

Aki Olavi Rasinen



Many industrial arts, technology education, and now technology and engineering education leaders have made their mark on our profession. Their legacy is something that members of the profession enjoy and have the responsibility to continue to build upon.

The Legacy Project focuses on the lives and actions of leaders who have forged our profession into what it is today. Members of the profession owe a debt of gratitude to these leaders. One simple way to demonstrate that gratitude is to recognize these leaders and some of their accomplishments. The focus in this issue will be on Dr. Aki Rasinen.

Aki Rasinen (MEd, PhD, Adjunct Professor) is an experienced educator, developer, and researcher. He has taught at elementary, secondary, and university levels. Throughout his career he has been involved in teacher education. For most of his teaching career, Dr. Rasinen has worked at Jyväskylä University Teacher Training School and at the Department of Teacher Education at the University of Jyväskylä, Finland.

During Dr. Rasinen's career as an educational leader, he has taught, planned, coordinated, managed, and developed curriculum as well as conducted educational research. In addition to his work in Finland, he has worked several years in Zambia, Namibia, and Mozambique as a teacher educator, education project management, and curriculum planner. He has been involved in curriculum development at the general education (elementary and secondary schools), and college and university levels, mainly in the field of technical education. Most of his curriculum development work has taken place at the national level. He was invited by National Board of Education to take part in the process of planning the National Core Curriculum for Basic Education (2004). He managed the development of a Work Package, a four-year EU project in which universities from several EU countries developed their national curriculum in technology education. He has lectured in African, Asian, and European countries, also in Australia and North America. He has authored or coauthored more than 50 publications, of which about half are peer-reviewed.

by
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Sonja Niiranen,
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DTE

Aki Olavi Rasinen

University Lecturer in Technology Education, Emeritus, Adjunct Professor, Technology Education

Place of Birth: Tampere, Finland

Married to: Tuija Rasinen

Degrees:

- Technical Subjects Teacher 1974 (BA type 4-year program), Rauma Teacher Training College
- BA 1976, University of Jyväskylä
- MA 1990, University of Turku
- LicEd 1999, University of Jyväskylä
- PhD 2000, University of Jyväskylä

Employment Record:

- University of Jyväskylä, Teacher Training School, Lecturer in Technical work, August 1974-June 1977
- Ministry of Foreign Affairs of Finland/Ministry of Education, Zambia, Practical Subjects Lecturer at Chipata Teacher Training College, July 1977-May 1979
- Compulsory army service, June 1979-May 1980
- University of Jyväskylä, Teacher Training School, Technical work lecturer, May 1980-July 1981
- Ministry of Foreign Affairs of Finland/Ministry of Education, Curriculum Development Center, Lusaka, Zambia, Practical Subjects Project Coordinator, July 1981-July 1983
- University of Jyväskylä, Technical Work Lecturer, July 1983-September 1986

Short-time consultancies, curriculum planning, and to train polytechnic teachers for Namibia. Planning of the polytechnic curriculum for schools and curriculum for the training course.

- FINNIDA (Finnish International Development Agency, Ministry of Foreign Affairs, Finland/Ministry of Education and Culture, Zambia, Practical Subjects Project Coordinator, September 1986 – December 1988

- University of Jyväskylä, University Training School and Department of Teacher Education, Lecturer January 1989-February 1994. Main tasks: Lecturing, research, planning of technology education mainly for university but also for Provincial Government of Central Finland. Taking part in the national Basic Education Curriculum Development. Planning the manual skills test for Namibians to be recruited to water engineering studies to Tampere University of Technology.
- Short consultancy for Espoo Young Chamber of Commerce to Zambia and Namibia to study co-operation possibilities.
- Finnish Training Partners International/Department of Technical Education and Vocational Training, Zambia General Educationist, February 1994-December 1995. Responsibilities include: liaised with different Zambian and donor authorities dealing with several projects run under an Education Sector Support Program. Implemented different projects according to the project document
- University of Jyväskylä, University Training School, Technical Work Lecturer, January 1995-2001
- Short consultancies for Ministry of Foreign Affairs to Mozambique and research work
- University of Jyväskylä, Department of Teacher Education, University Lecturer in Technology Education, January 2001-August 2013, Adjunct Professor 2011 – Present
- University of Jyväskylä, Department of Teacher Education, University Lecturer in Technology Education Emeritus, September 2013-Present

Occupational History:

Teacher, teacher educator, project coordinator, curriculum specialist, project manager, researcher.

Please describe how you came to be interested in the profession.

