Navigating Turbulent Waters via HR Processes: Tacit Knowledge Acquisition

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Abstract: Critical to tailoring future leadership roles in an organization, this paper maintains that addressing means of transferring tacit knowledge in HR processes from start to finish is integral in an organization's capability of succeeding in "turbulent times." More specifically, HR hiring processes need to look at ways of ascertaining a candidate's ability to glean key elements of tacit knowledge from training tailored to create opportunities for that kind of learning. The paper first looks at "turbulent times" in terms of the gaps in ICT expenditure levels between countries and then looks at means of closing those gaps via elevating the discernment of tacit knowledge at the hiring stage. How can HR develop systems underpin this process at the hiring stage? While this paper focuses on the field of higher education for its discussion, by extension it looks at what HR departments can do to hire tacit-knowledge-acquisition-ready candidates that can be directed to fill future leadership roles in an organization.

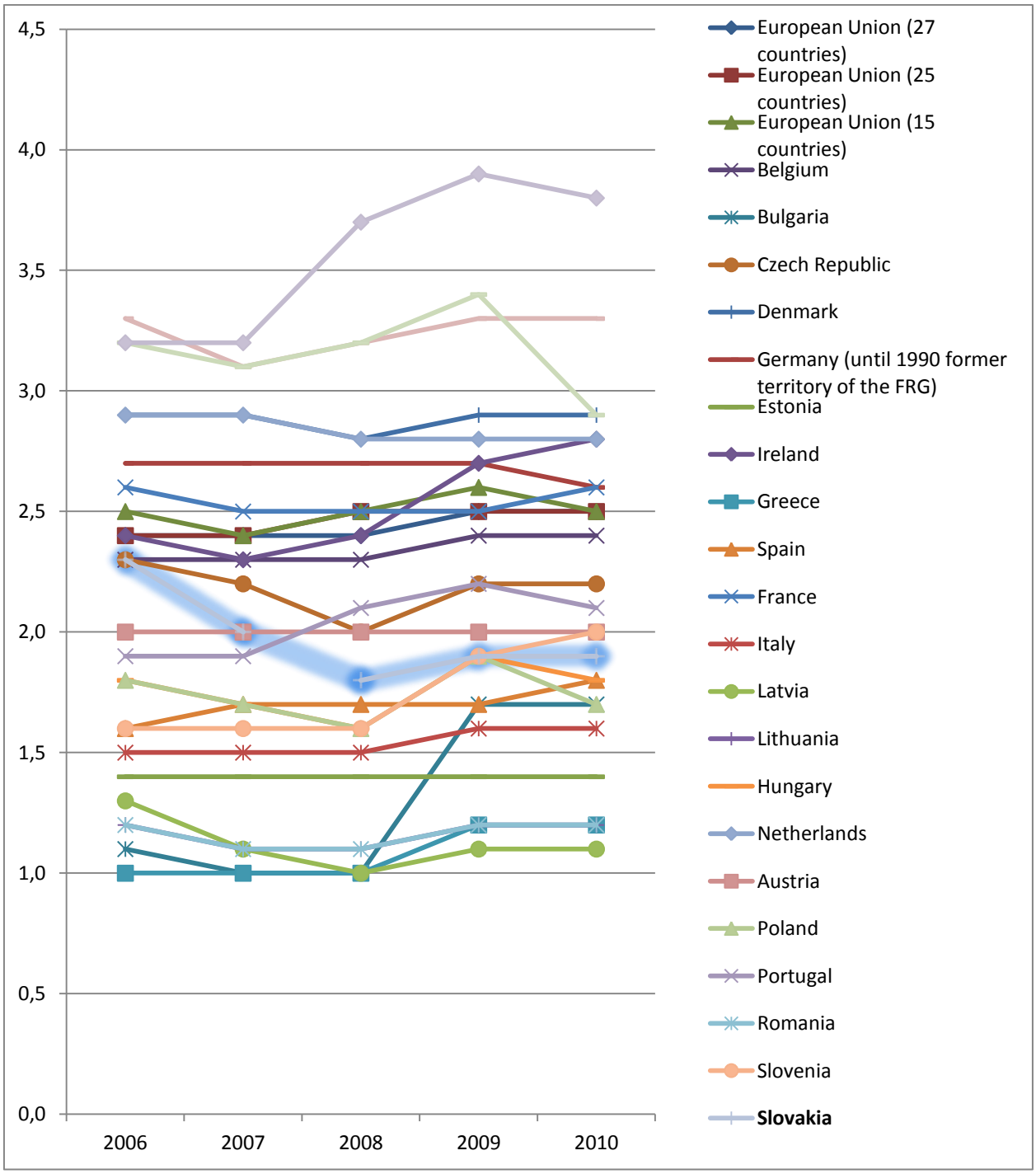
Keywords: Tacit knowledge, HR processes, ICT expenditure, teaching and learning.

