



Bridging the Digital Divide

A Policy Framework for Inclusive Distance
Apprenticeships in the European VET Sector

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Executive Summary

The rapid digitalization of the European labor market, catalyzed by the post-pandemic recovery and the strategic imperatives of the twin green and digital transitions, has fundamentally altered the landscape of Vocational Education and Training (VET). Distance apprenticeships—where work-based learning occurs partially or wholly through digital intermediaries—have emerged as a critical modality for delivering flexible, high-quality vocational skills. However, for the 51 million working-age persons with disabilities in the European Union, and specifically for the Deaf and Hard-of-Hearing (DHH) community, this digital shift presents a paradox: it offers the potential to decouple employment from geography, yet simultaneously risks exacerbating exclusion through the proliferation of inaccessible digital environments.

This Policy Recommendation Document, drafted under the aegis of the **QSA4Disability** project (Project Number: 2023-1-HU01-KA220-VET-000154805), serves as a strategic blueprint for VET providers, European Union policymakers, and industry stakeholders. Its primary objective is to operationalize the "Quality Standard for Distance Apprenticeship" to ensure that DHH individuals can access, participate in, and benefit from remote work-based learning on an equal basis with their hearing peers.¹

The analysis presented herein reveals a critical "double digital divide". DHH learners face not only the socio-economic barriers common to persons with disabilities but also specific technical and pedagogical impediments inherent to digital transmission. These range from the latency in Video Remote Interpreting (VRI) services, which disrupts the grammatical timing of sign language, to the lack of semantic accuracy in automated captioning systems used in technical fields. Furthermore, the cognitive load imposed by managing multiple visual information streams leads to rapid Zoom fatigue, reducing learning retention and increasing attrition rates.

Despite a robust legal framework underpinned by the UN Convention on the Rights of Persons with Disabilities (UNCRPD),² the European Pillar of Social Rights,³ and the recently adopted Herning Declaration on attractive and inclusive VET,⁴ implementation gaps persist. Current distance apprenticeship models often treat accessibility as a retroactive accommodation rather than a proactive design feature.

¹ QSA4Disability project website: <https://qsa4disability.eu/>

² United Nations. (2006). Convention on the Rights of Persons with Disabilities. Treaty Series, 2515, 3.

³ European Parliament, Council of the European Union, & European Commission. (2017). Interinstitutional Proclamation on the European Pillar of Social Rights.

⁴ European Commission. (2025). Herning Declaration on attractive and inclusive vocational education and training. Council of the European Union.



This reactive approach results in administrative burdens, funding bottlenecks, and a failure to provide the effective communication mandated by international law.

The **QSA4Disability** project counters this deficit through the development of a specialized Toolbox, an interactive e-Space, and a Community of Practices designed to foster equity. Building upon these outputs, this report articulates a set of high-level policy recommendations. These include the establishment of a **Digital-First Accessibility Standard** for VET platforms, the creation of a **Hybrid Support Model** funding mechanism that blends physical and digital accommodations, and the formalization of **Digital Apprenticeship Protocols** for employers.

By aligning technical standards with human rights obligations, the European VET sector has the opportunity to transform distance apprenticeships from a potential barrier into a powerful engine for inclusion. This report argues that the inclusion of DHH learners is not merely a compliance requirement but a catalyst for innovation, driving the development of more resilient, adaptable, and universally designed training environments that benefit the entire European workforce.



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1. Introduction: The New Paradigm of Vocational Training

1.1 The Evolution of Apprenticeships in the Digital Age

The concept of the apprenticeship is one of the oldest pedagogical models in human history, predicated on the direct transfer of tacit knowledge from master to novice. Traditionally, this relationship was defined by physical proximity: the apprentice stood beside the master, observing the angle of the chisel or the texture of the dough. However, the Fourth Industrial Revolution and the subsequent digital transformation of the European economy have radically redefined this dynamic. The modern "Distance Apprenticeship" involves the acquisition of vocational skills through digital intermediaries, where instruction, mentorship, and task execution occur partially or wholly via virtual platforms.

This shift is not merely logistical; it is ontological. The "workshop" is no longer a physical location but a digital environment—a Learning Management System (LMS), a video conferencing suite, or a collaborative coding repository. For the **QSA4Disability** project, this evolution represents a critical juncture. The project aims to dispel the myth of low employability among young deaf people by proving that digital environments, when correctly designed, can neutralize communication barriers rather than amplify them.

