

Opportunity

IT 4 ALL

for Everyone

Elevator Development Centre (EDC) Centre for Further Personal Development

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Used abbreviations

AC	Assessment Centre
CJD	Christliches Jugenddorfwerk Deutschlands Gemeinnutziger EV
EDC	Elevator Development Centre
IT SH	IT Services Hungary
KN	Karpatská nadácia
VPAC	Vocational Potencial Assessment Centre

1. Background of Elevator Development Centre (EDC)–Centre for Development

While the Assessment Centre is used as a selective tool for mapping and assessing the suitability of a candidate for the job position, the Centre for Development is used as a development tool for mapping and evaluating employee / candidate qualities that serves as a basis for his/her career development. The result of the standard Assessment centre is a suitability of the candidate for the job position, the result of the standard Centre for Development is a background for the further development of the employee.

In our case, regarding the Assessment Centre–adapted to the VPAC (Labour Potential Assessment Centre) ([link](#)), based on T-Systems' requirements, we defined the general core competencies ([link](#)) for finding a job in the TSSK, and then we evaluated the potential of the participants–representatives of a specific target group–candidates with some type of health or social disadvantage. Through the VPAC 1. we achieved personality and competence assessment for participation in the next development process–the Centre for Development (EDC).

2. The importance of EDC in the context of re-training of candidates with disabilities

Primary author of section: Anna Ričányiová

At present, virtually all IT companies in Slovakia face a problem of lack of qualified workforce across junior or senior positions. The trend is to educate and retrain the labour market through retraining courses, participation in IT farms, boot camps and so on.

While the ICT sector salaries are much higher than the average, it still did not bring enough qualified professionals to meet the demand of companies. Qualified IT specialist has a much better opportunity to find a job not only as an employee but also as a self-employed person.

When talking about qualified IT specialists, they are mostly the school-leavers of technical secondary, higher vocational schools, and especially, university graduates. However, even a candidate with a different education may become the expert if he / she is interested in modern technologies and is willing to learn, develop, retrain, complete a specialized course or training, or through self-study and gradual gaining practical experience. An important factor is the candidate's entry potential—his/her level of education—level and field, computer literacy, technical and IT orientation, good command of foreign language, technical thinking, drive and enthusiasm for ICT.

At a time of significant shortage of workers, HR staff also consider retraining and educating candidates from specific groups of productive population who are health or socially disadvantaged and their inclusion in the IT field is possible, taking into account their limitations, that are visual, auditory, physical, but also social. The topic of dealing with people with disabilities and their integration into the labour market is highly relevant at a time when many countries are also striving to set up a social and employment policy by means of their increasingly humanizing policy so that even disadvantaged individuals have the opportunity to be engaged in ordinary social life.

In the context of disadvantaged candidates finding a job, we are particularly interested in the prospects of disabled people in finding a job and whether the employers are willing to employ a person with their type of disability also in the open IT labour market.

Disabled individuals are not only subject to health restrictions, but even the social dimension is an integral part of their disease. Hand-in-hand with disability, a social isolation can also come, i.e. the psychological loss of social contact and the withdrawal into solitude in a difficult life situation. Generally, we can say that for a disabled person it is difficult to find a job in the competition of healthy individuals resulting from his / her personal requirements and life goals, while with mentally disabled persons, due to their frequent inability to act alone, this problem is even more serious.

In today's society, we are constantly confronted with the persistent stereotype related to of looking at disabled people.

The employment policy enshrined in legislation, within protection of disabled persons, is aimed to provide the application of equal conditions and the elimination of any discrimination on the labour market in relation to persons with disabilities in the context of the protection of persons with disabilities. In the case of a person with less disability that does not limit him/her to a high degree, he/she can very often find a job in an open labour market where he/she works among healthy individuals. The inclusion of a more disadvantaged individual in such an environment is more difficult, since his / her employment may involve several arguments that discourage employers themselves from employing him/her.

Our goal is to confirm or rebut the hypothesis that people with disabilities are a disadvantaged group on the labour market while trying to detect existing barriers and explore the possibilities of their integration into the working process in the field of ICT.

Within the VPAC (link), we identified candidates who have the potential to undergo retraining, training and training programs, and find a job. The candidates went through a developmental EDC program to develop their computer literacy (use of the MS Office package), language skills (English and German) as well as a series of soft skills trainings focused on communication, self-presentation, teamwork and the like.

During the pilot implementation of the EDC program, the candidates were able to learn conditions of the T-Systems Slovakia (TSSK) conditions directly from internal IT specialists and get the answers to the question of whether the work in IT field is or is not the right choice for them. The participants decided whether to actively participate in the EDC–Centre for Development, participate in as many training sessions as possible and thus increase their chances in the follow-up assessment process: VPAC II.

After graduating from the EDC Centre for Development, together with the trainers, we evaluated the results of participants' entrance tests, their attendance, engagement, initiative as well as the results of output tests after graduating from the EDC.

3. EDC goals from an IT company's point of view

Primary author of section: Martin Džbor

According to studies by the European Commission, in the last decade in modern society, there are several groups that are at risk of poverty and social exclusion outside of the main social stream. These vulnerable groups are formed (for example) by physically handicapped citizens, migrants, ethnic groups (especially Roma in the case of Slovakia), but also homeless people, etc. The inclusion of each of these vulnerable groups is one of the priorities of the EU and therefore the Member States are committed to developing the opportunities for the inclusion of vulnerable groups.

While there are dedicated mechanisms at the state level to support disadvantaged groups, in the opinion of the project team members, it is equally important to involve directly commercial companies, business—directly or using support mechanisms at national or European level. In the case of IT, this need for engagement is all the more important, as it is the need to develop the so-called digital skills that are usable not only directly in IT companies but practically in most professions and jobs.

There are, of course, many courses where the participants are taught and acquainted with specific software (MS Word, Excel, PowerPoint or Web Browser). However, there are far fewer courses that support the development of technical thinking or algorithmic thinking. The experience of an IT company that has organized various forms of training for different target groups shows that any candidate's chance to succeed is increased by learning skills, structured thinking, communication, or ability to work with other people. Courses of specific technologies and software products have much less impact on longer-term success.

For these reasons, it is important for companies themselves to be directly involved in the curriculum and content of educational programs. As mentioned in the previous paragraph, T-Systems Slovakia perceives the importance of creating educational content and its implementation in IT, digital skills, and especially in the area that we could call digitally transferable, supportive skills. This is immensely important because if a company in training support would devote itself solely to hard skills such as a specific software package or methodology, it would help educate only a narrow-minded consumer of certain software. However, what a modern company (and certainly a modern IT company) needs, is the candidate who is able to play a role of the producer—the creator of information, new knowledge and data who makes creative use of technical knowledge.

In some English literature, the term “prosumer”—a combination of the English word “consumer” + “producer” is increasingly used for this type of skill. In the opinion of T-Systems Slovakia's project team members who have participated in the IT4All project, the main goals of this project are motivated by our preference and the aim of helping to help to educate candidates from disadvantaged groups just like such “prosumers”. Candidates who are gradually passing through the EDC concept proposed in the project should be able not only to use different IT media but at least to try to create, change, adapt them.

The primary objective is therefore to ensure that these potential candidates from disadvantaged groups do not end up ever more endangered with digital content. If we teach them exclusively to consume the existing content through a browser, phone, or tablet, it may initially support their use of IT technology primarily for the entertainment from where it is potentially very close to creating addictions. If we focus in

development of these candidates more to development of their skills in problem solving, critical thinking, creativity, and so on, the chance that these people will fall socially even deeper is decreasing.

Another important aspect that the T-Systems Slovakia company has taken as a challenge in defining EDC goals is to overcome barriers to help a disadvantaged candidate learn to value himself/herself, his/her already acquired skills, and to be able to actively interact with his/her colleagues, to obtain information or advice from them that is personally difficult for him/her to get directly. The project team in the company believes that a disadvantaged candidate may have a higher chance of inclusion if he / she is able to engage in joint action with other team members into which he / she will be included—i.e. to contribute to common problem solving, discussions and debates, preparation of structured materials. IT careers should not be based solely on learning how to routinely use a single software package—it is too short-term and counter-productive thinking.

In short, and schematically, we could formulate EDC goals from company perspective as follows—see Table 1.

