Pædeatric Intensive Care Unit: a learning site for health professionals[1]

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Abstract:

This text stems from the main conclusions of an ethnographical study carried out in a pediatric intensive care unit; the aim was to characterize the training experiences and processes of nurses and doctors, as well as to develop the role of training in a work context with a close connection between clinical practice and training practice. It focuses on the experience of the actors themselves, their characteristics and interactions, learning strategies and the way they develop their training. The study set out on the assumption that these health professionals obtain knowledge acquired in work contexts, based on experience, reflection of practice, informal and non-formal learning processes. The research has been developed around a central issue: How are nurses and doctors trained in a pediatric intensive care unit? In other words, how do nurses and doctors learn pediatric intensive care? In an attempt to address this issue, the training backgrounds and processes of the *learning by doing* of these health professionals has been presented.

Key words:

Training in a work context, Experiential Learning, Ethnographical study, Pediatric Intensive Care.

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INTRODUCTORY NOTE

The description of a certain reality is far more objective if we are able to understand adult learning within the context of an individual's life and in the relations he/she establishes with the environment. The development of training within the work context enables one to make knowledge and space profitable, integrating a training dynamic in clinical practice which radically opposes the exteriority that has characterized training in health units; on the other hand, it is possible to outline strategies and find alternatives for making work and training time and space coincide. From this perspective, the individual learns because he/she experiments, lives, reflects, *learns by caring and cares by learning.*

So, within the scope of a master dissertation which gave rise to the publication of a book (Bártolo, 2007), we tried to address issues such as "what they learn", "how they learn", "with whom they learn", by means of profound, detailed knowledge of training situations and periods.

The object of this research study is the training of nurses and doctors within a work context and it focuses on the specific learning of performance, which results from the actual practice of work in a particular context. The methodological strategy used was the ethnographical study in a pediatric intensive care unit of a central hospital.

Two main techniques were used to collect the empirical information — participative observation and the semi-structured interview, as well as the analysis of documents. The field work was developed over a period of nine months where different descriptions of the various agents, moments and observed situations (in which we participated) took place and gave rise to a variety of registers. The latter was at the root of a *corpus* made up of all the material collected on the ground for analysis: field memoranda, observation reports, informal conversations, diaries of the agent and interviews. Content analysis was used for the processing of data.

The systematization of the main results led to the identification of activities and interactions from the clinical practice context which sustain the agents' training backgrounds and processes, thus, also involving us in a learning *continuum*: *from basic training to the context, from clinical practice to continuous training, from training to the development of knowledge and skills.*

TRAINING EXPERIENCES

From basic training to context

Basic training is marked by the absence of the practical component and particularly the learning of behavioral techniques. Doctors refer to the fact that the exclusively academic concern with a search for results (not in order to learn, but to finish a course and obtain a diploma) leaves many gaps in the system and the health professional is inadequately prepared for direct contact with the patient. This perspective is in keeping with the acquisition of

qualifications and not the development of competencies (Bellier, 2000; Canário, 1998).

The reasons which determine the choice of individuals for entry in the pediatric intensive care unit are based on previous experience acquired in other, more general units and which provides greater confidence and, inevitably, more in-depth knowledge by means of the conceptual bridges that are established between the different contexts (Kolb, 1984).

The main specificities we are confronted with are the complexity and criticism of in-patients, functional breakdown and the need for strict control, taking us to the technological component of these units, namely artificial ventilation. The latter, in addition to being technically demanding, has also anchored all the emotional, ethical, moral and relational consequences requiring coordination of the health care team. The unit is presented as a work *context* characterized by insecurity, the unexpected, the constant adaptation to new situations where there is no routine. The enclosed nature of the unit is another aspect that is mentioned which, in association with critical clinical situations, propitiates job-related fatigue and stress. The intensity of the day to day life in a pediatric intensive care unit is associated with a young team of professionals (mainly nursing), due to the pace and demand of the technical demands. While many characteristics point to technical and relational demands, others reveal the personal and professional satisfaction of the teams.

