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EDITORIAL

Loving doubt in dental education

Amar la duda en la educación odontológica

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«Doubt is an uncomfortable state; intellectual certainty is a ridiculous state.»

Miguel Ángel Santos Guerra,
Professor at the University of Málaga.

Dental practice cannot be considered a mere direct application of theory; rather, it must be seen as a complex, uncertain and changing scenario where interactions take place. These interactions are worthy of being observed, related, contrasted, questioned and reformulated, since they can be considered spaces and processes that generate new knowledge.[1] Constant interaction between theory and practice constitutes a creative and dynamic loop, which expands knowledge and transforms reality by transforming the subject who knows and acts as a consequence of his own interaction with reality. This is directly related to clinical practice guidelines, which must be considered an adjuvant in the attention granted to the patient. Nevertheless, these guidelines cannot be considered an accretion of norms which must be followed to the letter.

Stated and verbalized theories, theories in use, as well as knowledge in medical and stomatological clinical practice of the individual, constitute interdependent and related universes which nevertheless are independent and sometimes discrepant.

The professional, social and personal daily life of a subject in general, and of a health professional in particular, constitutes an unpredictable, uncertain and complex scenario, loaded with values and pressured by the urgency of immediate reactions. Within the scope of this scenario, theories in use, and non-declared theories, –that is to say, practical thought– are the governing elements of the interpretations and actions of the health professional.

Current research raises few doubts on the holistic and emergent characteristics of practical knowledge. Practical thought seems to be the appropriate location to understand the invariable but complex integrations of rational and logical elements with impelling and emotional motives of our interpretation and systems of action. It is composed of a repertoire of conscious and unconscious images, maps or artifacts which bring about information, logical associations, desires and emotional connotations. Meanings or representations built by human beings, and re-built in their interactions, possess cognitive and emotional components, either conscious or unconscious, which are indissolubly integrated into the complex representation unit. The complex nature of thought and human behavior cannot be comprehended without its evaluative emotional component; we are emotional beings supplemented with a very fine touch of rationality.

Learning involves reconstructing,[2] restructuring,[3] consciously and systematically rediscovering the framework of representations or meanings which all subjects have been building all along their personal history as a result of interactions within the scope of daily scenarios.

Learning involves increasing and re-thinking knowledge acquired from lived and thought experiences of all subjects to increase horizons of new experiences and new knowledge.

This is about becoming involved in an endless knowledge spiral to assess application of knowledge itself[4] through the processes of experimentation, demonstration and contextualization,[4] nevertheless achieving increasing knowledge and experience, as well as the possibility of applying them in a realistic context *(Figure 1)*.

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Students build up knowledge by interpreting, analyzing, assessing, and at the same time intervening,

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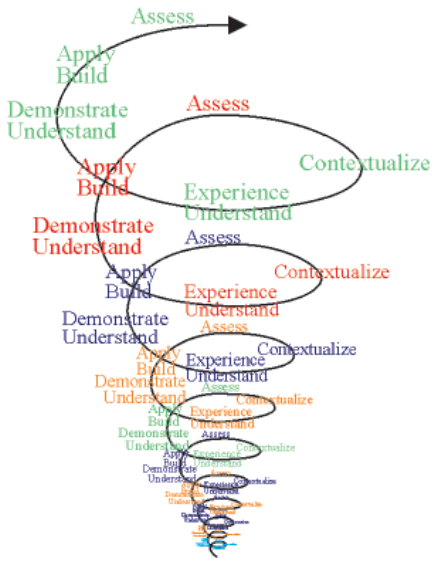

Figure 1. Ascending spiral of knowledge.

not simply reciting information. Educational endeavors must encompass sufficient humility so as to carefully listen to new knowledge manifestations, thus guiding the apprentice's correct interpretation.

Worthwhile knowledge in dental education possesses usage value, to discover and create new horizons or to solve problems and improve quality of life. The exchange of knowledge for grades must in any case be a mere secondary condition.

Within the scope of this epistemological perspective, scholastic or curricular composition of practical knowledge in general and of dental knowledge in particular advises the following:

- Begin with open issues and real problems (problem-based learning), granting special attention to uncertain and controversial areas.
- Use primary information sources. The patient is the privileged source of information.
- Question commonplace concepts, create new proposals and clinical interpretations, responsibly experiment within the scope of practice, and use new knowledge acquired in new contexts are the most valued methodological and didactic procedures.[6]
- Foster cooperation, grant true value to the «concept inter-disciplinary», thus generating debate, synergy shared resources, contrast of experiences and opinions. Medical students must face discrepancies among research publications when dealing with controversial issues; they must assume the constitutive relativity of human knowledge and thus, make the best possible decision.
- Emphasize concentration in the work area or attention focus that requires immediate solution, through a diagnostic analysis of social needs. It is advisable to perform this, rather than encompassing endless information and encyclopedic collections and data, which, although exhaustive, at the end of the day, bear no practical use.
- Perceive a curriculum as a set of relevant situations and problems, either of disciplinary or interdisciplinary nature, which represent a challenge to the action and comprehension ability of apprentice doctors, rather than as a set of juxtaposed disciplinary fragments; it is not sufficient to teach decontextualized disciplinary contents (anatomy, physiopathology, genetics, ethics, internal medicine, etc), it is then necessary to define those situations in which apprentice dentists can build, modify or refute skills and knowledge with the use of disciplinary contents. Teachers who value this manner of perceiving a curriculum provide students enough time to think about problems require further work, as well as other peers with whom to reflect upon it.[5]

Within the scope of dental science, as well as in the rest of areas devoted to health, the true value of the teacher or tutor lies in the knowledge of how to guide the apprentices, so as to achieve a better version of themselves. They must exhibit interest in their achievements, accept the clinical challenges this might entail, forego the idea of being living encyclopedias or luminaries. In our days, bearing in mind the accumulation of information handled in the media, any health professional with the task of forming human resources who wants to impose his theories and consider them as the only true theories is hopelessly condemned to failure.

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