Distance apprenticeships offer a unique value proposition for the DHH community. Historically, DHH individuals have been constrained by geography, often forced to relocate to access specialized training centers or resigning themselves to underemployment in local markets with limited scope. Distance VET has the potential to liberate skill acquisition from these geographical tethers. A DHH learner in a remote rural area of Bulgaria or Italy should, in theory, be able to apprentice with a high-tech software firm in Berlin or Dublin, supported by remote interpreters and digital text services. This modality aligns perfectly with the European Education Area's strategic goal of inclusive mobility.⁵

1.2 The "Double Digital Divide" and the DHH Learner

However, the promise of digital inclusion is threatened by the reality of the "double digital divide". The first divide is the well-documented gap in access to hardware and connectivity, which disproportionately affects persons with disabilities due to lower average incomes. The second, and more insidious divide, is the **inaccessibility of the digital interface itself**.

⁵ European Commission. (2020). Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions on achieving the European Education Area by 2025. COM(2020) 625 final.



For a hearing apprentice, a glitch in audio quality is an annoyance. For a DHH apprentice relying on an interpreter or captions, a glitch in video bandwidth or a lack of captioning support is a total cessation of information transfer. The digital environment, if not built with Universal Design principles, becomes a hostile architecture. When a VET provider utilizes a legacy LMS that does not support SRT caption files, or when a webinar platform forces an interpreter into a tiny, un-pinnable thumbnail, the system effectively disables the user.

The **QSA4Disability** project was commissioned to address these specific systemic exclusions (Project Number: 2023-1-HU01-KA220-VET-000154805). Its mandate extends beyond research to the creation of tangible assets: a Toolbox of protocols, an e-Space for training, and a transnational Community of Practices. This policy document serves as the strategic narrative for these tools, translating technical pedagogical needs into the legislative and procedural language required by EU decision-makers.

1.3 The Social Model of Disability in Digital VET

This report adheres strictly to the **social model of disability**. We posit that the disability of a DHH apprentice in a distance learning scenario arises not from their hearing status, but from the design flaws of the digital environment. A DHH individual is not disabled by their inability to hear a lecture; they are disabled by the institution's failure to provide captions.

In the context of the **QSA4Disability** project, this reframing is crucial. It shifts the burden of adaptation from the individual (who is often expected to cope or manage) to the institution (which must design and accommodate). This perspective aligns with the UNCRPD and the EU Strategy for the Rights of Persons with Disabilities 2021-2030,⁶ emphasizing that accessibility is a human right, not a charitable act. The goal is to create an environment where equity is engineered into the code and the curriculum.

⁶ European Commission. (2021). Union of Equality: Strategy for the Rights of Persons with Disabilities 2021-2030. COM(2021) 101 final. Brussels.



2. The QSA4Disability Intervention: Context and Objectives

2.1 Project Architecture and Goals

The **QSA4Disability** project is a direct response to the persistent employment gap faced by DHH youth in Europe. While the general youth unemployment rate fluctuates, the unemployment and underemployment rates for DHH individuals remain stubbornly high, often double that of the general population. This is frequently driven by the "myth of low employability"—a misconception held by employers that DHH workers are less productive, more expensive to insure, or too difficult to integrate into standard workflows.

The project aims to dismantle these myths through a three-pronged approach over its 24-month lifecycle:

1. **Fostering Equity:** Creating VET environments that are intrinsically inclusive, rather than exclusively retrofitted.
2. **Improving Job Placement:** Directly addressing the transition from education to employment by equipping DHH youth with high-demand skills via accessible apprenticeships.
3. **Standardization:** Developing a European Quality Framework/Standard for distance apprenticeships. This is critical because cross-border mobility (a key tenet of the Erasmus+ program) is impossible without a shared standard of accessibility.

2.2 The Toolbox (Work Package 2)

The Toolbox is the operational heart of the project. It provides the "how-to" for VET providers and employers who may be willing to host a DHH apprentice but lack the technical know-how. It includes:

- **Protocols:** Structured checklists for setting up accessible digital workstations.
- **Training Videos:** Visual guides for hearing staff on basic sign language etiquette and how to work with interpreters in a virtual setting.
- **e-Questionnaire:** A self-assessment tool for companies to gauge their readiness for inclusion.
- **Project Badge:** A digital credential that allows companies to signal their compliance with the QSA4Disability standard, creating a market incentive for inclusion.