Life in the unit is characterized by the accomplishment of variety of activities, by the establishment of interactions, the management of emotions and relations and forms of unit management and concern, mainly on the part of the nurses. Nursing management is based on the sharing of responsibilities and aims and collaboration in decision-making. This dynamic is in keeping with notions of commitment and team involvement for organizational development (Senge, 1990). Furthermore, this type of management calls for participation and innovation, something which contributes to the socialization process in the constant adaptation of the professional to the social environment in which he/she is immersed (Rocher, 1989).

The *interpersonal* relations characterize each working environment, making it unique and different from any other social system. This dimension emerges in the provision of health care, in the activities carried out, in all interactions, thus, conditioning the entire life of the unit. Work relations and the participation of individuals in collective activities are of extreme importance, since they contribute to the construction of professional and social identity (Dubar, 1997).

Opinions are divided as far as intra-team relations are concerned; they are either positive, such as the importance of a team/group spirit, or negative, such as professional devaluation.

Nurses reveal a strained relationship with the medical team, conveyed through access to clarification or response to a particular situation. This perception may be associated with professional immaturity or inexperience, which is not the case of two of the nurses who have been at the unit the longest. On the other hand, this may be interpreted as a lack of acknowledgement of the nurse's skills on the part of the medical team, since, as Le Boterf (2003) defends, in spite of accomplishing a particular aim, competency is not obtained without the recognition of third parties.

The nurses identify deficiencies in terms of professional relations (a topic used for intra-team reflection and the adequation of strategies towards the team of doctors) and the sharing of clinical information (the doctor feels that such sharing takes place while the nurse is of the opinion that the information he/she has regarding the patient is not taken into consideration). Technical and relational demands do not detract from personal and professional satisfaction as the confrontation with difficult situations, namely the management of parental suffering, leads to good interaction and a positive doctor-nurse relationship.

The complexity and diversity of intensive care unit practices give rise to a great many multidisciplinary interactions, and also, within the context, to multiple, articulated and complementary inter-related activities which heighten the learning process.

Clinical practice gets the actors involved in a multiplicity of gestures, techniques, procedures and attitudes which may be associated with individual and collective care: individual care gives priority to the interaction of the nurse or doctor

with the sick child; collective care stands out for its multidisciplinary interaction, where nurse and doctor interact with partners, displaying an interdependent attitude. Collective, shared care also calls for the integration of multidisciplinary knowledge. The fact that the health care team uses only one registration instrument is a sign of that the two activities, nursing and medicine, are well integrated.

The *handing over of shifts* is not merely a meeting among nurses where the clinical information of the patients is exchanged; this period is used for a number of different reasons, one of the most important being integration in the context of pediatric intensive care and subsequent learning of new situations. This period allows nurses a moment to stop and look, analyze, discuss and criticize their practice which, according to Hesbeen (2000), is the essential condition for nurses to develop their personal skills in the provision of care.

The shift handover is used to clarify all the information on the children admitted to the unit, thus, giving rise to a definition or redefinition of strategies; the final stage in the shift handover may be used to share technical and scientific information resulting from participation in previous training experiences.

The management shift handover enables the actors to partake in a non-formal learning experience whereby, according to Descy and Tessaring (2001), they are provided with unique skills which have been given little importance up to now. The diversity of learning contexts and opportunities urges for acknowledgement of this modality and greater articulation between formal and non-formal learning experiences (Pires, 2002). This moment is well-valued by the participants, since it is a privileged learning situation where different modalities (non-formal and informal) are integrated (Canário, 2000).

The disposition of the actors in the *doctors' rounds* does not follow a particular criterion. Indeed, the moment is often characterized by informality. In most shifts the patients are not distributed among the doctors who are on duty, which indicates the need for the medical team to be in control of all the children admitted to the unit.

The fact that the nurses actively participate in an activity that is traditionally exclusive to doctors is worth mentioning. The way the group acknowledges the importance of pair work is favorable to personal investment and commitment (D'Espiney, 1997). On the other hand, the participation of the nursing team during this round encourages the creation of an environment favoring collective learning, as suggested by Senge (1990) and Bolívar (1997).

