communication) were grouped and analysed in relationship to the concept of competences previously assumed. From the data collected, we could infer that it is possible to identify competences to be developed by the children in a kindergarten context and that this identification can be made by the teacher according to the group of children with whom they are working. This research enhances the value of a competence-based approach.

INTRODUCTION

This article focuses on the hypothesis of considering a competence-based approach in Portuguese early childhood education.

The Portuguese curriculum guidelines (PT, Ministério da Educação, 1997) for early childhood education are not structured in a competence-based approach. They present general information about the curriculum and are organised in two main chapters. The first, refers to general principles of the official framework and the second, to the educational intervention in three curriculum areas: *area of personal and social education*; *area of world knowledge*; and, *area of expression and communication*. Although this official document enhances the child as the actor of his development and learning (Dahlberg, Moss, & Pence, 2003) and the educator as the guide of this process (Rinaldi, 2006), it does not detail a set of specific competences concerning each curricular area.

After having supervised practice teaching for some years, we considered it relevant to study a competence approach in early childhood education. We believed that it was possible for educators to identify a set of competences to be

developed by the children and that this hypothesis could improve pedagogical work in Portuguese early childhood education services.

While there are various concepts of competence, this study focuses on the perspective of competence that places the child as a co-building actor within a complex learning process. Competence can be defined as a way of acting in a particular context (Le Boterf, 1999) or the ability to act efficiently in a particular type of situation, supported by knowledge but not limited to it (Perrenoud, 1999). Taking these ideas for the formulation of competence we assumed as indicators the subject, the action and the context of the action. As an example: the child (subject) uses and names the red colour (action) when he/she wants to paint his house (context of the action). This efficient action requires the individual's ability to develop, articulate and correlate different knowledge and attitudes. It is therefore, '… a cognitive, affective and social action that becomes visible in practices and actions that are applied on knowledge, on others and on reality' (Cruz, 2001, p. 29).

According to a competence-based approach, educators seek to facilitate the ability to apply learning experiences in early childhood education situations (Kowalski & Dias, 2008a/b). Our idea of a competence-based approach has two major assumptions:

1) Child significant experiences are the main focus of competence development. This idea is perceived, for instance,

- when the child mobilises information in an experience,

- when the child is engaged in an experience,

- when the child uses creativity according to his development and learning process, and

- when the child behaviour reveals his learning process.

2) Relationships are essential to competence development. This idea is perceived, for instance,

- when educators and children are partners in development and learning processes,

- when educators plan and assess with children their learning and development processes,

- when the children find the tools they need to solve problems, and

- when educators are curriculum supervisors.

These ideas are based on the views of a number of different authors, such as Piaget, Vygotsy, Bruner, Dewey, Dahlberg, Moss and Rinaldi. For instance, Piaget (cited by Matta, 2001, p. 59) argues that, '… the symbolic or representative intelligence has its origins in the triggering of reflexes and in the babies' sensory and motor experiences', and Pound says that (2005, p. 57):

> Through active learning – having direct and immediate experiences and deriving meaning from them through reflection – young children make sense of their world. The power of active learning comes from personal initiative. Children act on their natural desire to explore – they ask and search for answers to questions about people, materials, events, and ideas that arouse their curiosity; they solve problems that stand in the way of their goals, and they generate strategies to overcome barriers.

Rinaldi (2006, p. 128) also argues for the importance of valuing the children´s action in experiences with an open and investigative purpose when she states that, 'Children need to be appreciated and to live within an educational context that encourages research, because the school is by definition a place … where the symbolic and value systems of the culture and the society are experienced, interpreted, created and recreated by children and adults together …'. This process of development and learning by experience occurs in recreational situations of contextualised interaction, in a relational attitude of affection with the reality in which it takes place (Vygotsky, 1991).

The child learns by interacting with objects, events, ideas, and learns through its relation with adult(s) and peers in a cultural context that contributes to the construction of an individual and social universe (Dahlberg, Moss & Pence, 2003). As Bruner (1996) puts it, 'Culture shapes the mind and providences with the toolkit by which we construct not only our worlds but our very conceptions of ourselves' (p. 25).

The value of experience, in contexts to which children attribute a meaning and through which they develop themselves, is a generator of new learning situations. In order to be significant, these experiences should be planned and assessed by an educator who values the child and assumes the role of a mediator. The educator monitors the curriculum in an educational environment in order to enable the involvement of the children in learning experiences where they can attribute meaning. In an environment planned by the educator, the focus is not the experience in itself but rather the child who, by acting, solves problems with the opportunity to decide, relate and adapt its knowledge to the situation. The children then reflect, as a group, with the mediation of the educator.

