

THE USE OF UNCONVENTIONAL MATERIALS IN INFANT TODDLER CENTERS: EDUCATORS' IDEAS ABOUT THE CONTEXT AND CHILDREN'S PLAY

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Abstract

In this paper we present the preliminary results of an action research project (Lichtman, 2011; Savin-Baden & Howell Major, 2010) conducted at two infant toddler centres in an urban area of Northern Italy. The research took place in the context of an in-service training programme with educational staff at the two centres. Children between the ages of 8 months and 3 years were observed in order to identify the ways in which they made use of highly informal and unstructured materials such as industrial waste products (Guerra, 2013; Guerra & Zuccoli, 2012). In parallel, the educators were guided to reflect on the opportunities offered by such materials and on how the play environments and materials traditionally offered to younger children could be modified to avail of this potential. The educators' representations and reflections were documented using narrative instruments and photographic images, while the children's explorations and play were observed via video-recording. The visual documentation instruments (Goldman, Pea, Barron & Derry, 2007), that is to say, the video footage and photographs, played a vital role in encouraging the educators to review their existing educational beliefs and in setting off processes of change. The paper examines the role played by these instruments in the action research process and reports our preliminary reflections on various aspects of the use of unconventional materials in infant toddler centres.

Keywords: Unconventional materials, infant toddler centres, learning space design, research methodologies.

1 INTRODUCTION

In this paper we present the preliminary results of an action research project (Lichtman, 2011; Savin-Baden & Howell Major, 2010) conducted at two infant toddler centers in an urban area in Northern Italy. The research took place in the context of an in-service training program with educational staff at the two centers. Children between the ages of 8 months and 3 years were observed in order to identify the ways in which they made use of highly informal and unstructured materials, such as industrial waste products (Gandini, 2005; Ferrari, Giacomini, 2004). At the same time, educators were guided to reflect on the opportunities offered by such materials and on how the play environments and materials traditionally offered to younger children could be modified to take advantage of this potential.

The educators' representations and reflections were documented using narrative instruments and photographic images, while the children's explorations and play were observed using video-recording.

The paper examines the role played by these tools in the action research process and reports our preliminary reflections on various aspects of the use of unconventional materials in infant toddler centers.

2 THE SPECIFICITY OF UNCONVENTIONAL MATERIALS

This paper is part of a wider investigation on objects and materials in education has been ongoing for several years, focusing on the role that unstructured materials can have within a school setting (Guerra, Zuccoli, in press; Guerra, Zuccoli, 2012; Zuccoli, 2011). These materials were not created with a specific educational purpose, and they permit flexible, composite actions, allowing more open combinations. In particular, the survey investigates the potential of these informal indefinite materials, defined as "unusual" or "non-conventional", thereby emphasizing their characteristics, moving in the direction of deconstruction, which have not yet been fully explored in educational and scholastic contexts.

An example is industrial waste materials, which are generally new but not finished, normally parts used in the construction of other objects or processes and are therefore generally not immediately

recognizable. As elements used to create another product, these materials are afunctional because they were not designed to fulfill a function in an autonomous way. What distinguishes them from recycled materials, which contain meaning and refer to the function of the original object, is their lack of functionality which makes them open to being multi-purpose for different uses, and they can be attributed with meanings and functions by those who use them (Guerra, 2013).

3 A NEW HYPOTHESIS

The experiments, carried out between 2010 and 2013 with children in kindergarten and primary school, are particularly significant, documented in several publications (Marchesi, 2012; Mazzolati, 2012; Rainoldi, 2012; Raiteri, 2011; Sardi, 2011; Sartirani, 2012; Tasca, 2011; Todeschini, 2012; Valli, 2012; Vercesi, 2013). The experiences, conducted by thesis students in about 30 schools, enabled us to develop complex and multidisciplinary learning, constantly stimulating the children's interest and attention. In particular, starting from the use of these unusual materials, we observed important educational consequences in terms of the development and evolution of play, exploration and discovery, symbolic games, storytelling, assemblage and construction games, with evident enrichment both in the logical-mathematical skills as well as in the ability to work in groups. In addition, the experiences took advantage of the diversities between the different realities: the ages and interests of the children, the peculiarity of the context, the intention of the educator. A common base constituted by moving through several stages of proposals and preparation made by teachers, enabled us to accurately monitor the results by singling out the variables while keeping in mind the very targeted observations made throughout (with video cameras, cameras, audio recorders), designed to accompany and better define the planning, always very flexible and ready to gather the phrases, suggestions, curiosities and discoveries of children.