As with the shift handover, the doctors' rounds also have different aims, namely to provide an important contribution to the integration of new doctors in clinical practice. This dimension confirms the perspectives of Grant (2002) since, on the one hand, he considers learning on the basis of supervision and receiving feedback to be fundamental to a new perspective of post-graduate training, while on the other hand presenting and systematizing information is also regarded as an important learning component.

As with other unit activities, both the shift handover and the doctors' rounds have a multiplicity of functions; the exchange of clinical information often gives rise to relaxed moments which are indispensable to the management of emotions in a unit with these characteristics.

Conversations with parents occur frequently in the unit and can be both formal and informal, depending on each situation's level of demands. The presence of the parents in the unit gives them the status of partner in the provision of care, which has been confirmed by the constant sharing of information/decisions. Parents are called upon to give their opinions even in complex situations related to therapy investment, due to the fact that the complexity and difficulties surrounding bad news are attenuated if empathic communication is established and if this contact is shared (Mueller, 2002).

Sharing bad news among colleagues is a team strategy where good articulation is of vital importance and where communication with parents is reinforced, given the complexity of bad news. This perspective ties in with the frequent, clear and consistent communication, defended by Hazinski (1997), with the parents of children admitted to a pediatric intensive care unit.

TRAINING PROCESSES

From clinical practice to continuous training

The training potentialities of the work context and situation are conditioned by the type of context, the existing relations and decisions taken, but are strongly characterized by the communication established. Videira-Amaral (2001) refers to this dimension as an essential territory of professional practice. In the context under study we approached communication in terms of passing something on to the family —clinical evolution, prognosis, bad news as well as the communication established within the team. In the former, we encountered a constant preoccupation with empathic communication, conveyed in the clear, systematic information passed on to the family. In the latter, we found good intra and inter-team relations, with some deficiencies in the sharing of decisions.

The *problems and difficulties of clinical practice* are perceived by the actors as being the stimulus and impulse for learning to occur in a work situation context. The actors refer, almost exclusively, to the area related to bad news and the strategies they have learned to use in this daily confrontation within the work context, considering the solving of problems an essential aspect for acting in the future. However, emotional problems and difficulties are what are most important in the daily life of the unit; they are present in two fields: the relationship with parents and investment versus impotency. As far as the relationship with parents is concerned, the biggest constraints are related to bad news and all the stages involved with the situation. As Mueller (2002) mentions, developing the empathic communication skill is a fundamental but difficult task, since these moments are experienced with a considerable amount of suffering on the part of the unit's professionals; while, on the one hand, getting closer to the parents is a requirement, on the other hand it is also necessary to keep a distance, which is one of the most difficult aspects to overcome.

Another problem of the intensiveness is related to the therapy investment, namely when the team is not in agreement about decisions regarding extreme situations. In pædiatric intensive care, this situation takes on even greater importance due to the fact that one is confronted with young people at the end of their lives while they are also still at the beginning of (Vale, 2001). The weight of the technical component and resort to artificial ventilation postpone clinical decisions based on non-investment. This causes the doctors of the unit to experience anguished dilemmas in view of their powerlessness in the most difficult situations. This perspective reinforces the importance of the holistic care dimension and the accompaniment of a person's entire life cycle. It is not easy for health professionals to accept that letting someone die is also looking after one's neighbor. Death is what is presented as the most difficult problem for the team to manage, not just because of the emotional load but because of the afore-mentioned powerlessness.

In addition to the emotional problems of dealing with critical situations, the actors refer to problems regarding intra-team relations. These emerge on the basis of divergences both in clinical decisions and the techniques being used. Clarification of the type of relational problem has more to do with the absence of a common management language, as our overall perception is of a good intra-team relationship.

Nevertheless, according to Dubar (1990), the type of learning which takes into account the real problems encountered while performing job duties is of much greater importance and leads to an interdisciplinary learning situation.