Table 1. Goals for skills development from a company's point of view

Target type of skill	Specific area	Explanation, motivation
Work with others	Communication	The basis of any chance—ability to formulate opinion, idea, consent or disagreement—appropriately to the context, situation
	Work in a team, conflicts	A disadvantaged candidate has a lot of IT skills that are underdeveloped—hence he/she needs to learn to compensate for his "weaknesses" by participating in a team, in cooperation with other colleagues
	Foreign language (English)	For IT career de facto necessity—due to specific terminology (especially in programming), existence of documentation, customer
Troubleshooting in IT	Support IT packages	The usual focus of many IT courses (spreadsheets, text editors, web browsers, etc.)—CV creation, correspondence, job applications, etc.
	Overview of IT areas	Career in IT goes far beyond the office package (spreadsheets and text files)—the advantage is to get acquainted with activities such as administration of IT elements, their preparation or modification (server, DB, network,...)
	Further education in IT	A disadvantaged candidate often needs more time to achieve success in the job position—it is important to offer him/her the habits leading to the possibility to use available (standard) types of education, different superstructures, dual forms, and so on.

Digital content creation	Creativity	The transition from passive familiarization with the tools to their use for a particular purpose, personal goal—in a form of documentation, games, educational materials and the like.
	(Self)presentation	One of the essential requirements, along with the promotion of communicability—the ability to “sell” one's own idea, opinion, output (even publicly)
	Documentation/analysis	Ability to create structured, wider text or graphic material to support presentation or communication

The IT company should, in a standard context, require all of the above-mentioned categories and all of the above-mentioned skill areas. Considering that this project is a relatively new attempt to build a system of knowledge and experience in the field of inclusion, we pragmatically focused on a subset of these ambitions—in order to achieve specific outcomes and experiences on which could become a base for further work with disadvantaged candidates. An equally important factor was to provide an appropriate level of ambition for the disadvantaged candidate himself/herself—too big expectations from a potential IT employer could block him/her and thus avoid the desired progress. We prefer the way of gradual steps and gradually increasing ambitions. For this reason, our goals include especially:

- skills aimed to improvement of communication of a disadvantaged candidate,
- skills aimed to improvement of integration into teams and groups,
- skills aimed to development of basic („office“) IT skills,
- further IT education and understanding of diversity in ICT careers,
- presentations of himself/herself and his/her outputs in the context of a group and a team.

4. Target group of EDC (Slovakia)

Primary author of section: Anna Ričányiová, Barbora Kollárová

The target group that was pilot tested in the process of EDC development and pilot implementation was a group of 14 selected participants of IT4ALL project who successfully completed VPAC 1 and who identified the prerequisites and potential for work in the IT area. 11 of them had some type of physical handicap. 2 were Roma.

Of the five candidates who did not join EDC: 1 participant gained a job, 1 started full-time university study, 2 resigned for health and family reasons, and 1 participant preferred its own business, allowing it to combine income from work (a protected workshop focused on IT services) and contributions from the state. This participant demonstrated the initiative and, in view of the technical equipment available to him, has proposed the MS Office Professional project for online public education in cooperation with the Carpathian Foundation. This intention is developed and awaits your fundraising opportunity.

9 participants participated in the Centre for Development (EDC). Six of them completed it by meeting the minimum required criteria (initial testing of the level of knowledge, minimum participation in the contact classes, preparation of individual assignments). Three resigned from various, mostly personal and health reasons. Six EDC participants have completed 21 contact classes led by internal trainers in three key areas. On an individual basis, they fulfilled the assignments sent to them by the trainers and subsequently checked their fulfilment.

During the implementation of the Centre for Development (EDC), the participants were able to contact an internal psychologist—an IT company employee, in case of need and interest, and arrange a personal meeting. However, none of the participants made use of this option.

All contact classes were conducted in the training area of a participating IT company with barrier-free access and accessibility of the barrier-free toilet, parking and catering services. However, parking reserved for immobile and disabled visitors was not always free. The accessibility of the Centre for Development was therefore principally secured and trouble-free. In this respect, however, it is necessary to ensure the availability of all jobs that could be occupied by potential staff with special needs.

Assessments and feedback from the pilot target group showed that availability was satisfactory, the approach of trainers and other staff was very good. The only identified problem was not entirely reliable and satisfactory technical conditions and parameters of used electronic documents that did not allow the blind participants to work with them. The technical and technological requirements are discussed in more detail in Chapter 9 (link).

All six EDC graduates were given the opportunity to take the next stage of the assessment centre: VPAC 2 the aim of which was to evaluate their progress and their readiness to compete for selected open positions in the involved IT company. For more detailed information on the progress and evaluation of candidates through VPAC 2, see Chapter 8. (Link)

Of the six candidates, five were recommended to continue seeking job in the IT area and were encouraged to apply for open positions. One participant was advised to seek job outside the IT sector. One participant

has already gone through a job interview process and has accepted a job offer from a participating IT company. Two candidates went to participate in a 1-month internship at IT Services Hungary in Debrecen (IT4ALL project partner). It is assumed that after graduation they will apply for a position in the IT sector. One participant continues to study at an IT university and plans to join the dual education program of the involved company. One participant decided to return to his IT business in his hometown.

5. Identification of work positions for the EDC target group

Primary author of section: Daniela Bodnárová, Martin Džbor

Regarding the relatively low readiness of candidates from disadvantaged groups at entry, i.e. early stages of their gradual integration and inclusion in the labour market, predominantly junior positions are suitable for this target group where no previous work experience in specific areas is needed. However, it is no intentional dehonouring of a potential candidate in any case. It is rather necessary to consider the appropriate level of challenge that the particular job position and offer contains. If we use too demanding job position for a disadvantaged candidate, which typically emphasizes previous experience, previous practice, such a position may lead to personal frustration and blocking the candidate rather than encouraging and motivating him/her.

Another major advantage of so-called junior positions is a relatively long-term chance of gradual development. These positions occur at the beginning of career paths and ladders, so the candidate who enters them can develop broadly as he/she gradually becomes acquainted with his/her abilities, skills, and different IT activities performance requirements.

From the point of view of the complexity of the work carried out, it is mainly about the initial technical positions, but also about positions of a procedural and supportive nature, where during the trial period the IT company can train the new employee and provide relevant training of necessary technologies. These positions are also commonly recommended to school-leavers of secondary vocational schools or even of non-technical colleges/universities. These jobs are in no case “segregated” jobs. Specifically, they are Level I or Level II ICT Administrator positions, especially in Linux (or Windows) operating systems support, but also in the area of support for IT solutions in the field of computer networks (LAN), databases or customer applications.

Another, very suitable category of job opportunities is the area of process specialists. In this case, it is a job that does not require deep technical knowledge and skills, it rather uses transferable skills (communication, presentation) and more general digital skills (office packs, foreign languages, problem solving). We also offered the graduates, as an alternative to a specific job, so called internships—in the T-Systems Slovakia company in similar positions, or in IT Services Hungary in Hungary. The aim of this alternative was to allow the candidate to look “under cover” and to become acquainted with the claims and requirements without the commitment and pressure on success that might occur when trying to enter a standard job, especially a full-time one.

Below, we briefly describe the expected basic skills of the above-mentioned job positions according to descriptions valid at the time of implementation of the project in the T-Systems Slovakia company (see Table 2).

Table 2. Expectations regarding the employee in positions relevant for EDC engagement

Position	Typical expectations regarding the worker	
	Hard knowledge and skills	Soft skills
Junior/ICT Adminis-trator	<ul style="list-style-type: none"> Administration of Windows, Linux or computer networks, in productive environments Knowledge of and capability to work according to ITIL processes, i.e. change, problem-, incident- and configuration management 	<ul style="list-style-type: none"> Willingness to learn Flexibility, responsibility Team player English–intermediate (B1+)
ICT Adminis-trator	<ul style="list-style-type: none"> General overview of ICT Administration of Windows, Linux, or SAP Systems or computer networks, in complex and productive environments. Knowledge of and capability to work according to ITIL processes, i.e. change, problem-, incident- and configuration management Overview of the ITIL processes Understanding of IT security Knowledge of databases and application environments Min 1 year on similar position 	<ul style="list-style-type: none"> Flexibility, responsibility Capability to self-learn Active approach to fulfil work tasks Good communication skills Team player English–intermediate (B1+)
DB Adminis-trator (junior)	<ul style="list-style-type: none"> Administration of UNIX/Linux at intermediate level Administration of MySQL or other SQL databases at intermediate level Capability to create shell scripts for automation–bash, perl Capability to analyse system data and evaluate component status 	<ul style="list-style-type: none"> Flexibility, responsibility Capability to self-learn Active approach to fulfil work tasks Good communication skills Team player English–intermediate (B1+)
Process Specialist	<ul style="list-style-type: none"> Technical skills – overview of basic ICT Knowledge of international process standards (ITIL–min. incident, change, problem and configuration management) Process orientation and analytical thinking 	<ul style="list-style-type: none"> Communication skills Interpersonal skills Organizational skills Ability to interact professionally with employees at all levels of the organization and across cultures English–Upper intermediate (B2)
Quality Specialist	<ul style="list-style-type: none"> Practical experience of continuous improvement methods and techniques Experience with process, incident and problem management Excel, macros, VBA at advanced level 	<ul style="list-style-type: none"> Very good communication and negotiation skills Ability to understand how the IT technology supports the business Good understanding of statistical and analytical principles and processes English–advanced (C1)