2.3 The e-Space (Work Package 3)

The e-Space is a Moodle-based platform designed to support the triangular relationship between the VET provider (sending organization), the company (hosting



organization), and the DHH apprentice. Primarily targeting VET providers and companies, the platform offers training courses and resources to equip stakeholders with the knowledge and skills needed to effectively support DHH apprentices in distance learning environments. By building institutional capacity and providing guidance on best practices for inclusive apprenticeship management, the e-Space strengthens the ability of organizations to deliver accessible distance apprenticeships.

2.4 The Community of Practices (Work Package 4)

Inclusion cannot happen in isolation. The Community of Practices links virtual and local hubs to share best practices. It aims to create a network effect where a successful distance apprenticeship in one country can serve as a template for another. This work package culminates in the EU Policy Recommendation—the current document—which seeks to embed the project's findings into the structural fabric of European VET policy.



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3. Legal and Strategic Alignment: The Architecture of Rights

To be effective, policy recommendations must be anchored in existing legal obligations and strategic goals. The inclusion of DHH learners in distance VET is not an isolated initiative but a necessary step to fulfill Europe's broader commitments to human rights and economic competitiveness.

3.1 The United Nations Convention on the Rights of Persons with Disabilities (UNCRPD)

The UNCRPD is the supreme international instrument governing disability rights. Ratified by the EU and all Member States, it creates binding legal obligations.

- **Article 24 (Education):** This article mandates an "inclusive education system at all levels and lifelong learning". Crucially, it requires States Parties to ensure that "persons with disabilities are not excluded from the general education system on the basis of disability." In the context of distance VET, this means that if a digital platform is inaccessible, the State is in violation of the Convention. The article specifically calls for "reasonable accommodation" of the individual's requirements. For a DHH apprentice, reasonable accommodation might include real-time captioning or a sign language interpreter. The denial of these services, or the provision of substandard quality (e.g., automated captions with high error rates), constitutes a breach of the right to education.
- **Article 27 (Work and Employment):** This article recognizes the right to work on an equal basis with others, in a labor market that is "open, inclusive and accessible". Distance apprenticeships sit at the intersection of education and employment. As apprentices are legally employees in many jurisdictions, the digital workplace must be accessible. Article 27 prohibits discrimination in "continuance of employment" and "career advancement." If a DHH apprentice cannot participate in a virtual team meeting due to a lack of interpreters, they are being denied the opportunity for career advancement.

3.2 The European Pillar of Social Rights

The Pillar serves as the social rulebook for the European Union.

- **Principle 17 (Inclusion of people with disabilities):** This principle explicitly states that people with disabilities have the right to "services that enable them to participate in the labour market and in society and a work environment adapted to their needs". In 2025, the work environment is increasingly digital. An adapted work environment for a DHH person must include software interfaces that allow for customization of font size, color contrast, and video layout. A rigid, inaccessible interface is an unadapted environment.
- **Principle 1 (Education, training and life-long learning):** Everyone has the



right to quality and inclusive education to maintain and acquire skills. This principle underpins the EU's Skills Agenda.⁷ The exclusion of DHH learners from VET undermines the EU's goal of a skilled workforce. The Herning Declaration reinforces this by calling for VET systems that are "attractive and inclusive" to boost competitiveness.

3.3 EU Strategy for the Rights of Persons with Disabilities 2021-2030

This comprehensive strategy aims to ensure that persons with disabilities can enjoy their human rights and fully participate in society and economy.

- **Employment Flagship:** The strategy includes a Disability Employment Package to improve labor market outcomes.⁸ Distance apprenticeships are identified as a key vehicle for this improvement, allowing DHH individuals to access jobs in the digital economy that were previously inaccessible. The strategy calls on Member States to set targets for reducing the employment gap.
- **Skills Flagship:** The strategy emphasizes the need for new skills for the green and digital transitions. The Union of Skills initiative relies on the participation of all adults in training.⁹ The **QSA4Disability** framework supports this by ensuring DHH learners can access high-demand digital skills training.
- **AccessibleEU:** The strategy launched the AccessibleEU resource centre¹⁰ to support the implementation of accessibility legislation. Our recommendations align with this by proposing specific technical standards for VET platforms that can be disseminated through AccessibleEU.

