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## **IFIP – The International Federation for Information Processing**

IFIP was founded in 1960 under the auspices of UNESCO, following the First World Computer Congress held in Paris the previous year. An umbrella organization for societies working in information processing, IFIP's aim is two-fold: to support information processing within its member countries and to encourage technology transfer to developing nations. As its mission statement clearly states,

*IFIP's mission is to be the leading, truly international, apolitical organization which encourages and assists in the development, exploitation and application of information technology for the benefit of all people.*

IFIP is a non-profitmaking organization, run almost solely by 2500 volunteers. It operates through a number of technical committees, which organize events and publications. IFIP's events range from an international congress to local seminars, but the most important are:

- The IFIP World Computer Congress, held every second year;
- Open conferences;
- Working conferences.

The flagship event is the IFIP World Computer Congress, at which both invited and contributed papers are presented. Contributed papers are rigorously refereed and the rejection rate is high.

As with the Congress, participation in the open conferences is open to all and papers may be invited or submitted. Again, submitted papers are stringently refereed.

The working conferences are structured differently. They are usually run by a working group and attendance is small and by invitation only. Their purpose is to create an atmosphere conducive to innovation and development. Refereeing is also rigorous and papers are subjected to extensive group discussion.

Publications arising from IFIP events vary. The papers presented at the IFIP World Computer Congress and at open conferences are published as conference proceedings, while the results of the working conferences are often published as collections of selected and edited papers.

Any national society whose primary activity is about information processing may apply to become a full member of IFIP, although full membership is restricted to one society per country. Full members are entitled to vote at the annual General Assembly, National societies preferring a less committed involvement may apply for associate or corresponding membership. Associate members enjoy the same benefits as full members, but without voting rights. Corresponding members are not represented in IFIP bodies. Affiliated membership is open to non-national societies, and individual and honorary membership schemes are also offered.

Don Passey  
Andreas Breiter  
Adrie Visscher (Eds.)

# Next Generation of Information Technology in Educational Management

10th IFIP WG 3.7 Conference, ITEM 2012  
Bremen, Germany, August 5-8, 2012  
Revised Selected Papers



Springer

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# Preface

## Next Generation of Information Technology in Educational Management

This book offers a selection of papers presented at the latest international conference of Working Group 3.7 of the International Federation for Information Processing (IFIP). This conference, the 10<sup>th</sup> international conference organized by the Working Group, focused on an important contemporary issue – the next generation of information technology in educational management.

The conference sought to achieve a wider understanding of factors related to and influencing this issue, taking opportunities to consider current practices, concepts and research directions in this topic area. The conference drew on a wide range of expertise and research studies, from across Australia, Europe, and the USA. The conference built on and developed key points and concerns raised in the two conferences immediately preceding this one:

- Evolution of information technology in educational management, which focused on ways information technology has been involved in and supported educational management over a period of 20 years, and the changes seen over that period of time (considered in depth in the international conference in Darwin, Australia, in 2008)
- Information technology and managing quality education, which focused on ways information technology has been used to support enhanced qualities of educational management and its outcomes in terms of effective and improved teaching and learning (explored in the international conference in Kasane, Botswana, in 2010)

Taking these concerns forward, the international conference in Bremen, Germany, focused on the topic of the next generation of information technology. From this conference, four key questions arose:

- Why do we need new educational management information systems?
- What issues do those developing new educational management information system face?
- What new educational management information systems are being developed?
- What educational management systems are already in place?

This book takes these four key questions in turn, and presents papers enhancing our understanding and appreciation of these issues, as well as details concerned with implications and factors seen to be emerging at this time. These papers offer

an outstanding overview of this contemporary field, bringing together complementary study outcomes and positional perspectives to help frame our research within wider policy and practice dimensions.

### **Why do we need new educational management information systems?**

- Staman, Visscher, and Luyten argue that data management can support school improvement practices, at student, teacher, classroom and school levels, and that it is vital for key stakeholders to be trained and to use data appropriately from educational management information systems to support school improvement for the benefit of learners.
- Passey highlights the important roles of discussion in managing educational improvement, and how data management can support discussions between teachers, teachers and students, and parents, teachers and students, that can both support vital decision making and inform monitoring practices to enhance learning approaches, practices and outcomes.
- Schildkamp, Karbautzki, Breiter, Marciniak, and Ronka report on ways data can be framed and conceptualized to support users in schools in developing management practices to enhance teaching and learning, and on this basis propose training programs to support effective use of data in schools.

