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# Action research on transition program addressed to young adults with Intellectual Disabilities carried out in Ireland

## Ricerca-azione su di un programma di transizione rivolto a giovani adulti con disabilità intellettiva realizzato in Irlanda

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### Abstract

Individuals with intellectual disabilities are faced with significant barriers relating to the transition to adult life and jobs. The research' purposes were: to determine what evidence-based transition programs have been realized since the introduction of UNCRPD; to design and evaluate the effectiveness of the transition program E-IDEAS (carried out in Ireland), aimed to support workplace inclusion. A systematic literature review was carried out, and the elements emerged were used to develop the program, attended by 5 participants, and provided with five work-placements. Pre-and post-intervention standardized assessments were taken for measuring the improvement in quality of life and adaptive behaviour.

**Keywords:** Transition programs; Employment skills; Youths; Intellectual disability; Literature review.

### Sintesi

Le persone con disabilità intellettiva incontrano molte barriere nel percorso di transizione alla vita adulta e al lavoro. Scopi della ricerca sono stati: individuare quali programmi basati sull'evidenza empirica sono stati realizzati a partire dall'introduzione dell'UNCRPD; progettare e valutare l'efficacia del programma di transizione E-IDEAS (realizzato in Irlanda), volto a supportare l'inclusione in contesti di lavoro. A tal fine, è stata effettuata una revisione sistematica della letteratura, e gli elementi emersi sono stati utilizzati per lo sviluppo del programma di transizione, a cui hanno partecipato 5 giovani adulti, che hanno inoltre svolto cinque tirocini. Inoltre, sono state effettuate valutazioni standardizzate pre e post-intervento al fine di misurare il miglioramento della loro qualità della vita e i cambiamenti di carattere comportamentali.

**Parole chiave:** Programmi di transizione; Competenze lavorative; Giovani; Disabilità intellettuale; Revisione della letteratura.

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4. This manuscript is the result of the joint work of the three authors. For the sole purpose of identifying the parties, Ivan Traina is the author of introduction, paragraphs 2, 3 and part of conclusions, Marco Andreoli of paragraph 1, and Geraldine Leader of the conclusions.

## Introduction

### *Why this research*

The research presented in this paper shed lights on the current situation of transition programs addressed to young adults with Intellectual Disability (ID) aimed to support the acquisition of employment skills and to provide the opportunity to attend an individualized work-placement.

The research has been developed analyzing a wide range of projects and study implemented in different parts of the world (e.g., U.S., Canada, Europe, Australia, South Asia) analyzing publications and databases through a systematic literature review. After this, the research focused on the Irish context for elaborating the transition program E-IDE-AS (Empowerment of youth with Intellectual Disabilities through Education and training for Acquiring Employment Skills)<sup>5</sup>.

At international level, to date research on intellectual disability has focused almost exclusively on childhood and early interventions in the context of pre-employment for youth with disabilities. Adolescents, youth, and young adults with ID are an under-studied population (Lai *et al.*, 2016) and although in recent years some studies have been conducted on methodologies that favour inclusion in employment context, little research has been conducted including youths with ID and transition programs including detailed curricula for the acquisition of employment skills, internship experiences realized in real life em-

ployment settings (Gilson & Carter, 2016).

Considering the Irish current situation, it is characterized by mainstream or special schools with a well-meaning but outdated focus on caring for the individual, rather than promoting specific transition programs for acquiring employment skills and an active productive role in society.

As in many other countries, transition can represent a barrier for the development of a good quality of life, increasing self-esteem, planning of future projects, and improving socio-personal skills (Pallisera *et al.*, 2012) as it is a multidimensional process that includes the beginning of working life, social and community participation, establishing satisfactory adult relationships, and the beginning emancipation from the family (Cobb & Alwell, 2009).

### *What this paper adds*

This research analysed existing transition programs from school to employment addressed to youths with ID, and used findings for the design of a transition program carried out in Ireland for facilitating the transition from school to adult life in youths with ID.

The strength of evidence emerged from the analysis of the research and projects focused on transition programs concerns mainly four key aspects: a) curriculum contents; b) chance to have real work experiences through individualized internship; c) support provided by job coaches and technological solutions; and d) transition programs anchored in community-based rather than school-based settings.

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These aspects have inspired the design and implementation of the program to facilitate the transition from school to employment of youths with ID.

It includes useful elements that can be used by care givers, educators, teachers for supporting the acquisition of skills for living independently and work inclusion.

This paper shows the action research process carried out to implement the E-IDEAS transition program. Since there is not much empirical research focusing on transition programs showing evidence of acquiring job skills, this paper provides an important foundation for research in the field of transition from school to work.

