



Electronics and Employability  
Advancement for Adults with  
Down Syndrome

2023-1-LV01-KA220-ADU-000160601

# WP3.1

## NATIONAL DESK RESEARCH

This report lays the foundation for developing the training format and digital tools through conducting national-level research with 1) Key information about the educational needs of adults with Down Syndrome in technology-related learning; and 2) Best practice examples of existing methodologies, tools or materials already used to educate adults with intellectual disabilities (especially in electronics, coding, tinkering or general digital training).

Country:  
**LATVIA**



Funded by  
the European Union



## Disclaimer

Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or State Education Development Agency (SEDA). Neither the European Union nor the granting authority (SEDA) can be held responsible for them.

### [CC BY](#)

This license enables reusers to distribute, remix, adapt and build upon the material in any medium or format, so long as attribution is given to the creator. The license allows for commercial use. CC BY includes the following elements:



BY: credit must be given to the creator.



## Introduction

This report presents the findings of a national desk research study for Latvia, conducted as a key activity under Work Package 3 (WP3.1) of the Erasmus+ project "Electronics and Employability Advancement for Adults with Down Syndrome" (FEAT-DS), project code 2023-1-LV01-KA220-ADU-000160601. The research objective, as mandated by the project guidelines, is to establish a robust evidence base that will inform the subsequent co-design phases of the project. The research has been structured to provide a deep and nuanced understanding of the Latvian context, encompassing national policies, the specific educational needs of the target group, the existing support landscape and international best practices in technology-focused education for individuals with intellectual disabilities.

The findings and recommendations detailed herein are intended to directly guide the development of the project's primary intellectual outputs. These outputs include a specialized training format, a suite of accessible coding games and an inclusive web platform, all of which are designed to enhance the digital and electronics-related skills of adults with Down Syndrome in Latvia and across the partner countries. This report, therefore, serves as the critical bridge between understanding the target group's unique needs and designing effective, evidence-based and user-centered solutions. It aims to equip FEAT-DS project team with the necessary insights to create materials that are innovative and deeply resonant with the social, educational and policy environment in Latvia.





## Contents

<b>1. Educational Needs Overview for Adults with Down Syndrome in Latvia .....</b>	<b>5</b>
National Policy and Support Framework .....	5
The Learning Profile of Adults with Down Syndrome: Cognitive and Social Factors .....	7
The Latvian Adult Education and Vocational Training Landscape .....	8
Systemic Challenges and Gaps in Inclusive Education .....	9
<b>2. Best Practice Examples in Technology Education from Latvia .....</b>	<b>11</b>
Best Practice Example 1 .....	11
Best Practice Example 2 .....	12
Best Practice Example 3 .....	13
<b>3. Insights and Recommendations for WP3 Co-Design .....</b>	<b>15</b>
Recommendations for Content Structure and Pedagogy .....	15
Recommendations for Learning Tools (Games & Platform) .....	15
Recommendations for Accessibility and Engagement Features .....	16
Recommendations for Educator and Facilitator Support .....	17
<b>References and Links .....</b>	<b>18</b>





# 1. Educational Needs Overview for Adults with Down Syndrome in Latvia

## National Policy and Support Framework

Latvia has established a clear policy direction aligned with international standards, most notably the United Nations Convention on the Rights of Persons with Disabilities (CRPD), which has been in force in the country since 31 March 2010.<sup>1</sup> The ratification of the CRPD has catalyzed a fundamental and ongoing shift in national disability policy, moving away from a purely medical model that emphasizes impairment towards a social and human rights-based approach. This modern perspective focuses on an individual's functional capacity and their right to full participation in society.<sup>2</sup> A practical manifestation of this shift is the reform of the disability assessment system, which since 2015 has been based on the World Health Organization's International Classification of Functioning, Disability and Health (ICF). This framework evaluates a person's health condition and their ability to function in various life domains, including learning and communication.

