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### *WHAT IS YOUR KOZMA NUMBER? – AN ACADEMIC CAREER IN THE LIGHT OF CO-AUTHOR NETWORKS*

When celebrating an acknowledged education researcher's birthday, we usually make a lengthy enumeration of their research projects, volumes, positions, prizes and other instances of their professional achievement. Birthdays actually serve as occasions for collecting them, just as we compiled the bibliography of Tamás Kozma's works for his 70th birthday (Nagy-Baló, Varga Kovács & Kozmáné, 2009). Now, however, we would like to celebrate his 75th birthday in a non-traditional way. As he is a very prolific author, his collected bibliography is likely to be published again in electronic or printed form. It would be redundant to summarize his life story and his extensive work experience after he published his autobiography titled *Erdei séta* (A Walk in the Forest), which gives a picture of the events of his life against a colourful cultural background, making it a valuable piece of reading also as a source of the history and sociology of social science (Kozma, 2011). Trying to avoid cliches, we are going to greet him in a special way.

Rather than focus on the measurable aspects of his career, we intend to call attention to a less visible feature, namely his ability to establish networks. In my view a researcher's oeuvre is not complete without cooperation, networking and passing down those skills to the next generation. By its very nature, education research is a community activity as the role of empirical data collection – in institution networks that function locally but are parts of a national system – is more important than in other disciplines. And it is during the above research process that comparative and regional approaches are shaped, the future generation of researchers is raised and lifelong professional relationships are formed. Unfortunately, the study of researchers' relationship networks is a neglected area of the assessment of academic products, although the size of a researcher's relationship network is a reliable indicator of how knowledge is shared and the young generation raised. Some researchers think that dealing with the young generation means selection while others are more inclusive in their approach and try to involve and train a large number of young professionals.

The formal organisational structure of the body of researchers is recorded in several documents and reports, but their informal network, about which we have first-hand knowledge, definite opinions and juicy bits of gossip, is never the focus of

academic investigation. The works of Bourdieu (1984), Becher (1989), Chait (2002), Kozma (2004) and Teichler (2007) inspired us to attempt to explore the informal networks of the regular members of doctoral schools (Kozma & Pusztai, 2009), the leading Hungarian conference series on education research (Abuczky, 2009) or student-faculty relationships (Pusztai, 2011). Our project is an integral part of the process of replacing the old theory-of-conflict paradigm of education research with a new approach.

When studying the impact of social capital on academic achievement we also examined the role of social capital in the training of future researchers. The so called network approach to higher education research takes the view that the social capital of students, faculty and the institutions themselves depends on the extension and strength of the individual members' relationship networks. We have already done research on the impact of student relationship networks on achievement and found that through relationships within the campus the individual gathers information and incorporates values that influence one's attitude to studying. According to our findings, tight relationship networks have the strongest positive influence on students' careers. In another study we examined how the teaching staff of the doctoral programme see the relationship of PhD students and their advisers and the correlation between their achievement and institutional embeddedness (Pusztai, 2009). Still, there has been very little research on the internal relationship networks of researchers, although they are noteworthy in several respects. First, they can serve as channels of innovation and researchers' mobility; second, they play an important role in researchers' advancement.

Back in 2009, on Kozma's 70th birthday, the idea cropped up that an indicator called the Kozma number would come in handy during the analysis of the relationship networks of Hungarian education research. It could work in the same way as the Erdős number does for mathematicians. On the present occasion we are making a playful attempt at the application of the network approach. If we set out to test the hypotheses on researchers' weak ties, we examine conference attendance and participation in various boards. Kozma's international connections are also centred around international professional organisations and conferences. Having reviewed conference programmes and European expert lists of international organisations, we have found the names of researchers Kozma has cooperated with most actively during his career. We have asked some of the most distinguished researchers of the list, namely Wolfgang Mitter, Ulrich Techler, Jon Lauglo and Don Westerheijden to write a paper each by way of greeting. Kozma did not only get acquainted and

maintained professional and friendly relations with the above researchers and made their works known in Hungary and Central Europe but he also looked for the opportunity to introduce the young generation of researchers to them, thereby strengthening the relationship network. One cannot exaggerate the benefit he brought to post-socialist education research that had just stepped out from behind the iron curtain after decades of isolation.

Networks also contain strong ties, which develop from day-to-day cooperation in academic life. When we set out to give an overall picture of this aspect of the Kozma network, we based our analysis on the hypothesis that joint publication or co-authorship can be manifestations of strong ties. The cohesion and common identity that develop during joint research are key elements of academic socialisation (Weidman, 2006). While researchers are pursuing their life strategies, they unconsciously show patterns of behaviour to the forthcoming generation through their formal and informal communication, time management, work attitudes and rewarding systems (Austin, 2002).

Relationships of co-authorship, which develop during the process of publication, are worth looking at from the following points of view: how open or closed and how stable they are, whether they involve a narrow or a broad circle and whether they reach beyond the boundaries of “academic tribes”. As it is known, the academic community has a traditionally very segmented structure with isolated individual research centres, and, moreover, people at different levels of the academic hierarchy do not speak the same language, either. Even so, the academic community can do much more efficient work if there is cooperation among people of different ranks from different schools.

In our present investigation we mean by co-authorship cooperation in the writing of a study or a book chapter but do not mean contribution to a volume edited by Tamás Kozma. The MTMT system (the Hungarian database of academic publications) contains 312 of his publications from between 1967 and 2011. Over one fourth of his publications has a co-author and since there are often more than one, this adds up to 113 co-authors. Three quarters of them appear more than once. The most frequent co-author and co-editor has 33 appearances (from 1971 till the present day), the second most frequent one has 9, and several others appear 3 to 5 times. These data suggest the existence of long-lasting research teams. The eldest co-author was born before 1930, the youngest after 1990, which has enormous significance. It is quite common in Hungarian education research that widely acknowledged researchers of the same rank work together. Yet it is an entirely

different situation when a young talented author is given the opportunity to do research and publish at the same time and even have his name in the by-line.

Kozma's co-authors have a varied institutional background. About half of them started their cooperation in Budapest (Pedagogical Research Team of the Hungarian Academy of Sciences, Hungarian Institute for Educational Research and Development), over one fourth at the University of Debrecen, but some of them come from other regions of Hungarian higher education or even abroad. It is important to note that there are almost as many female co-authors (45%) as male ones. It is to be emphasised because although female researchers are usually excellent and reliable members of their research teams, their career advancement is slower than that of their male colleagues. In the long run, the impact of relationships on achievement can be measured by how dedicated the more or less young co-authors will become to research as a lifestyle and what skills they will develop in research, publishing and establishing their own schools. All the above factors are taken into account together by the system of Hungarian academic promotion. The highest title is called Doctor of the Hungarian Academy of Sciences, which is required for being appointed professor at a Hungarian university. As far as titles are concerned, one fourth of the co-authors are professors, but only a minority held the title at the time of the first joint publication. One tenth of them are habilitated, over one fourth of them has a PhD degree and another fourth of them are doctoral students.

Our findings show that in terms of co-authorship the Kozma network is an inclusive and young one with a commitment to talent development. During cooperation the young co-authors grow in commitment, get a good start and make significant progress in their careers. Kozma's attitude does not only set a fine example to his fellow researchers, but it also serves as a point of reference to measure how much his former co-authors are involved in the support of young talents.

By way of conclusion, let me congratulate Tamás Kozma and wish him many happy returns of the day!

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