The first part of this paper consists of a summary of the literature analysis, conducted through a systematic review. The second part presents the implication for practice and the main aspects emerged by this review. The third part briefly describes the design and implementation of the transition program E-IDEAS, the findings of its experimentation during a pilot study and its evaluation. This was carried out using two measuring tools to demonstrate the acquisition of these skills and an evidence-based improvement of quality of life of participants involved.

## 1. The literature review and projects analysis for the design of transition program E-IDEAS

The aim of the literature review was to determine what empirically designed and evidence-based transition programs have been

realized. Once data was collected, these were analysed with the precise objective to identify what elements were useful to design and implement a successful transition program.

The initial assumption was that employment studies of educational outcomes of youths with ID show high levels of unemployment and underemployment (Simonsen, 2010) and the challenge faced by individuals in the transition from education system to employment still persist. Researchers continue to cite the need to conduct more research on transitions to determine exactly what should constitute good practice (Landmark *et al.*, 2010; Test *et al.*, 2009) for the design of learning pathways aimed to facilitate and support the acquisition of job-related skills and the realization of experiences in real life employment settings.

In addition to the literature review, a deep analysis of projects focused on transition programme was conducted.

### 1.1. Methodology used

The objectives of literature review were to analyse methodological limitations within existing programs developed starting from the entry into force of the UNCRPD (May 2008) to date and to identify positive elements to take in consideration in order to be successful.

The research questions were:

1) *“What transition programs with an original empirical research design exist for youths with ID and to what extent do transition programs outline functional curriculum and specific employment and independent living skills to be acquired?”*

2) “What are the transition programs that show to be effective for realizing internship experiences and obtaining satisfaction with the job (e.g., to be paid)?”

To do so, the research focused on the elaboration of a systematic review and the analysis of projects implemented and validated for supporting access to the labour market.

As opposed to traditional literature reviews or narrative reviews, which have been often criticized for being biased and arbitrary, systematic reviews are conducted following a step-by-step rigorous process, which allows for transparency and replicability.

Indeed, systematic reviews synthesize the findings of many different research studies in a way which is explicit, transparent, replicable, accountable, and potentially updatable (Oakley, 2003). Systematic reviews involve:

- Pre-planning of the entire review process.
- Exhaustive search of the literature using a pre-defined strategy.
- Transparent definition of inclusion and exclusion criteria.
- Critical assessment of the methodological quality of studies.
- Data extraction and synthesis methods explicitly stated.

In the following sections, we describe the process we have used for completing the systematic review.

### 1.1.1. Searching Method and study selection

A systematic search of publications investigating transition programs from school to employment including youths with ID was

conducted. The PRISMA (Preferred Reporting Items for Systematic Reviews and Meta-Analyses) method was utilized to systematically review the literature (Moher, 2009). The databases searched included PsycINFO, CINAHL, Social & Behavior Science, Taylor & Francis and ERIC. These databases were selected because they cover a large and distinct part of the relevant literature on transition programs. PsycINFO contains information on psychological sciences and related fields across a host of academic disciplines, CINAHL focuses more on medical and health information while Social & Behavior Science is a leading source on social and behavioural sciences concerned with mental, emotional, and social well-being. In addition, searches included the database ERIC, because it is an authoritative database of indexed and full-text education literature and resources, and Taylor & Francis, since it contains information for academic study and professional development across a wide range of subjects in Social Science and Humanities. Only studies were included that would maximize the understanding of factors that would increase the possibility to elaborate a successful transition program to access to employment.

Supplementary searches are essential to locate further important references to be included in the systematic review (Pappaioannou *et al.* 2011). Consequently, following initial searches and reviews of reference lists, hand searches were conducted on specific journals such as *European Journal of Special Needs Education, Disability & Society, Journal of Intellectual and Developmental Disability and Equality, and Diversity and Inclusion:*

An International Journal, to identify suitable studies currently in press and not yet indexed in the above databases.

The review process has been divided in four phases: identification, screening, eligibility, and inclusion. The first phase has identified 9979 records, then a titles review considering one or more keyword related to most important subjects for research (Transition programs, Employability skills, Special education, Students with disability and Youths) led to 151 relevant results. A thorough abstracts review followed based on the inclusion criteria (Appendix A) where 46 articles were identified and subjected to full-text analysis for assessing the methodological quality. Forty-two were

excluded after the quality assessment as they did not meet the inclusion criteria (see Appendix B). To identify additional publications, the reference lists of publications selected, and journals have been manually reviewed for inclusion and three other studies were found. After the manual search, one record was included in the final sample, resulting in a total of three studies being selected. Minor modifications have been made to the search strategy as needed within individual databases and journals.

The process of appraising these articles is displayed in the following information flow diagram.