The implementation of the CRPD is guided by a series of short-term policy planning documents. The "Guidelines for the implementation of the CRPD for the period 2014–2020" set the initial stage. This was followed by the "Plan for the Promotion of Equal Opportunities for Persons with Disabilities for 2021-2023", which outlined specific measures across key areas like accessibility of the environment and services.<sup>3</sup> The continuity of this policy focus is demonstrated by the recent adoption of a new "Plan for Equal Opportunities for Persons with Disabilities 2024-2027", indicating a sustained, cross-sectoral commitment to improving the lives of persons with disabilities.<sup>4</sup>

Crucially, these disability-specific policies intersect with and are reinforced by broader national development goals. The "National Development Plan of Latvia for 2021-2027" explicitly highlights the need to improve digital skills across the entire population as a cornerstone of economic growth and societal modernization. The plan sets ambitious targets, aiming to increase the proportion of the population with at least basic digital skills from 43% in 2019 to 70% by 2027.<sup>5</sup> This creates a powerful policy window for FEAT-DS initiative, which directly address this national priority for a specific, often overlooked, segment of the population. The State Employment Agency (SEA) is a key actor in this

---

<sup>1</sup> [https://www.norden.ee/images/heaolu/Nordic-Baltic\\_Meeting\\_on\\_Disability\\_Policy\\_and\\_Practice\\_/Disability\\_policy\\_in\\_Latvia.pdf](https://www.norden.ee/images/heaolu/Nordic-Baltic_Meeting_on_Disability_Policy_and_Practice_/Disability_policy_in_Latvia.pdf)

<sup>2</sup> [https://reform-support.ec.europa.eu/what-we-do/labour-market-and-social-protection/improving-assessment-disability-and-integration-people-disabilities-labour-market-latvia\\_en](https://reform-support.ec.europa.eu/what-we-do/labour-market-and-social-protection/improving-assessment-disability-and-integration-people-disabilities-labour-market-latvia_en)

<sup>3</sup> <https://likumi.lv/ta/id/325492-par-planu-personu-ar-invaliditati-vienlidzigu-iespeju-veicinasanai-2021-2023-gadam>

<sup>4</sup> <https://www.mk.gov.lv/lv/jaunums/plano-uzlabot-cilveku-ar-invaliditati-vienlidzigu-iespeju-nodrosinasanu>

<sup>5</sup> [https://www.edf-feph.org/content/uploads/2024/10/latvia-accessible\\_DATA\\_project.pdf](https://www.edf-feph.org/content/uploads/2024/10/latvia-accessible_DATA_project.pdf)



domain, mandated to provide a range of support measures, including digital skills training, to unemployed persons, explicitly including those with disabilities.

This convergence of disability inclusion policy and digital transformation strategy presents a significant opportunity. FEAT-DS project does not operate in a policy vacuum; rather, it aligns perfectly with two major, concurrent strategic thrusts in Latvia. This dual alignment strengthens the project's rationale, enhances its relevance to national stakeholders and improves its potential for long-term sustainability and integration into existing national support systems. The project can be positioned as a practical and innovative contributor to achieving Latvia's stated goals for a more inclusive and digitally competent society.

The following table provides a concise summary of the key policies and their relevance to the project:

<b>Policy/Document Title</b>	<b>Mandating Body/Ministry</b>	<b>Key Objectives</b>	<b>Direct Relevance to FEAT-DS</b>
UN Convention on the Rights of Persons with Disabilities (CRPD)	United Nations (implemented by Latvian Government)	To promote, protect and ensure the full and equal enjoyment of all human rights by all persons with disabilities, including the right to education and work.	Provides the overarching human rights framework for the project, mandating inclusive education and access to vocational training.
National Development Plan 2021-2027	Latvian Government	To improve the quality of life for all inhabitants, with a focus on digital skills development, adult learning and improving the learning environment through digital solutions.	Directly aligns with the project's goal of enhancing digital skills. Positions FEAT-DS as a contributor to a key national economic and social priority.
Plan for Equal Opportunities for Persons with Disabilities (2021-2023 & 2024-2027)	Ministry of Welfare	To develop an integrated support system that meets the needs of persons with disabilities, including measures for accessibility, inclusive	Confirms the national commitment to providing targeted support and creating an inclusive environment, which the FEAT-DS platform



Policy/Document Title	Mandating Body/Ministry	Key Objectives	Direct Relevance to FEAT-DS
		employment and public education.	and training aim to facilitate.
Youth Guarantee Scheme (amendments)	Latvian Government	To introduce specific support measures for learners with disabilities (mental disorders), including grants for equipment and technical aids and validation of non-formal learning.	Demonstrates existing mechanisms for funding and supporting specialized educational needs, which could be relevant for the project's sustainability and dissemination.

