

Transforming Vocational Education and Training: Harnessing the Power of Digital Assessment

Report and Policy Recommendations from the e-assessment in
VET Project.

eAssessment in **VET**

KA226 – Partnerships for Digital Education Readiness

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Introduction

In recent years, the integration of digital technologies has revolutionised various sectors of society, and the field of education is no exception. One area that has witnessed significant transformation is vocational education and training (VET), which plays a vital role in equipping individuals with the skills and knowledge necessary to thrive in today's rapidly evolving job market. As we move further into the digital age, the use of digital assessment tools has emerged as a powerful strategy to enhance the effectiveness and efficiency of VET programs.

This policy report aims to delve into the multifaceted aspects of digital assessment in vocational education and training and explore its potential benefits, challenges, and implications. By analysing existing research, examining best practices, and considering stakeholder perspectives, this report seeks to provide policymakers with actionable recommendations to effectively harness the power of digital assessment in VET settings.

Digital assessment encompasses a wide range of tools and techniques that leverage digital technologies to evaluate learners' knowledge, skills, and competencies. From online quizzes and simulations to virtual portfolios and competency-based assessments, digital assessment offers a dynamic and adaptable alternative to traditional paper-based evaluations. By embracing these innovative approaches, VET institutions can unlock a plethora of advantages that can reshape the educational landscape and foster better learning outcomes.

One of the primary advantages of digital assessment in VET is its ability to provide timely and constructive feedback. Through automated grading systems, immediate feedback can be provided to learners, allowing them to gauge their progress and identify areas for improvement in real-time. Furthermore, digital assessment platforms often offer personalised learning pathways, tailoring educational content to individual needs and promoting self-directed learning. This personalised approach can significantly enhance engagement, motivation, and knowledge retention among VET learners.

Moreover, digital assessment can contribute to the development of essential 21st-century skills, including digital literacy, critical thinking, and problem-solving. By utilising interactive and immersive assessment methods, such as virtual simulations and scenario-based tasks, VET institutions can bridge the gap between theoretical knowledge and practical application. This approach empowers learners to develop hands-on skills that align with industry demands, preparing them for the demands of the modern workplace.

However, the adoption of digital assessment in VET is not without challenges. Issues related to infrastructure, technological accessibility, data privacy, and digital equity need to be thoughtfully addressed to ensure equitable access and equal opportunities for all learners. Additionally, concerns surrounding the reliability and validity of digital assessments must be thoroughly examined to maintain the integrity and credibility of VET qualifications.

As we navigate the evolving landscape of vocational education and training, it is imperative for policymakers, educators, and stakeholders to embrace the transformative potential of digital assessment. This policy report will delve into the opportunities and challenges associated with digital assessment implementation and provide evidence-based recommendations to facilitate its successful integration into VET programs. By doing so, we can build a resilient, future-ready VET system that empowers learners, bridges the skills gap, and meets the dynamic demands of the digital era.

Contents

Contents

[Compatibility and Interoperability](#)

[The need for formative assessment](#)

[Competency based assessment](#)

[Authentic Assessment](#)

[Training the teachers](#)

[E-Portfolios, Europass and Microcredentials](#)

[Who Owns Data?](#)

[Technologies to improve feedback](#)

[Communities of Practice](#)

[Policy Recommendations](#)

Compatibility and Interoperability

Cooperation between learning destinations in vocational training.

VET institutions and systems are well placed to facilitate up-skilling and retraining, which is an essential prerequisite for a fair and inclusive transition. Erasmus+¹ and the Recovery and Resilience Facility² (part of NextGenerationEU) have been used to prepare people through VET for the labour market opportunities arising from the transitions to green and digital skills

In addition, intensive digital training courses continue to be promoted, updating DigCompEdu³ (the EU's digital competences framework), which reflects new and emerging technological developments, such as artificial intelligence, "data migration" for all aspects of life and green skills. A similar competency framework has been developed in the field of sustainability to build a common understanding of the core competences needed for a green transition. SELFIE⁴ (Self-reflection for Effective Learning through Innovative Educational Technologies) is a tool to support the digitisation of schools. The tool is free and can be adapted for schools, including vocational schools, to understand and implement digital technologies in their teaching and learning practices. SELFIE collects anonymous feedback from pupils, teachers and school leaders on how technology is used in their school through questionnaires. The tool then generates a report on the strengths and weaknesses of the school's use of technology.

Vocational education and training system.

Several factors influence students' learning outcomes. Collegial cooperation between teachers, sharing of experiences, activities, support for each other, team planning and implementation of activities are essential and important to improve students' learning outcomes.