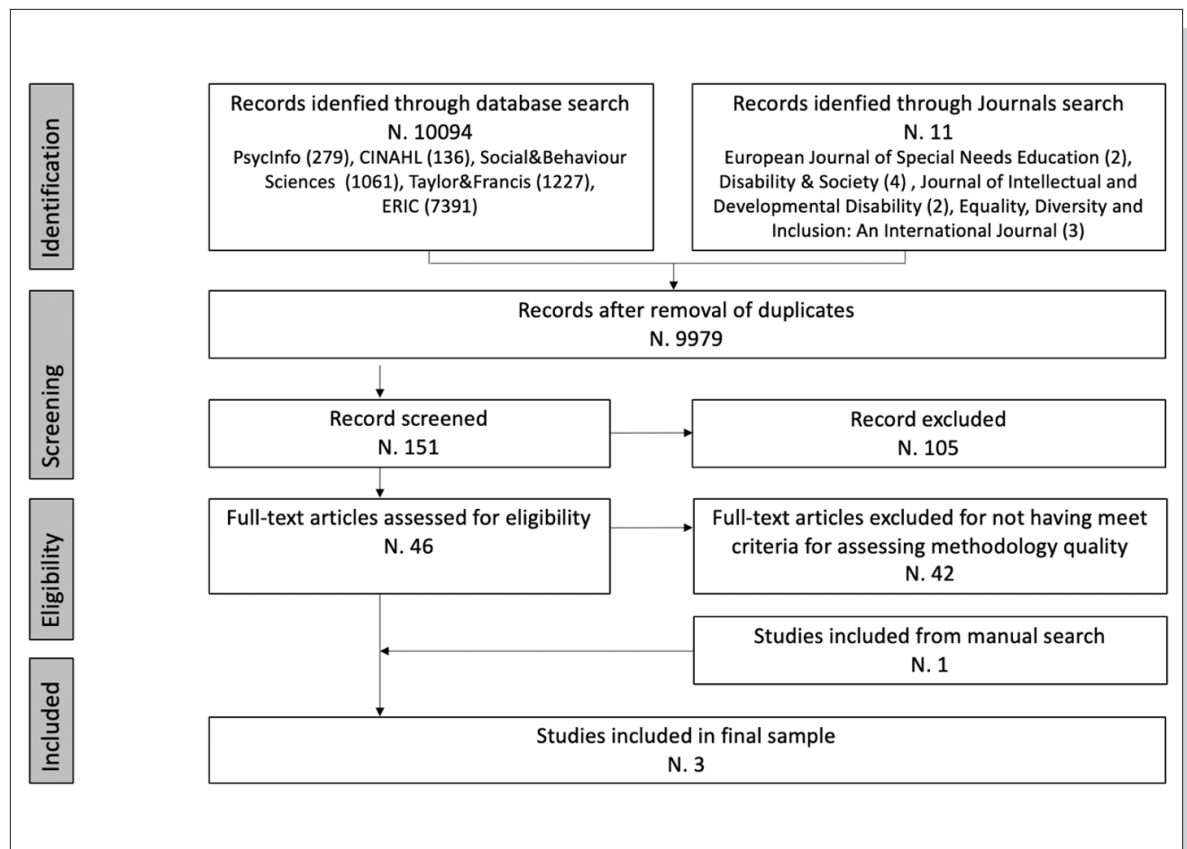


Fig. 1 - Flow diagram.

### 1.1.2. Projects analysis

The systematic review allowed to identify 12 interventions on transition programs for young adult with ID. These were: Best Buddies Jobs Program<sup>6</sup>, Better Outcomes & Successful Transitions for Autism (BOOST-A™)<sup>7</sup>, Bridges From School to Work Program<sup>8</sup>, Oregon Youth Transition Program (YTP)<sup>9</sup>, Postsecondary Education Research Center (PERC) project<sup>10</sup>, Project Panther LIFE's curriculum<sup>11</sup>, SITE Program<sup>12</sup>, TEACCH Program<sup>13</sup>, Greenside Studio<sup>14</sup>, TOPS Program<sup>15</sup>, Triumph Transition Program<sup>16</sup> and UI REACH Program<sup>17</sup>.

These were used as guidance for the design of the transition program E-IDEAS, and we especially focused on 4 key elements that emerged as particularly relevant: experimental curriculum designed for the acquisition of employment skills, prior learning, internship experiences realised in real life employment settings, and the use of Assistive technology.

### 1.2. Literature results

This research on the effectiveness of transition programs identified three programs from school to employment addressed to

youths with ID. These present an original empirical research design and outline a functional curriculum for acquiring employment and independent living skills including information and data on the achievement of paid jobs.

The programs are:

- 1) Job coaching program<sup>18</sup>,
- 2) Project SEARCH program<sup>19</sup>
- 3) Transition Service Program (TrP) at Montgomery County Public Schools<sup>20</sup>

These provide details on interventions that predictably foster the development of employment outcomes and define what works for youths with ID.