After graduation of senior secondary school, I didn't really have a clear picture of what I would like to study. However, I liked biology and craft at school. Then in 1970 I applied to study biology at the University of Turku and also to teacher training college in Rauma. I was accepted to study technical work, and studied to become a technical craft teacher in Rauma. After my studies, in

my work as a lecturer in University of Jyväskylä, Teacher Training School, I also supervised teacher education students' training. That led me to become interested in teacher education. I was also lucky to have good colleagues such as Doctor Matti Parikka working in the department of teacher education in the field of technical craft. Matti had already started to develop technology educational approaches in his teaching. Through that route I became interested in developing technology education.

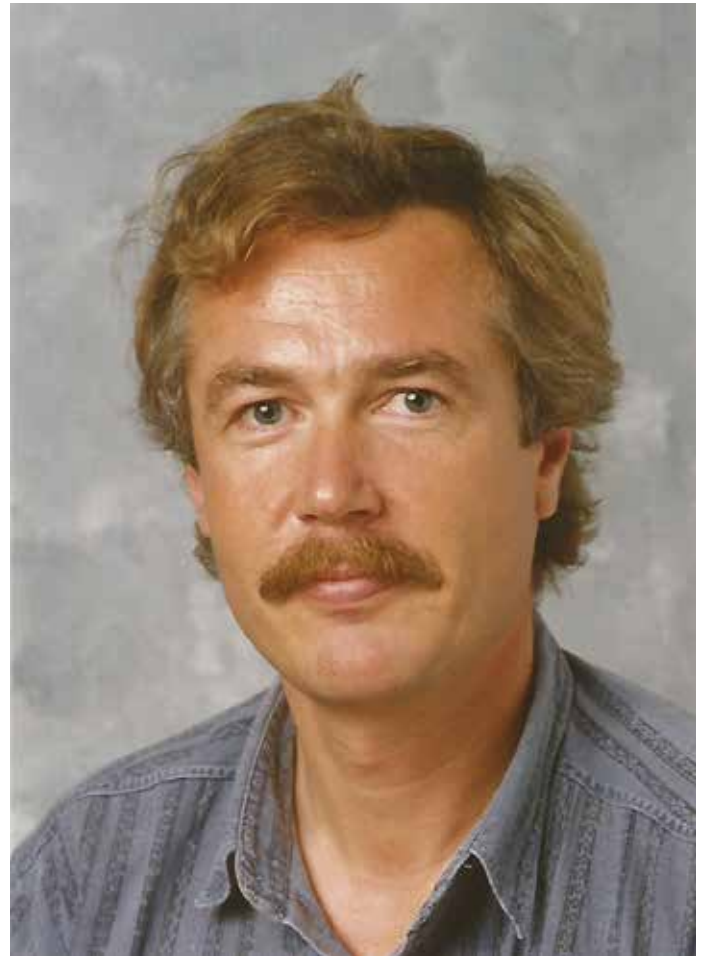
In late 80s I was lucky to have a chance to visit several Institutions dealing with craft, design, and technology (universities, polytechnics, schools, and curriculum development centers) in England and Scotland. In early 90s I visited two universities and some schools dealing with technology education in the United States. These study tours certainly pushed me forward on the road of developing technology education in Finland.

During the 1980s, you worked many years in Zambia. Please provide us with your perspectives related to developing technology education there that time.

I worked in Zambia several times during the years 1977-1995. The first period was 1977-1979. I worked then in the Practical Subjects Project at Teacher's Training College in Chipata. The aim of the project was to plan curriculum and learning materials for Zambian primary schools from Grades 1 to 6 and to train teacher education college students to teach what was then called Practical Subjects. We started everything from scratch. We had a shelter or a roof for working and some hand tools. The students had never used any tools, nor was there any funding to buy materials. Thus, we had to ask students to improvise a lot and to be innovative! We used various recycled materials and remnants from a shoe factory and sawmill. We used any materials we could find nearby from nature. I tried to emphasize problem solving and design. Even though resources were very limited, students were very motivated to design individual artifacts because there was a need for all kinds of things.

During the years 1981-1983 I worked in the Curriculum Development Centre in Lusaka, Zambia as a Project Coordinator of the Practical Subjects Project. I moved to Zambia in the summer of 1986. I was invited to work as a Project Coordinator again in the same Practical Subjects Project. I lived in Zambia for two and half years and moved back to Finland in 1988.

Before my first contract in Zambia I asked myself if I was entitled to go and "push" my Finnish ideas about technical education; would I disturb the local culture? However, after my experiences in Chipata Teacher Training College, I was convinced that practical subjects were something missing from the Zambian curriculum. Of course, it was important to listen to the local people, students, colleagues, and authorities to make sure that what was studied fitted to Zambian culture. Fortunately, I worked closely with Zambian counterparts and maintained an acceptable focus, both educationally and culturally. I regard cooperation with various stakeholders as essential in development projects. After all, basic techniques and learning and teaching methods are all international. Therefore, I did not hesitate to accept my duties as Project Coordinator. The years spent in Zambia were very challenging in many ways but also very rewarding.