Consequently, children develop diverse competences (in an integrated way) in various fields of knowledge when the educator mediates children's experiences through a variety of educational situations. These fields of knowledge are identified as 'areas' in the Portuguese curriculum guidelines (PT, Ministério da Educação, 1997) and are considered in the next section.

OVERVIEW OF THE STUDY

In Portugal, early childhood education is supervised by the Ministry of Social Affairs (nursery – children from 4 months to 3 years old) and by the Ministry of Education (kindergarten – children from 3 to 6 years old). The Portuguese curriculum guidelines (PT, Ministério da Educação, 1997) for children from 3 to 6 years old '… are not a program since they adopt a perspective centred on proposals for the educator instead of learning to be held by the child' (p. 13). They focus on three curriculum areas: the area of personal and social education (this refers to a

child's relation with itself, with others and with the world), the area of world knowledge (this refers to a child's connections with natural environments), and the area of expression and communication (this refers to a child's psychomotor and symbolic development using different languages).

The degree in early childhood education in Portugal until 2009/2010 was a four-year programme. Currently, there are two study cycles: 1) a degree in basic education (3 years); and, 2) a master's degree in early childhood education (up to two years). These academic degrees are granted by universities and polytechnics. In the Polytechnic Institute of Leiria (Portugal), the initial teacher education programme in early childhood education had, until 2009/2010, theoretical and practical components. The practical component had 400 hours that was divided into two units (Pedagogic Practice I and Pedagogic Practice II). The study considered in this article focuses on the Pedagogical Practice II unit. Within this programme, in the academic year of 2008/2009 (the year in which the data for this study was collected), the team responsible for the curricular unit of Pedagogic Practice II (3rd year), initiated a new pedagogical approach based on the development of children's competences. In the 1st semester of that annual curricular unit, students had a period of practice in a nursery context and, in the 2nd semester, a pedagogical experience in kindergarten.

This unit programme also comprised thematic seminars, opportunities for written and oral reflection (individually and in a small or large group), monitoring of teaching practices in context, and meetings with people involved in the practice in specific groups (students, teachers and cooperating teachers/ supervisors) for reflection on learning processes and planning exercises in a competences-development approach. The seminars were focuses in subjects such as educational context observation and characterisation, curricular approaches in early childhood education, planning and assessment. Students had to complete a written reflection each week about their experience in kindergarten and had also the opportunity in different kinds of meetings of sharing their practical experiences with colleagues and supervisors who monitored their practice in a kindergarten context.

The weekly planning of the work to be carried out with children (planning exercises) had the same references for all the student groups: children's group (age and number), initial conversation with the children to prepare for the day, educational intentionality, children competences in the context of the activity, pedagogical activity and assessment. Although in the Portuguese curricular guidelines the value of competence development is not clear, we put forward a proposal that embraced a planning exercise to formulate children's competences. Believing that the competence may only be developed if it creates meaning for the learners (children and adults), we sought to develop a formative experience that valued the prospective development of competences. We intended that the future educators could organise their pedagogical ideas valuing children's action and the action context. In addition, students could take into account the curriculum areas for Portuguese early childhood education.

The relevance of this process led us to study this overall approach and analyse the planning exercises done by students which focused on competences formulation, as shown below.

METHODOLOGY

Study issues and objectives

The aim of this study was to analyse students' lesson plans which had been formulated according to a competence-based approach. The objective was to identify a set of competences to be developed by children in a kindergarten context. We intended to test this competence-based approach according to a logic formulation which assumed the following references: subject, action and context. We wanted to see if the students' planning would meet competences data within all areas proposed by the Portuguese curriculum guidelines (PT, Ministério da Educação, 1997).

Sample

In order to conduct this study, we selected a sample composed of the work carried out in groups by the students who attended the curricular unit of Pedagogic Practice II, in the 3rd year of the degree in early childhood education, in the academic year of 2008/2009. This pedagogic practice was held throughout the 2nd semester, once a week, in institutions within the private network (7) and solidarity network (Ministry of Social Affairs) (5). Thus, the sample under analysis refers to a total of 26 planning assignments carried out weekly in pairs, with the exception of two which were carried out individually.

Tools for data collection

In order to conduct this study there was a need to resort to the assignments carried out by the students. The weekly lesson plans were coded for competences in areas of content and the coded data was then sorted into tables to identify emerging competences.