The three transition programs identified also showed to be effective for realizing internship experiences in real work setting and obtaining a paid job as demonstrated by the cases included in the systematic review.

The programs reported have some common themes: use of a person-centred approach based on person's needs, provision of internships within community or in real life employment settings, and support of job coach during the internship.

Also, the collaboration between educational environments, adult services staff and employers emerged as a successful factor for realizing experiences that help them to

6. Available at: <https://www.bestbuddies.org/what-we-do/mission-vision-goals/>

7. Available at: <https://youth.gov/content/step-school-transitional-environment-program>

8. Available at: <https://bridgestowork.org/our-story/>

9. Available at: <https://ytp.uoregon.edu/>

10. Available at: <https://perc.utk.edu/>

11. Available at: <http://fiuembrace.fiu.edu/home/fiu-embrace-panther-life/>

12. Available at: <http://site.iupui.edu/>

13. Available at: <https://teacch.com/>

14. Available at: <https://www.greenside.herts.sch.uk/Learning.html>

15. Available at: <https://www.scvths.org/Page/149>

16. Available at: <https://triumphservices.org/>

17. Available at: <https://education.uiowa.edu/services/reach>

18. Website not available.

19. Additional readings on research outcomes of Project SEARCH are available at: <https://projectsearch.us/outcomes-research/>

20. Additional readings on research outcomes of Transition Service Program at Montgomery County Public Schools are available at: <https://www.montgomeryschoolsmd.org/departments/sharedaccountability/>



acquire self-esteem, self-advocacy, and independence (Pascall & Hendey, 2004), besides the knowledge and competences to gain competitive employment. Other common features are the age of participants (18-21) and the use of intensive instruction for acquiring social, communication, and job skills.

## 2. Implications for practice

The main aspect emerged through the analysis of literature searched and projects analysed is that youths with ID who participated in specific interventions for supporting the transition from school to employment have better long-term employment outcomes than those who did not attend any transition program or specific intervention (Clodagh & Gleeson, 2017; Fleming *et al.*, 2013; OECD, 2011; Green *et al.*, 2017).

The strength of evidence emerged from the analysis of the transition programs reviewed and practical implications for designing a new program concern mainly four key aspects: (1) Curriculum contents facilitating the acquisition of self-determination skills as employment and independent living skills, (2) Chance to have real life work experiences through individualized internship, (3) Support provided by job coaches and technological solutions and (4) Transition programs anchored in community-based rather than school-based settings. These aspects are relevant to key groups such as teachers/trainers, program designers, professionals, users, carers, families, and policy decision-makers.

### 2.1. Curriculum contents

The self-determination should be supplemented with a functional curriculum or a life skills curriculum that is a type of curriculum focused on teaching learners the necessary skills to function in adult life (Bouck & Joshi, 2012). It includes functional math and functional reading skills for preparing a young person with a disability for actively participating in the community. As studies show (Guy, 2006) adult literacy education is an important bridge to employment<sup>21</sup>.

### 2.2. Chance to have real work experiences through individualized internship

The self-determination is strictly connected with the second aspect mentioned above, the chance to have real work experiences. Once the instruments (knowledge and skills) are transferred to perform a job task through a functional curriculum, an individualized internship designed with a person-centred approach became an essential part of the transition program for the assimilation of learning.

### 2.3. Support provided by job coaches and technological solutions

The third aspect consists of the support of job coach and technological aids. These supports can guarantee an effective realization of the internship. Learners can be supported for receiving guidance, increasing the level of performance in job-related tasks and so-

21. Retrieved from: <http://unesdoc.unesco.org/images/0014/001462/146281e.pdf>

cial interactions with others in the workplace. Realizing a real work experience supported by the help of trained person and/or specific technological tools can enhance learning and independence for people with ID.

#### *2.4. Transition programs anchored in community-based setting*

It has long been clear that transition programs for learners with ID should be realized in community rather than school settings, for a variety of reasons. First, peers their age exit school at age 18. Schools lose their relevance after students have attended for four or more years. Individuals who learn in authentic and integrated environments are more likely to acquire meaningful jobs, community living, mobility, social and other skills for adulthood (Rogan *et al.*, 2014).

This aspect fosters a direct involvement of local employment providers and employers that can play an important role in the transition process and promotes coordinated approaches to the planning and delivery of transition education services (Beyer *et al.*, 2008). As studies show, their involvement is necessary to validate employment outcomes and foster effective social inclusion (Lysaght *et al.*, 2012).