### The Learning Profile of Adults with Down Syndrome: Cognitive and Social Factors

To design effective educational interventions, it is essential to understand the specific learning profile of adults with Down Syndrome. International research and guidelines provide a consistent picture of common cognitive strengths and challenges that must inform pedagogical approaches.

A primary challenge documented in the literature is a relative deficit in short-term memory, particularly auditory-verbal memory.<sup>6</sup> This means that learners with Down Syndrome can find it difficult to process and retain long strings of spoken instructions or complex verbal explanations. This has direct implications for teaching methods, suggesting that reliance on lectures or lengthy verbal guidance will be ineffective.

Conversely, a significant and well-documented strength is in visual processing and learning. Many individuals with Down Syndrome are strong visual learners who benefit greatly from information presented through images, diagrams, color-coding and practical demonstrations. They often learn effectively by observing and imitating a task being performed. This preference for visual and kinesthetic learning underscores the importance of hands-on, activity-based educational models over abstract, theoretical ones.

Learning is further enhanced through the use of structure, routine and repetition. Predictable learning environments and activities help to reduce cognitive load and build confidence. Repetition is a key

<sup>6</sup> <https://www.downs-syndrome.org.uk/wp-content/uploads/2023/11/Planning-for-inclusive-practice-DSi-guidelines-extract.pdf>



strategy for transferring information from short-term to long-term memory, which is particularly important given the memory challenges noted above.

Communication barriers are also a key consideration. While highly variable among individuals, it is common for receptive language skills (understanding) to be more developed than expressive language skills (speaking).<sup>7</sup> This necessitates the use of simplified language structures and may require alternative or augmentative communication supports. In Latvia, local NGOs such as "Dauna Sindroms Latvija"<sup>8</sup> and the umbrella organization SUSTENTO<sup>9</sup> have actively worked to address these needs. They highlight the importance of social integration and have succeeded the use of "Vieglā valoda" (Easy Language) as a direct and locally relevant response to the communication needs of people with intellectual disabilities.<sup>10</sup> This method, which simplifies sentence structure and vocabulary while using visual supports, is a critical tool for making educational content accessible.

### The Latvian Adult Education and Vocational Training Landscape

The context of adult education in Latvia presents both challenges and a structured support system. A significant national challenge is the overall low participation rate in adult learning. In 2022, only 34.1% of adults aged 25-64 had participated in learning in the preceding 12 weeks, a figure below the EU average.<sup>11</sup> This is compounded by a notable digital skills gap in the general adult population, where only 51% possess at least basic digital skills, far from the national 2030 target of 80%. This general context suggests that adults with intellectual disabilities, who already face learning barriers, are at a heightened risk of being excluded from digital upskilling opportunities.

The primary state institution responsible for providing vocational training and employment support is the State Employment Agency (NVA or *Nodarbinātības valsts aģentūra*).<sup>12</sup> The NVA offers a comprehensive suite of services that are available to all registered unemployed persons, including those with disabilities. These services include:

- **Professional Training and Non-Formal Education:** Access to various courses to increase competitiveness and acquire new skills.
- **Subsidized Employment:** A key measure where the NVA provides financial support to employers for up to two years to create a job for an unemployed person with a disability. This program includes the support of a qualified advisor to help the individual acquire job-specific skills.
- **Workplace Adaptation:** The NVA provides grants to employers for the purchase of

---

<sup>7</sup> <https://www.mdpi.com/2227-9709/6/2/25>

<sup>8</sup> <https://daunasindroms.lv/>

<sup>9</sup> <https://www.sustento.lv/>

<sup>10</sup> <https://www.vieglavaloda.lv/lv/>

<sup>11</sup> [https://www.baltictimes.com/adult\\_learning\\_participation\\_remains\\_a\\_challenge\\_in\\_latvia\\_-\\_ec\\_report/](https://www.baltictimes.com/adult_learning_participation_remains_a_challenge_in_latvia_-_ec_report/)

<sup>12</sup> <https://www.nva.gov.lv/lv/nodarbinatibas-atbalsts-personam-ar-invaliditati>





equipment or technical aids needed to adapt a workplace for an employee with a disability.