Reporting Specialist	<ul style="list-style-type: none"> • Experience in the field of data processing and reporting, possibly report automation • Experience with creating user reports • Experience as a user with databases like MSSQL, MySQL • Knowledge of programming languages, scripting 	<ul style="list-style-type: none"> • Very good communication and negotiation skills • Ability to understand how the IT technology supports the business • Good understanding of statistical and analytical principles and processes • English–advanced (C1)
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6. The process of preparation and creation of the Centre for Development of EDC

Primary author of section: Martin Gbúr

6.1. Testing the professional skills of candidates for EDC

Following the selection of candidates through the VPAC 1, where they demonstrated sufficient potential for work in the IT sector on the basis of the selected and evaluated competencies, they also passed testing of their professional skills. IT skills, English, German, and soft skills were tested. Each test took into account the specific needs and constraints of the candidates that were at the same time modified to ensure the same conditions for each candidate without any exceptions or preferences.

The aim of the test was to determine the level of knowledge of each candidate in each area in order to divide the candidates into groups according to these levels (beginner, advanced). At the same time, this test brought the expected outputs which included information on knowledge and experience in the tested areas of IT, English and German, as well as of soft skills.

In the area of IT skills, the candidates were divided into two groups—beginners and advanced ones, also within the English language. There is only one group of candidates within the German language area who need this language as part of their future career development. Because the area of soft skills is very broad, it was tailored to the entire group of candidates in order to bring various soft skills needed for their development closer to them, so the testing did not require division of candidates into groups.

Evaluation of the test that was processed immediately after meeting with the participants of testing. On the basis of the results achieved, two groups were created, differing by the level of curriculum difficulty.

Concept of Soft Skills Testing

When preparing the test for the participants, we came from our lecturer's experience and knowledge acquired during the implementation of the IT4ALL project and during the exchange of experience with the German partner CJD Frechen ([link](#))

Based on outputs from VPAC 1, we decided to use the MBTI test that was developed and is used by T-Systems' HR department. This test is currently one of the most used in HR. MBTI ([link](#)) is a personality test designed to identify a person. This test was chosen upon some factors, the first one was that selection based on VPAC 1 brought participants who did not have reduced cognitive abilities. The second one was the principle of equal access used by our German colleagues (CJD Frechen) in their work that decided about use of the same test tool that is commonly used in our company.

The MBTI evaluation model helps to understand what individuals are trying to achieve in their self-realization, what they think is important, how they decide, how they behave to their surroundings. This typology is based on the assumption that human behaviour is no coincidence and can be predicted. Based on these regularities, we can organize different types of personality and their differences. The differences are completely natural and do not mean any deviation or peculiarity.

The evaluation is based on a psychometric questionnaire designed to accurately measure the psychological preferences of people with respect to how they perceive the world around themselves and make decisions. The test used is based on a book by Michal Čákr–Personality Typology for Managers (Management Press, Prague, 2012).

The test was submitted in electronic form, in format of the excel file and the test itself was not edited. The test participants were to download a file containing MBTI to their computers. We saved the file online and sent the link to the location of test saving to the test participants via email. The test should also be sent back by the participants via e-mail or stored in the shared directory on the Google Drive.

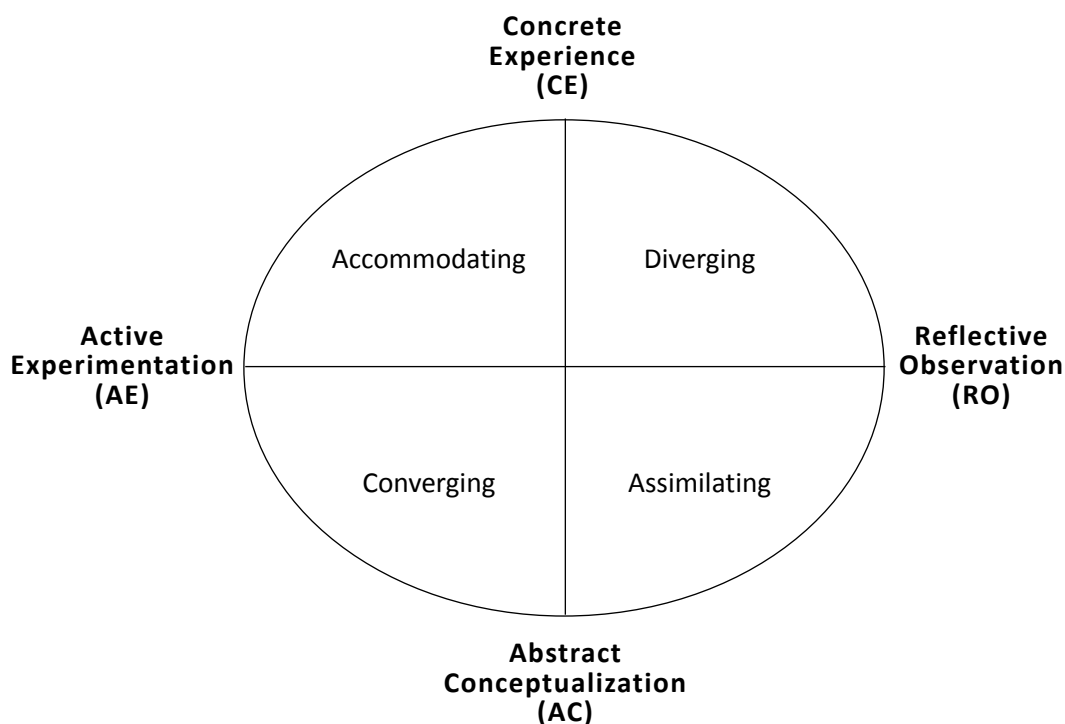
The second test we decided to implement was the Kolb test of learning styles. According to Kolb's model, learning is most effective when carried out in process and should not be judged solely according to the results achieved. We decided for this test for four reasons, the first one was that very few people are aware of what style of learning they personally like. The second reason is the European Commission's recommendation, which assigns the competence to learn to eight key life skills. The third reason is that after coming to a new place of work everyone must adapt as soon as possible. In this adaptation process, our knowledge of our competence is very helpful.

The fourth reason is that the results of this test, in combination with the personality test, make the image of the person well. And based on past experience, it is one of the few known competencies in our population. The goal was to find out what types of participants from the perspective of the preferred learning style occur in our training (EDC). So, whether we will have people more focused on theoretical preparation or so-called activists who need to do and try the things and, on the contrary, the theory is boring and uninteresting for them. The results of our testing, at least theoretically, prepared us for our participants and comparing the results of both tests, we created their profiles. The results of both tests were very interesting.

All 13 candidates were tested while 8 people participated in the training cycle itself. The aim was to find out with what kind of personality we will be working and compare the individual types to determine in advance what types will be or will be not able to work in a group.

Kolb's learning cycle is one of the most widespread theories of learning and skill acquisition. According to Kolb's model, learning is a continuous process based on personal experience. It is then necessary to analyse learning in terms of process (activity / game reflection) and not in terms of the result achieved. Knowledge (knowledge gained through studies, experience) is then the result of a combination of understanding of experience (what we have experienced) and of how to use this experience further in the future.

Figure 1. Scheme: Kolb's cycle of experience learning and basic learning styles



Kolb's theory also explains a cycle of experience learning that applies to all people. The cycle consists of all 4 parts and can start at any point:

1. Concrete experience (CE)
2. Reflection, thinking of lived experience (RO)
3. Abstract conceptualization (AC)
4. Experimenting with conclusions, creating new concepts (AE)

Kolb's theory goes hand in hand with personal theories, such as MBTI typology. Peter Honey and Alan Mumford, who created a very similar theory, were also inspired by Kolb's theory.

Kolb also defined the learning style that is the product of the two choices we make or prefer, and which contradict each other. The concrete experience (CE), when a person needs to catch a concrete thing versus an abstract concept (AC), when one tries to analyse things and think logically. The second choice occurs when processing information.