### **3. Design, implementation, and evaluation of the transition program E-IDEAS**

#### *3.1. Methodology for program development*

The methodology adopted for the development of the E-IDEAS transition program was based on task analysis and chaining. It comes from Applied Behavior Analysis, and it is used to break complex tasks into a sequence of smaller steps or actions (Steege *et al.*, 2007). The understanding of all steps involved for a particular task can assist in identifying any steps that may need extra instruction, and this helps to learn the task in a logical progression. Also, a person-centred approach was used for designing job related activities and employment tasks.

The methodology to design the program was also influenced by research and studies resulted from the literature review and projects analysis concerning transition from school to employment, namely: Project SEARCH, Project IDEAL, Project STEP, Bridges From School to Work Program, Oregon's Youth Transition Program, Bridget project, Able to Include project and ATLEC project.

##### *3.1.1. Participants and setting*

To be part of the research, participants had to meet the following inclusion criteria: (i) 18 years or older, (ii) a diagnosis of ID, (iii) mild to moderate disability; (iv) can provide informed consent; (v) live in the community. Exclusion criterium was where an individual



had a cognitive impairment that would affect reliable participation or capacity to give informed consent or to use materials (e.g., the assistive technology, tablets, worksheets, etc.) or to actively participate during lessons. Five participants ranging in age from 19 to 22 years were recruited from a vocational training centre in the west of Ireland. One participant was diagnosed ID and four with Down Syndrome and a co-occurring mild to moderate ID. Participants’ scores relating to diagnoses were obtained from their case files. All participants had been enrolled in special education services throughout their lives. Participation in the research was voluntary and informed written assent was also obtained from participant’s parents. Pseudonyms were assigned to all participants to preserve anonymity and confidentiality (See Table 1).

The program took place in two locations: the National University of Ireland Galway and a local disability service provider (Ability West), for a total of 4 months (96 hours). The program was delivered by one researcher supported by two undergraduate students from the School of Psychology in the university and one staff member from the disability service provider. The individualized work-placement took place in five different job placements (2 hours for 2 days per week for 3 months) with the support of five job coaches provided by a local organization (EmployAbility Galway) involved in the research, and the support of the assistive technology AVAIL®<sup>23</sup>. Participants were trained to use this education platform through tablets during the classroom activities at the training centre and during their work-placement with the support of job coaches.

The program took place in two loca-

Variable	Participant				
	# 1 M	# 2 F	# 3 K	# 4 M	# 5 G
Demographics					
Age (years)	20	19	20	22	19
Gender	M	M	F	F	F
Diagnoses	DS	DS	ID	DS	DS
Level of Intellectual functioning	Moderate ID	Mild ID	Moderate ID	Moderate ID	Moderate ID
Previous job-experience	Yes	No	Yes	Yes	No
Previous job-training experience	Yes	No	Yes	Yes	No

F female, M male, DS Down Syndrome, ID Intellectual disability.

Tab. 1 - Description of Participants<sup>22</sup>.

22. Retrieved from Traina, I., Mannion, A., & Leader, G. (2021). Transition Program from School to Employment in Youths with Intellectual Disability: Evaluation of the Irish Pilot Study E-IDEAS. *Developmental Neurorehabilitation*, 1-14.

23. <https://www.availsupport.ie/>

### 3.1.2. Program structure

The transition program E-IDEAS was divided in two parts with different learning activities, delivered concurrently and representing a unique learning program:

1. Employment preparation curriculum.
2. Individualized work-placement.

The Employment preparation curriculum has been developed using a “top/down” driven approach, as it was based on previous research and projects outcomes. While the Individualized work-placement was organized adopting a “bottom/up” driven approach that consists of analysing the work placement

context, identifying employment needs, organizing focus groups, and collecting feedback from all the stakeholders involved (Kaehne & Beyer, 2014).

The curriculum was developed starting from the identification of skills that are significant to overcome barriers for obtaining and maintaining an employment. These have been further analysed and organised in four categories of skills: basic, social, independent living and employment, and each one in sub-category with its own specific and detailed skills to be transferred, as reported in Table 2.

