MODEL FOR IT TRAINING AND EMPLOYMENT OF PEOPLE WITH AUTISM SPECTRUM DISORDERS

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Abstract: ESI (European Software Institute), Center Eastern Europe and BASSCOM, in collaboration with Association Autism developed a project of a model for employment provision to people with ASD. The model includes trainings and workshops for IT companies for work with people with ASD, as well as theoretical/ practical IT training for the job candidates.

The job positions for the employees with autism spectrum disorders are software products testing for bugs, data processing in IT systems, administration and office functions and other suitable activities using IT.

This paper describes the course of the project and the sustainable results of the pilot model. The training program and the methodology for adapted and real employment, developed within the framework of the project are also described.

Keywords: IT training and employment, autism, social iInclusion.

ACM Classification Keywords: J. Computer Applications - J.4 Social and Behavioral Sciences, K.3 Computers and Education - Assistive technologies for persons with disabilities, K.3 Computers and Education - Employment, K.3 Computers and Education - Handicapped persons/special needs,

Introduction

The project "Model for IT training and employment of people with ASD (Autism Spectrum Disorders)" is developed in 2007 and expresses the willingness of IT companies – members of BASSCOM (Bulgarian Association of Software Companies) to provide employment for people with disabilities. In April 2011 the project implementation started focusing on the training and employment of people with ASD.

ESI (European Software Institute) Center Eastern Europe and BASSCOM, in collaboration with Association Autism developed a project of a model for employment provision to people with ASD. The model includes trainings and workshops for IT companies for work with people with ASD, as well as theoretical/ practical IT training for the job candidates.

The job positions for the employees with autism spectrum disorders are software products testing for bugs, data processing in IT systems, administration and office functions and other suitable activities using IT.

Why information technologies? The work with IT offers a safe and foreseeable (logically managed) working and training environment for people with autism spectrum disorders. IT are a way for overcoming of the social isolation and helps the adequate social integration of people with ASD.

In July 2010, the program PROGRESS of EC in the area of Equal Rights and Social Inclusion announce a call for project proposals for co-financing of pilot projects on employment for people with autism spectrum disorders. More than 50 projects from all the countries, members of the EU, are submitted. Only four of them are approved for financial support and among them is that of ESI Center Eastern Europe, BASSCOM and Association Autism.

On the 18th of April 2011 the implementation of the project "Development and Piloting a Model for Occupational Training and Employment of People with ASD in the ICT Sector" started its implementation, co-financed by the European Union on the program "PILOT PROJECTS ON EMPLOYMENT OF PERSONS WITH AUTISM SPECTRUM DISORDERS".

The project duration is 12 months. It is focused on improvement the conditions for employability of the people with ASD through development and piloting of sustainable employment model for adjusted vocational training and individual support, which are to compensate the deficit, caused by the impairment.

Partners

ESI (European Software Institute) Center Eastern Europe – Project Coordinator. ESI CEE supports IT companies and organizations in the implementation of leading strategic management and software engineering methodologies. The mission of ESI CEE is to increase industry capacity and productivity in the region, ICT business competitiveness, and ICT professional skills and qualifications.

BASSCOM (Bulgarian Association of Software Companies) – organizes the contacts and activities related to ICT companies. The main goals of BASSCOM are to promote the Bulgarian software industry, develop the professionalism and competitiveness of IT sector, work for improvement of education system and participate actively in development and implementation of effective IT policies in benefit of the entire society.

Association Autism – organizes the activities related with training and employment of persons with ASD. Association Autism is a parental and social organization which supports people with ASD. The mission of the Association is to support the effective social integration of people with ASD.

Estimated Results

The goal of this project was to improve the employment situation of people with ASD through development and piloting of a sustainable employment model, tailored vocational training and individualised support to compensate the deficit caused by the impairment.

The project partners developed and pilot an employment model for provision of training and employment to people with ASD. A tailored ICT training and certification on IT skills for trainees with ASD, a wide awareness campaign towards employers and further employment to people with ASD in ICT companies were implemented within the project.

The project goal was be achieved through a set of activities related with research of the present situation of people with ASD in the labor market, possible preventive measures ought to be taken in order to prevent unemployment and exclusion of people with autism and Asperger Syndrome from the labor market, training needs analysis, adaptation of an existing ICT training curriculum for people with ASD to the needs of people with ASD, where appropriate, conducting ICT trainings and certification of ICT skills, training tutors to work with people with ASD, provision of employment in ICT companies, raising the awareness in the community and verification/ dissemination of the project results. An approach based on individual assessment and development of the potential and capabilities of people with ASD was used. The trainings itselves were focused on the quality and productivity in the work process and hereby demonstrated the assets for companies which hire people with disabilities. Raising the awareness on the advantages from hiring people with ASD and their abilities was another direct approach for the involvement of more employers from the ICT sector and thus ensuring a sustainable employment rates for people with ASD.