3.4 International Labour Organization (ILO) Standards

- **Convention No. 111 (Discrimination):** This convention prohibits any distinction, exclusion, or preference that has the effect of nullifying equality of opportunity or treatment in employment or occupation.¹¹ A distance apprenticeship program that relies solely on audio-based instruction inherently excludes DHH learners, violating the spirit of C111.
- **Convention No. 159 (Vocational Rehabilitation):** This convention mandates national policies to enable disabled persons to secure, retain, and advance in suitable employment.¹² It specifically calls for measures appropriate to national conditions. In the digital age, appropriate measures must include digital accessibility standards.

⁷ European Commission. (2020). *European Skills Agenda for sustainable competitiveness, social fairness and resilience* (COM/2020/274 final).

⁸ European Commission. (2022). Disability Employment Package to improve labour market outcomes for persons with disabilities. Directorate-General for Employment, Social Affairs and Inclusion.

⁹ European Commission. (2025, March 5). Communication on the Union of Skills (COM/2025/90). <https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=celex:52025DC0090>

¹⁰ AccessibleEU Center website: <https://accessible-eu-centre.ec.europa.eu/>

¹¹ International Labour Organization. (1958). *Discrimination (Employment and Occupation) Convention* (No. 111).

¹² International Labour Organization. (1983). *Vocational Rehabilitation and Employment (Disabled Persons) Convention* (No. 159).



- **AI and Employment Policy Brief (2025):** The ILO's recent policy brief on AI and employment¹³ highlights the double-edged sword of AI. While AI can power assistive technologies, it can also reinforce bias in recruitment and monitoring. Our report integrates these findings, recommending human-in-the-loop safeguards for AI tools used in apprenticeships.

3.5 The European Education Area and Digital Education Action Plan

The **Digital Education Action Plan (2021-2027)** sets a vision for a "high-performing digital education ecosystem".¹⁴ Action 1 focuses on infrastructure and connectivity. However, connectivity for a DHH learner is not just bandwidth; it is *semantic* connectivity. The Plan's focus on inclusive digital learning validates the need for the QSA4Disability Toolbox, as general digital education initiatives often overlook the specific latency and bandwidth requirements of high-definition sign language streaming.

¹³ International Labour Organization. (2025). Work transformed: The promise and peril of artificial intelligence (ILO Brief). Geneva: ILO.

¹⁴ European Commission. (2021). Digital Education Action Plan 2021-2027: Resetting education and training for the digital age. COM(2020) 624 final. Brussels.



4. Current Barriers: The Anatomy of Exclusion in Distance VET

Despite the legal mandates, the practical reality for DHH learners in distance apprenticeships is fraught with systemic barriers. These barriers are not merely inconveniences; they are structural blockades that prevent skill acquisition and professional integration.

4.1 Technical Barriers: The Mechanics of Latency and Interface Failure

The technical infrastructure of distance learning is frequently hostile to visual communicators.

4.1.1 Video Remote Interpreting (VRI) and Latency

The single largest barrier is the quality of communication support. In a physical classroom, an interpreter stands next to the speaker; in a virtual environment (VRI), the interpreter is a 2D window on a screen, highly susceptible to packet loss and latency. In a VRI setup, audio travels from the instructor to the interpreter, is processed and signed, and then video travels to the DHH student—a process that reverses when the student asks a question, creating delays of 5-10 seconds. In fast-paced seminars or collaborative coding sessions, this delay means the DHH apprentice is perpetually out of sync; by the time they sign a question and it is voiced, the topic has changed. Moreover, sign language is a kinetic, three-dimensional language where meaning is conveyed through motion and facial expression. Poor connection or video quality that may cause the video to freeze or pixelate destroys the grammatical integrity of the message, rendering communication unintelligible.

4.1.2 Automated Captioning Limitations

While AI-driven captioning has improved, it remains insufficient for technical VET subjects. In fields like engineering, pharmacology, or coding, a single mis-captioned term can be catastrophic. "15 milligrams" captioned as "50 milligrams," or `int main()` captioned as `in main`, renders the instruction dangerous or useless. Reliance on auto-captions without human post-editing fails the "effective communication" standard mandated by EU directives. Furthermore, automated captions often lack speaker identification, making it impossible for a DHH learner to know *who* is speaking in a group discussion.

4.2 Pedagogical Barriers: Cognitive Load and Zoom Fatigue

The shift to digital learning imposes a unique cognitive burden on DHH learners.