Category	Sub-category	Specific Skills
1. Basic skills	1.1. Health and Wellness	<ul style="list-style-type: none"> <li>• Care of their own</li> <li>• Follow correct nutritious diet</li> <li>• Follow a healthy lifestyle, stress management</li> <li>• Linking good physical and mental health with personal achievement</li> </ul>
	1.2. ICT-AT*	<ul style="list-style-type: none"> <li>• Basic knowledge of ICT</li> <li>• Turn on and off a computer, smartphone, or tablet</li> <li>• Access and manage Apps for supporting learning and work activities</li> <li>• Use technology to locate basic information</li> <li>• Online safety</li> <li>• Basic knowledge of AT</li> <li>• Use of AVAIL platform</li> </ul>
	1.3. Money Management	<ul style="list-style-type: none"> <li>• Counting and sorting of money</li> <li>• Knowledge of basic financial information</li> <li>• Identification of methods of withdrawing and deposit funds</li> </ul>
2. Social skills	2.1. Communication Skills	<ul style="list-style-type: none"> <li>• Use of verbal, nonverbal, written, and electronic communication skills</li> <li>• Use of appropriate conversational skills with peers and adults</li> <li>• Identity, express and understanding feelings of oneself and others</li> <li>• Follow and give information</li> <li>• Presentation skills</li> </ul>
	2.2. Adult related Social Skills	<ul style="list-style-type: none"> <li>• Getting an adult attention</li> <li>• Responding to requests from parents, teachers, employers</li> <li>• Working independently</li> </ul>
	2.3. Self-related Skills	<ul style="list-style-type: none"> <li>• Using self-control</li> <li>• Feeling good about her/his-self</li> <li>• Resolve problems with others</li> </ul>
<i>(Continua a pag. seguente)</i>		

\*ICT-AT: Information Communication Technology and Assistive Technology.

3. Independent living skills	3.1. Navigation in the community	<ul style="list-style-type: none"> <li>• Knowledge of the transportation system</li> <li>• Knowledge of the main signals</li> <li>• Knowledge on how to orientate in the community</li> <li>• Ability to move and travel independently</li> </ul>
	3.2. Time management	<ul style="list-style-type: none"> <li>• Knowledge and understanding of time</li> <li>• Being organized</li> <li>• Ability to plan, prioritize work and setting clear goals</li> <li>• Dealing with unexpected events</li> </ul>
	3.3. Professionalism	<ul style="list-style-type: none"> <li>• Knowledge of appropriate interview etiquette</li> <li>• Ability to keep track of appointment and be on time</li> <li>• Demonstrate appropriate conversational skills with co-workers and customers</li> <li>• Maintaining an appropriate appearance</li> </ul>
	3.4. Advocacy skills	<ul style="list-style-type: none"> <li>• Identify barriers and difficulties in the community</li> <li>• Understand Advocacy and Self Advocacy</li> <li>• Reflect on what it means to be a person with a disability in Ireland</li> <li>• Identify resources and support within local community</li> </ul>
4. Employment skills	4.1. Team Building	<ul style="list-style-type: none"> <li>• Ability to communicate personal needs</li> <li>• Team-building practice</li> <li>• Solve conflicts within a team</li> <li>• Complete assigned tasks, establish procedures, respect a timeline</li> </ul>
	4.2. Job Searching	<ul style="list-style-type: none"> <li>• Develop a personal resume and cover letter</li> <li>• Identify interests, abilities, personal priorities, and family responsibilities affecting carrier choice</li> <li>• Identify employment opportunities related to personal employment goal</li> <li>• Identify various sources to use in finding job opportunities</li> </ul>
	4.3. Safety at work	<ul style="list-style-type: none"> <li>• Knowledge of the workplace</li> <li>• Identify safe working practices</li> <li>• Knowledge of personal safety practices</li> </ul>

Tab. 2 - List of skills to be transferred.

### 3.2. Findings of the transition program

To assess the efficacy of the transition program to transfer social, communication, independent living and employment skills, an inductive approach was taken to data analysis (Braun & Clarke, 2006), including a visual and qualitative analyses.

In order to evaluate the variation in the quality of life of participants and measure the acquisition of independent living skills before

and after the participation in the transition program, two different tools were selected: the San Martín Scale (Verdugo *et al.*, 2014) and Vineland-II Adaptive Behavior Scales – 2nd edition (Sparrow *et al.* 2005).

Changes in scores obtained from pre- and post-intervention collected through indirect measures (San Martín and Vineland-II scales) were analysed to assess a real participants' improvement of quality of life and an effective acquisition of skills. The effect of intervention was interpreted using informal interviews,

observations and analysis of the scores obtained through the scales before and after the program delivery. Also, work placements experiences were observed and further analysed and discussed with job-coaches that supported participants. The small number of participants has not allowed a significant statistical or quantitative analysis of data collected, but all participants were evaluated using pre- and post-testing in order to provide a social and qualitative validity of intervention.

Outcomes were evaluated using questionnaires administered directly to participants, families, care givers and job coaches. The scales used allowed for the collection of data to assess the improvement of participants' quality of life and acquisition of skills. A summary of results deviation obtained through tests before and after the intervention for each participant is presented in Figure 2 and 3.

