DESIGNING WITH CMAP AT ALL STAGES OF KNOWLEDGE IN A KINDERGARTEN

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Abstract. "Design and cooperate" is a fundamental value for kindergarten which is reiterated in many laws regulating Public Education, but not always implemented. This, however, has been implemented thanks to the concept maps in a kindergarten in Giugliano, in Campania. Interactive maps that have been implemented explicitly developed every stage of top-down teaching and learning. These models are seen as useful tools for groups of teachers who wish to publish and share their teaching circle design, as well as to plan learning and evaluations units. Conceptual mapping for projecting and cooperating groups represents the main working methodology among teachers and student of this school. The purpose of this experiment is to create a database for exchanging news and information with other schools.

1   Introduction

At the beginning of the school year, a group of teachers from two schools in Giugliano (Campania) and Frosinone created a new method of systematizing school projecting and planning with the help of conceptual maps developed with the Cmap Tools software. Each teacher supported the research project by implementing the conceptual maps through resources of his/her own school. The research is based on the following six hypotheses:

A CmapServer is seen as a place of the net comprising resources, files and conceptual maps. Cmapservice is an interface allowing the introduction of further services to a CmapServer.

The CmapTools software furthers cooperation and participation to the construction and transformation of Knowledge Models.
• A Cmap is a knowledge model, to which resources can be directly attached.
• Users can organize the files hierarchically according to their specific requirements.

Conceptual maps teaching through cooperative learning in school environments is the most adequate strategy to achieve the following objectives: acquiring and controlling a number of skills such as challenge and cooperation.

National guidelines concerning kindergarten curricula leave room for school projecting and programming. Curriculum setting implies, as a matter of fact, the emergence of decisions concerning basic contents, crucial aspects of organization, availability of material and human resources, according to specific objectives and learning goals placed by "National Indications" as well as to each characteristic and requirement of the context. School autonomia (concerning the introduction of decentralized regulations for schools) and teachers' expertise play a crucial role in mediating between local and national cultural dimensions:

• Citizenship education   • Road safety education   • Environment education
• Health education   • Food education   • Emotion education

2   Educational projecting in kindergarten: description of school programming structure with CMAP

The main goals in kindergarten education can only be defined by placing the child in his/her own environment. These objectives are: 1) identity building; 2) achievement of independence; 3) acquisition of skills. The development of each learning unit, achieved from the five expertise areas (Figures 1,2,3,4 and 5) helps the achievement of goals.
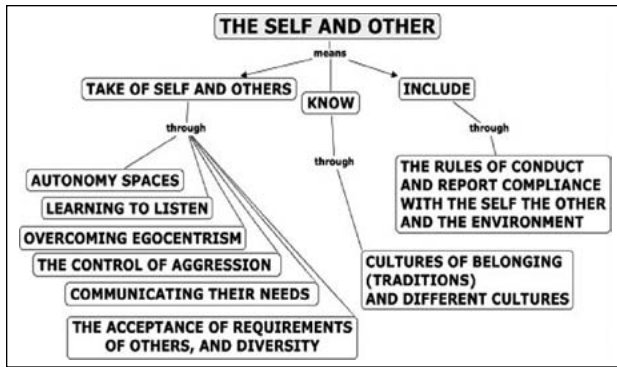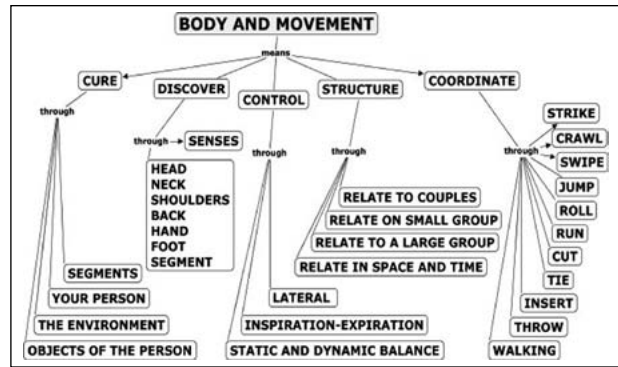
Figure 1. The self and others
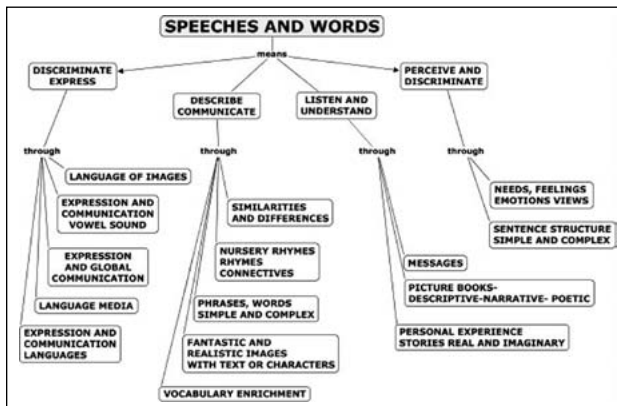