Problem-solving strategies are managed by the actors on the basis of previous experience and the learning they accomplish when confronted with problems/difficulties in a work situation (Kolb, 1984; Couceiro, 1996). For example nurses movingly refer to using the validation of information with parents at the moment of bad news and individually managing emotions. Overall, both doctors and nurses mention falling back on colleagues in some problem-solving strategies and difficulties, which is referred to by Nóvoa (1988) as the path leading to actual *training*, in other words, working collectively around problem-solving.

The use of the mother of a child to teach professionals how to deal with different situations is presented as a curious and innovative detail which reflects the formative dimension of the relationship with the patient or family. This fact is stressed by

Dominicé (1988) since it is not the event itself which determines the training process, but the solutions that are found and the meaning attributed to them by the subject.

From training to the development of knowledge and skills

The strategies and forms of *training* used are distributed around different modalities but, above all, they are detached from the mere transmission of scholarly and academic knowledge (Abreu, 1994) and from reality itself. From a more formal manner, such as training away from the context, or in-service training to a more informal way of conceiving and developing training — conveyed, mainly, through experience and in-service training - the actors give value to the formative potentialities of the work situation. The strategic recourse to the work team and to multi-professional knowledge is very clear in collective learning, on both relational and technical levels.

The actors perceive the concept of training as a dynamic structure (Malglaive, 1995, 1997) closely associated with the creation and development of skills, but equally characterized by the need to address the requirements of the context, in a constantly evolving work system, such as is the case in pædiatric intensiveness. The informal nature of the training process is valued by the actors, since the poorly structured situations of daily life, even when produced unconsciously or unintentionally on the part of the addressees, correspond to potentially educational situations (Canário, 2000). Members of the health team in the unit refer to the mobilization of knowledge in context and its applicability to the work situation as being essential to formative practice.

Self-training is often based on the reflective dimension that a particular actor impresses on his/her practice, in the sense that it encourages time and energy to become available, which does not usually occur in daily activity (Couceiro, 1996). This self-training dimension is clear in the discourse of the different actors, in the reading, study and research of the greatest variety of sources. It is a well known fact that pædiatric intensive care units require continuous technical and scientific upgrading, and so their professionals approach this concern with a spirit of continuous improvement, wishing to learn in order to do better. A different, but perhaps more complete perspective is related to the need to be updated, prepared to act and, hence, to use the different available resources — literature and medical knowledge — which, according to Canário (1997), results from a confluence of different sources: science, experience, interaction (social) with partners, other professionals and patients. Difficulties and problems seem to fall more along the lines of needing to train oneself, to finding answers or solutions to the technical, relational and emotional challenges these units bestow upon their professionals.

In-service Training is an increasingly frequent practice in the unit. Although initially made more dynamic by the nursing team, today it has a much broader scope and includes the participation of the entire health team and its multi-professional nature is the main theme of discussion in many of the sessions. What is at the root of this form of training is the fact that there are errors in clinical practice. The error emerges as a problem which may be solved by means of training and, as something very concrete and specific, which should be eliminated by falling back on the context and the actors themselves. According to Macdonald (*in* Grant, 2002), the error is an important component in learning in a professional context and is well regarded by this team of health workers. Despite the formal nature of this activity, the content responds to a specific practice problem and the use of technical demonstration facilitates team learning. In-service training is also used for the sharing of experiences acquired in another context, in which importance is given to scientific knowledge.

In-service training has gained more and more importance in the life of health units, since the training activity and the practice of healthcare are concentrated in the same space; the actors are trained in the same spaces and at the same time through a reflective attitude in a work situation where action and training are brought together (Abreu, 1994). This modality values the experience, performance and practice of individuals, providing material for reflection and preparing them for a more specific type of learning (Newman & Peile, 2002) — the practical side which, in addition to being acknowledged and well regarded,

is also associated with the work situation, in the day-to day life of the unit.

The actors acknowledge that the work context provides them with problems, difficulties and new situations, and it is precisely this work situation which is the raw material for learning (Barroso, 2003). In the specific case of the pædiatric intensive care unit, the fact that a vast amount of information and experiences has to be managed is, in itself, a basic aspect of learning (Ruza Tarrio & Ortega, 2003).