Procedures

After identifying the object of the study and defining the work methodology, we analysed these pedagogic practice activities according to a competence-based approach. The data came from the students' lesson plans that were developed by each group studying Pedagogic Practice II in the 3rd year of their degree in early childhood education (in the academic year of 2008/2009). Each group was identified by a number. A survey of the plans was carried out regarding the competences to be developed by children for each content area indicated in the Portuguese curriculum guidelines: *area of personal and social education; area of expression and communication – domain of motor, dramatic, plastic and musical expressions; domain of oral language and the approach to writing; domain of mathematics; and, area of world knowledge* (PT, Ministério da Educação, 1997). From this, we developed a table of the competences identified by area/domain of content.

In a second stage, the competences identified in each area/domain of content were grouped and counted. From a total of 115 competences formulated, we selected 10 competences by area or domain, in a total of 80 competences. We considered that these 10 competences represented the competence average within all the groups. Those 10 competences were formulated with reference to our competence-based approach –subject/action/context. For the domain of musical expression, and given that there were 9 competences identified in the plans, we chose to introduce a tenth competence that had been identified in another domain

('By imitating the sounds produced by bees, the child oscillates between strong and weak sounds' – plan 7).

Data analysis

Following a qualitative research methodology, we valued the competences that arose from the students' plans. Using a descriptive perspective, we wanted to understand how students assumed a competence-based approach in their weekly planning with respect to the curricular areas.

We only took into account the competences formulated according to the concepts previously considered: subject, action and context. The subject refers to the child, the action refers to what the child does/acts, while the context identifies the educational experience in which the child acts.

RESULTS: COMPETENCES IDENTIFIED IN THE STUDENTS' PLANS

Below, we present 8 tables which contain the indication of the competences presented by the students regarding each of the areas/domains of the Portuguese curriculum guidelines formulated accordingly to the competence-based approach logic: subject/action/context.

Plan	Competences – Personal and Social Education
9	'During the picnic, the child: plays with friends, plays different games, listens to stories'
9	'By painting hats, the children communicate their ideas and aesthetic preferences, listen to and respect their colleagues' preferences and ideas'
9	'Throughout the preparation of the cake, the children collaborate as a big group'
9	'The child interacts freely with the other children when they are in the Indian tent'
9	'The children will intervene in an orderly manner during the karaoke, waiting for their turn.'
9	'During the picnic the child eats their lunch in an orderly manner'
9	'When exploring the dough as a group, the children socialise and share sensations with each other'
7	'The child interacts with their colleagues and waits their turn, in the educational experience'
8	'During the party, the children interact with the other children'
7	'The child respects the rules while on the bus and at the 'Feira de Maio' [May Fair]'

Table 1. Competences – Area of Personal and Social Education

In Table 1, it is possible to observe that all student groups formulated competences accordingly to the following logic: subject, action and context. The content of the 10 competences reveals a higher incidence on the child's actions in interaction process. *Playing, collaborating, intervening,* and *engaging* were considered to be interaction processes.

In the *Area of Personal and Social Education*, students were able to use the proposed competence-based approach to formulate competences considering each child's pedagogical process.

Plan	Competences – World Knowledge
9	'By painting the hats, the children observe the paints' characteristics such as colour and temperature'
8	'The child predicts which instrument corresponds to them based on the sound produced'
10	'The child observes the changes that occur during the cake-baking process'
9	'During the conversation about the fish, the child says what they know about it'
6	'The children observe the environment around them along the way'
9	'After the picnic, the child places the rubbish in the appropriate bins'
8	'The child observes the objects' behaviour when these are placed in water'
9	'When the materials are mixed, the child observes the transformation which occurs'
9	'The child identifies the function of each kitchen utensil used during the cake-baking process'
4	'The children identify and name the physical properties of the turtle that is in the aquarium'

Table 2. Competences – Area of World Knowledge

In Table 2, the data in the *Area of World Knowledge* is according to the proposal logic and shows a higher incidence in the observation processes (5 out of 10 competences) and in the relation established with materials/substances (6 out of 10 competences).

The context(s) include experiments with animals (2 out of 10 competences) and in natural environments (2 out of 10 competences). There is also the cake-baking process (2 out of 10 competences).