Across all program areas, including social, communication, independent living and em-

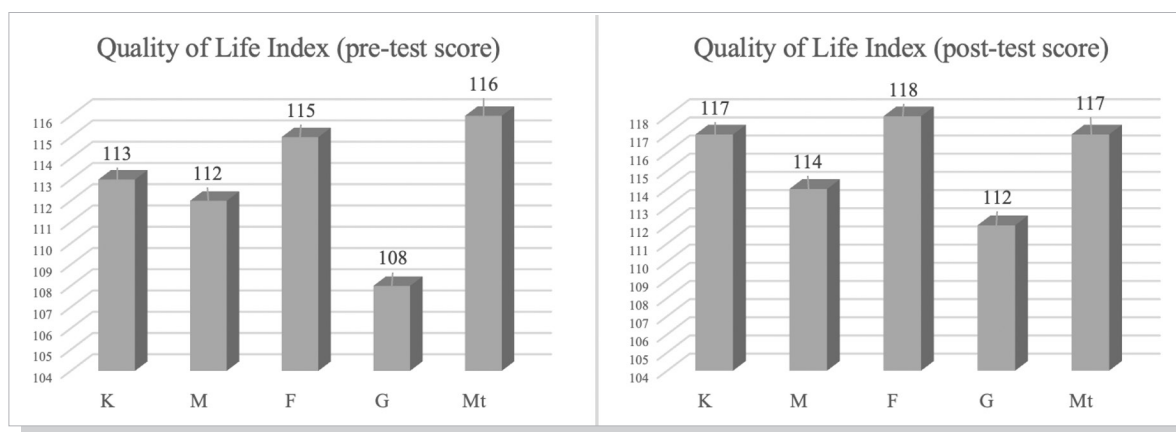


Fig. 2 - Scores obtained in the pre and post-test using the San Martín scale<sup>24</sup>.

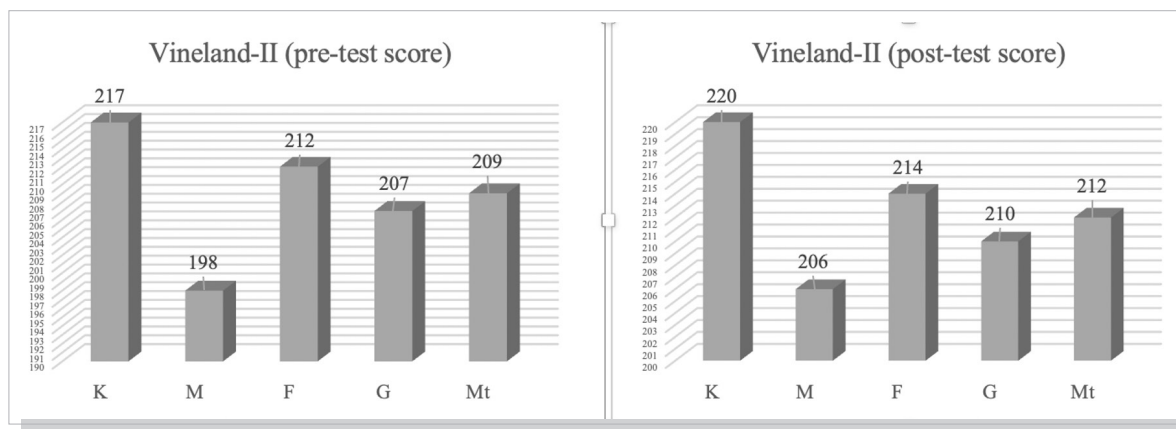


Fig. 3 - Scores obtained in the pre and post-test using the Vineland-II scale<sup>25</sup>.

24. Retrieved from Traina, I., Mannion, A., & Leader, G. (2021). Transition Program from School to Employment in Youths with Intellectual Disability: Evaluation of the Irish Pilot Study E-IDEAS. *Developmental Neurorehabilitation*, 1-14.

ployment skills, participants demonstrated they acquired such skills correctly following the implementation of teaching and training activities. This improvement occurred when the intervention was implemented and the work placements started, suggesting that the program was responsible for the improvements in job related tasks performed by participants. Results show that young adults who attended the E-IDEAS transition program have higher scores at post-test. The San Martín and Vineland-II scales, which were the primary outcome measure of the study, showed an increase in the achievement of independent living and employment skills.

The scores obtained in pre- and post-test using the San Martín scale show that all participants increased the scores comparing the results of pre- and post-test (Fig. 2), and improvements were observed in the domains of emotional well-being, interpersonal relationships, and self-determination. Comparing the pre- and post-test results of Vineland-II scale all participants increased the scores (Fig. 3) related to their adaptive behavior. The domains where they have most improved were communication, daily living skills and socialisation. In addition, job coaches and care givers reported that social, communication, independent living and employment skills improved following the program, demonstrating a significant improvement in overall social competencies. These included peer and adults-related social skills and independent living skills, which have led to more appropriate social behaviors in employment settings and improved personal competence in managing daily activities.

Based on job coaches feedback collected through reports and interviews, the main employment skills acquired by participants consisted of communication and interaction skills with colleagues, timekeeping, cleanliness, and independence.