1 Introduction: Turbulent times and the relative state of ICT in Slovakia

To set the context for this study, let us see where Slovakia fits in relation with selected countries in terms of several key ICT expenditure and use indicators. Aristovnik (2012) points out that "the use of ICT in education and training has been a key priority in most EU and OECD countries in the last decade, although progress has been uneven." He goes on to say, "ICT has had a major impact on the education sector, on organization and one teaching and learning methods. Yet there are considerably different ICT expenditure levels within and between countries" [1]. Where does Slovakia fit in? Are they leading ICT development, in the middle of the pack, or lagging behind? How can Slovakia take steps to narrow the gap? How important is tacit knowledge in bridging the differences? If tacit knowledge is a significant factor in bringing Slovakia up to speed, how can it better be discerned at the hiring stage? What is a good leadership candidate? What means can effectively be used to determine future "coachability"?

2 Information technology expenditure: Selected countries

First off, one indicator we can examine to determine where Slovakia fits in internationally is to look at the relative investment in information technology (both hardware and software) as a percentage of GDP:



Information technology expenditure as a percentage of GDP Source: Eurostat, July 7, 2012

What we can see here is that the investment in technology in Slovakia is in the bottom ten of the countries under consideration. Below Slovakia are countries like Romania, Bulgaria and Greece. Compounding this placement is the relatively low GDP of Slovakia, so the actual investment in euros pales in comparison to countries at the upper range of the graph, like the UK, Sweden and Finland. A look at the expenditure in millions of euros bears this out:

European Union (27 countries)	281,802	294,951	304,440	294,108	302,379
Bulgaria	267	298	331	592	628
Czech Republic	2,586	2,797	3,002	3,104	3,214
Germany	61,622	64,955	67,185	63,671	65,364
Greece	2,186	2,287	2,411	2,885	2,697
Spain	16,077	17,382	18,015	18,220	18,944
France	46,153	47,801	49,155	47,657	49,522
Italy	22,338	22,704	23,028	24,200	24,296
Latvia	201	228	241	196	196
Lithuania	289	324	353	311	324
Hungary	1,645	1,692	1,730	1,695	1,755
Netherlands	15,436	16,276	16,927	16,181	16,409
Austria	5,232	5,402	5,602	5,570	5,762
Poland	4,806	5,295	5,731	6,053	6,187
Portugal	2,931	3,176	3,444	3,678	3,581
Romania	1,166	1,344	1,493	1,389	1,521
Slovenia	501	552	596	685	696
Slovakia	1,019	1,109	1,196	1,198	1,245
Finland	5,486	5,637	5,811	5,736	5,898
Sweden	10,084	10,429	10,754	9,885	10,061
United Kingdom	63,000	65,693	67,336	61,354	63,793
Norway	5,005	5,234	5,411	:	:
Switzerland	9,236	9,600	9,874	:	:
Turkey	3,636	4,247	4,470	:	:
United States	296,912	313,596	323,723	:	:
Japan	85,150	89,045	91,374	:	:

IT Expenditure in Millions of Euros Source: Eurostat July 31, 2012

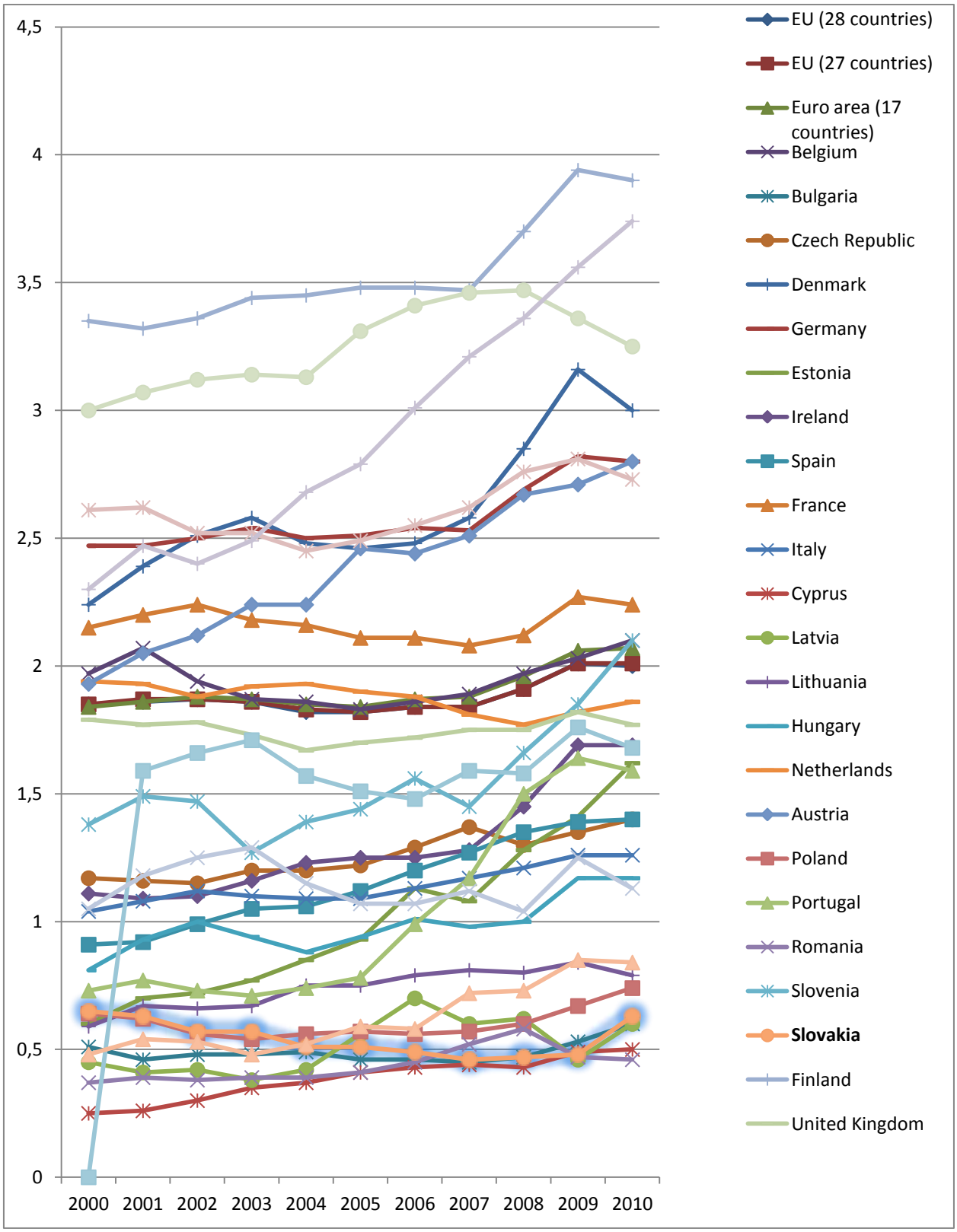
To see that countries like the UK and Germany spend over 60 times as much on IT puts the situation in an even more pronounced contrast—imagine the difference in hardware alone. It seems that Slovakia lags significantly

behind in such investment; how can students be competitive being potentially at such a disadvantage? More importantly, what role can the education system play in narrowing this gap?

As a further note, there will always be Slovak students who succeed internationally and are as competitive and knowledgeable as the top students from any country—*despite* any deficiencies in the education system or in IT expenditure. We must keep in mind that we cannot look at such exceptions; some personalities drive through in any culture or country and are indeed outliers. What we must consider, then, are median results, and what has critical mass within the system.