- **Specialized Support Services:** During training or employment measures, the NVA can provide funding for occupational therapists, sign language interpreters and personal support persons to assist the individual.
- **Career Consultations and Mobility Support:** Guidance on career paths and financial support for travel to a workplace or training location.

In addition to the NVA, the Social Integration State Agency (*Sociālās integrācijas valsts aģentūra*) also plays a role by providing professional rehabilitation services, where training programs are determined based on an individual's functional abilities and prior qualifications.<sup>13</sup> This existing state-funded infrastructure for vocational support provides a potential pathway for the integration and long-term sustainability of the FEAT-DS training program.

### Systemic Challenges and Gaps in Inclusive Education

Despite a progressive policy framework, the research reveals a significant gap between policy ideals and practical reality within the Latvian education system. While official statistics report that 67% of municipal schools implement inclusive education, qualitative evidence from families suggests that it is common for schools to refuse to enroll children with disabilities, citing various reasons.<sup>14</sup> This indicates a systemic challenge in translating national inclusion mandates into consistent practice at the institutional level.

A primary barrier identified in multiple sources is the lack of preparedness among educators. Teachers consistently report that their university-level pedagogical training provides insufficient knowledge and practical skills for working in an inclusive classroom. Many feel ill-equipped to meet the diverse needs of students, particularly those with significant disabilities and must rely on supplemental seminars or self-education to build their competence. This skills gap is exacerbated by a reported lack of adapted teaching materials and adequate support staff, such as teacher assistants and special education tutors, within mainstream schools.

These challenges are not new. A 2018 study focusing on children with Down Syndrome in Latvia highlighted that parents felt a profound lack of a systemic support structure to help train their children for independent living or employment. The burden of finding resources, advocating for support and coordinating services fell almost entirely on the family, leading to high levels of stress and uncertainty about their children's future.<sup>15</sup> While support systems do exist on paper, their development and

---

<sup>13</sup> <https://www.cedefop.europa.eu/en/tools/timeline-vet-policies-europe/search/28396>

<sup>14</sup> <https://eng.lsm.lv/article/society/education/inclusive-education-in-latvia-theory-and-practice.a408913/>

<sup>15</sup> [https://www.shs-conferences.org/articles/shsconf/pdf/2018/12/shsconf\\_shw2016\\_03008.pdf](https://www.shs-conferences.org/articles/shsconf/pdf/2018/12/shsconf_shw2016_03008.pdf)



accessibility are often hampered by a lack of consistent financial resources, leading to inequalities in service provision, particularly between urban and rural areas.

This situation creates a complex and challenging environment for adults with Down Syndrome seeking to acquire new skills, especially in a technical field like digital electronics. They are at risk of being caught in a "double disadvantage vortex". On one hand, they are part of a general Latvian adult population that already has a significant digital skills deficit, meaning the baseline for digital literacy is low. On the other hand, the specialized inclusive education system that should provide them with tailored support is itself struggling with under-resourcing and a lack of educator preparedness for this very task.



## 2. Best Practice Examples in Technology Education from Latvia

This section presents three exemplary Latvian projects and methods that offer concrete, reusable insights for FEAT-DS project. They have been selected for their proven effectiveness in the Latvian context, their alignment with the project's focus on digital skills and inclusion for people with disabilities and their embodiment of inclusive design principles.

The selected examples showcase a range of approaches, from a university-led project developing digital assistive tools and training, to a community-based initiative using public libraries as digital learning hubs and a foundational communication methodology that underpins all accessible content.