4.2.1 The Split-Attention Effect

Cognitive Load Theory posits that the human brain has a limited working memory. In a physical classroom, a DHH student can shift their gaze between the interpreter and the visual aid (whiteboard) relatively easily. In a distance setting, the screen is cluttered. The student must simultaneously monitor:

1. The instructor's face (for emotional cues).
2. The interpreter's video window (for linguistic input).
3. The shared screen/slides (for content).
4. The captioning stream (for backup/technical terms).
5. The chat window (for peer interaction).

This fragmentation forces the student to constantly switch attention, this constant splitting of attention significantly degrades learning performance. This results in Zoom fatigue setting in much faster for DHH learners than for their hearing peers, leading to exhaustion and reduced retention.

4.2.2 The Lack of Incidental Learning

Distance learners miss out on the "hidden curriculum"—the informal knowledge transfer that happens in the hallway or during coffee breaks. For DHH learners, who are often isolated in their home environments, this loss is acute. They lack access to deaf mentors or peers with whom they can discuss the unwritten rules of the workplace. This isolation can lead to imposter syndrome and higher dropout rates.

4.3 Institutional and Financial Barriers

4.3.1 Funding Rigidity

National funding systems for disability support are often designed for physical presence. A sign language interpreter grant might cover an interpreter's travel costs to a physical college but may not have a mechanism to pay for a remote interpreter located in a different city or country. This bureaucracy creates delays; apprentices often start their programs weeks before their support services are approved.

4.3.2 The Cross-Border Void

Distance apprenticeships offer the promise of cross-border mobility. A student in Spain could apprentice for a German company. However, funding systems are national. Who pays for the interpreter? The Spanish agency (residence) or the German agency (employment)? This jurisdictional void often leads to both sides refusing to pay, leaving the apprentice without support.

5. Strategic Recommendations

To bridge these divides and fulfill the mandate of the **QSA4Disability** project, we propose the following strategic recommendations. These are structured to be actionable, measurable, and aligned with the Union of Equality¹⁵ strategy.

Recommendation 1: The Digital-First Accessibility Standard for VET Platforms

Target Audience: EU Policymakers (DG EMPL, DG EAC), National Accreditation Agencies, VET Providers.

Context: Current accessibility compliance is often retroactive. Platforms are procured based on cost and features, with accessibility treated as a plugin. This leads to the deployment of LMS and conferencing tools that are fundamentally incompatible with assistive technologies.

Implementation Steps:

1. **Mandatory Procurement Criteria:** EU and National funding for VET digitalization (e.g., under the Recovery and Resilience Facility) must be conditional on the procurement of platforms that meet EN 301 549¹⁶ (Accessibility requirements for ICT products and services) at the *native* level. This standard should be the baseline for all VET infrastructure.
2. **Adoption of QSA4Disability Protocols:** National VET agencies should formally endorse the **QSA4Disability Protocol** as the reference standard for distance apprenticeship audits. This protocol provides a structured checklist for pre-session technical runs, lighting standards for interpreters, and window-pinning capabilities.
3. **Vendor Certification (Accessibility Passport):** VET providers should demand Accessibility Passports from software vendors (LMS, video conferencing) that certify their products have been tested with screen readers and VRI workflows.
4. **AI Safeguards:** In line with the ILO 2025 Policy Brief on AI, any use of AI for candidate assessment or progress monitoring in apprenticeships must be audited for bias against DHH communication patterns (e.g., ensuring video interview AI does not penalize lack of eye contact or unusual speech patterns).

¹⁵ European Commission. (2021). *Union of equality: Strategy for the rights of persons with disabilities 2021-2030* (COM(2021) 101 final). Publications Office of the European Union.

¹⁶ European Telecommunications Standards Institute (ETSI). (2021). Accessibility requirements for ICT products and services (EN 301 549 V3.2.1).



Expected Outcome: A built-in accessibility environment where DHH learners do not need to request basic access (like captions), as these features are default. This reduces the administrative burden on the learner and the legal liability of the provider.

Recommendation 2: The Hybrid Support Model Funding Mechanism

Target Audience: Managing Authorities of ESF+ (European Social Fund Plus), National Ministries of Labor.

Context: Funding models are often rigid, designed for either physical attendance or fully independent study. They rarely support the complex hybrid needs of distance apprenticeships, nor do they handle cross-border complexities effectively.

