

## SHORT ESSAY

## Theme-based research and education on sound and hearing

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Japan is not only a nice country to live in, but also to do research on hearing. I have had the privilege to work at the Department of Acoustic Design at Kyushu University (originally Kyushu Institute of Design) and at the MEG center of Yokogawa Ltd. (Kanazawa University office). When doing experiments in psychophysics and neuroscience, virtually all the equipment I have used was of Japanese making: NIRS-machines from Hitachi and Shimadzu [1], ERP-equipment from Nihon Kohden, recording/calibration equipment from companies such as Iwatsu, Sony, and more. Japan surely houses some of the best-equipped and most advanced research facilities in the world.

As for scientific research itself, recently I am seeing a trend that I like: an increasing number of scholars are being part of large, theme-based research groups, in which cooperation is the keyword. Rather than working individually on a narrowly-defined topic, Japanese researchers now tend to join forces to investigate a research theme from many different angles, with diverse research techniques and contributions from each individual group member. Maybe this trend is catalyzed by the project-style “kakenhi” application format, along with university/institution policy to create “centers of excellence.” Anyhow, these groups do research that agrees with the ever-growing need for multi-disciplinary, multi-level research in today’s scientific world.

I have been fortunate to be a part of some theme-based groups throughout my (over 12) years in Japan, once from the start, at Kanazawa University. With a core group of 5 researchers and over 10 staff members, we focused on cognitive and affective development in preschool children [2]. Besides hearing and speech, the focus was also on (multi-modal) vision and touch, investigated through psychophysics, questionnaires/interviews, and neuroscience. A recent publication on speech perception in preschool children of our group had 16(!) co-authors [3].

This sounds like a ridiculous number, but all authors had their contribution: child-psychologists, engineers, cognitive psychologists, medical doctors, research managers—they all did their part. The research environment was stimulating, productive, and, of course, equipped with Japanese instrumentation. Definitely a great experience.

More recently, fairly new to the education part of science, I was impressed to see that here in Fukuoka my supervisors had also embraced theme-based education. Instead of having seminars restricted to students of a single laboratory, there are seminars with members of 3 or 4 different laboratories discussing their work together. Rather than Prof. X’s lab seminar, we have “speech,” “neuroscience,” and “auditory psychology” seminars. Students can get acquainted with research ideas and techniques other than those being taught at their own laboratory, under combined supervision from teachers with their own expertise. To me, this theme-based style of teaching is highly recommendable, since students can learn to think, work, and cooperate with more flexibility. My best wishes to all sound and hearing teachers and researchers in Japan—I hope to be part of this community for many more years.

## REFERENCES

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