Figure 2. Body and movement

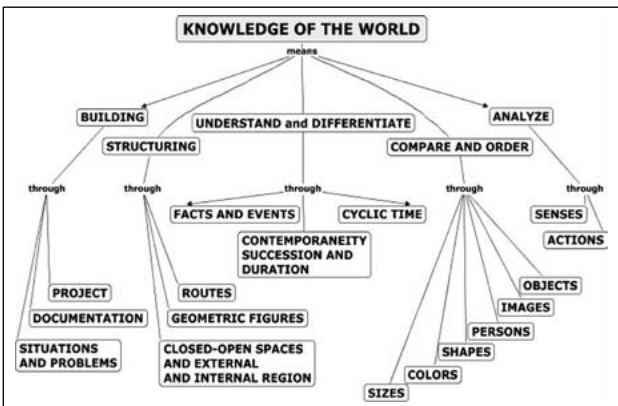**Figure 3.** Speeches and words

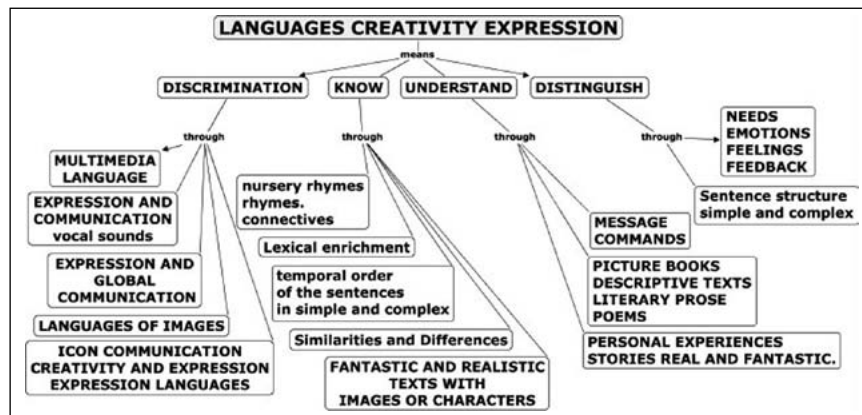**Figure 4.** Knowledge of the world

Figure 5. Language, creativity expression, gestures, art and music, multimedia

The five areas of expertise and expected skills:

2.1   The self and the other

In this area the child opens up to the other, not giving up to his/her identity, but re-affirming it by interacting with others. The contact with children with different languages, somatic traits, religious and cultural traditions should also taken into consideration for school projecting. In this area the child gets to know his/her own body, personality and being with others.

Expected skills. The child develops a sense of personal identity; he/she is aware of his/her needs and feelings and is able to control and express them adequately. He/she also develops awareness about his/her personal and family history, including family and community customs and traditions and develops his/her sense of affiliation. The child understands that community life involves rules to comply with.

2.2   Body and movement

The progressive acquisition of sensory and perceptive skills, the gradual development of motor confidence, the establishment of space/time relations enable confidence in moving within family and social environments. In this field the development of body language also occurs. Games enable the children to acquire self-confidence and to experience their capabilities and limits.

Expected skills. The child reaches individual independence concerning his/her body. He/she enjoys movement and activities such as running, balancing, individual and group game coordination; he/she gets to know the dangers around him/her and the different parts of his/her own body. He/she improves his/her body sensorial, cognitive, expressive, rhythm and relation skills by exercising.

2.3   Language, creativity, expression

In this area the child identifies the differences characterising speaking and writing acts among people, detecting differences between words, images, Figures, drawings, writings, signified and signifier: children learn how to express themselves through different forms of languages: voice, gestures, music, manipulation, dramatization. The function of these languages develops the sense of beauty and self/other knowledge.

Expected skills. The child enjoys spectacles and develops interest for music. He/she communicates, expresses emotions, uses his/her body language to tell a story; he explores materials around him/her and uses them creatively.

2.4   Knowledge of the world

This is the area where space/time concepts are acquired. Rhythms, linear successions and temporal cycles are elaborated; the space is manipulated, dismantled, re-constructed and managed; individual and cooperative work is projected and realised; every activity is reported, documented and recalled in order to confront it with past experiences. Children learn to know the reality and to organize their experiences through conscious actions, such as clustering, comparing, counting up, representing with drawings and words.

Expected skills. The child clusters and orders according to different criteria, compares and evaluates quality. He/she uses basic signs to record: he/she places him/herself, objects and persons correctly in the space. He/she can correctly follow a route only based on verbal indications; he/she can orientate him/herself within daily life time; he/she observes a natural phenomenon as well as living beings based on criteria or hypotheses attentively and systematically; he/she is curious, eager to explore, question, discuss, compare hypotheses, explanations and solutions.

2.5   Speeches and words

The child learns how to communicate verbally, how to describe the world and his/her experiences, how to talk, reflect on the use of the language, getting closer to the written language. The knowledge of his/her mother tongue strengthens the child's personal and cultural identity. The language becomes increasingly a means to undertake game activities and to express personal feelings.

Kindergarten also promote the full control of the Italian language among children and the use of mother tongue for children with different cultural roots.