### Best Practice Example 1

<b>Name &amp; type</b>	SSSD-HE - Digital Platform and E-course for Inclusive Higher Education
<b>Target audience</b>	Students with disabilities in higher education, academic staff, university representatives and digital solution specialists.
<b>What it does</b>	This Erasmus+ project, led by Liepaja University, developed an open-access digital platform to evaluate and provide assistive support for students with disabilities. It also created a comprehensive e-learning course to train educators on using creative information technologies and assistive programs.
<b>Inclusive / effective design</b>	The project's solutions were developed in direct cooperation with students with disabilities and specialists to ensure they meet diverse needs. The platform serves as a centralized hub for information on assistive technologies and support mechanisms, while the e-course is available in multiple languages.
<b>Why it is pertinent to FEAT-DS</b>	As a recent, Latvian-led initiative, SSSD-HE provides a direct model for developing a digital ecosystem that supports both learners with disabilities and their educators. It highlights the importance of not just creating tools, but also building the capacity of facilitators to use them effectively.
<b>Insight to be reused</b>	The core insight is the necessity of an <b>integrated educator support system</b> . FEAT-DS project should emulate this by creating a dedicated training module and resource toolkit for facilitators, ensuring they are confident and competent in using the project's outputs.
<b>Evidence / impact</b>	The project was funded by the Erasmus+ programme and ran from 2020 to 2023, involving partners from Latvia, Cyprus, Greece and Slovenia. It produced key outputs including a digital assessment tool, an interactive



	information toolkit and a university e-course and culminated in an international scientific event in Liepaja in March 2023.
Link / media	<a href="https://sssd-he.liepu.lv/">https://sssd-he.liepu.lv/</a>

## Best Practice Example 2

<b>Name &amp; type</b>	Family Digital Activity Hubs (DigiHubs) / DigiAll - Library-Based Digital Learning Initiative
<b>Target audience</b>	Vulnerable groups in Latvia's Latgale region and Lithuania, with a specific focus on increasing accessibility for <b>people with special needs</b> . The activities are designed to be family-friendly.
<b>What it does</b>	This cross-border initiative establishes "DigiHubs" in public libraries (including Daugavpils and Preili in Latvia) equipped with modern technology like 3D printers, Lego robots and VR sets. The project develops innovative educational tools, including an interactive wall, an interactive bookcase and a quiz creator specifically adapted for special needs.
<b>Inclusive / effective design</b>	The project's core design is centered on inclusivity. Educational tools are explicitly "adapted for special needs". By being located in public libraries, it ensures the tools are physically accessible within the community. The use of varied technologies (VR, interactive walls) caters to different learning styles.
<b>Why it is pertinent to FEAT-DS</b>	DigiHubs is a current, large-scale Latvian project that directly tackles digital literacy for people with special needs. It provides an excellent model for using a variety of engaging technologies (robotics, VR) and for situating educational activities within existing community infrastructure (libraries), which is highly relevant for the dissemination and sustainability of the FEAT-DS outputs.
<b>Insight to be reused</b>	The most valuable insight is the " <b>community hub</b> " model. Instead of assuming users will access tools in isolation, the project leverages trusted public spaces (libraries) and trains staff (librarians, educators) to facilitate learning. This integrated, community-based approach is a powerful strategy for reaching the target group and ensuring long-term impact.
<b>Evidence / impact</b>	The DigiAll project is a continuation of a successful model, funded by the Interreg VI-A Latvia-Lithuania Programme 2021-2027. The current phase (2025-2027) aims to train 100 librarians and educators and enhance the



	qualifications of 50 staff members, demonstrating a clear focus on building capacity and ensuring sustainable outcomes.
Link / media	<a href="https://keep.eu/projects/30919/Empowering-Everyone-Advanci-EN/">https://keep.eu/projects/30919/Empowering-Everyone-Advanci-EN/</a> <a href="https://latlit.eu/theprojects/digiall/">https://latlit.eu/theprojects/digiall/</a>