The daily rounds (of doctors and nurses) during which the clinical cases, therapy investment, relational disorders (between parents and technicians), the decision to reanimate or not are discussed, take on a crucial, highly formative role. The planning and accomplishment of daily unit activities allow doctors and nurses to construct skills which could not be developed so effectively in a training classroom and which are primarily accessible through forms of experience (Abreu, 1997) such as: preparation and accomplishment of rounds, negotiation (technicians/family/patient), the planning of care and management. Such behavioral learning during the work activity is reinforced by integrating a new doctor in the care unit through the way he/she intervenes and converses with the group. However, the technical component is also given importance by means of in-service training.

The progressive accumulation of experiences produces scientific knowledge (Ruza Tarrio & Ortega, 2003), and it is precisely *experience* that nurses and doctors stress in their learning; they focus the mobilization of knowledge on clinical practice and on the pædiatric intensive care context. According to Kolb (1984) the use of theory and practice, the potentialities of the context and the individual's skills all interact in an integrated manner, thus, giving rise to experiential learning. Such learning through experience is highlighted by the actors from a technical stance. However, the emotional aspect is also mentioned by the actors as having a particular effect on the way the difficulties related to critical illness and bad prognosis develop this learning experience.

In the current context the previous experience of some actors has been used as a stimulus for learning and development and, by underlining the role of experience as the biggest resource for learning, taking the adult to be the holder of a variety of experiences, reinforces one of Knowles' (1990) principles.

Reflection on practice in a particular context, at a particular moment is valued by the actors, which confirms the theory of Schön (1987). Our thinking serves to reconstruct what we are going to do while we are doing it. From this perspective, the role of practice is central to the production of skills, which is optimized by working with the critically ill child and his/her family.

Training away from the context has arisen as a result of the identification of needs in professional activity and from daily reflection on the problems of clinical practice, with a view, in specific situations, to developing the skills needed to mobilize the theoretical and technical resources acquired during the training period. This resource is valued by the actors and takes on a strategic dimension in the life of the unit, with its need being justified in different ways: comparison with the scientific community (Grant, 2002) is one of the aspects considered to be important; the need for knowledge, which characterizes adult learning (Knowles, 1990), is important in so far as these professionals need to know the reasons for learning and its use; the challenges of practice which trigger the feeling of needing to learn in the actors; the fact that they can reflect away from the context facilitates concentration during training; finally, since these professionals associate exterior training to the acquisition of scientific expertise (Benner, 2001).

On the other hand, training performed away from the context not only establishes the acquisition of scientific knowledge, but also guarantees its applicability to the unit; only in this way do the actors view such investment as being beneficial. This modality is often structured as a training internship based on observation or practice and is referred to by the actors as one of their most enriching learning situations, where new technical, scientific and organizational knowledge is acquired. The actors are of the opinion that individual training should be shared in order to contribute to the growth of the team and to the management of organizational knowledge (Senge, 1990).

The role of the *team* in learning is valued by the actors and normally occurs on an informal level.

The strategic recourse to multi-professional knowledge is very clear in this collective learning situation, both in relational terms and on a technical level.

The work team is acknowledged as a source of permanent support to problem-solving. This fact is expressed by both nurses and doctors and presented from a perspective involving the clarification of doubts, but also on the assumption of a humble and open mind, characterized by the need to learn.

Intervention on the part of the team is central to the process of integration within the unit. Doctors regard it as an extremely important area of training; nurses are more concerned with the quality of the integration program which will give rise to a quick and effective socialization process, and view the integration procedure as a continuous and dynamic process, to which all the actors contribute. In this context monitoring and the team leader are of crucial importance.

Group work is increasingly used by the healthcare team in the unit; it accomplishes different aims which involve the furthering of technical, scientific and relational knowledge. In accordance with the perspective of Argyris and Schön (in Bolívar,1997), this practice contributes to group learning, since nurses and doctors cooperate with each other in order to accomplish common aims. Senge (1990) underlines the idea of obtaining extraordinary results within a group of people working together due to common aims, the confidence established and to the fact that they complement each other as a result of the organization of learning. The unit's health care team confirms this learning disposition around common aims both within the formal, organized work group and during day to day practice.