The first type of people needs to experiment with the thing (AE), and the second type of people observes the things reflectively (RO), listens, talks about them and evaluates them. By combining these two meth-

ods, Kolb created a model upon which he assigns the people to one of 4 ways of receiving and processing information.

Learning style is then a way how the individual choices made during the learning process influence the choice of information and its subsequent processing. The difference in learning styles then explains why some people prefer a particular way of learning in comparison with others, and vice versa.

The test was written in the paper version received by each test participant and he/she passed the test after its completing. The test contained 12 questions, each question having 4 responses, and between 1 and 4 it was necessary to determine own preferences. Preference 4 means that the statement is the truest to me, and 1 means that the statement is untrue to me. In addition to the 12 questions, the test also contains a table that each participant had to complete on the basis of the attached instructions.

Concept of IT Skills Testing

The starting point for preparation of the IT skills test the usual working tools (software) and their use within the involved company were. They include particularly Microsoft Office applications—Excel, Word and PowerPoint. In addition, the testing was also focused on general IT knowledge and operation of the Microsoft Windows operating system. A test set consisting of five of the above-mentioned fields was prepared. Each field consisted of five to ten tasks, the difficulty of which was graded. The degree of difficulty of the questions was also reflected in a different assessment. Together, participants could get 100 points (20 points per thematic field) for the whole test.

The source for the individual parts of the test preparation was the personal experience of the trainer regarding IT resources used in the T-Systems Slovakia company. The tests are original and built solely to test the knowledge level of the test participants. When preparing it, the emphasis was placed on the unambiguous nature of the input and interpretation of graphic elements by text descriptions. As it turned out during the testing, the reader software used by the blind participant could not fully interpret the tasks (especially in Excel and PowerPoint). In view of this fact, the PowerPoint field was omitted from the final form of syllables as well as the final test.

The test was prepared in electronic form, taking into account the physical needs of the test participants. In particular, the images were supplemented with a description of what they are portrayed. Each block of the test was one file that the test participants had to download to their computer. Preparation of the field of tasks was to be labelled (in the case of a question with the choice of answer option) or developed (for tasks within the Excel and PowerPoint fields) directly in the input file. All files were saved online. A link to the saving place of the tasks was sent by e-mail to the test participant. The participants should send back the completed tests, also by e-mail.

Concept of language skills testing (German, English)

When testing a foreign language for the purpose of EDC, it is necessary to consider both the grammatical aspect of the language and the communication skills of the participant. As part of the project, the oral test was evaluated as most acceptable, as the participants were more familiar with the lecturer during testing, and thus the often-tense atmosphere could break. The reserved time for testing is approx. 10 to 15 minutes, depending on the language level. With the low-level of knowledge, the conversation was chosen in the Slovak language. With a higher level of language knowledge, testing was done exclusively in a foreign language. By questions, it is possible to find out an approximate level of language.

In both tests, the level of grammar of the foreign language command, the extent of vocabulary for basic topics as a common day, liked activities, recent past, and ultimately, attitude to the foreign language were examined. At the end of the test, an approximate course of education was presented, what topics and methods of teaching will be chosen (emphasis on communication and vocabulary extension) and basic grammar. During both tests, it is advisable to get an overview of what topics the participants are interested in and then incorporate them into the lessons.

Because the participants in the test group were severely disadvantaged (vision and hearing handicap), it was necessary to adjust the test method and, as a consequence, adjust the course of the training. Testing is done individually, it was not necessary to adjust the testing method for the whole group, but in a form of communication, to learn more about the participant. How to use a computer as a hearing aid, as it is not possible to read everything from the lips.

The English Language Level Test is available on a web link.

The breakdown of participants by level was made on the basis of a written test and a brief characteristic of themselves in a short conversation..

Knowledge gained during testing

During the testing itself, we encountered technical problems and even less cognitive problems that could have been related to technical deficiencies:

- Insufficiently reliable and functional network connectivity of participants in the room
- Problems of vision handicapped participants of testing with reader software
- Paper format tests require an assistant that limits candidate's performance in terms of time or / and quality
- A file with the test in excel/pdf format was primary not adjusted to needs of sightless participants
- It was operatively removed during testing itself.
- For some participants, we observed a reduced focusing on assigned tasks, leading to inattention and despite describing the role of inserted pictures, they ignored the tasks with pictures ignored, did not complete and hand over some tasks elaborated only partially.
- For some participants, we noticed a higher and for some too low language level, sometimes leading to stagnation of participants in the group.
- The problem with hearing occurred in the case of deaf participant.

6.2. Creation of the EDC courses content

IT skills course

At the request of the participants themselves, a decision was made to allow the members of the lower level group to attend the higher-level meetings and vice versa. The test participants themselves openly admitted that in some cases they do not feel sure in issue and would therefore attend meetings at both levels. The timetable as well as the syllabus of meetings were designed so that lower-level topics always preceded higher-level topics. The emphasis was put on the practical training of procedures and knowledge

in the work with individual programs of the Microsoft Office software package. The course lasted 21 contact lessons.

The table below shows the schedule of meetings of individual groups and topics of lessons (see Table 3).

Table 3. Schedule of meetings and topics for IT skills course

Term	Time	Field	Description
Day 1	2 lessons	Introductory lesson	Few words of introduction, Schedule of meetings, Challenges and expectations, Technical background of meetings
Day 2	2 lessons	Excel	Formatting, Skilful abbreviations, Data filtering and sorting
Day 3	2 lessons	Excel (repetition)	Formulas, Graphs, Contingency tables, Macros
Day 4	2 lessons	Excel (repetition) / Word	Word–Formatting
Day 5	2 lessons	Word (repetition) / Word	Breakdown of the document, Page numbering, Insertion of content, Footnotes
Day 6	2 lessons	Word (repetition) / Interesting news from the world of IT	–
Day 7	2 lessons	Output test (Excel / Word)	–

Soft skills course

When preparing the course, we took into account the test outputs (see Chapter 8). When creating the individual training lessons, we started out with a list of topics that we specified in the team of coaches and project co-workers before the participants testing. The topics of training are focused on so-called soft skills and their development. They are varied, and we have agreed to create a plan that would pursue the goal of better understanding each other and strengthening skills and attitudes in the field of mutual communication, work in a group or in a team. We wanted gradually to create a team from this group that would be able to communicate together and would perform the tasks set and at the same time would learn how to cooperate. All of these are skills that are most needed in the IT sector and, given the results achieved with the final testing, we state that our goal has been achieved.

In creating the training lessons, we used methods of non-formal learning based on Kolb’s learning cycle that is used in experience pedagogy. Its advantage is that it works with a particular personal experience of each participant, placing a great emphasis on the reflection of the experience, from which the learning moments that can be applied in the next activity can be extracted. It is a methodology based on activities and a smaller number of theoretical inputs. At the same time, communication and work in a group are needed. We created a program for each lesson so that it always contains at least one activity, whether in pairs or in larger groups. At the beginning of the contact lessons, we introduced a theoretical input that was presented in a form of presentations.

Table 4. Structure of soft skills course

Term	Time	Field	Description
Day 1	2 lessons	Introductory lesson	Meeting and introducing, Expectations, Personality type test
Day 2	2 lessons	Motivation–Self-knowledge	Learning styles, self-knowledge–Johari window, EQ, motivation and self-motivation
Day 3	2 lessons	Communications skills I.	What is communication? Verbal–nonverbal communication, Active listening.
Day 4	2 lessons	Communication skills II.	Reflection of the previous session, Body language, Personal feedback
Day 5	2 lessons	Assertiveness–Sales skills	What is assertiveness? Training of some techniques. What are sales techniques?–the tricks that are commonly used.
Day 6	2 lessons	Stress and change management	What is stress, distress, eustress? Techniques of stress management. Stress test–life situations. What is change management?
Day 7	2 lessons	Presentation skills I.	Theory and division into personal/frontal presentation and shared presentation (webex). How to prepare a personal–frontal presentation
Day 8	2 lessons	Presentation skills II.	Presentation in T-Systems, principles to prepare good PPT and Telekom rules for company presentation in PPT.
Day 9	2 lessons	Presentation of participants I.	The homework for participants to prepare and present frontally one ICT theme.
Day 10	2 lessons	Presentation of participants II.	Homework for participants to prepare and present frontally and through the Telekom template via PPT one ICT theme.
Day 11	2 lessons	Company culture (culture in TSSK)	What is company culture? Rules of Telekom and T-Systems
Day 12	2 lessons	Company culture + guest	Four pillars of T-Systems and a guest, Mr. Juraj Probal, about his life in T and motivation
Day 13	2 lessons	Discussions	
Day 14	2 lessons	Discussions and end	

Language skills course

German language course was focused on communication. After testing, the participants' language skills were taken into account. At a lower level, education was aimed at extension of vocabulary in fields such as home and household, work and things at work, weather, talking about himself/herself (to introduce himself/herself and conduct dialogue when meeting German-speaking people), food, leisure, basic IT concepts, at a restaurant, at a hotel, at an airport or at a station, and creating a CV. Regarding grammar, it was present time, future time and past time, various adjectives related to the topics and their declension, modal verbs and the difference between "tykanie" (singular form of you) and "vykanie" (plural form of you).