### Best Practice Example 3

<b>Name &amp; type</b>	Vieglā Valoda (Easy Language) - Accessible Communication Method
<b>Target audience</b>	The primary beneficiaries are people with intellectual or cognitive disabilities, but it is also highly effective for people with low literacy skills, non-native language speakers, the elderly and anyone who may struggle with complex, jargon-filled text.
<b>What it does</b>	"Easy Language" is not a separate language but a specific and rule-based method of writing and presenting information. It involves using simplified sentence structures (typically one main idea per sentence), a controlled and common vocabulary and a clear, logical presentation of information. This is often supported by clear formatting, such as large fonts, ample white space and the use of supporting images, icons or pictograms to aid comprehension.
<b>Inclusive / effective design</b>	The design is inherently inclusive, focusing on: simplified syntax (short, active-voice sentences); controlled vocabulary (avoiding jargon); logical structure; and strong visual support. A key principle is user-centered validation, where materials are tested with the target audience.
<b>Why it is pertinent to FEAT-DS</b>	This is a crucial <i>methodological</i> best practice that is directly applicable to all of the project's outputs. Given the target group's documented challenges with processing complex language, all textual content within the FEAT-DS training materials, coding games and web platform should be developed following "Easy Language" principles. This is a particularly relevant practice for the Latvian context, as it is actively promoted by local organizations like the "Vieglās valodas aģentūra" (Easy Language Agency) and SUSTENTO.
<b>Insight to be reused</b>	FEAT-DS project should formally <b>develop and adhere to a set of "Easy Language" style guidelines</b> for all written and spoken content produced. A strategic project activity could involve collaborating with or seeking consultation from a local expert organization like the "Vieglās valodas



	aģentūra" to ensure the high-quality and authentic application of this method.
<b>Evidence / impact</b>	"Easy Language" is an internationally recognized accessibility standard. In Latvia, it is promoted and used by prominent disability organizations and has been adopted by public institutions, such as the Bank of Latvia, to make important financial information accessible to a wider audience. The "Vieglās valodas aģentūra" works with the government and other bodies to create accessible materials.
<b>Link / media</b>	<a href="https://www.lu.lv/fileadmin/user_upload/LU.LV/Apaksvietnes/Projekti/pelrsi/Viegla_valoda_Rokasgramata.pdf">https://www.lu.lv/fileadmin/user_upload/LU.LV/Apaksvietnes/Projekti/pelrsi/Viegla_valoda_Rokasgramata.pdf</a> <a href="https://www.vieglavaloda.lv/lv/">https://www.vieglavaloda.lv/lv/</a>

### 3. Insights and Recommendations for WP3 Co-Design

#### Recommendations for Content Structure and Pedagogy

The design of the training content must be fundamentally shaped by the specific learning profile of adults with Down Syndrome. A standard e-learning approach will be ineffective. The following pedagogical strategies are recommended:

- **Adopt a Modular, Thematic and Project-Based Structure:** The training curriculum should be broken down into small, self-contained modules (e.g., Module 1: "What is Electricity?", Module 2: "Making a Light Turn On", Module 3: "Your First Code"). This micro-learning approach allows for flexible pacing, prevents cognitive overload and provides frequent opportunities for learners to feel a sense of accomplishment upon completing each distinct module. Each module should be project-based, culminating in a tangible outcome (e.g., "Build a virtual doorbell", "Code a character to dance").
- **Prioritize a Visual-First, Kinesthetic-Second Approach:** All new concepts must be introduced visually first, using clear diagrams, simple animations and short video demonstrations with minimal narration. Learning activities must then be hands-on and interactive, requiring the learner to build, manipulate and test. This dual approach directly addresses the identified strengths in visual processing and kinesthetic learning among individuals with Down Syndrome.
- **Embed Repetition and Predictable Routines:** To address challenges with short-term memory and facilitate the transfer of knowledge to long-term memory, repetition is key. Each learning module should follow a predictable and consistent structure, for example: 1. **Watch** (a short video demonstration), 2. **Build** (assemble a virtual circuit), 3. **Code** (use blocks to control the circuit), 4. **Test** (run the program and see the result). Key concepts, vocabulary and interface elements should be intentionally revisited across multiple modules to reinforce learning.
- **Implement "Easy Language" as a Universal Standard:** All text presented to the learner—including instructions, feedback messages, button labels and any supplementary materials—must be written and formatted according to the principles of "Vieglā valoda" (Easy Language). This is a non-negotiable accessibility requirement grounded in the communication needs of the target group and the availability of established local expertise and practice in Latvia.