### **What issues do those developing new educational management information system face?**

- Breiter, Groß, and Stauke present evidence of the key issues facing those attempting to implement and adopt wide-scale e-assessment processes using technologically based systems, and potential implications for those wishing to consider the feasibility or development of these practices further.
- Tanrikulu provides evidence from experts working in the field of e-assessment in higher education, identifying factors both supporting and hindering processes of wider integration and implementation of e-assessment practices, raising implications for those resourcing developments in this field.
- Celep and Konaklı provide evidence from school teachers about current knowledge management practices, and highlight the importance of administrative support and background characteristics on levels and forms of knowledge management processes, raising questions about aspects where future developments could support more effective organizational learning in schools.
- Mohamad, Manning, and Tatnall provide evidence about knowledge management practices in another sector of education, in the administration of higher education in Malaysia, and again highlight factors that could contribute to enhanced organizational learning and practices, considering particularly the influences of cultural factors and adoption decisions.
- Thorn provides evidence of how data management systems are currently being adapted to inform decisions on teacher pay performance through the teacher incentive scheme in the USA, and highlights key issues and concerns

to be addressed if this form of program is to be supported more effectively through data management systems aligned to social systems in the future.

- Schulz and Breiter explore the use of logfiles derived from school information systems as ways to analyze patterns and uses, to inform at levels of awareness and outcome, while identifying not only ways these data are currently being used but also limitations and implications for future uses and development.

### **What new educational management information systems are being developed?**

- Strickley describes how data links between national data sets enabled wider transfer between local and national government systems in the United Kingdom, enabling access through an information system that could support citizens more considerately, effectively and efficiently when seeking and receiving allocated funding to support their children with free school meals.
- Castro and Santos describe the processes and procedures used to build from an existing, and develop a new, information system to support schools with specified and different forms and levels of data, linked to key performance indicators.
- Pereira and Castro present a case study that describes the conceptual and practical approaches used to identify and select technology partners for developing school information systems, accommodating the needs of all key stakeholders, and using a systematic approach to the needs to develop appropriate decision making.
- Lämmerhirt, Franssen, and Becker describe processes and procedures involved in conceptualizing, developing, and implementing a campus-wide data management system to support higher educational needs in their university, initiated through business process modeling, requirements analysis, integrating organizational processes, and procuring and developing a new information management system.

### **What educational management information systems are already in place?**

- Casey describes the data information systems in place across a county in Norway, where data are held in a variety of government data bases, and transferred in order to support all stakeholders across the secondary school sector.
- Tatnall and Davey describe a learning management system developed and implemented across the entire school sector in Victoria, Australia, identifying features that are successful and those where further focus is needed to enhance future practices for students, teachers, and parents.
- Gregor, Wilmes, and Kiock describe the development and implementation of a data management system to support school planning needs across Berlin, Germany, highlighting the fundamental roles of those involved, and the vital need to accommodate personal and ethical regulations laid down in statutes.

All papers in this book were peer-reviewed, and authors were able to use reviewer, presentation audience, and editor feedback in order to finalize the chapters presented here. We, the editors, wish to thank our authors for contributing to this book, which we believe will help to stimulate wider consideration for those working in this field, whether they be researchers, policy makers, or practitioners.

March 2013

Don Passey  
Andreas Breiter  
Adrie Visscher



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## Note of Apology

The authors and editors of a paper presented in the previous IFIP AICT 348 volume entitled *Information Technology and Managing Quality Education* sincerely apologise for the omission of two authors' names. The paper offered in Chapter 10 of that volume should read, on both pages IX and 95:

Bridging the Knowledge Gap for African Researchers through Open Access Publishing: The Case of African Higher Education Research Online (AHERO)

*Beatrice Sekabembe, Jude Ssempebwa, Shehaamah Mohamed and Allison Fullard*