The pædiatric intensive care unit provides a strong contribution to the *development of knowledge and skills* process, in that its professionals are constantly putting their theoretical and practical knowledge into practice, and it is on the basis of this confluence that new professional skills are born.

The *technical skill* results from knowledge that is mobilized in work situations; its dynamic nature, based on accomplishment through action, emerges in the discourse of the actors (Le Boterf, 1997). The team displays particular concern with the training of technical skills, so that members may become experts (Benner, 2001) in reanimation procedures; in this case the skill is interpreted as being of a high specialization level, associated with a specific work post (Descy & Tessaring, 2001).

The strict evaluation carried out by the nursing team of all the accomplished procedures and the precise knowledge of the children's clinical situation convey concern with technical mastery, and are good indicators of the technical knowledge produced in the unit.

The relational skill is an aspect that is present in all areas of the research, combining and mobilizing a whole set of knowledge and resources. The pædiatric intensive care unit, a context in constant evolution, displays professional skills and profiles related to personal aspects and qualities — knowing how to behave (Pires, 2000). Intra-team communication develops this skill, backing the perspective of Le Boterf (2002), who defends the need for knowing how to interact with others in order to act skillfully; not only the individual resources give rise to competency, but also the combination of these resources with those of the other members (knowledge, know-how, qualities, culture, experiences). The relational skill reaches its peak when a confrontation with complex problem-solving situations emerges, or with situations involving bad news, a bad prognosis or death. In these contexts, previously acquired knowledge is activated.

Responsibility is one of the main skills put into action by the actors in the unit. The term is used indiscriminately, both in terms of characterizing the subject and in the specific action itself; however, concern with good practices is limited to the technical field.

New management practices, open to the participation of the professionals, may be found in the unit under study, and so the mobilization of transversal skills such as autonomy and creativity take on a particularly important role (Barroso, 1996). From this perspective, the field covering the limits of clinical intervention, which are clear for some of the actors, may be included in this area. The notion of limiting the area of intervention seems to be related to the risks involved in bad practice and the actors themselves are the ones to acknowledge the importance of *autonomy,* responsible autonomy, however. The integration process in the unit strongly contributes

to this progressive acquisition of autonomy, as set out in the integration programs of the medical and nursing teams.

The new work situations, and also those involving greater complexity, test the creative ability of the health care team. Each stage creates a new situation requiring evaluation in order to start off on a different path. The more difficult the situation is, the more knowledge is mobilized: recourse to previously acquired knowledge in one context or another brings about the development of new skills such as *creativity*.

FINAL NOTE

This research study has highlighted the formative potentialities of a particular health unit where the practice of nurses and doctors confirms integration between the field of training and the field of action, thus, displaying better articulation between a training and work situation. Participation and involvement in continuous training are fundamental to the healthcare team in the unit. Nurses and doctors use different strategies from a diversity of complementary resources, giving value to the pedagogical potential of pædiatric intensiveness.

The intensive care unit is a space for the transformation of professional skills, in a continuous training process, where different knowledge is mobilized in the work activity. The interactions of its professionals in the day to day life of the unit provide an educational context, from which new, practical knowledge emerges, acquired directly through the performance of work duties.

Continuous professional training has been at the root of many transformations in health institutions and we by no means intend to forget this unquestionable value. However, its traditional, academic form, dependent on community co-financing has started to exhaust the potentialities for the development of its professionals and the actual organization. These educational units will have to leave behind the exteriority which characterizes them and begin to view the work context and clinical practice as a *new form of training*.

Reality is not discovered, it is constructed in a situation which has always given priority to a logic based on the understanding of the training processes which occur in a work context. Our access to the point of view of the actors has enabled the construction of a new discourse based on a relationship of trust which, as far as we are concerned, is the best instrument for collecting data.

Endnotes

1. Paraphrased title of a book by Rui Canário.

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