The project consortium included an ICT professional training organization, service provider association of people with ASD and an ICT branch organization. The initiative expressed the willingness of IT companies – some of them members of BASSCOM (Bulgarian Association of Software Companies) to provide employment for persons with autism in the IT sector. The project is co-funded by EC. Young persons with autism and potential employers were trained how to work together in real business environment. After the accomplishment of the trainings the youths have been provided with employment in Bulgarian ICT intensive companies. The trainings consisted of workshops for the employers on how to work with persons with autism, IT trainings for persons with ASD – theoretical and practical IT trainings. The training of the companies targeted employers and computer skills trainers to help them understand the social model of the disability and learn how to handle employees or trainees within the autistic spectrum. It presented techniques that challenged the traditional perceptions of disability and ASD, transfered knowledge for communication with disabled people, gave clues for supportive company culture, provided examples of successful good practicies from other countries. This training was delivered by a team of experienced experts in the field of autism. All persons with autism and experts dealing with the integration and rehabilitation of people with ASD passed through IT card test for personal certification of computer literacy. The project idea was to provide the people with autism the opportunity to move away from caring home environment during the day, find a way for professional and personal development with means of information technologies, and work in real business environment. The companies which took part in the project and hired persons with autism would expect improvement of the working atmosphere, positive changes in the employees' perception towards surrounding environment – through pro-activity in the community interaction to pro-activity in organization goals achievement.

Methodology

During the first half of the project implementation 9 IT companies have been starting to prepare for hiring the youths. This phase of the project included The Disability Equality Training for Employers as a one day course for managers and human resources professionals from potential beneficiary organisations/companies. The purpose of the training was to help employers gain a better understanding of the disability legislation and how it impacts hiring, supervising and working with people with ASD. The training was also focused on raising the participants' awareness of the employment issues of disabled people – psychological characteristics, behavioural specifics, work tasks considering the skills of people with ASD etc. Recognising how policies and practice can be easily changed to create a welcoming environment at the workplace for the ASD employees was one of the outcomes from the training. It created an understanding what they can do to remove barriers to employment and promotion of ASD staff. The following training was for The Disability Equality in the Workplace. It involved peers, middle management and logistics management from the potential beneficiary organisations /companies. This training provided practical guidelines for inclusion of employees with ASD. The idea of that was to equip the staff member with a take-away pack of useful reference materials as well as encourage them to participate in the process of integration of the people with ASD within their team at the work place. This trainings were conducted individually in each company.

By the end of the project 7 companies actually created a work opportunity for the autistic people. They provided internship for job positions related with IT apps functional testing, content management systems, digitalization and processing of documents, data base filling, and company social activities.

The following step took care of the evaluation of the 20 candidates and the preparation of the individual plans of the participants. The characteristics of each person were taken into consideration with regards to the learning process, personal level of experience in working with computers, ability to study in a group, the speed of acquiring new skills and competences, the topics of motivation and the points of interest etc.

The computer training phase was planned to be up to 4 hours a day. Due to the lack of similar commitments of the participants it started with an hour a day and grew till 4. The whole training was generally divided into four modules and each module cover different set of disciplines. The first two included the MS & Open Office applications: (e.g. correspondence information technologies), Word, Windows XP, MS Office XP (Word, Access, Excel, Power Point); Spreadsheets (MS Excel, Open Office Calc), Internet – applications (e.g. e-mail, address books, browsing, work with search engines, e-commerce, e-signature, finding information and software in the Internet). The trainees' advancement in each discipline was monitored through regular tests and upon completion participants took an exam, the results from which defined the selection of trainees for the next training module/phase. There were no participants who advanced so significantly so they can cover the Object-oriented programming, data structures; Data bases and logical programming, applications – e.g. Java or any part of the aadvanced and functional programming, design and analysis of algorithms, artificial intelligence. After the process of computer training was completed the psychologists and special teachers from the professional team of experts hold another round of meetings with the companies representatives so to be able to chose the most appropriate applicants for the positions offered by the companies to the people within ASD.

Prior to the beginning of the internship the companies were equipped with a detailed handout how to handle and work with a person with ASD. With addition to that they received an individual plan and instruction guide how to particularly work with the person to be invited to their company.

The start of the internships for the young people was secured by the presence of an ASD expert to support the mentors and the teams of each IT company which offered a workplace for the autistic participants. The professional psychologists who were responsible for the training of the particular people with ASD were the experts who accompanied the interns at the workplace for the first few days of the new phase of their further training. For the period of the internship there was an ongoing phone and e-mail communication between the ASD specialists and the mentors in order to provide the best possible environment for the integration of persons with ASD.