2.1 R & D expenditure: Selected countries

Further statistics to give a picture of drivers behind development and education are relative research and development expenditure. It makes sense that there is a direct correlation between expenditures on R & D and the prevalence and use of ICTs in a given country. Here is how things look, using data from Eurostat from 2000 to 2010:



R&D Expenditure as Percentage of GDP, Selected Countries

Source: Eurostat

Again, we can see that Slovakia is near the very bottom of the countries sampled. The correlation between R & D expenditure and the advancement of technologies and educational achievement is something to be considered as an investment in the future, if you will. One way to interpret this data is that countries that invest more in R & D, as a percentage of their GDP, place a high priority on being a leader in technological development and use. Finland, Japan, South Korea, Denmark, the US and Austria are at the top; Slovakia is in the company of Romania, Cyprus, Latvia, Bulgaria and Turkey. These countries all invest very little when it comes to R & D.

2.2 Telecommunications prices: A prohibitive factor

Ever since I moved to Slovakia from Canada 17 years ago, I have felt that the prices for telecommunications and electronics were significantly higher than I was used to. Do statistics bear this out, or is it all in my head? Let us look at one indicator, the relative price for a ten-minute local phone call over a decade:

GEO/TIME	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
EU (27 countries)	:	:	0.37	0.36	0.35	0.34	0.35	0.37	0.38	0.41
Belgium	0.54	0.54	0.56	0.57	0.57	0.57	0.58	0.60	0.62	0.63
Bulgaria	0.06	0.09	0.17	0.17	0.16	0.16	0.16	0.16	0.15	0.16
Czech Republic	0.46	0.46	0.46	0.64	0.64	0.64	0.64	0.64	0.64	0.65
Denmark	0.41	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.37	0.13
Germany	0.43	0.42	0.42	0.42	0.39	0.39	0.40	0.40	0.29	0.29
Estonia	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.25	0.23	0.25
Ireland	0.51	0.51	0.51	0.49	0.49	0.49	0.52	0.52	0.58	0.58
Greece	0.36	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.32
Spain	0.28	0.28	0.28	0.28	0.28	0.19	0.23	0.24	0.29	0.30
France	0.39	0.39	0.39	0.39	0.33	0.36	0.36	0.35	0.36	0.36
Italy	0.25	0.25	0.25	0.25	0.22	0.22	0.22	0.22	0.22	0.22
Cyprus	0.16	0.16	0.20	0.20	0.21	0.21	0.24	0.17	0.17	0.18
Latvia	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.35	0.36	0.36
Lithuania	0.35	0.35	0.35	0.39	0.39	0.39	0.39	0.39	0.39	0.39
Luxembourg	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31	0.31
Hungary	0.34	0.34	0.41	0.41	0.41	0.39	0.39	0.39	0.16	0.46
Malta	:	:	0.27	0.25	0.25	0.25	0.25	0.25	0.25	0.25
Netherlands	0.32	0.32	0.33	0.33	0.33	0.33	0.33	0.45	0.55	0.60
Austria	0.69	0.56	0.56	0.49	0.49	0.49	0.49	0.49	0.49	0.54
Poland	0.36	0.36	0.36	0.36	0.36	0.36	0.36	0.51	0.51	0.51

Portugal	0.30	0.31	0.31	0.40	0.37	0.37	0.37	0.37	0.37	0.37
Romania	0.37	0.33	0.33	0.35	0.35	0.32	0.32	0.22	0.22	0.24
Slovenia	0.17	0.26	0.26	0.26	0.26	0.26	0.29	0.29	0.29	0.29
Slovakia	0.52	0.52	0.52	0.75	0.75	0.75	0.75	0.76	0.75	0.75
Finland	0.23	0.23	0.23	0.24	0.24	0.24	0.28	0.39	0.29	0.34
Sweden	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.29
United Kingdom	0.47	0.47	0.47	0.36	0.36	0.36	0.39	0.48	0.63	0.77
United States	0.09	0.09	0.09	0.08	0.08	0.08	0.08	0.08	0.08	0.08
Japan	0.41	0.35	0.35	0.35	0.35	0.35	0.35	0.33	0.33	0.33

Telecommunications Services: Prices for selected countries, local calls (10 minutes) Source: Eurostat 31.07.12

Slovakia has the dubious distinction of having the highest rates for telecommunications services, as indicated in the chart above. Note that until the final year of the above statistics, it had the highest rates of any country under consideration. This is compounded by the fact that the average monthly salary is considerably lower than in many of the other countries in the table.