Plan	Competences – Musical Expression
4	'During a game on the rug, the child sings songs'
6	'By creating unconventional instruments, the children produce different sounds'
9	'The child coordinates the movements with the rhythm of the music during the dance'
8	'While they listen to the music and paint the cloth, the children identify the sounds according to the intensity'
8	'The child produces sounds and differentiates them by handling the unconventional instruments'
2	'The child moves according to the sound of the music'
3	'The children balance themselves coordinating their gestures and movements according to what is proposed, taking into account the rhythm of the music throughout the dance'
7	'By imitating the sounds produced by bees, the child oscillates between strong and weak sounds'
1	'When listening and reproducing a song, the children use sounds with various properties (intensity, duration and tone)'
8	'While they hear the music and paint the cloth, the children identify sounds regarding the duration'

Table 3. Competences – Area of Expression and Communication: Domain of Musical Expression

The data in Table 3, within the *Area of Expression and Communication – Domain of Musical Expression*, present a set of competences formulated according to the proposal logic and shows an incidence in the listening of sounds (3 out of 10 competences) and production of sounds (4 out of 10 competences).

Plan	Competences – Plastic Expression
6	'During the activity, the child cuts out images and sticks them on their face'
9	'When painting the hats, the children mix colours according to their taste'
8	'The child represents a trumpet through a drawing'
7	'The child identifies the colour of the box which they throw the ball into'
9	'The child handles the scissors and cuts the cardboard to start the preparation of building the puppet'
8	'The child glues pieces of fabric and a feather on a cardboard strip, on the desk of the activity room, after exploring unconventional instruments'
9	'The child glues the tree leaves while decorating the white cloth'
9	'When they have a white cap, the child paints it freely'
5	'The child builds a house with the milk cartons, by piling and gluing them'
3	'The children select the patches of green when observing the images in the magazines'

Table 4. Competences – Area of Expression and Communication: Domain of Plastic Expression

The analysis of the data in Table 4, within the *Area of Expression and Communication: Domain of Plastic Expression* is consistent with the proposal logic (subject/action/context) and shows a higher incidence in the cutting, gluing and painting techniques (6 out of 10 competences).

Plan	Competences – Motor Expression
6	' When listening to music, the children move in a coordinated way'
9	'The children are aware of the space and balances themselves during the dance'
10	'The child handles the proposed ingredients when they are breaking the eggs, putting the flour, sugar and the remaining ingredients, into the bowl'
8	'The child relaxes with the sound of music and with the indications given by the interns, during the relaxation'
5	'The child keeps their balance, while crossing the bridge of legos in their path'
10	'When baking cakes, the child mixes the ingredients'
9	'The children dance to a song with the interns'
9	'The child controls their arm movements to make soap bubbles and their body movements when they dance'
9	' When mixing the cake dough, the child handles the spoon'
8	'When listening to a song, the children make body movements according to the rhythm of the music'

Table 5. Competences – Area of Expression and Communication: Domain of Motor Expression

Table 5, concerning the *Area of Expression and Communication: Domain of Motor Expression,* present a set of competences formulated as requested and shows a higher incidence in the basic motor actions (6 out of 10 competences) and in the way the child (children) relate to the space (6 out of 10 competences). *Manipulation, spatial awareness and balance* were considered basic motor actions. Dancing is the most relevant context (5 out of 10 competences).

Plan	Competences - Dramatic Expression
7	'During the game, the child represents the chosen profession'
4	'The child solves problematic situations during a dramatic game'
5	'In a exploratory game, the child identifies and expresses the suggested feelings'
5	'The children intervene in the assigning and negotiation of the characters to be interpreted'
9	'The child acts out situations of their daily life, using puppets'
9	'The child negotiates each ones' role and reaches an agreement during the dramatic game'
8	'The child interacts with other children by improvising at the time of recreating the indigenous dance'
5	'During the dramatic game, the children improvise in order to respond to problems that arise'
8	'During the dramatic representation, the child uses costumes and/or objects that influence their acting'
8	'The child uses shadow/light and colour to create atmospheres that are favourable to the accomplishment of the story'

Table 6. Competences – Area of Expression and Communication: Domain of Dramatic Expression

In Table 6, referring to the *Area of Expression and Communication: Domain of Dramatic Expression*, we note that students could formulate competences as required. The higher incidence was in improvised representation (6 out of 10 competences).

Plan	Competences - Mathematics
5	'When making the chocolate salami, the child identifies the recipe's sequence'
8	'With the straws, the child is able to order them from the longest to the shortest'
9	'The children establish quantity relations when listing the ingredients used to prepare the cake'
3	'The child does the counting and ordering, on top of the table, of six objects from the images about the legend'
6	'When being organized according to their ages, the children identify their age'
10	'When making cakes, the child counts verbally, taking a measuring unit into account'
8	'The children observe and identify the geometrical figures' characteristics, discussing them in group'
6	'The child makes the puzzle according to the image provided'
9	'The child counts the cake's ingredients as they are added'
6	'The child solves problems during the educational experience'

Table 7. Competences – Area of Expression and Communication: Domain of Mathematics

In Table 7, concerning the *Area of Expression and Communication: Domain of Mathematics,* the data reveals that the lesson plans' competences follow the subject/action/context logic and shows a higher incidence in counting processes (4 out of 10 competences) and in characterisation (3 out of 10 competences).