At a higher level, the topics were agreed upon with the participant, and the lessons were held as an open discussion on the subject. The two lessons were devoted to IT vocabulary, as well as vocabulary used at work and writing of e-mails.

Since I was less interested in German, I could use a tailor-made approach and to solve various problems in learning German, such as pronunciation, explanation of sentence structure and others. The beginning of the lessons was devoted to repetition of previous topic and also to problems with preparation of homework. Participants also had to create a curriculum vitae in German.

7. Implementation and course of the Centre for Development-EDC

Primary author of section: Martin Gbúr

Recommendations and experiences from the pilot implementation of the IT skills course:

Technical security, whether on the part of the supervisor or the students, was sufficient. Individual problems with Wi-Fi internet access were the only deficiency. But it was not the most important for, and later it turned out to be unnecessary. However, the diversity of versions of Microsoft Office programs installed on individual students' computers may be considered as a problem. I have therefore generalized or skipped some of the points of the topics.

The premises where the meetings were held are considered to be inadequate as it is a windowless room with only artificial lighting and without adequate natural ventilation (air conditioning is not suitable for a group with a physical handicap). I can see solution of these troubles in use of training classrooms in the premises of our company (subject to the provision of barrier-free access).

Individual meetings were running according to schedule and duration set. The discipline of attendance was exceptionally good. In some cases, I had to harmonize the terms of the meetings with other working terms or to schedule them considering meeting of other fields. However, the communication of any changes in the organization was, I think, sufficient and trouble-free.

The rate of topics learned was slow. Interaction of students with me as a supervisor I think is sufficient, concentration on the topics, too. The students' ongoing questions were material and did not disrupt the course of training. Differences in student knowledge proved to be irrelevant. However, the big problem was a composition of groups in which the students with disabilities of different character met. This, in my opinion, resulted in a lower level of involvement by Janka Andrejková (more in the individual student assessment below) or loss of interest in training for Andrea Sabova. The interaction of a trainer with such a non-homogeneous group always proved to be a disadvantage for the individuals and required more individual approach.

For the above reason, I removed Microsoft PowerPoint from the timetable and replaced it with the topics (Interesting news from IT world) suitable also for Janka Andrejková. I also limited the final test to the Microsoft Word and Microsoft Excel themes that the students were able to pass more or less at the same level.

All in all, I can say that the training provided the students with an opportunity to practice their knowledge of the attendance of Microsoft Office programs as well as to consult individual questions more than new knowledge. I would recommend that any other training of a similar nature be carried out in more suitable premises (e.g. within an IT Senior Project) with barrier-free approaches considering the nature of the students' handicap, in more homogeneous groups.

Based on the experience gained from the implementation of this training program, we know the following:

- It is inappropriate to have too large groups (the five-member group is considered optimal) with too diverse sensory limitations.
- The most ideal is to approach to individual participants as individually as possible.
- The time needed for one and the same topic is very different for participants with different handicaps.

Soft skills course implementation

Within soft skills, the trainers prepared a schedule of 14 lessons, each with a duration of 90 minutes. Each lesson was devoted to one topic, but we focused most on what the participants were most interested in and considered the need for the topic in the future. For the participants better knowing each other and also for the trainers knowing them, at the beginning of the timetable there were scheduled activities aimed at identifying personality types, their characteristics or learning styles. As a result of these self-testing activities, the trainers were able to evaluate the participants better either during the training or at the end of the project. The training of communication and presentation skills followed then where the participants, besides learning the theory, could try the presentation itself. Just the presentations were the topic of their most interest. More than four lessons were devoted to the theory of presentation, but especially to the participants' presentations themselves.

The participants were given the task of preparing a presentation for 5 minutes on any subject and then presenting it to others. The next lesson's assignment was a presentation on the already-established, mostly IT topics associated with T-Systems Slovakia, subject to the use of corporate templates for presentations.

During the lessons, participants were very interactive, expressing their views on the topics, and in particular sharing their stories or knowledge. This is why the area of soft skills focused mainly on communication, but also on the actual understanding of the corporation, so that participants have an image of how it works in society. Two lessons were devoted to corporate culture, introducing the company's activities. Within one lesson, we also invited an employee who has been working for a few years in the company, has gone through several positions, and has been able to tell the participants a very specific picture of life in the corporation.

One of the most important topics was motivation and self-motivation. The trainers exchanged experiences or tips on how to remain motivated and constantly work on himself/herself with the participants. The last lesson was devoted to individual interviews with each of the participants (but in the group), each responding to several questions about their disadvantages, background, interests, and the IT4ALL project. You can find the interviews here. (Link)

The most commonly applied methods were discussion, teamwork, individual work, presentation–performing (see Table 5).

Table 5. Evaluation of methods used in education

Discussion:	<ul style="list-style-type: none"> • Pros: each participant gets the opportunity to comment on the topic; support of the same or similar opinions; relaxed atmosphere • Cons: less specific outputs
Team work:	<ul style="list-style-type: none"> • Pros: work in groups, candidates have learned to work with different types of personalities; a common result of the activity • Cons: personalities do not always have to comply with others (challenge for candidates)
Individual work:	<ul style="list-style-type: none"> • Pros: expressing himself/herself, own opinion; everybody works for himself/herself and is forced to come up with some result; the results of the activities • Cons: not everyone can work alone, so the results may not be according to expectations
Presentations:	<ul style="list-style-type: none"> • Pros: learning of how to be carefully prepared, each “plays” for himself/herself; everyone must rely on himself/herself; different presentation styles • Cons: non-conformity when performing in front of a group of people

Recommendations and experience from the pilot implementation of the course:

Although different methods of work were laid down at the beginning of the soft skills courses, the trainers learned more about the participants during the training lessons and considered that the participants had no problem talking about themselves, they often talked about their limitations and experiences of life, at the same time we noticed that they had great the need to talk about it and to be heard. That is why that at the beginning of every lesson it is necessary to prepare the space for so called harmonizing of the group. Our experience has shown that the best methods are to give the participants themselves the opportunity to present themselves, express their own opinions, as well as group work and discussion.

Our group was very heterogeneously composed. We had people with a larger age difference from the age of 20 to over 40. Front the point of view of their education, it was also a varied composition from graduates from secondary school to a person with PhD. But the biggest challenge was that we had people with different physical limitations, the most complicated was to integrate a participant with visual handicap and a participant with hearing handicap. After a few lessons, we, our supervisors as well as the participants, found the best way to work with a person with visual handicap. But for the course of training as well as the team spirit, the presence of people with both visual and hearing disadvantages at the same time was very disturbing. Leading of such training for 90 minutes is not appropriate.

All in all, when organizing similar training, we recommend paying more attention to team activities and better knowing each other. It takes more time to devote to it. It is also important to reduce the number of training topics and focus on just a few, for organization, business, key competencies and then work on them. It is very important to clarify which challenges and selection of methods a physical limitation brings for the work of a trainer. Based on our experience, we would recommend creating less heterogeneous groups and not having a group of people with very different perceptive limitation.

Individual approach to participants in a similar group in soft skills training is not recommended, as the goal of training is to prepare participants to integrate into a common, everyday environment, into a work team. It is therefore important for them to be able to integrate into a group so as not to be afraid to express their

opinion and the like, to apply so-called equal treatment approach. Disadvantaged participants themselves appreciate and prefer this approach.

Language skills courses implementation–German language

German language course was focused on communication. After testing, the participants' language skills were taken into account. At a lower level, education was aimed at extension of vocabulary in fields such as home and household, work and things at work, weather, talking about himself/herself (to introduce himself/herself and conduct dialogue when meeting German-speaking people), food, leisure, basic IT concepts, at a restaurant, at a hotel, at an airport or at a station, and creating a CV. Regarding grammar, it was present time, future time and past time, various adjectives related to the topics and their declension, modal verbs and the difference between "tykanie" (singular form of you) and "vykanie" (plural form of you).

