discipline. Writers exploit these inherent characteristics in a language to make their writing ambiguous and colourful. In scientific and technical writings it will be hazardous if an ordinary language is not shorn of those extraneous meanings. This is done by vocabulary control: first by restricting the entry of keywords to connote concepts and then by precisely defining every word so introduced. No discipline can progress beyond its infancy without its technical terminology. Its progress goes hand in hand with the development of its terminology and vice-versa. Ranganathan was a great advocate of using technical terminology. He always appealed, sometimes emotionally, to his fellow-librarians to use technical terms for the development of library science. He coined many new terms for every branch of the discipline, as he always needed new and precise words to effectively communicate his trail-blazing writings embodied in 50 books and 1500 papers. He had a good habit of pre-defining his terms separately in a section preceding the text, be it a book or a paper. Ironically, it is his use of technical terminology which has hindered access to his revolutionary thoughts. Some find his writings highly-jargon ridden and thus difficult to read. For many his diction is strange and is in Indian English. Some opponents have criticized Ranganathan as a man who reveled in jargon and used it as a means for self-aggrandisement. Ranganathan remained uncompromising on this issue, and now his terminology is considered his fundamental contribution to the discipline and to the English language[1].

Prior to the book under review, no successful effort had been made to cull up all his terms and put them together under one cover. Therefore such a compilation was overdue and is highly welcome. This reference work alphabetically puts together and briefly explains about 800 terms coined and used by Ranganathan. Each entry begins with the term printed in boldface, followed by its briefly expanded meaning ranging from 10 to 100 words on the average. In some cases meanings are exemplified and illustrated with diagrams. The source document is indicated at the end of the entry, although there are many exceptions, too. The sources cited are too highly abbreviated to be understood by every user. No consolidated list of sources tapped is given. The work is not exhaustive, as many characteristically Ranganathian terms are not listed, e.g., "librachine", "ready reference service", to name two at random. On the other hand, some obsolete terms have been included. Some of the entries are not self-explanatory: to be fully understood their context has to be imagined. An index of broader subjects would have enhanced the book's value. Despite its flaws and limitations the work is valuable and of practical use to students, teachers and Ranganathan scholars.

Mohinder Partap Satija

Dr.M.P.Satija, Guru Nanak Dev University, Amritsar-143 005, India

1 Satija, M.P.: Indian sources of library and information science terminology. J.Libr.& Inform.Sci. 16(1991)No.2, p.129-143

HORN, Klaus-Peter; WIGGER, Lothar (Eds.): **Systematiken und Klassifikationen in der Erziehungswissenschaft.** (Systematic Arrangements and Classification Systems in Education Science/Pedagogy) Weinheim: Deutscher Studienverlag 1994. ISBN 3-89271-468-1. (Beiträge zur Theorie und Geschichte der Erziehungswissenschaft Bd. 15)

Scientists from four research projects contributed to this volume. The central theme of the seventeen articles by sixteen authors is the organization of knowledge in the educational sciences.

A few selected quotations from different articles reveal the main line of thought which is ubiquitous throughout the volume:

-... "*at the same time, however, there is no clarity as to what is to be regarded as pedagogy*" (Tenorth, p. 11)

- "... *that terminology and attempts at systematization in the German educational sciences harbor a major conflict potential* ..." (Rost, p. 197)

- ..."*in a 'soft', hardly established science there exists - neither historically nor currently - an unquestioned sytematics of the subject and its domains.*" (Horn/Tenorth/Helm 246)

One does not need much time to find quotations of this kind in the volume under review. They show the basic dilemma of a discipline which was institutionalized only by the beginning of the 20th century (cf. HELM in this vol.).

This dilemma makes it anything but easy to structure articles from different fields of research. HORN and WIGGER chose the following structure:

1. Introduction (Einleitung)
2. Basic Differentiations (Basale Unterscheidungen)
3. Classifications as Tools (Klassifikationen als Werkzeuge)
4. Classifications in the Educational Sciences (Erziehungswissenschaftliche Klassifikationen)
5. Comments (Kommentare)

In their *introduction* the editors provide a disposition of the problem in which they argue against the development of a meta-classification or meta-system for the educational sciences. They are in favor of plurality which is considered to be a chance for the educational sciences when one sticks to Niemeyers' motto "Evaluate everything. Keep the best."

In the *second part* all articles deal with the problem that even basic concepts in educational sciences are not well defined. The different authors pick out concepts which are often used as general concepts but they have to admit that the borders of these concepts are anything but clear.