#### Recommendations for Learning Tools (Games & Platform)

The digital tools themselves must be designed from the ground up with the target user in mind, drawing lessons from the successful best-practice examples.

- **Design a Scaffolded Learning "Ecosystem":** The digital platform should not be a single,

monolithic tool but rather a guided learning journey that reflects the pedagogical spectrum from tangible to abstract. A recommended pathway would be:

- **Level 1:** Virtual Electronics Workbench: A Snap Circuits-style interface where users learn the basics of electronics by dragging and snapping together large, color-coded virtual components to build simple circuits.
- **Level 2:** Tangible Logic Puzzles: A virtual TacTile Reader-style game where users learn the concept of sequencing by arranging virtual tiles to solve simple logic puzzles or control an on-screen character.
- **Level 3:** Block-Based Coding: A Scratch-like interface where users apply their knowledge by using visual blocks to program and control the virtual circuits they built in **Level 1**. This scaffolded approach provides multiple, gentle entry points and creates a clear, logical progression that builds skills and confidence systematically.
- **Adhere to Inclusive User Interface (UI) and User Experience (UX) Principles:**
  - **Clarity and Simplicity:** Use large, high-contrast buttons and universally understood icons. The interface must be clean and uncluttered, with ample white space to reduce visual distraction.
  - **Simplified Interaction:** All essential interactions should be achievable with a simple mouse click or a single screen tap. Complex gestures like precise drag-and-drop, right-clicking or double-clicking should be avoided as primary interaction methods.
  - **Minimal Text:** Rely on visual cues, icons and animations over text-based instructions wherever possible.

## Recommendations for Accessibility and Engagement Features

To ensure the platform is both usable and motivating, a core set of accessibility and engagement features must be integrated.

- **Core Accessibility Feature Checklist:**
  - **Universal Text-to-Speech:** Every piece of text on the screen, from instructions to button labels, must have an easily identifiable "read aloud" button next to it.
  - **Visual Customization Options:** The platform should include a simple settings panel where users or facilitators can adjust text size, switch to a high-contrast color scheme and perhaps change background colors.
  - **Adjustable Pace and Timing:** The system should not impose strict time limits. Users or facilitators should have the ability to control the speed of animations and the time allowed for completing tasks.
  - **Error-Free by Design:** The input methods for coding should be designed to prevent syntax errors, emulating the "snap-together" grammar of Scratch and the physical constraints of the TacTile Reader. Feedback for logical errors should be positive and encouraging (e.g., "Great try! Let's look at this block again", rather than "Error!").
- **Strategies for Sustained Engagement:**





- **Intrinsic Gamification:** Use positive reinforcement such as points, celebratory animations and the awarding of badges for completing modules or mastering skills.
- **Personalization and Ownership:** Allow learners to choose an avatar, select color schemes for their projects or give their creations names. This fosters a sense of ownership and personal investment.
- **Meaningful and Relatable Projects:** Frame all learning activities around creating projects with a clear and relatable purpose, such as "Make the lights on a virtual birthday cake blink", "Code a character to wave hello" or "Build a circuit that plays a simple tune".

### Recommendations for Educator and Facilitator Support

The research clearly indicates that the success of the FEAT-DS tools is critically dependent on the confidence and competence of the educators, social workers and support staff who will facilitate the learning process. The documented lack of teacher preparedness for inclusive digital education in Latvia means that the project cannot simply deliver the tools and expect successful implementation. Therefore, the project must treat the training and support of these facilitators as a primary, not secondary, objective.