At a higher level, the topics were agreed upon with the participant, and the lessons were held as an open discussion on the subject. The two lessons were devoted to IT vocabulary, as well as vocabulary used at work and writing of e-mails.

Since I was less interested in German, I could use a tailor-made approach and to solve various problems in learning German, such as pronunciation, explanation of sentence structure and others. The beginning of the lessons was devoted to repetition of previous topic and also to problems with preparation of homework. Participants also had to create a curriculum vitae in German.

Language skills courses implementation–English language

The attendance of English language course was higher than of a German course, with higher students' fluctuation in classes. The course itself took place similarly to the German language course, at the beginning. All participants passed the knowledge level test and on the basis of the test results, the content of the individual lessons was chosen. The course itself was aimed at extension of vocabulary and extension of vocabulary from the IT field. We also raised the level of communication skills from English.

Testing showed that our participants can be divided into two groups according to the language level. At a lower level, education was focused on extension of vocabulary in fields such as talking about himself/herself (to introduce himself/herself and conduct dialogue at meetings), food, leisure, basic IT concepts, at a restaurant, at a hotel, at an airport or at a station, and creating a CV. Regarding grammar, we focused on understanding and developing conjugations in English, in particular on the present tense, future tense and past tense and their perfect tenses, various adjectives related to topics. We have also focused on modal verbs and the difference between Slovak and English.

At a higher level, the topics were agreed with the participant and the lessons were held as an open discussion on different topics. 4 lessons were devoted to IT vocabulary and also to words related to work and writing of an email.

Despite the higher interest, I was able to individually devote to the participants and to solve various problems in learning English, such as pronunciation, explanation of sentence structures and others. The beginning of the lessons was devoted to repetition of the previous topic and homework. Participants also had to create a curriculum vitae in English.

Recommendations and experience from the pilot implementation of the course:

German language course took place without complications, also due to the low number of candidates. At the same time, the trainer had the opportunity to arrange meetings based on the individual needs

of the participants. The English language course met with more interest of the participants. Its course was similar as in common language courses. In classes, it was necessary to approach to participants with sensory handicap individually, and the preparation of documents for such participants required a different approach. Overall motivation to learn was at a higher level, the only deficiency was occasional missing of lessons by the individual slowing so the rate of learning. We can also confirm the recommendation of our colleague Pavel Horňák that time necessary for learning of one and the same topics differs very much with the participants with different disabilities.

8. EDC results, progress and assessment of candidates through VPAC2

Primary author of section: Anna Ričányiová

The results of the progress of the EDC participants in the hard skills field are included in the output of the trainers / lecturers of the individual courses.

As the VPAC 2 goals we determined to assess the progress of participants in the competencies under review—communicability and ability to ask questions, task understanding and prioritization, result orientation and persistence in solving tasks, dealing with stressful situations along with responsiveness to change, and finally team competence—integration in collective.

The main goal of the assessment centre was to identify the potential and motivation for use in the IT environment, to offer a suitable job position in TSSK or to focus on the area of possible development. The possibility of a foreign internship, including accompanist, was offered to the selected participants.

Participants had the opportunity to experience the IT environment of the employer, the style of communication, the culture of the company, the importance of team work at the workplace, the importance of foreign language knowledge when working in the environment of an international company. Many candidates do not understand the requirements of the pre-selection process for communicative knowledge of the foreign language (predominantly English and German). They assume that if they are looking for a job in Slovakia, the knowledge of Slovak language and possibly basic knowledge of the world language will be enough. The aim of EDC is also to explain the importance of communication with other foreign members of the team, with colleagues from abroad and from the headquarters of the company, with internal and external clients of the company. Often, the internal communication language in IT companies is English, many policies, instructions and manuals are written in a foreign language, e-mail communication is also done many times in a foreign language. Even through the EDC Development Centre, participants have the opportunity to understand why the entry requirement for language level is so important.

Some participants, after the introductory AC, evaluated their level of PC skills at an advanced level. In EDC, they had the opportunity to find out their true level of work with MS Office, whether they really use all of the program's functionalities and self-reflectively to assess their readiness for positions on IT market.

However, all junior positions occupied in the local market require not only user knowledge of MS Office, but also experience with Windows, Unix / Linux administration, SAP ERP orientation, knowledge of ITIL processes, knowledge of databases and general orientation in IT technology.

Our EDC program was indeed not able to include in detail all the areas needed for development in view of the duration, the participants' composition, their limitations, or input technical level, but its pilot implementation brought us a lot of experience and incentives that are relevant to setting the parameters of any other internal selection—developing IT tools of employers who are open to recruiting staff with special needs.

So, if we assess the readiness of candidates with special needs on the IT market after graduating EDC, it is necessary to build on their motivation, support the initiative and the study of the candidates as well as participation in the various retraining courses offered by today's labour market.

The results of VPAC 2 showed that soft skills such as communicability, comprehension and understanding of tasks, ability to manage stressful situations and presentation skills of participants have improved. Some participants remained at the entry level, but most achieved a significant progress and their ability to respond flexibly to a changing environment, to understand the tasks and the meaning of the assignment, to find a connection has increased. Work in the group during EDC was also very useful. At the final VPAC, the 2nd team acted as a team respecting the limitations of some of its members, respected the character diversity, and significantly influenced so the overall outcome of the VPAC final outcomes.

However, VPAC 2 undoubtedly has shown an increase in IT awareness, knowledge of basic concepts, and a higher orientation in IT issues. The EDC program has undoubtedly encouraged participants to further study, encouraging their self-confidence and determination to apply for open positions in the IT sector.

When designing VPAC 2, we took into account the specifics of the individuals, the dynamics and composition of the group, the basic orientation in the IT terminology, the mutual knowledge of the participants in the group by means of which they unambiguously got to the larger comfort zone and passing of VPAC 2 was therefore less stressful for them.

List of VPAC 2 tasks.

TASK No. 1—INDIVIDUAL TASK: Presentation—explanation for ordinary persons

Monitored competencies:

Tasks understanding | Result orientation | Communicability | Persistence

Preparation:

5 minutes—individual preparation

2 minutes—individual presentation

Assignment:

Type any word from the IT field that comes to mind. This may be the word you met during training in recent months. Fold the paper and place it in the middle of the table.

Choose one of the papers from the middle of the table.

Prepare a two-minute presentation about the word that is written there.

TASK No. 2—INDIVIDUAL/GROUP TASK—Project preparation

Monitored competencies:

Communicability | Asking questions | Tasks understanding | Stress situations solution | Integration in collective | Result orientation | Response to change | Task prioritization | Persistence

Preparation:

15 minutes–individual preparation

20 minutes–group brainstorming

10 minutes–presentation of common result + moderator’s questions

- a) **Assignment:** You are working as a Programmer at T-Systems. You were asked by your direct superior to propose a program for the year-end Christmas party. As a team of programmers, you always prefer traditional things–good food, quality drinks, and Christmas presents. You do not need dancing, music, and so on.

Prepare the concept and proposal of a Christmas party that would be interesting and engaging for your colleagues from place, program, budget for activities and the like.

- b) **Assignment:** You are working as Financial Controller at T-Systems. You were asked by your direct superior to propose a program for the year-end Christmas party. This year, however, the budget for the employees’ social program was almost spent, so the Christmas party must be cheaper than in the previous years. However, other employees do not know about this fact.

Prepare the concept and proposal of a Christmas party from participants, place, program, budget for activity and the like.

- c) **Assignment:** You work as Marketing Specialist at T-Systems. You were asked by your direct superior to propose a program for the year-end Christmas party. Every year, employees complain that the party is not original, that the program is still repetitive, so you should think of something creative that employees will remember for a long time.

Prepare the concept and proposal of a Christmas party from participants, place, program, budget for activity and the like.

TASK No. 3–INDIVIDUAL/GROUP TASK–Riddles**Monitored competencies:**

Tasks understanding | Stress situations solution | Integration in collective | Result orientation | Task prioritization | Persistence

Preparation:

No preparation was necessary for this task. Questions/riddles were asked in oral form by moderator of the assessment centre and participants tried to get to right answer by brainstorming or individually.

The goal of this task was not necessarily the correct solving of individual riddles. The intention was to track the participants’ thinking, their ability to understand only the read text, to connect the related facts, to think rationally, to initiate the solution with and the like.

1. The bus driver in Paris headed down the hill. He missed the stop sign but did not stop. Then he turned left to where the ban of turning left sign was. Finally, he continued driving in the opposite direction in a one-way street. Even so, he did not break any traffic regulations. How is it possible?
2. Disarray letters in a word in the collocation to put together one word.