The challenges met by the people with autism were during the process of training were with regards to the new area of expertise which they didn't have much of experience with other then playing and using it for purposes different than work. The requirements for the level of independency were pretty high and the influence support or interference of the family members in the process reduced to a minimum. There was an awareness of responsibility and obligations to the tasks in the workplace required. Some of the participants never had the chance to be previously engaged in a long term commitment other than school and play. The difficulties in communication were also among the challenges experience by the young people with ASD. There was a new environment, new rules, new people and atmosphere they needed to get used too. The accomplishment of the undertaking required a certain level of task prioritization and time management which the project participants had to build or improve.

Other difficulties to tackle for the ASD people were related to the need to have a better ability to transition from English to Bulgarian and then English again while proceeding with the filing and data taking. The companies' teams were really tolerant to the specifics of the ASD colleagues but the lack of interaction made them wonder and not be sure if they created a welcoming enough environment for their autistic interns. In some of the cases the attitude of the ASD people was too direct or too loose and the talking in a loud voice was disruptive.

Conclusion

Despite of the challenges there are obvious results to report. The main achievements are with regards to the new acquired computer skills, newly created interest in the IT matter and computer supported communication. The improvement of social interaction skills during the internship even before the completion of the project was significant. It impressed even the ASD experts and family members of the participants. The positive development of the social skills could be witnessed in the process of communication with work colleagues but also in the relationship with the extended family and the outside world.

The basic IT knowledge and competences learned will increase the employability of the participants in the future if they will not be hired by the end of this project. 6 IT companies associated with BASCOM/ESI Centre Bulgaria provided the necessary accommodations and environment adaptations for each ASD individual on the job and know more about handling disabled staff members following the disability equality trainings provided to their middle management and HR officers. The IT people who took the roles of mentors and those who were closely helping them also gained a significant amount of knowledge to communicate better with disabled trainees in their practice. While preparing themselves for the computer training of the ASD participants 10 special pedagogues and psychologists improved and structured their previous IT skills and knowledge which can be also seen as a

positive effect of the project undertaking. The experience learned will be used in the follow-up stage when the model of education and employment support will be applied at a larger scale.

The review of the employment of ASD persons will give us a chance to recommend legislative changes that will improve the effectiveness of the public funds and the employment situation of more disabled people. The difficulties in this area are with regards to the higher percentage of disability the people with ASD usually get. At the same time by issuing the medical papers with 70% of disability does not give the chance to autistic people to be hired. The controversy of this situation is rather complicated. There is still a lack of understanding of the autistic spectrum disorders. It is difficult to accept that a person with 70% and more percent of disability who even didn't graduate from school could be very advanced professional when it comes to the field of computers.

The positive results of the integration of the ASD participants in the 6 companies who choose to cooperate with ESI Centre Eastern Europe and Association Autism in this project could be seen a positive sign for future application of this model throughout Bulgaria and the neighbouring countries. As more adults with autism are entering the workforce than ever before, the issues involving autistic people and the workplace are being redefined to benefit both employees and employers. The creation of proper handout materials explaining what autistic people expect in the workplace and the type of resources available to help achieve a successful employment experience is adding to the future opportunities in the process of recruitment of ASD people into the free market.

Just a few years ago the job market was slim or almost closed for people with autism. Opportunities were scant due to factors such as less awareness about autism, stereotypes about the disorder and communication problems during interviews with potential employers. Today autism awareness around the world and support services for people with autism have led to more opportunities for autistic adults in every level of the job market. More employers are aware that many people with autism have valuable skills and qualifications that can benefit their companies in different areas of the economy. The projects' final conference was held on 13th of March 2012. There were Belgium and Spanish representatives sharing experience of other EU countries with regards to successful good practices in recruiting autistic people and using IT service for the purpose of quality of life support and career opportunity. The projects presented at the Sofia conference were used to convince the decision makers in Bulgaria as well as the different businesses that our initiative is not an isolated phenomenon. The reason to let government officials and conference participants hear about the experience in EU countries in the field was to convince them of the need to create a better environment for busting the integration of people within ASD into the free labour market. The completion of this project proved that even people with ASD with no previous computer experience can do useful tasks within a company. Depends on the fact whether the person is low or high-functioning, an autistic adult can excel at tasks involving categorization, such as packing goods at a shop floor, or solving high- tech software problems. Knowing and understanding more and more the autistic spectrum disorder allows us to take action and turn the specific characteristics of autistic people into their advantage when it comes to work commitment.

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