The 3-month follow-up probes provided further information about the skills acquired and additional work experiences were carried out by some participants after the intervention. Following completion of the program and work placement, F. was successful in gaining employment in a restaurant four days per week. Mt. obtained a paid job at a supermarket and for M. the work-placement period was extended for two additional months. The other two participants (K. and G.) were appointed for job interviews at a cafeteria and a restaurant.

After completion of the program a measure of social validity was undertaken by the researchers with each participant through a questionnaire to rate the participant's satisfaction with transition program. Another social validity questionnaire was sent out to families for assessing parent's satisfaction with the intervention and the progress they felt their son/daughter made in social, communication, independent living, and employment skills.

## 4. Conclusion

Although there are some promising studies and methods for training youths with ID designed to facilitate the transition from school to adult life, currently, there are no standard employment programs and limited research on

25. Retrieved from Traina, I., Mannion, A., & Leader, G. (2021). Transition Program from School to Employment in Youths with Intellectual Disability: Evaluation of the Irish Pilot Study E-IDEAS. *Developmental Neurorehabilitation*, 1-14.

effectiveness. Research generally addresses a limited subset of employment skills, and none have been validated for general acceptance. Starting from this evidence, this research provided an important foundation for future study in this area. Since there is not much empirical research focusing on transition programs, including the availability of program showing evidence of the achievements in jobs. This research delivered useful elements to replicate, adapt or re-design programs grounded on evidence-based research and real work experiences, such as the methodology adopted for the development of the E-IDEAS transition program that was based on task analysis to break complex activities into a sequence of smaller actions. This has shown to be successful in helping participants to understand and perform all steps involved for a particular job-related activity, allowing to learn the task in a logical progression.

Also, the learning activities (curriculum) were provided concurrently with the individualized internship, allowing participants to immediately put into practice what learned. Finally, the use of assistive technology AVAIL® and support of job coaches have helped participants to actively perform job-related tasks.

To conclude, the research has analysed the literature on this topic to determinate what implications and successful elements consider to design, implement, and evaluate the transition program E-IDEAS, as tool to be used by care givers, educators, and teachers to enable the adoption of transition pathways that simultaneously provides an employment preparation and individualized work-placement which can successfully support the acquisition of skills for work inclusion.

#### *4.1. Limitations*

While this research utilized a methodical approach to evaluate empirically the efficacy of the transition program, potential sources of bias exist. These are due to the lack of specific tools for measuring the acquisition of employment skills by persons with ID as well as for analysing specific achievements. The lack of testing for generalization within the workplace environment to ascertain true social fit is another limitation.

#### *4.2. Future Research*

Future research could explore the effects of the intervention on larger group samples. Research could explore the use of group designs, as the small sample size included in this research might reflect an issue. Further study could examine the effects of this program (developed in Ireland) in other countries, as the topography of skills useful to obtain and maintain a job and social norms can vary across cultures and locations. What is needed is to carefully examine and replicate features of the program that builds capacities for transition to adult life and provide empirical and research-based programs for the acquisition of job-related skills.



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**Appendix A.**

**Inclusion criteria of research**

Age	Studies have to be transition programs for youths with ID (16-22 years old)
Diagnosis	Diagnosis has to refer to moderate and mild ID
Detailed curricula	Studies of transition programs have to include detailed curricula for facilitating the acquisition of self-determination skills or internship experiences realized in employment settings
Outcomes	Studies have to report production of tools, methodologies, guidebooks or manual
Original empirical research design	Studies have to outline qualitative, quantitative, longitudinal designs and/or intervention studies
Period	Studies have to be published between May 2008 and April 2018
Language	Studies have to be written in the English language

**Appendix B.**

**Criteria for assessing the methodological quality of research and project selected**

Descriptive validity	1) Experimental transition program or curriculum or planning for the acquisition of employment skills design is stated
	2) Sample-size is stated
	3) The following characteristics of youths participating in the transition program are outlined: - Age (16-22 years) - Gender - Co-morbid medical and psychological diagnosis, including intellectual disabilities, developmental and learning difficulties
	4) Background factors which affect psychological or behavioral responses are measured: - Prior learning - Acquisition of employment and independent living skills - Realization of internship experiences during the transition program
	5) The experimental transition program has produced tools, methodologies, guidebooks, report or manual
	6) If statistical methods or standardized measures are used, they have to be described
	Internal validity
8) Measures are used to assess/monitor the acquisition of skills	
External validity	9) Experiences realized, and skills acquired are representative of those which may be encountered in everyday life
Statistical conclusion validity	10) If statistical findings are reported, they have to be examined
	11) Analysis appropriate for the research question are utilized
	12) If group analysis is employed, individual responding is also examined