Implementation Steps:

1. **Cross-Border Portability of Support:** Establish a mechanism within ESF+ that allows disability support funding to follow the apprentice across borders. If a DHH learner in Poland apprentices for a company in Germany, the funding for their Polish Sign Language (PJM) interpreter should be seamless. This mirrors the logic of the **European Disability Card**.¹⁷
2. **Technological Basket Grants:** Create specific grant lines for the hardware required for distance participation. This includes high-definition webcams, **dual-monitor setups** (essential for separating the interpreter window from the work window to reduce cognitive load), and noise-canceling peripherals for hard-of-hearing users using assistive listening devices.
3. **VRI Contingency Funds:** Allocate specific budget lines for professional Video Remote Interpreting (VRI) services to cover last-minute needs (e.g., when a meeting is called on short notice), preventing the isolation of the DHH apprentice.

Expected Outcome: Increased enrollment and retention of DHH apprentices, as the financial and logistical barriers to securing support are removed. This aligns with the Disability Employment Package goal of ensuring reasonable accommodation and the Herning Declaration's call for sustainable investment.

Recommendation 3: Standardized Digital Apprenticeship Protocols for Employers

Target Audience: Chambers of Commerce, Employer Associations (e.g., SMEUnited, BusinessEurope), HR Departments.

Context: Employers often lack the knowledge to host a DHH apprentice remotely. They fear high costs or communication breakdowns due to myths about DHH employability. The myth of low employability is perpetuated by a lack of clear operational procedures.

¹⁷ European Commission. (2023). Proposal for a Council Directive on the European Disability Card and the European Parking Card for persons with disabilities. COM(2023) 512 final. Brussels.



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Implementation Steps:

1. **The Welcome Pack Protocol:** Employers should adopt the **QSA4Disability Toolbox** Welcome Pack for DHH apprentices. This includes a pre-start Tech Check to ensure the company's VPN and firewalls do not block VRI services.
2. **Disability Disclosure Safety:** Implement clear, non-punitive mechanisms for disability disclosure during the onboarding process.¹⁸ This ensures accommodations are ready on Day 1 without stigma.
3. **Asynchronous Workflows:** Encourage employers to adopt asynchronous communication policies (e.g., detailed written briefs instead of verbal instructions, recorded meetings with transcripts). This benefits all employees but is critical for DHH staff to review content without the pressure of real-time communication.
4. **Deaf Awareness Micro-Training:** Mandate a short (1-hour) digital training module for the apprentice's immediate team, covering basic communication etiquette (e.g., "speak one at a time," "face the camera") using the QSA4Disability training videos.

Expected Outcome: A cultural shift in host companies from "accommodating a deficit" to "optimizing workflow." This dispels the myth of low professional contribution by enabling DHH apprentices to perform at their peak efficiency.

Recommendation 4: The e-Mentor Network & Role Modeling

Target Audience: VET Providers, DHH Advocacy Groups (e.g., EUD, National Associations of the Deaf), NGOs.

Context: Isolation is a primary driver of dropout rates in distance education. DHH learners lack access to "hidden curriculum" knowledge often transferred casually in physical settings.

Implementation Steps:

1. **Virtual Hubs:** Utilize the **QSA4Disability Community of Practices** (WP4) to establish virtual hubs where DHH apprentices across Europe can connect, share strategies for remote work, and support one another.
2. **Deaf Professional Mentoring:** Formalize a mentorship program where successful Deaf professionals in the digital sector act as e-mentors. They can provide specific advice on navigating office politics via chat, managing interpreter relationships, and advocating for self-needs.
3. **Peer-to-Peer Training:** Implement peer-mentoring programs adapted for the digital space. This creates a support layer that is distinct from the formal supervisor-apprentice relationship.

¹⁸ As recommended by the JFF Center for Apprenticeship. See DiBiase, M., & Hoff, D. (2024). Creating an inclusive apprenticeship environment through best practices in disability identification and disclosure. Jobs for the Future (JFF).



Expected Outcome: Enhanced psycho-social well-being of apprentices, reduced imposter syndrome, and higher completion rates of apprenticeship programs.

Recommendation 5: Data Disaggregation and Monitoring

Target Audience: Eurostat, National Statistical Offices, QSA4Disability Partners.