I would like to hone in on one year in particular, 2004, when the disparity among rates in Slovakia and other countries was at its greatest. As you may observe, the rate in Slovakia was significantly higher than in other countries. Looking at the UK, the only other country that surpassed Slovakia by 2010, the rate was less than half of Slovakia's in 2004. To compound the price differential, and to add further perspective, in 2004, the average monthly gross salary was 760.80 USD, while in the UK it was 3920.40 USD - over five times as much [2]. Looking at an even greater rate differential, in 2004, the rate in the US was 0.08 cents. Put another way, if you consider the 3730 USD average monthly salary in the United States at that time, as a percentage of gross salary, it would be like paying almost 4 USD for a ten minute local call. This would be an absurd rate, and no one in the US would stand for it, but the reality would even be worse if you considered net salaries. Let me relate a personal example:

When I first came to Slovakia back in the fall of 1998, the price for calling back home to Canada was about 15 Slovak crowns *per minute*. At the exchange rates at that time, that was almost 0.50 USD - and the average monthly salary was somewhere around 220 USD (7,000 Slovak crowns). So, a 30 minute call home to catch up on things would be about 15 USD, so if one were to make it a weekly call, it would take up over one quarter of your monthly take-home income. From what I recall, the internet prices were typically 1,000 Slovak crowns/month. Can you imagine in the US paying about 420 USD per month for a very slow and unreliable dialup connection?

Let me relate one more example from that time: I had a friend who was pricing the latest video camera. In Slovakia at that time, the price for the camera he was looking at was 50,000 Skk. The identical camera cost 39,000 Skk (at the historical exchange rate with the Deutsche Mark) in Germany; and in the US, it was the equivalent of 19,000 Skk, well less than half the price. The way he put it to me was that he could fly to New York, pick up the camera, and still save money. While the reasons behind these marked differences in prices are not a matter for this paper, it is clear that the prices of ICTs in Slovakia, especially given the relatively low average salaries, are a significant factor in limiting their proliferation.

What is especially interesting is that if we are to assume that by "turbulent times," we are referring to the Great Recession, *viz*., the extended era of economic downturn since 2008, these statistics clearly show the gap in ICT expenditure, and the further indicator here of the cost of ICTs pre-dates this economic turbulence. Given this level of entrenchment, how can Slovakia navigate its way out of these rough waters and catch up with other countries? The answer lies in education, and, more specifically, an education system that stresses the importance of the development of tacit knowledge. One key driver of change, then, would be to focus on tacit knowledge at the hiring stage.

3 Further analysis and commentary – Narrowing the gap

From the data presented above, it is clear the ICT investment in Slovakia lags significantly behind other EU countries, and it would seem that such investment is a low priority. The link to the subject at hand would seem to be that there is negative reinforcement of the lack of development of tacit knowledge, if there is indeed a connection between investment in ICTs and the educational sector. One can clearly not expect investment to increase anytime soon because of its low priority. The rationale behind why no significant investment has been seen includes, for example, the Maastricht criteria: the Slovak government has not given leverage to increase public expenditure on education, in addition to the agricultural and healthcare sectors.

It may be argued that within the framework of the current restrictions, we can still support the spillover or profusion of tacit knowledge via systemic changes. However, there are other barriers to its development, the primary one being a high degree of pessimism. How many times have you heard someone accept something negative in this country (e.g. the level of corruption) with a shrug of the shoulders and the bland statement, "It's Slovakia"? The negative reinforcement is pervasive, and many people in Slovakia have even given up trying. But you never know whether a system can be better unless you try it.

3.1 Mitigating the risk via a focus on tacit knowledge

If the aim is to make tacit knowledge the standard and its development more intentional, how can we create an environment in which people are willing to share their knowledge? The Slovak environment must become more competitive. On top of the pessimism, there is a fear of competition—a fear that if tacit knowledge or know-how is shared, competitive advantage is lost. This assumes, however, that knowledge is somehow finite, so sharing it means you have given everything away without hope of gaining more. What are the incentive mechanisms that can be put in place to encourage people to share, then? In my 17 years living in Slovakia, little has changed in terms of the barriers; indeed, if expenditure is increased now, the effects of such financing will take a long time, and a significant change will likely not even happen in our lifetime.