Plan	*Competences – Verbal Language and Approach to Writing*
8	'During the conversation about living beings, the child communicates their ideas'
7	'The child learns new vocabulary related to the farm during the visit'
7	'The children listen and watch the story attentively on the rug, showing interest'
9	'The children help record the cake recipe after its preparation'
8	'The children talk about what they are feeling and experiencing during the picnic'
5	'By creating the necklace, the child expresses how they feel about their mother'
9	'While one of the children is imitating the image, the other children try to understand what their colleague is imitating'
4	'The children separate the word 'Turtle' in syllables and state other words that start with the letter 'T''
8	'The child communicates what they think about what happened after placing the object in the water'
9	'When making the cake, the child distinguishes the different ingredients and names them'

Table 8. Competences Formulated by the Students – Area of Expression and Communication: Domain of Verbal Language and Approach to Writing

Table 8, referring to the *Area of Expression and Communication: Domain of Verbal Language and Approach to Writing,* shows that all competences were formulated within the proposed logic and point to a higher incidence in communication processes (4 out of 10 times) and lexical enrichment (3 out of 10 competences).

DISCUSSION

The data presented in the 8 tables shows that students used the competence-based approach to formulate competences according to the proposed logic: subject, action and context. In addition, it reveals that it is possible to develop competences in all the content areas of the Portuguese curriculum guidelines: *Area Of Personal and Social Education; Area Of Expression and Communication – Domain of Motor, Dramatic, Plastic and Musical Expressions,* and *Domain of Oral Language and the Approach to Writing; Domain of Mathematics;* and*, Area of World Knowledge* (PT, Ministério da Educação, 1997).

The competences formulated by these students expose learning outcomes, such as planning, collaboration, intervention and engagement (Table 1), which Bruner (1996) considers as being important for children's development. Observation processes and the relation established with materials/substances (Table 2) are considered by Pereira (2002) as important to science literacy learning. Listening and producing sounds (Table 3), cutting, gluing and painting (Table 4), manipulation, spatial awareness and balance (Table 5), and improvised representation (Table 6) are, according to Edwards (1993), essential to artistic processes as ways of representing ideas and feelings. Matta (2001) also suggests that mathematics and communication processes (Table 7 and 8) and lexical enrichment (Table 8) are fundamental to self-learning and learning with others.

This data analysis corroborates approaches to early childhood teacher education that value children's interactions that engage with competences to support their development and learning (Le Boterf, 1999; Rinaldi, 2006). This perspective fits into the conception of social development which values the citizen's action in the resolution of situations in context (OECD, 2005). Theorists in

learning/development and pedagogics, within a constructivist perspective, agree (theoretically) that it is necessary to see the child as an active agent in the construction of their knowledge (Bruner, 1996; Matta, 2001; Vygotsky, 1991). In Portugal, the official documents point in the same direction. Nevertheless, the application of these conceptions is still being studied.

According to the Portuguese curriculum guidelines (PT, Ministério da Educação, 1997), 'The different areas of content should be considered as references to take into account in the planning and assessment of experiences and educational opportunities and not as sealed compartments to be approached separately' (p. 48). When planning and assessing, the educator, then, needs to reinforce the role of the child in their development and learning processes. By following an on-going and integrated development/learning process, the competence-based approach should not be reduced to a set of closed, intermediate and final indicators. Instead, children individually and in group can engage in new learning experiences where the educator and children interact through a competence-based approach.

By understanding the inherent logic of this approach, the educator can learn to formulate competences according to the needs of their group and according to official guidelines (Pires, et al., 2008). Our experience in the initial teaching of early childhood educators in Portugal proves the relevance and sustainability of this approach (Kowalski & Dias, 2008a).

CONCLUSION

This study focussed on the inclusion of a competence-based approach into a Portuguese early childhood education programme – specially the curricular unit of Pedagogic Practice II at the Polytechnic Institute of Leiria in the academic year of 2008/2009. The data gathered lead us to deduce that it is possible for educators to plan and implement a competence-based approach with regard to subjects (children), their actions and the context (learning experience). This study, then, reinforces the idea that any educator can choose a competence-based approach and that educators can use such an approach as a pedagogical option in order to identify, support and facilitate experiences that support children's on-going learning and development.

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