

Preface

We hope that our descriptions in this book of innovative schools worldwide, embedded in a framework of architectural psychology, will be able to offer a professional foundation for the construction, renovation, or expansion of existing and future schools.

Interest in this topic has in recent years gained impetus as a result of various studies evaluating pupils' performance in international comparisons, notably the triennial worldwide PISA (Programme for International Student Assessment) studies coordinated by the Organisation for Economic Cooperation and Development (OECD) that assess 15-year-olds literacy in reading, maths, and science as well as problem-solving in general. These curriculum-independent studies with a rotating particular emphasis on one of the three core areas began in 2000, and each successive round has led politicians, educators, and parents – particularly in countries not at the top of the results list – to ask why pupils in one country do better than those in another. Whilst there is, of course, no simple single-factor solution, the importance of learning environments that support various user needs is being recognized. In our search for features of supportive environments, we found that, besides teachers, parents, and other children, the school buildings themselves significantly influence performance, well-being, social behavior, and therefore also, in the end, grades as well as the knowledge and skills that pupils acquire for their future lives.

The success of an earlier book of ours on school buildings and trends in educational architecture in Germany, *Schulen der Zukunft* (Schools of the Future), published in 2002, encouraged us to widen our scope and address the subject on an international level. After all, how an inspiring, stimulating school should be designed will be different in different countries, according to culture and climate. There are commonalities, however, and so our proposals should be understood as a set of criteria that should be examined for applicability, and adapted to the respective local situation.

Many factors have to be considered. Depending on a country's location relative to the equator, the north or south face of a building may serve to provide cooling shade or contribute to heating the structure. But what counts as the optimal temperature is very similar in hot and cold climates, and for mental work

is around 21–22° C (approximately 70° F). And depending on the climate of a specific region, one might use cool or warm colors to compensate for actual temperature deficits. Then again, there are cultural differences in the symbolic meaning attributed to colors, which will influence well-being. The need for privacy is also very different in various cultures.

User participation in the design and building processes is usually implemented according to the degree of acceptance of the organizational effort it requires, but in the view of experts it is vital for the long-term acceptance of buildings. Information technology enhances the communication of knowledge even across considerable distances, and its advance will therefore reach most schools in the future, if it has not done so already. Especially for children in need of special support, from one-parent or immigrant families, schools with a home-like atmosphere and many appropriation opportunities represent built models of a functioning home. Integration is also supported by universal design. Innovation in the regulations for school construction will have to be advanced in many countries with the help of a common design language.

The contributors to this book address all these aspects. Overall, we see our recommendations as based on an interactionist approach, which posits that performance can be promoted with school buildings, relative to the specific teaching methods, learning goals, and learning styles, the people – students and teachers – involved, the community, the general culture, and the climate. This means that there is no one single school design that will satisfy all requirements everywhere: While the recommendations we offer are clear expert-based suggestions, they remain varied and multifaceted.

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