When it comes to education, teachers must be given the freedom to modify curriculum (syllabus) and thus the opportunity to fill the gaps they see. The accreditation system in Slovakia seeks uniformity and attempts to quantify the unquantifiable, trying to create a homogeneous style of education, which does not allow for such gap-filling. Knowledge is not a stock variable: it is infinite and intensely dynamic, and tacit knowledge vastly unquantifiable, so education must allow for these qualities. In the discouraging educational environment in Slovakia, with the barriers of archaic and superficial accreditation criteria, and a strong fear of losing one's competitive advantage if tacit knowledge is shared, how can we ever close the gap, lagging behind as we are? If the answer lies in developing tacit knowledge, then a key means to shift this focus is creating a team that knows how to foster it. I would advocate a more 'grass roots' approach, and specifically aim to address it not only at the level of the Ministry of Education or at the school administrative levels but right at the level of hiring teachers.

What steps, then, can be taken during the hiring process to determine whether a teaching candidate can create an environment in the classroom ideal for the development and transfer of tacit knowledge?

3.2 Hiring teachers: The CV

We can even step back, before we talk about reviewing CVs of teaching applicants, to the earlier stages of the hiring process—namely, the posting of the position itself. The posting should obviously relate to the type of candidate you wish to attract, and if the focus is tacit knowledge, then one of the key things you would be looking for is direct experience and expertise in the area the candidate is supposed to teach.

The experience and expertise you would look for on the CV, then, would be a combination of both practical work experience and some indication of academic experience. It might be added that academic experience (i.e. having taught before) is not absolutely necessary and that directly relevant work experience cannot be "faked" and is therefore the more critical factor.

For example, a teaching candidate may come with no professional experience in the field in which he/she will teach but does have a terminal degree in the subject area and ten years of teaching experience. A second candidate

may never have darkened the door of a university classroom but rather has ten years of professional experience in that field. It would be difficult for the first candidate to draw on the experience of "how things really work" in that profession or market sector, while, obviously, the second candidate has that advantage. In a way, to close that gap in experience, it would take the same ten years of professional exposure, which, as was mentioned above, cannot be "faked."

Having said that, the focus on direct professional experience on a candidate's CV must be further qualified. Some candidates have a vast amount of professional experience directly in the field of study yet are not able to break down what they do into "teachable" components. Some do what they do without even knowing how they do it. In fostering tacit knowledge or sharing know-how in the classroom, if they do not know how they do it, how can they share know-how? Let me share an analogy:

As a Canadian of Slovak heritage, I feel compelled to look at the game of hockey for our analogy. I have been watching NHL hockey ever since I can remember, which goes back to about the last time the Toronto Maple Leafs won their last Stanley Cup—in 1967. I have seen a lot of players over the years and it used to surprise me to see a player that I recognized and knew to be something of a "goon" on the ice - a player who did not have much "talent," could not skate or handle the puck very well, who got a lot of penalties and even got into quite a few fights – turn out to be a coach at the NHL level, indicating (presumably) that he was somehow respected enough as a coach to be at the very top level. Well, it used to surprise me until I realized that those are the types of players who have to work hard to get where they got, who have to break it down and become disciples of the game in order to get to and stay at the top level. The most talented players don't even have to think about it and sometimes cannot even explain how they do what they do, while the weaker players have done nothing other than constantly examine their game, break it down into its constituent parts and work on each and every part to improve it. It rather makes sense that these 'non-talented' players, then, are the ones who are able to transfer this knowledge to other young players and break it down for them.

This is not to say that what you want to look for in a CV is for someone who really showed no "talent" as a professional but had to work very hard to break things down to be successful in their field. Rather, it is to say that some candidates with brilliant and rich direct experience on their CVs sometimes cannot communicate it effectively to students. Obviously, you could have all the knowledge in the world but if you cannot share it, it is useless. So, there must be further steps taken (again, obviously) to figure out if the candidate with a CV rich in experience in the field of teaching will be good at fostering tacit knowledge in the classroom.

3.3 Hiring teachers: The interview

The task here is not to discuss interviewing techniques in depth or to revolutionize the interview process; rather, the focus is to look at parts of the interview that may increase the likelihood of hiring a teaching candidate who will effectively foster the development of tacit knowledge in the classroom, by creating opportunities to share know-how, addressing different learning styles, developing situations and activities where students can observe tacit elements of knowledge acquisition, and the like.