From 1983-1986, in addition to my teaching duties in Finland, I was heavily involved with planning curriculum in Polytechnic Education for Namibian primary and secondary schools. I also planned and organized a teacher training course for teachers who wanted to specialize in Polytechnic Education. Again, when planning and teaching, I had to consider the aims, objectives, methods, and contents to fit to the local culture. Also, in this project, I worked hand in hand with a Namibian expert and, of course, the participants of the course.

Before becoming a university lecturer at the University of Jyväskylä you worked as a teacher in secondary and upper secondary school. What were the concepts, ideas, and skills that you found important at that time? How would you describe yourself as a teacher?

My aim has always been to guide students to plan, produce, and evaluate their projects by themselves. However, often in many schools, students were following and copying the teachers' model. I found it important to encourage students to problem solve using their own thoughts, to innovate by looking around to find ideas, and to apply their own ideas in practice. Even though we didn't speak about cooperative learning at that time, students worked in groups when designing and planning their projects.



Public defense of doctoral dissertation.

As a teacher I have tried to use methods where pupils would learn to be innovative, to explore their environment, and to find problems to solve, and I have tried to support them towards that direction. I have also tried to be open minded and recognize individuals and their personal ways of learning. All the time, what has led my way or what has been the philosophy in life altogether is that nothing is really that serious. Whenever possible one should try to apply some humor. In a way I have probably been able to apply some kind of "humor pedagogy" in my work. An example of this is a patch that I received during the PATT conference in London in 2011 that read: "Sense of humor?" In addition to that, I have tried to mix with the students by going among them when they are working and during breaks.

Craft and technology education have had a rather challenging relationship in Finnish education. You were a very active promoter towards moving technical craft closer to technology education. Why did you pursue this interest, and how did it evolve during your career at the university?

This is a question of defining the concepts of craft and technology, technical work/craft, technology education, craft, design and technology. I think they kind of overlap each other. Some

people think that craft is something more traditional in following the plans that someone else has done, and technology is then perhaps more related to ICT. What I think is that, for example, problem solving is an important factor in technical work and technology education. As a result of my studies in Scotland and England in 1989, I became more and more interested in technology education and how to develop technical work towards technology education. From there on I have, in my own studies and from the 1991 "Technology Education Experiment" with the lecturer of didactics of technical work, Matti Parikka, aimed to determine: What is the definition of technology education? And, how could it be studied in schools and in teacher education? These questions led both Matti and me to doctoral studies. On top of those questions, our worry was that too many girls in the Finnish school system were left aside of technology studies. I wanted to promote that girls also could, and should, study technology. Also, I still think we should put more effort in developing students' innovative skills by guiding them to explore and find problems in their own environment and to solve problems through technology studies.

Finnish students perform well on assessments such as the Programme for International Student Assessment (PISA). Do you feel that Crafts education contributes to that success? If so, why do you think it is so?

Craft has been a compulsory subject in the Finnish general education schools since 1886. Nowadays all pupils from Grade 1 to Grade 7 study it approximately two periods per week. After Grade 7, craft studies is optional, but very popular. At least from the beginning of the 70s, creative problem solving has been emphasized in craft studies. Also, cooperation among students and between various subject areas has been encouraged. In craft, or technology education (if you prefer), math, science, and problem solving (these content areas are tested in PISA research) are integrated into the teaching and learning process in a natural manner. I am not aware of any research about the possible correlation between craft/technology studies and the above-mentioned subjects. However, I believe that there must be transfer effect from good practices, particularly in problem solving. Students are holistic learners, and obviously the skills learnt during craft/technology lessons can be applied in another context as well. This would be an interesting research task.

You were involved in the curriculum work of Finnish National Curriculum for Basic Education, 2004. In your opinion, how would you organize and implement technology education in schools today? What would be the main aims and characteristics of technology education?

All schools in Finland follow the National Core Curriculum, which gives the guidelines to municipalities to write their own curriculum. So, the curricula are quite similar all over the country.