In shifting of research to the ECEC context with children between eight months and three years of age, our new goal was to observe and test the hypothesis that these materials, characterized by their indefiniteness and ductility, could be of interest to younger children, allowing them to carry out experiments that fully involved the body, language, and creativity despite their different sets of age-appropriate skills. The significant differences relating to the development of language, spatial/mathematical ability, play/symbolic skills of this age group, closer to protosymbolic and the early stages of symbolic play (Bondioli, Savio, 2002), raised the question as to whether little-recognizable, identifiable materials could be of less interest in terms of the experience and knowledge for the children involved. The proposals were made in two ECECs, with different contexts, and at a *tempo per le famiglie* (public family play center), where the contribution of parents in the exploratory phase of play was another interesting variable. The preparation of a specific space to propose the materials was a prerequisite, as well as using these materials for free exploration with a small group (maximum of 5 children). The experiences were monitored and recorded.

4 THE TRAINING-ACTION RESEARCH CONTEXT

Designing training and action-research starting from unusual / non-conventional materials which are primarily results of industrial waste means changing perspectives for both trainers and educators regarding play and children's cognitive research. This request for more flexible training highlighted objectives, after years without external feedback, which were to improve the quality of service and in particular to address constant change in the social fabric. The high rate of first and second generation immigration, very different questions raised by new families, offered two choices: either the educators would not evolve, and stick to their tired and true methods and beliefs, or they needed to develop an openness to new ways of organizing, working and towards culture, without forgetting the identity and history of that particular ECEC. Educators who had received this training could be divided into two broad categories: a group that was more willing to experiment with new proposals, a group more wary of change, seen as a criticism of their professionalism. Carrying out training was certainly a complex task. It involved consistent acknowledgment of the work done over time by the educators, together with the introduction of new concrete proposals (specifically the use of these materials), tried in the first place by educators as adults, and subsequently as a proposal for the children, then to be utilized in the ECECs themselves, and finally reviewed together thanks to the videos and photos taken by the trainers and educators.

5 THE THEORETICAL AND OPERATIONAL MODE FOR ACTION-RESEARCH

Throughout this experience, both the researchers, and the educators were aware of the fact that the path would not be linear. There were many points of difficulty and possibilities for discussion and / or disagreement. Their different positions became clearer, and the explanations of their individual strategies were transformed into clarifying elements for the growth of the group. The questions raised were continually revised for everyone: the educators, the administrators and later for the researchers, after the first more formal, general meetings in order to identify the real requests for change, even within the structure of the various ECECs (Craig, 2009; Creswell, 2005) It was therefore during the preliminary observation phase that the questions were gradually defined, made more detailed and differentiated within the three ECECs, which led to the development of an action plan that was not imposed from the outside but chosen by each individual ECEC. In this phase the most appropriate tools were also identified and chosen. Photos, films (Margolis, Pauwels, 2011) proved to be excellent tools for sharing individual experiences in order to reflect on the possibility for detachment (*epoché* or suspension of judgment (Patton, 1990) that allow for the identification of the real possibility for change. The use of visual documentation tools (Goldman, Pea, Barron & Derry, 2007) such as video and photographs was a crucial element in order to think concretely about what was happening, living the participants the possibility to review their positions and thus trigger the possibility for change.

The position of the researchers was questioned, first of all by themselves, in an effort to truly be open to listening, to understanding how the proposals could negatively affect long-standing ways of working. At the same time, we also kept in mind how they could also be profitable and essential for re-activating curiosity, new points of view, changing what stifled the educational space, thanks to the questions posed. Therefore, there was always discussion and exchange of opinions, thanks to the fact that there were always two researchers present at each meeting.

6 TRAINING AND RESEARCH STRATEGIES

The visual documentation tools (video footage and photographs) played a vital role in encouraging the educators to review existing educational beliefs and set off processes for change.

Photos were a powerful way to promote reflection on their work as educators and researchers, as well as a key element to promote professional change, understood as a new way of thinking about public areas, installations, objects offered to children by carefully observing what emerged and was emerging constantly. The educators were asked to photograph the objects routinely used at school, considered powerful vehicles for play/discovery/learning, highlighting which actions used the selected object and how they were routinely offered to the children. Abstracting these objects from the everyday was a way to create an *epoché*, a detachment and an observation different from that used daily, immersed in the rush of everyday action/reaction dyad. From these initial observations carried out in each ECEC and shared with the group, a collection of 54 photographs, with as many objects and materials gave us an overview of the proposals offered to children. This first survey of what was available and considered valuable in each ECEC also included descriptions of the types of activities designed, and then realized. Many defined objects emerged, along with furniture, traditional toys, creating a collage of very diverse educational settings. At the same time, rich and sustainable immersion and contact with usual and unusual materials offered by the trainers/researchers was set up. Contact with these unstructured materials was initially spontaneous, aimed at discovery and experimentation, and only after were more accurate reflections made by filling out forms for each material, which included a detailed description and a graphic representation, first sharing the content in small groups and then in the large group. These were the items included on the form: material name, size, visual description / sketch, photograph, observations, possible category, additional notes, initials of the person who made the categorization, date. Following this initial categorization, small groups worked together to link these materials to an action to propose to the children by identifying and planning the materials chosen with a rationale, objectives, the space and the set up, always including the motivations, observations, and then setting up these objects, letting the other colleagues and researchers observe them and try them out. This experience highlighted these dyads: matter vs. materials; ductility vs. structure, negotiation vs. spontaneity, exploration of concepts vs. experimental actions and creations.

