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**Mental arithmetic and conceptual understanding: The pedagogical struggle for the deaf in the late nineteenth century.**

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Summary: This paper contributes to the historical examination of the pedagogical struggle in teaching arithmetic to deaf children in schools for the deaf during the late nineteenth century. By using primary sources (e.g., American Annals of the Deaf and Proceedings of the Conventions for American Instructors of the Deaf), this study brings to light a new understanding of mathematics instruction and curricula for the deaf during the late nineteenth century through a detailed analysis of the struggle at the time. The founding of the National College for the Deaf-Mute in Washington, DC, and the emergence of vocational programs in schools for the deaf in response to the rapid advance of the Industrial Movement in the late nineteenth century brought educational professionals of the deaf together, and the debate on mental arithmetic and conceptual understanding ensued. In terms of teaching arithmetic to deaf students, the pedagogical pendulum swung back and forth. As teachers of the deaf attempted to define effective pedagogies in teaching and learning for mastery in arithmetic, some supported mental arithmetic as the best avenue to mental discipline, accuracy and rapidity. On the contrary, others argued that the visual avenue to conceptual understanding first would bring appreciation of mathematical knowledge and relationships between the concrete and the abstract. The majority of the teachers of the deaf concurred that understanding practical mathematical applications was as important as the knowledge of arithmetical concepts in order to enter higher school institutions or to secure a job, as society moved from the agricultural-business sphere toward the industrial-business sphere. Mastery in arithmetic and applications of arithmetic to the workplace were the gravitational forces that pulled the pendulum to the center.

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