Expected skills. The child fully develops his/her language skills and improves the Italian vocabulary; he/she expresses thoughts and emotions verbally, choosing different forms of the language for each activity; he/she makes up and tells stories, listens and understands others'. He/she is aware of his/her mother tongue and develops an adequate

linguistic archive according to past experiences and learning. Language skills enable the child to develop the process of socialization and the development of his/her thought.
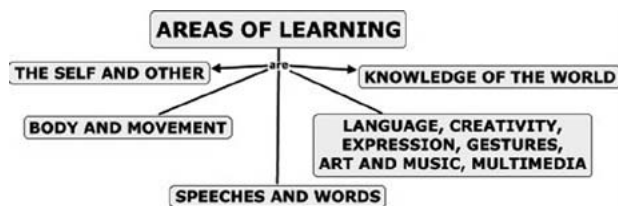
3   Theoretical references

Figure 6. Cmap of the five fields of experience

The implementation of the Law 30.10.2008 n. 169, regulating the introduction of "Cittadinanza e Costituzione" teaching (Citizenship and Constitutional Law) provides the opportunity to stress the crucial links between school and the Constitution, from the perspective of both its legitimacy its educational duties. Schools must take action and undertake experimentation in order to enhance this strategy.

Figure 7. C-map on Education for civil cohabitation

The DM 31.7.2007 Law has stressed that the hurdles placed by innovative firms led the Italian government to renounce the "Convivenza civile" (Civil Cohabitation), even if its overall principle has been introduced within the document "Indications for educational kindergarten programming" at the following points:
- the introduction "Culture, School, Person", that links these Indications to the objective of "a new citizenship" for a "new humanism";
- in the introduction to subject areas, where active citizenship, legality, ethics of responsibility and values enshrined in the Constitution are mentioned, together with a few articles from the constitutional law.
-in the part regulating history and geography as a subject area, underlining that this area comprise "among its main objectives the development of competencies concerning the active citizenship"(acquisition of the main rules for living together in a given society and the respect for these rules, as well as the overall knowledge about both the constitution law and the human rights).

Thematic units and learning objectives concerning "Citizenship and Constitution" in Kindergarten Learning objectives. The project aims at identifying ex post competencies and specific teaching skills concerning Constitution and citizenship by gathering them from best practices elaborated during the experimentation. Skills and competencies to be transferred in kindergarten should mainly deal with:
- the concepts of family, school and groups as a community.
- strategies enabling the acquisition of knowledge and attitudes with parents, schoolmates, teachers and other adults.

Goals to be achieved for the certification of individual skills at the conclusion of kindergarten education.
-showing awareness concerning both individual personal and family history and the transformation of the relation with other schoolmates and adults;
- interrogating about existential themes, cultural and gender diversity, justice, what is right and what is wrong;

- accomplishing tasks, elaborating projects, solve problems autonomously, with coetaneous and adults;
- expressing the extent of the personal bound to family, community, school, country and world;
- managing conflicts, negotiating tasks and commitments, working with cooperation, defining shared rules of action.
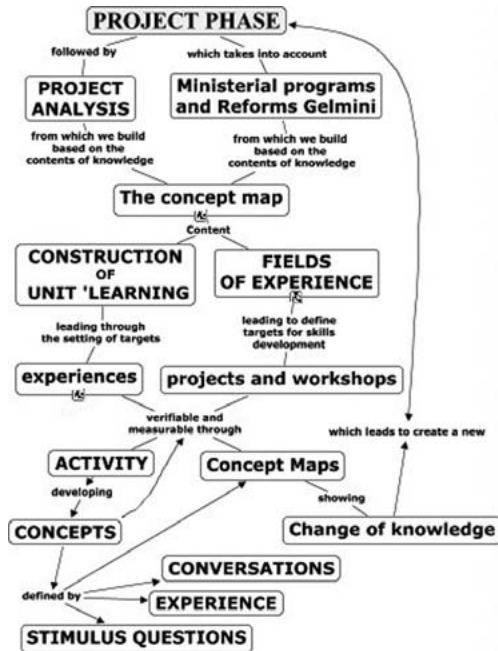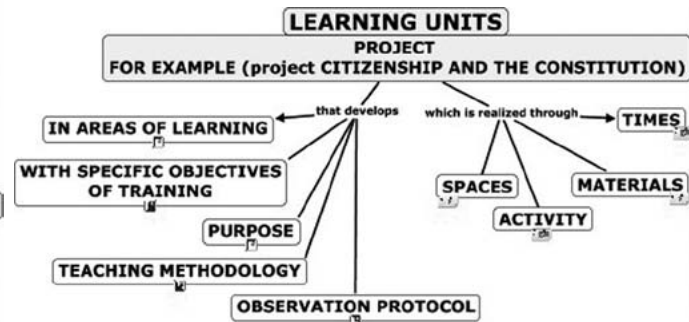

Figure 8. C-map on Project Phase

Figure 9. C-map on Learning Units

4   Conclusions

These models created through Cmap by teachers and school directors have been – and will represent- a basic structure from projecting to planning for kindergarten. They will help the new teachers and will be able to be used by different users in the CmapServer in order to cooperate and to create databases comprising resources, files and Cmaps.

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