TENORTH finds it problematic to define just when it is appropriate to apply the term "pedagogical" to a phenomenon. STROSS shows the problematic conceptual relationship of the terms "education" ("Erziehung") and "indoctrination" ("Indoktrination"). NIEMEYER and SCHROER deal with "social pedagogy" in the Weimar Republic which was regarded on the one hand as a part of pedagogy, but on the other hand as the ultimate goal of all pedagogy. LÜDERS, researching the use of pedagogical knowledge in everyday situations, writes about his difficulties to identify parts of interviews as referring to "something" pedagogical. ZYMEK shows in his study of Prussian school statistics in the 19th and early 20th century that the categories for the statistics were established for political, administrative and financial reasons, but not for scientific or pedagocical ones. Although the borders of these categories changed quite often, they served as a basis for

comparisons and decisions. WINKLER wonders whether it is useful to have recourse to classical authors of pedagogy to solve the conceptual chaos. Apart from the difficulty to determine when an author is to be named "classical", Winkler found out that the reference to them constitutes a specific form of pedagogical discourse, but it is not appropriate to regard them as Archimedic points for classification systems. HELM - the last author of the second part - describes the process of the institutionalization of the educational sciences at the beginning of the 20th century. It was only at this time that educational science was broadly accepted as a subject for doctoral dissertations and post-doctoral lecturing qualifications (Habilitationen).

The short third part "*Classifications as Tools*" consists of two articles only. This is not surprising, since classifications cannot serve well as tools when the general concepts are not clear. ROST provides educational scientists with a valuable synthesis of the current problems with pedagogical bibliographies, thesauri, and indexing. Concentrating on pedagogical thesauri he depicts the deficits, starting with the "Deutsche Thesaurus für Pädagogik und ihre Grenzgebiete" and ending with a hopeful outlook at the "Fachinformationssystem Bildung" and the newly-founded "Gesellschaft Information Bildung". To judge by the CD-ROM database which the "Fachinformationsdienst Bildung" has provided - after ROST had finished his article - it seems that his hope was at least partly justified. In the next article LEONHARD shows in a case study how the Regensburg Shelf System fails to serve the needs of users. According to Leonard - and I agree with him - the Regensburg Shelf System lacks representational predictability. E.g., one finds "Teaching Evaluation" ("Unterrichtsbeurteilung") in the group "Didactics and Methodology of Teaching" ("Didaktik und Methodik des Unterrichts") but "Examinations" ("Prüfungen") in the group "Particular questions of the overall school system" ("Spezialfragen des gesamten Schulwesens"). This grouping is quite peculiar and only one of many examples.

The *fourth part* looks at new classifications developed by educational scientists for particular research purposes. It deals with classifications developed by HORN/TENORTH/HELM, WIERICHS, DUDEK, and WIGGER. All are created from scratch and they differ very much.

On the one hand we have classifications using categories which refer to particular topics. See for instance excerpts from HORN/TENORTH/HELM:

Dimension 1: Education and its Reflection
  Group 01: Upbringing and Education
  Group 02: Teaching and School
  ...
Dimension 2. Other Social Systems and their Reflection
  Group 09: Religion and Church
  ...
Dimension 3: Non-systemic Reflection
  Group 14: Body and Psyche
  ...
Dimension 4: Remainder of non-assignable words
  Group 21: Thematically non-specifiable words

On the other hand we have the classification system FORWERZ which uses a kind of form categories:

1. System (System)
2. Organization (Organisation)
3. Sponsors (Träger)
4. Sponsors - Features (Träger - Merkmale)
5. Staff (Personal)
6. Staff - Features (Personal - Merkmale)
7. Adressee (Adressat)
8. Adressee - Features (Adressat - Merkmale)
9. Action/Content (Maßnahme/Inhalt)
10. Leading Objectives (Leitziel)
11. Result (Ergebnis)
12. Marginal Notes (Randbemerkungen)
13. Negation (Negation)
14. Other (Sonstiges)

I will not discuss these classifications in detail. The common problem is that each was created for a particular research problem. According to the authors these categories are useful for their specific research problems, but the classifications are not comparable and not useful in other contexts. Even in this limited context of application one sometimes wonders whether the relation of the general categories or groups is useful. For example, Vogel in his comment in this volume argues that in the classification by HORN/TENORTH/HELM the group "Upbringing and Education" relates to the other group "Teaching and School" as "apple", "pears", and "plum" to "windfalls" and "stewed fruit". The FORWERZ classification seems to be the only one which seems to have the potential for a broad application.

The *fifth part*, consisting of three articles, offers three different kinds of comments on the research projects described in this volume. BOHLENDER gives a general account of the status of classification as a tool for science. MEYER-DRAWE reflects on the problem of ordering. VOGEL, in a well-balanced and informative article, writes about classification problems in the educational sciences as a deficit of the discipline.

The volume gives an interesting and valuable insight into the status of the German educational sciences from the perspective of knowledge organization. This insight is based on quantitative and qualitative analyses of the conceptual framework of the educational sciences. The variety of research methods, including inductive and deductive methods of establishing categories, provides interesting ideas for those who want to carry out conceptual research.

In my opinion the research described in this volume displays the need that experts of the discipline and experts of knowledge organization ought to work together in order to develop an acceptable conceptual organization of pedagogical knowledge which meets the needs of researchers, students and anyone else interested in this discipline. Such a collaboration should look across the ocean to the United States where educational scientists are in a much more comfortable situation, e.g. because of their use of the ERIC Thesaurus.

Ewald Kiel

Dr.E.Kiel, Institut für Interkulturelle Didaktik, Universität Göttingen, Waldweg 26, D-37073 Göttingen