In 2004 I was involved in planning curriculum in a Craft subject and cross-curriculum theme called "Human beings and technology." The idea of having these cross-curricular themes is a good one; therefore, various subject areas have to consider all cross-curricular areas, I believe, and I hope that this makes teachers want to cooperate and to see where they can find common aims, objectives, and contents. The current National Core Curriculum for Basic Education (NCCBE) 2014, presents seven transversal competence areas, which is similar with the idea of the cross-curricular themes. What I would like to see is that the various subject teachers and class teachers would see the possibility of cooperation and integration, seeing the curriculum in a holistic manner, so that pupils would have the opportunity to study various topics in a holistic way. In relation to technology education, I think it is important to realize, unlike NCCBE 2014 considered technology education to be only ICT, that we should think about everyday technology and to see technology in a broader sense. Of course, I would also like to see more time for studying technological topics and that all pupils are given a chance to study it. I would also like to emphasize that pupils would be more guided to identify the problems to be solved by themselves.

You have always enjoyed international collaboration. Please provide us some insights into what you have gained from it during your career.

I have gained A LOT. I was interested in international things already when I was a student. I went to work in Denmark when we had summer holidays and I was a volunteer to be a guide for international visitors. And when I got the chance to go Zambia, I didn't hesitate a bit. I got kind of self-reliance in using the English language when working in Chipata for two years as a teacher educator. From experiences in various projects in Africa, I have been interested in continuing international cooperation and being able to cooperate with many nationalities. This background from Africa has made me brave enough to approach various international institutions and universities, visit several PATT, ITEEA, DATTArc/TERC and other conferences, and write my doctoral thesis and research papers in English. Also, my students have benefited from my international network. They have heard lectures and attended hands-on activities organized by my colleagues from North America, Asia, and various European countries. Without this type of background, I'm sure I wouldn't have been invited to take part in the European Union-funded project called Understanding and Providing Developmental Approach to Technology Education (UPDATE 2007-2009) and to cooperate with various universities in Japan or to be a member of a World Maker Education Alliance. So, I have gained a lot from these experiences. They have given me a broader view of technology education, people around the world, the world itself, cooperation, hopefully liberality (broad-minded), and another drop of sense of humor.



Thank you Dr. Rasinen for sharing some of the highlights of your service to the craft and technology and engineering profession. Your work, in Finland and internationally, has undoubtedly benefitted thousands of students across the globe. The International Technology and Engineering Educators Association is truly international because of the outstanding work of educators such as you.

It is beneficial for current (and future) leaders to read about the experiences and issues that existed in the past and how they were addressed. In a few months the next interview will appear in this journal. If you have a suggestion of a leader to recognize, contact Johnny Moye with that person's name and contact information.





Dr. Aki Rasinen is a University Lecturer in Technology Education, Emeritus. He has studied to become a technical subjects teacher and then he has completed BA, MA, LicEd, and PhD in two universities. He has worked as primary school and high school teacher,

university lecturer, project manager, curriculum developer, and researcher mainly in Finland but also nine years in Southern African countries. His research interests are technology education curriculum; girls' involvement in technology studies; problem solving, creativity and innovation; STEAM, holistic learning, co-operation/integration of various subject areas. He may be contacted at aki.rasinen@jyu.fi.



Dr. Sonja Niiranen is a University Lecturer in Engineering Education. She has received her MA in education (2006) and PhD in technology education (2016). She worked 13 years as a technical craft and technology education teacher in the Department of Teacher Education at the University of Jyväskylä.

Sonja is currently at Tampere University, teaching university pedagogical studies in engineering education for the teachers at the university. Her research interests include pedagogy of technology, engineering and entrepreneurship education.



Mr. Pasi Ikonen is an experienced teacher and teacher trainer. He is currently working as a University Teacher in the Department of Teacher Education at the University of Jyväskylä. Over his career he has been involved in several national and international in-service

training programs both academic and school teachers. Mr. Ikonen also has experience in international scientific and teacher professional development projects in several countries including USA, Saudi Arabia, China, Thailand, UAE, Kosovo, France, and United Kingdom. His main research interests are teacher education and technology education. His duty at the University includes memberships in Board of the Department, Pedagogical Committee of the Department and Faculty Committee of International Affairs. Mr. Ikonen's background is a comprehensive school teacher and has taught several grades and schools before attending to University of Jyväskylä 2003.



Mr. Timo Rissanen is a University Teacher in Technology Education in the Department of Teacher Education at the University of Jyväskylä. Before coming to the university, he worked as a comprehensive school teacher.

His main interest is developing new ways of learning craft and technology education in collaboration with the school teachers. In the field of research, he is interested of craft and technology education curriculums.



Johnny J Moye, Ph.D. DTE, serves as ITEEA Senior Fellow. He is a retired U.S. Navy Master Chief Petty Officer, a former high school technology teacher, and a retired school division CTE Supervisor. He currently serves as an adjunct professor with Old Dominion University's STEMPS department. Johnny can be reached at johnnyjmoye@gmail.com.