3. Some months have 31 days. How many months have 28 days?
4. How is it possible that the Chinese eat more rice than Japanese?
5. Does a night watchman have a pension entitlement if he dies during the day??
6. Your task is to burn fire, and you have alcohol, candle, gas, paper, straw, black coal, a box of matches and a piece of cotton. What do you burn first?
7. A murder happened on the steamer. At the time of the incident, 4 people (victim, captain, cook, and ship boy) were on the steamer. According to the testimonies of the individual persons, find out who the murderer was.

Captain: "At the time, I handled the rudder."

Cook: "At the time, I cooked."

Ship boy: "At that time, I removed the sails."

Who is the murderer?

9. Adaptation needs of the candidates and the employer's flexibility (technical and mental adaptation of the environment)

Do you think it is possible to move objects, centre them, colour or change the shade, size, find the number of objects in the image, etc. by the instructions so that the task would be completed with covered eyes?

Janka (sightless graduate of the pilot EDC)

Primary author of section: Martin Gbúr

What the project participants told us: survey / feedback results from participants

- § Barrier-free workspaces and toilets.
- § Suitable working chair—adjustable, easy to adjust or possibility to use the fit ball.
- § Air conditioning—adjustable on an individual basis, i.e. with possibility to regulate the setting (temperature and intensity) or to turn off the AC if necessary.
- § Possibility of breaks as wells as space for short individual physiotherapy.
- § Large monitor and keyboard with XXL keys.
- § Printed text with 2-fold font size.
- § Ppt presentations—send by email in advance. Ability to adjust the font size.
- § Space for comfortable and hygienic insertion of contact lenses. (table, washbasin, mirror)

For people with severe visual disability, the greatest barrier is the unavailability of visual information.

Software or hardware that conveys information displayed on the computer screen. Access to information is mediated in voice or tactile forms. Voice form is voice output. It is software that can be installed on a regular computer. This voice software allows blind people reading of information on the computer screen displayed in a text form. However, the software does not allow reading of graphical information, so it cannot read pictures or any graphical outputs.

The second option is an access to information from the computer screen via a tactile form. The access to information through the touch is allowed by a Braille line that displays Braille text. But it also allows you to read only text, but not graphical information. Voice software does not communicate with programs and documents where graphics are used, e.g. Microsoft PowerPoint. The problem is also caused by the graphics used in Microsoft Word and Microsoft Excel. The documents should be customized—available for the screen reader:

- Barrier-free workspaces and toilets.
- § Suitable working chair—adjustable, easy to adjust or possibility to use the fit ball.
- § Air conditioning—adjustable on an individual basis, i.e. with possibility to regulate the setting (temperature and intensity) or to turn off the AC if necessary.
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List of recommended measures to facilitate participants with physical disabilities (visual, hearing, etc.) to undertake evaluation, selection and development activities aimed at their integration into the working environment in an IT company:

- Work tools, computer and software used must be accessible to people with severe health disability (including visually disabled candidates)
- The computer must be equipped with assistive technology—reading and magnifying assistive software. It is necessary to consider its acquisition and regular update.
- Software, not general as Windows OS or MS Office, but specific—business one must cooperate with the assistive applications. For this purpose, testing and adjustments are required.

- For the processing of paper (black-and-white) documents, printouts, circular letters or other documents, a low-vision person with severe health disability needs an electronic reading magnifier. The sightless person needs a scanner and an OCR application.
- The visually disabled or sightless candidate so has his/her own computer with a customized environment. As a result, it cannot be expected that he/she will sit to any computer and will immediately perform the assigned tasks.
- Electronic documents must be processed in an accessible form. This concerns internal policies, circular letters, attendance forms, presentation at meetings (these should be received in advance, for example, before the start of the meeting) and the like.
- Visually disabled persons should have a fixed job.
- When moving, it is necessary to train with the visually impaired person moving from the reception desk to the workplace, to the toilet, to the lunch room, to the meeting rooms, to the elevators and the like.
- In the entry areas, guiding lines should be established, relief marks on the floor, so that the visually disabled person could get independently to the tourniquets and to the elevators.
- It is advisable for colleagues to be advised that newly coming employees with visual or other physical disability will sometimes need assistance and help.
- It would be advisable for the employees in the working team to which the employee with severe health disability comes to undergo appropriate instruction. In this case, it is not just the brief introduction of a new colleague to the team, but existing members should go through and get available a coaching to discuss their difficulties, misunderstandings and challenges with a specialist for inclusion or a psychologist to help the smoother integration of a disadvantaged employee

What the EDC internal trainer told us: Martin Gbúr

Based on my previous lecturer's knowledge and experience, as well as the knowledge and experience gained during the IT4ALL project, I believe that with regard to the adaption needs of the participants, it is important for the participants to be aware of what the employment in a large and well-run company such as T-Systems Slovakia means and to know what is waiting for them. Simply to know more about the company in which are starting to work (time of coming to the workplace, time of leaving the workplace, lunch breaks) way of communication in the company: use of singular form of "you" ("tykanie") in the workplace, English, slang expressions of workers. Each new employee meets with it, I do not think that all this the worker knew in detail before the turn-out. By that I mean that he/she would be aware of these "details" as he/she will meet with them and we will have to adapt to them sometimes that sometimes means that we will have to tolerate them and sometimes, even because of them, to abandon something from our comfort.

At least equally important as being aware of the challenges that await you as a new employee in a new company, in a new environment, and with new colleagues, is to be aware of and to be ready for a new colleague / colleague with physical disability.

Every working team that accepts coming of such a worker to the team must properly prepare for him/her. To find out what technical or software equipment the worker needs is just a basic requirement.

It is important to find out how a person normally works, what are his or her self-care activities and needs, what this means for the team, how long a person can work without a break. What types of tasks to assign/ not to assign him/her. To find out and be prepared to tolerate the time it takes to solve individual tasks or submit documents. And also, and perhaps most important is to find out and learn how to communicate

with each other. To be prepared and want to learn to approach in other way to the worker, talk to him/her, give him/her a feedback, be able to listen to him/her... etc. All this may sound too simple or at first reading as automatic, but mostly it is so that the new employee is adapting to the team he is coming to. By accepting a person with a physical disability, it can happen that the whole team, its previous functioning, the behaviour in the team will have to be adapted to the new person in the team and that you all will have to change.

Being aware of this change, what it brings and what it will cost (time, money, energy) is very important for easier integration of a new worker and learning to work differently. In general, I think the positive results will come (a bit later) and that the effort is advisable.

10. EDC quality standards

Primary author of section: Anna Ričányiová

The creation and planning of EDC for the purposes of IT companies reflects insufficient readiness of graduates of universities to find a job in ICT conditions, as well as the lack of such skills in candidates on the market that are crucial for the strategic development of the respective IT company. When talking about concepts of quality standards, they usually refer to content–“content standard” and performance–so called “performance standard”.

Standardizing EDC for its further implementation is limited in this respect to the standardization of soft skills and general IT competencies, i.e. basic IT overview. The content standard is processed in EDC in this specific way with respect to the specific characteristics of IT education. The content standard does not define “static” curriculum (concepts, thematic units, etc.), defines typical activities by performing of which a relevant performance standard can be achieved. The content standard should then be specified and supplemented in the training schedules of lecturers during EDC implementation.

The performance standard is based on definition of the expected learning outcomes. This is a required description of performance or behavioural manifestations that may indicate the fulfilment or non-fulfilment of the educational goal and even of the purpose of the EDC tool. The aim of the Development Centre is to achieve the set and required performance standard.

EDC–Development Centre planning

The basis of particular planning is one of several compulsory components of school education programs.

In planning, the lecturer, in addition to the health disadvantages of the participants, also respects their natural variability, educational level, socio-cultural environment from which EDC participants come from. In case of an increase in number of targeted training activities, the lecturer takes into account the possibility of combination and conjunction of the relevant educational areas in a targeted educational activity.

Within support of adaptation, it is advisable to plan activities in a systematic way from less demanding requirements for the participants to the more demanding. It is not excluded that within a single targeted learning activity, the lecturers choose different levels of one performance standard according to the devel-

opment potential of the participants in a group. At the same time, it is not necessary for it to formally pass through all levels.

Performance standards can be divided if they are broadly conceived and too comprehensive for implementing them in a single targeted learning activity (e.g., he/she understands the concepts of cell, function, filter, database. He/she is oriented on the elementary level in time relations of daily, weekly, monthly reports), but also join them (e.g., he/she identifies errors in the table and below).

