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Teaching from practice to theory

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Cognitive processes seem to be highly activated when curiosity intervenes as motivational energy in the classroom. This conclusion is reached after a teaching experience in a metallurgy class, with students from a technical school with low interest in learning and studying. Unlike the traditional sequence of teaching materials in which crystalline and atomic models are studied from the literature to later arrive at a phase diagram; this experience begins directly in the laboratory with students doing cooling curves for the alloy of two metals. After this, students make metallographic specimens with the solidification obtained. This experience results in a research activity by which students observe a phenomenon, measure values, verify changes and transform two metals in a number of phases before they study the theory. In this way, students understand the theoretical explanation as a necessary element to further delve into the scientific activity as opposed to pre-established knowledge that is imposed on them.

Biography

Mario Pablo Spector is Director of the Materials Laboratory at National Technological University in the City of Parana (Argentina) and teaches Metallurgy at a secondary technical school. His main field of research interest is implantable metallic prostheses. The Laboratory he leads performs work for companies and hospitals, especially in connection with the quality of the material, machining, and finish of metal prostheses, and prepares university students in the Metallurgy field. "Applied research" is also an important aspect in his work, focusing on the area of Micro-Bio-Metallurgy, in terms of the relationship between metals and bacteria.

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