Following this first phase, we carried out a workshop on materials, making it possible to reflect on the relationship between the assumptions of the adult and the proposal offered to the children. At this stage, we introduced - in parallel with the in-service training- experimentation with materials for play by the children of different classes in the ECEC, videotaped both by the educators involved and the researchers-trainers.

After, videos were viewed, analyzed and discussed with the educators, who were surprised by the duration of the proposals, and the involvement of children. In particular, the discussion centered on the comparison between unstructured, heuristic materials traditionally used in ECECs, and unconventional materials. The diverse way the children approached these materials was evident, possibly attributable to their unique qualities.

A final proposal based on this visual material, involved firstly discussing photographs related to the ECECs involved and of other ECECs that have already worked on the theme of waste materials. The photographs allowed everyday life to be analyzed and discussed, but also led to comparison with other schools that were not familiar to each other, and secondly to open to other possible set-ups and other modes of use.

Viewing photographs and films of other ECECs was particularly relevant during this phase of training, because it was not seen as detached criticism of what the educators were doing every day, but as a possible choice among many others, comparing their work with that of others. Each photo showed countless other possible solutions and the many aspects highlighted during the training. There were many requests for contact with other schools and their diverse histories, with strongly characterized pedagogical identities, to experience other possible ways of organizing the ECEC, setting up spaces, offering meaningful experiences for children.

7 IDEAS IN EVOLUTION

This action-research has undoubtedly brought some significant changes in the teachers' ideas in relation to children's play environments and materials meaningful to their growth and learning experiences.

In the initial phase of the action research, the encounter with unfamiliar materials, those attributed culturally and educationally with little value, those considered similar to others already used like those that are recycled, aroused suspicion, but above all the feeling of being in front of something obvious. The lack of the habit of in-depth observation of what is put into children's hands, the lack of firsthand experience, reliance on untested hypotheses, easily leads to not recognizing the differences between contiguous proposals, which are in reality not the same, and, at the same time, to difficulties in setting up a meaningful learning context.

Working in direct contact with materials through experience as well as analyzing visual materials such as photographs and videos creates a focus on detail and leads to in-depth investigation of the specifics of each proposal offered to the children, and rendering noticeable the specific elements and emphasizing the differences. This consequently led to new, more refined expertise in the design and preparation of contexts for children's play, enriched with meaning because they become more sophisticated and complex and at the same time more focused and responsive to the needs and the different groups.

It is important to note the specificity of play materials proposed to children was an additional element of value in this research and training experience. On the one hand, they constituted a powerful provocation for educators, which went beyond their apparent obviousness and gradually revealed a surprising richness of possibility.

Secondly, experiences with the children showed the educational potential inherent to them, for both educators and researchers. They not only offered elements of interest in comparison to more traditional, structured materials, but also interesting and specific particularities in relation to other types of unstructured materials, such as those typical of heuristic games.

If, in this type of game the child experiments with small-sized materials, with the quantity and type selected by the adult, exploring them with eyes, hands and mouth, when using unconventional materials – objects with a greater variety of sizes, less recognizable than other finished materials used daily - the whole body is involved both in a static way but also through movement in these encounters with unknown objects. The non-recognition of the materials, which for the older children is a feature that promotes the attribution of subjective meanings, does not seem to be a limitation for younger children, such as those at ECECs, who seem to be able to adapt the uses of unconventional materials to their needs using a variety of strategies.

In this sense, the combined use of non-conventional materials and visual documentation materials seems particularly profitable, because they create the chance to stop and reflect on new experiences, thereby favoring their value and the deepening of the specific proposals while supporting pedagogical and didactic choices.

8 CONCLUSIONS

Working with unconventional materials supported by visual documentation means shared rethinking of objects and tools used for some time in ECECs.

In particular, the experiences with children and the correlated videos were the central part, offering a real opportunity to reflect on the potential of the proposed objects. Some of the resistances have been revised, because the experiences of the children with these materials were surprising due to their actions and involvement.

The carefully selected video footage opened new thoughts on the part of educators who rethought certain angles, certain spaces, materials and objects proposed.

Resistances were not completely resolved, the difficulty to read the reasons that support the educational choices in-depth continues, the motivation to change is not consistent, space for more articulate discussions and imagining new possibilities has opened up.

An interdisciplinary viewpoint was fundamental in the analysis of the children's actions and reactions, as numerous current studies attest (Thorne, 2007). Researchers and educators must have a different overview when faced by concrete actions of children in order to go beyond obsolete, wearily repeated practices, they need to ask themselves questions and imagine and implement new scenarios.

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