In planning the training program, we should not forget to apply consistently the principles of the so-called inclusive education and training. When enrolling a participant with a health handicap or a socially disadvantaged environment, the lecturers can work with the adaptation of performance standards when creating an individual education program.

To properly set up the EDC development goals, a thorough analysis of participants' and group needs that is vulnerable to social inequalities will take into account existing physical or technical barriers, individual disabilities or disadvantages that the target group may face, and which should be anticipated.

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11. EDC as a flexible tool reflecting diversity and supporting inclusion

Primary author of section: Martin Džbor

The EDC—Elevator Development Centre concept represents a very realistic form of support for a member of a disadvantaged group from the point of view of the company. The pragmatic value of EDC lies in the fact that it emphasizes the term of elevator as a metaphor of something that is trying to get a disadvantaged candidate to get from the initial level of knowledge and skills to a higher level where the candidate would be better prepared to compete with the main stream applicants. Notwithstanding the various declarations on the need for, or the appropriateness of positive discrimination of the candidates from disadvantaged groups, considering the multiyear experience of T-Systems Slovakia, we believe that positive discrimination itself is not sufficient for interviews or recruitment alone. It is necessary to work with the disadvantaged candidates longer and more systematically, to help them build their personal and professional profiles, and thus bring them to a long-term—and socially better-rated and accepted job in the IT sector.

From the point of view of T-Systems Slovakia, it is quite desirable to invest effort into direct interaction with disadvantaged candidates. This IT firm has shown the need to recruit between 300 and 600 applicants from the external labour market in recent years. Of these numbers, approximately 40-50% (150 to 300 job positions) in the past few years were suitable for IT beginners and people without previous experience. The labour market in the eastern Slovakia region is currently in a state where such numbers are reachable through mainstream candidates (i.e. candidates without special needs). However, in the near future, the labour market will change, and work activities will require a degree of diversity—especially in the intercultural area. And here, candidates from disadvantaged communities have potential advantages on their side.

Since one of the successes of a disadvantaged candidate is to build and support their ability to communicate, present themselves and their ideas, especially towards other mainstream communities, automatically, after appropriate training, these candidates gain a higher degree of empathy towards their partners—including potential collaborators from other cultures, countries or business sectors. Paradoxically, therefore, in the modern age, a member of a disadvantaged community or group may become a link in a team that increases the degree of cohesion in an otherwise diversified group or team. And from this point of view, the EDC concept, which T-Systems Slovakia decided to implement in a pilot form, while contributing to its development, development, testing and gradual improvement, is not only interesting as a CSR activity but also as building a potential competitive advantage in an increasingly complex market work.

Of course, the ability to take advantage of this potential competitive advantage is not entirely straightforward. This is for certain not a simple and fast-to-implement algorithm. EDC, as it has been built up to now, addresses its demands and offers to a disadvantaged candidate and tries to change him/her in a certain way, to develop his/her potential. However, it is equally important to introduce a “counter-force” into the whole system—it is not enough to change, develop and motivate the disadvantaged candidates themselves, but also to change the minds of ordinary employees, ordinary managers (especially potential direct superiors) as well as various supporting posts (building administration, personnel departments—including

recruitment specialists, communication departments—including new forms of communication with potentially disadvantaged groups, etc.).

In the table below, we show a positive influence regarding each type of employee that a participation can have on him/her and a personal experience with the concept such as EDC but also which factors of behaviour or perception with certain type of the employee should be taken into account in order not to cause collision situations (see Table 6).

Although inclusion and diversity are becoming an increasingly high priority in corporations, reality often remains at the level of relatively simple statements such as “reach a certain percentage of the representativeness of different groups”, “increase the percentage of diversity by X%” and the like. Practice shows that these are ambitions that rarely lead to real and long-term changes. There are many anecdotal references in the literature describing filled quotas for the most diverse disadvantaged groups, but the real impact of these groups on decision-making, company development, and the like remains virtually unchanged. In other words, despite formal figures, no significant support and inclusion of disadvantaged groups is implemented. In addition, there is a frequent substitution of concepts and objectives of diversification and inclusion. These terms are closely interlinked, but inclusion requires a deeper impact on the organization, the real participation of minorities and groups that may be considered disadvantaged, the creation of values, decisions and the like.

Table 6. Simulation of positive impact and personal experience with the EDC concept

Target group	Positive impact of EDC on the employee	Employee risk factor
Ordinary employee	<ul style="list-style-type: none"> • A greater awareness of the diversity of team members facilitates the entry of disadvantaged people • The acceptance of “otherness” of disadvantaged fellow is essential to create well-being and productivity 	<ul style="list-style-type: none"> • The need for greater empathy • More customize context, situation = to others • Perceives a disadvantaged candidate as a significant minority (1 out of 100) • Often the need for extra effort, which does not need to be explicitly evaluated
Ordinary manager	<ul style="list-style-type: none"> • Direct superior as the main source of motivation for the disadvantaged • Possibility of positive support through HR tools (feedback, performance and potential assessment, reward) • A reference enabling potential career development and growth 	<ul style="list-style-type: none"> • Pressure often reduces time to personalize access to subordinates • Reluctance to try out new things (while being a regular candidate why working with disadvantaged people...) • Lack of experience in adapting the environment (accesses, form of communication, speed of work, irregular availability,...)
Building administration	<ul style="list-style-type: none"> • Influence on the visibility of an inclusive environment (external characters) • Knowledge of the legislative environment can simplify changes in the company’s physical environment 	<ul style="list-style-type: none"> • Physical, convenient accessibility for different categories of disadvantage (investment intensity + understanding) • Potential need for a multilingual environment (minority, sign,...) • Integrated access to work environment—access, parking, elevators, corridors, rooms, food,... • Ability to predict the needs of another group without direct experience

<p>Another supporting role</p>	<ul style="list-style-type: none"> • Impact on accepting an inclusive environment (through corporate culture) • Impact on / over stories of successful people • Impact on the creation of support mechanisms (coaching, mentoring, shadowing, home office,...) 	<ul style="list-style-type: none"> • Potential need for a multilingual environment (minority, sign,...) • Ability to predict the needs of another group without direct experience • Support, coaching beyond normal employee support (potentially “positive discrimination” / support)
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The basic principle of inclusion is to achieve a situation where the company perceives each employee as a person able to use his/her specific skills, knowledge and talents to achieve business goals. The fact that the term “everyone” refers to employees without any demographic disadvantage as well as to employees and candidates with some demographic, social, health and other disadvantages is critical. Inclusion increases loyalty in the workplace leading to increased satisfaction with the work done and ultimately resulting in higher productivity and consequently profitability. T-Systems Slovakia has an experience with so understood inclusion—whether it is the involvement of non-technical graduates in the so-called second chance through the IT businesses that the company has been organizing since 2007, or it is a dual study giving a chance for graduates to deepen their IT skills and knowledge. In both cases, the above-mentioned effects of high loyalty, long-term satisfaction, increasing productivity were actually noted. It is therefore natural to put a similarly ambitious target in a company towards social, health, or otherwise disadvantaged groups.

The labour market for these groups is potentially interesting, but its size and quality is currently at the level of dozens of candidates—what needs to be compared with the mainstream where the market capacity reaches between 1,000 and 10,000 potential candidates. The EDC’s results from this project only confirm this significant gap. The output of 12 successful candidates from VPAC and then five from EDC, from the original base of around 30, realistically reflects how large market can be expected in the context of inclusion.

VPAC and EDC tools are not only attractive for a commercial company like T-Systems Slovakia, not only in terms of potential labour market growth, which is thus captured. It’s also interesting as a possibility to get the topic of inclusion into the company’s discussions about how to talk about inclusion as about an opportunity to “invest”—but not as about an exclusively cost issue. In other words, any preparation of a candidate before entering a job is advantageous—it reduces the cost of training, shortens the time for being prepared for a new role, and thus allows a faster start-up of the income component after the candidate has been assigned to a specific task. This is a realistic financial expectation that we can reasonably estimate in the context of piloted candidates:

- Saved training value after taking up employment—approximately 500 euros per person/month of professional training. In ordinary training, it takes 3–6 months for a newcomer.
- Faster deployment of an employee to a higher complexity job can generate around € 600 to € 1000 per one person/month in the form of operating or project revenue for the company (depending on job position). So, if the employee’s start is shortened from six to three months, the financial value can even reach three thousand...
- Working with candidates before testing, recruiting, interviewing, etc. brings value in a form of better focused target group with which, from the marketing point of view, it is easier and more efficient to work than overly diverse. In case of dual study, we estimated the recruiting cost reducing by about 200 to 400 euros per one successful candidate...

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