First, let us look at the types of questions that might most effectively help the interviewer discern whether the candidate will be effective at creating situations in the classroom for fostering the development of tacit knowledge. One of the key things is to get away from traditional "sage-on-the-stage" approaches like pure lectures as the primary form of content-focused delivery. A typical question, then, might be, "What activities, aside from lecturing, might we see in your classroom?" If the answer tends towards a variety of teaching techniques that focus on collaboration, highly interactive techniques, case studies and on roleplaying or situational learning that provides opportunities for observations and reflection, you probably have someone who will be able to develop tacit knowledge acquisition opportunities in the classroom.

Notice that above I have said "we" in this question, which is no accident: Like most hiring situations, an interview panel can bring multiple perspectives to the situation, as well as conversational dynamics that can even allow the situation to mimic tacit-knowledge fostering situations in the classroom. It may indeed help to step back and analyze and reflect on this dynamics in terms of how the candidate dealt with it, among the hiring team after the interviewing is completed.

Another line of questioning which may be effective in discerning whether the candidate will develop tacit knowledge in the classroom would be to present various scenarios and to ask how the candidate might deal with them, with a focus on the development of this type of learning. For example, you could present a situation - something of a case itself - where a student is struggling with a course concept or skill - and ask how the candidate would approach that student. If the answer tends towards telling the student "the answer", then probably the development of tacit knowledge is not the candidate's priority; however, if the answer is more about "showing" the student something, having the student perform a task, or drawing the answer out of the student via discovery in a way, then you probably have a candidate before you who would be good at fostering tacit knowledge in the classroom.

A second area to focus on in the interview is emotional intelligence. The interview can be structured in a way as to create opportunities, both by direct questioning and by observing the candidate's reactions and behaviors during the interview, for him/her to demonstrate empathy, social skills, self-awareness and other traits of emotional intelligence. It is more likely that a candidate strong in elements of emotional intelligence will not only be able to foster tacit knowledge in the classroom and be able to coach students effectively but will also be a good teacher in general.

Third, a direct conversation about tacit knowledge acquisition in the classroom may be in order. While the candidate may not necessarily be well-versed in the nomenclature of tacit knowledge, it would quickly become apparent whether he/she knew how to develop it and typically include a variety of teaching techniques in his/her teaching quiver that can be drawn and well-aimed at the tacit knowledge target.

Lastly, like pretty well any hiring situation, the use of multiple interview rounds can allow for more opportunities to observe key traits and behavior and gauge the knowledge of the candidate. Two or three separate interviews, under different conditions (time, place, style, panel make up, etc.) can help determine whether the candidate is not only a good one but also is a type of teacher that will make tacit knowledge acquisition a key part of the learning environment.

Oh, one last point about the interviewing process I've learned the hard way: Check references. This step can not only save a lot of headaches, but questions can also be asked of the references about the candidate's approach to the classroom/workplace, whether he/she has demonstrated elements of emotional intelligence in past positions, etc.

3.4 Hiring teachers: The teaching demonstration

One part of the hiring process that can go a long way in determining whether the candidate has the "right stuff" to not only teach but also develop tacit knowledge in the classroom (and beyond) is the teaching demonstration. A teaching demonstration is a short lesson - say 15 – 30 minutes - where the candidate actually plays the role of a teacher in the classroom and the hiring team of his/her students. In this way, actual teaching techniques can be observed and student interactions can be simulated. The "students" can even role-play some typical situations that might involve the teaching candidate's reactions and can demonstrate his/her ability to coach students, bring out tacit knowledge, etc.

A further step of the teaching demonstration, once it is formally completed, is to allow the candidate to reflect upon and analyze what happened and for the interview team to provide feedback and opportunity for further reflection. A reflective candidate - someone who can bring learning out of practical activities and coach students in the right direction - is once again a trait of someone who would likely be good at developing tacit knowledge in the classroom.

4 Conclusion

In summary, the study shows the gaps in ICT "infrastructure" and costs between Slovakia and more 'advanced' economies. It argues that a focus on tacit knowledge in the classroom can be an effective way to bridge this gap. More specifically, it outlines steps in the hiring process - wit, CVs, questioning techniques and teaching demonstration - that highlight a candidate's proclivity towards tacit knowledge acquisition in the classroom. As stated at the outset, while this study focuses on education, and specifically on hiring teachers in the classroom, it can

have spillover for many wider situations, especially when it comes to hiring for leadership positions in any organization.

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