This calls for the development of a dedicated "**Educator Enablement Package**" to ensure the FEAT-DS program is implemented effectively and sustainably. The following components are recommended for this package:

- **A Dedicated Facilitator Training Module:** This should be a distinct section of the FEAT-DS platform, accessible only to registered educators and support staff. This online module should provide comprehensive training covering:
  - The pedagogical principles behind the FEAT-DS tools (e.g., the visual-first approach, the tangible-to-abstract spectrum).
  - A technical, step-by-step guide to using the platform and its features.
  - Evidence-based strategies for supporting and motivating learners with Down Syndrome in a technology-rich learning environment.
- **A Downloadable Resource Library:** To support offline and blended learning activities, the platform should offer a library of downloadable resources for facilitators. This should include printable "Easy Language" lesson plans, visual aids (like flashcards for circuit components), checklists for tracking learner progress and simple troubleshooting guides.
- **A Facilitator Community of Practice:** The project should establish a simple, moderated online forum within the FEAT-DS platform. This would create a space for educators and facilitators from Latvia and all partner countries to share their experiences, ask questions, exchange tips and success stories and offer peer support. This directly addresses the finding that teachers in Latvia currently learn most effectively from their colleagues and peers and it would build a valuable and sustainable support network for the project's community.

## References and Links

1. [https://www.norden.ee/images/heaolu/Nordic-Baltic\\_Meeting\\_on\\_Disability\\_Policy\\_and\\_Practice\\_/Disability\\_policy\\_in\\_Latvia.pdf](https://www.norden.ee/images/heaolu/Nordic-Baltic_Meeting_on_Disability_Policy_and_Practice_/Disability_policy_in_Latvia.pdf)
2. [https://reform-support.ec.europa.eu/what-we-do/labour-market-and-social-protection/improving-assessment-disability-and-integration-people-disabilities-labour-market-latvia\\_en](https://reform-support.ec.europa.eu/what-we-do/labour-market-and-social-protection/improving-assessment-disability-and-integration-people-disabilities-labour-market-latvia_en)
3. <https://likumi.lv/ta/id/325492-par-planu-personu-ar-invaliditati-vienlidzigu-iespeju-veicinasanai-2021-2023-gadam>
4. <https://www.mk.gov.lv/lv/jaunums/plano-uzlabot-cilveku-ar-invaliditati-vienlidzigu-iespeju-nodrosinasanu>
5. [https://www.edf-feph.org/content/uploads/2024/10/latvia-accessible\\_DATA\\_project.pdf](https://www.edf-feph.org/content/uploads/2024/10/latvia-accessible_DATA_project.pdf)
6. <https://www.downs-syndrome.org.uk/wp-content/uploads/2023/11/Planning-for-inclusive-practice-DSi-guidelines-extract.pdf>
7. <https://www.mdpi.com/2227-9709/6/2/25>
8. <https://daunasindroms.lv/>
9. <https://www.sustento.lv/>
10. <https://www.vieglavaloda.lv/lv/>
11. [https://www.baltictimes.com/adult\\_learning\\_participation\\_remains\\_a\\_challenge\\_in\\_latvia\\_-\\_ec\\_report/](https://www.baltictimes.com/adult_learning_participation_remains_a_challenge_in_latvia_-_ec_report/)
12. <https://www.nva.gov.lv/lv/nodarbinatibas-atbalsts-personam-ar-invaliditati>
13. <https://www.cedefop.europa.eu/en/tools/timeline-vet-policies-europe/search/28396>
14. <https://eng.lsm.lv/article/society/education/inclusive-education-in-latvia-theory-and-practice.a408913/>
15. [https://www.shs-conferences.org/articles/shsconf/pdf/2018/12/shsconf\\_shw2016\\_03008.pdf](https://www.shs-conferences.org/articles/shsconf/pdf/2018/12/shsconf_shw2016_03008.pdf)
16. <https://sssd-he.liepu.lv/>
17. <https://keep.eu/projects/30919/Empowering-Everyone-Advanci-EN/>
18. <https://latlit.eu/theprojects/digiall/>
19. [https://www.lu.lv/fileadmin/user\\_upload/LU.LV/Apaksvietnes/Projekti/perlsi/Viegla\\_valoda\\_Rokasgramata.pdf](https://www.lu.lv/fileadmin/user_upload/LU.LV/Apaksvietnes/Projekti/perlsi/Viegla_valoda_Rokasgramata.pdf)