Context: There is a scarcity of data on DHH workers in the EU. Without data, it is impossible to measure the success of inclusion strategies or the true employment gap. Current data often lumps all disabilities together, masking the specific outcomes of DHH individuals.¹⁹

Implementation Steps:

1. **Washington Group Questions:** Mandate the use of the Washington Group Short Set on Functioning²⁰ in all VET graduate tracking systems to disaggregate data by disability type.
2. **QSA4Disability Badge Tracking:** Use the **QSA4Disability project badge** (WP2) as a trackable micro-credential. This allows for the longitudinal study of outcomes for apprentices who trained under this quality standard versus those who did not.
3. **Feedback Loops:** Integrate the **e-questionnaire** from the QSA4Disability Toolbox into the standard mid-term review process for all apprenticeships, ensuring that accessibility failures (e.g., "Was the interpreter provided on time?") are flagged early.

Expected Outcome: Evidence-based policymaking. We move from anecdotal evidence of exclusion to robust statistical proof of what works, guiding future ESF+ allocations and policy refinements.

¹⁹ Priestley, M., & Grammenos, S. (2021). How useful are equality indicators? The expressive function of 'stat imperfecta' in disability rights advocacy. *Evidence & Policy*, 17(2), 209-226.

²⁰ Washington Group on Disability Statistics. (2020). The Washington Group Short Set on Functioning (WG-SS).



6. Implementation Roadmap

To realize these recommendations, a phased approach is necessary, moving from immediate tactical fixes to long-term structural reform.

Phase 1: Foundation (0-12 Months)

- **Action:** Immediate dissemination of the **QSA4Disability Toolbox** to VET providers in partner countries.
- **Action:** Integration of the **e-Space** platform into pilot apprenticeship programs in Hungary, Italy, and other partner nations.
- **Policy:** National Ministries issue guidance notes on the eligibility of VRI and hardware costs under existing apprenticeship funding schemes, explicitly categorizing digital access as a reimbursable expense.
- **Action:** Launch of the QSA4Disability Train the Trainers workshops to equip VET staff with the skills to manage inclusive digital classrooms.

Phase 2: Standardisation (1-3 Years)

- **Action:** Expansion of the **Community of Practices** to include major European employer networks (e.g., SMEunited).
- **Policy:** Incorporation of the **Digital-First Accessibility Standard** (Rec 1) into national VET accreditation requirements. Accreditation agencies should begin auditing VET providers' LMS platforms for accessibility compliance.
- **Action:** Launch of the EU-wide e-Mentor database for DHH apprentices, facilitated by EUD and National Associations of the Deaf.

Phase 3: Integration (3-5 Years)

- **Policy:** Full alignment of EU VET structural funds (ESF+) with the **Hybrid Support Model** (Rec 2), allowing for seamless cross-border funding portability. This would likely require a revision of the regulations governing the portability of social benefits.
- **Outcome:** The Distance Apprenticeship becomes a primary, high-prestige pathway for DHH employment, with employment rates of DHH graduates reaching parity with the general population in target sectors (ICT, Administration, Green Economy).



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7. Conclusion

The transition to distance apprenticeships presents a binary choice for the European VET sector: it can be a vector for unprecedented exclusion, where the "double digital divide" leaves DHH learners behind screens of silence and static; or it can be the frontier of true inclusion, where technology dismantles the physical barriers that have historically marginalized the Deaf community.

The **QSA4Disability** project has demonstrated that the tools for this second future exist. The protocols, the platforms, and the pedagogies are ready. What is required now is the political will to mandate them and the institutional agility to fund them. The recently adopted Herning Declaration provides the political momentum, calling for VET systems that are attractive and inclusive. However, declarations are not enough. We need implementation.

By adopting these recommendations, EU policymakers and VET providers do not just comply with the UNCRPD or the Pillar of Social Rights; they actively construct a labor market that values the unique contributions of Deaf talent. We must move beyond the medical model of fixing the apprentice to the social model of fixing the digital environment. When we ensure that a distance apprenticeship is accessible to a Deaf learner, we inevitably create a learning environment that is more robust, clear, and flexible for *all* learners. Inclusion is not a charitable add-on; it is the ultimate quality standard.

We call upon the European Commission, Member States, and social partners to endorse the **QSA4Disability Quality Standard** and to integrate these policy recommendations into the upcoming review of the Digital Education Action Plan and the European Disability Strategy. The future of work is digital; let us ensure it is also accessible.





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