A second important factor is the school's cooperation with business. Apprenticeships are the most direct way to develop employees with the competences and skills needed by the company. The ability of learners to assess

¹ <https://erasmus-plus.ec.europa.eu/>

²

https://commission.europa.eu/business-economy-euro/economic-recovery/recovery-and-resilience-facility_en

³ https://joint-research-centre.ec.europa.eu/digcompedu_en

⁴ <https://education.ec.europa.eu/selfie/about-selfie>

their knowledge and skills, to set measurable personal goals, and to achieve them within a given timeframe also requires communication and cooperation. Students need to identify their strengths and weaknesses in order to assess themselves and set expectations, to establish a starting point and to assess the final outcome. It is important to highlight a learner's strengths in a timely and appropriate way, even if they are not very strong, but can be a significant achievement for a particular individual.

The need for formative assessment

Formative assessment plays a crucial role in VET by providing ongoing feedback and monitoring learners' progress throughout their training journey. While summative assessments, such as final exams or certification exams, have traditionally been the focus in VET, there is a growing recognition of the need for more formative assessment practices.

Vocational learning is often hands-on and practical, focusing on skill development. Formative assessment allows for timely and continuous feedback, enabling learners to identify strengths and weaknesses in their performance. Regular feedback helps learners understand their progress, make improvements, and develop their skills incrementally. It also provides instructors with valuable insights into individual learners' needs. By monitoring learners' performance in real-time, instructors can tailor their instruction to address specific areas of improvement. This personalised approach facilitates targeted interventions, ensuring that learners receive the necessary support and guidance to succeed.

Vocational education places a strong emphasis on acquiring practical skills relevant to specific industries. By integrating authentic, real-world contextualised formative methods, such as simulations and projects, learners can demonstrate their competency and application of skills, bridging the gap between theory and practice.

Vocational training needs to be flexible and adaptable to meet the dynamic demands of industries. Formative assessment aligns with this need by allowing for ongoing adjustments to instructional strategies and content. By collecting data on learners' performance, instructors can identify emerging trends or gaps in knowledge and adjust their teaching methods accordingly. It also helps to align VET programs with industry needs. Regular feedback from industry professionals and employers can inform the development of assessments that reflect current industry practices and standards. This ensures that learners are equipped with the skills and knowledge demanded by the job market, increasing their employability and readiness for the workplace.

The incorporation of more formative assessment practices in VET is essential to support learners' skill development, provide timely feedback, personalise instruction, enhance motivation and engagement, and align training with industry needs. By embracing formative assessment, VET institutions can create a learner-centred and adaptive environment that prepares individuals for success in their chosen vocational pathways.

Competency based assessment

In VET there is a notable move towards competence-based and work-based learning. This represents a shift in educational approaches that focuses on developing practical skills and knowledge relevant to the workplace. This approach recognizes the importance of aligning education with the needs of employers and the labour market, aiming to produce job-ready graduates.

Competence-based learning emphasises the acquisition and demonstration of specific skills and competencies rather than solely focusing on theoretical knowledge. It recognizes that employers value practical abilities and job-specific skills that can be directly applied in real-world settings. By emphasising competencies, vocational education programs aim to bridge the gap between classroom learning and workplace requirements, ensuring that students are well-prepared to enter the workforce.

Work-based learning is an integral part of competence-based education. It provides students with opportunities to gain practical experience in real work environments, enabling them to apply their skills and knowledge in authentic settings. Work-based learning can take various forms, such as internships, apprenticeships, cooperative education programs, or on-the-job training. These experiences offer students valuable insights into the world of work, allow them to develop professional networks, and enhance their employability by acquiring industry-specific skills and competencies.

Overall, the move represents a practical and responsive approach to education that equips students with the skills, knowledge, and experiences necessary to succeed in the workforce. By combining classroom instruction with real-world application, VET institutions can effectively prepare individuals for the demands of their chosen career pathways.

Authentic Assessment

Authentic assessment is an approach to evaluating student learning that focuses on real-world, meaningful tasks and activities. It aims to assess students' abilities to apply knowledge and skills in authentic contexts, rather than simply recalling information or performing isolated tasks. Authentic assessment is designed to mirror the complexity and demands of the professional or real-life settings in which the knowledge or skills being assessed are typically applied.

Authentic assessment should have;

- Real-world relevance
- Complex and open-ended tasks
- Rather than assessing isolated knowledge or skills, authentic assessment integrates different disciplines and assesses the application of knowledge across multiple domains. It encourages students to draw on a range of competencies to solve problems or complete projects.
- Active student engagement
- Authentic assessments strive to create a realistic context or scenario that reflects the actual contexts in which the knowledge or skills are applied. They may also involve an authentic audience, such as peers, professionals, or community members who provide feedback or evaluate students' work.
- Ongoing feedback and reflection
- Multiple assessment methods

Training the teachers

In the field of TVET, many assume that the key factor in providing effective education is the content knowledge and skills of teachers and trainers, which are typically based on work experience. Many TVET teachers and trainers then complement their competences with occasional training in the use of ICT in their professional context. However, our research indicates that a broader educational background is essential for the advanced use of ICT competencies to enhance the quality of education in all domains related to the teaching and training profession. Therefore, we recommend that a broad educational context, such as provided by teacher certification, be included in the professional development of TVET teachers and trainers. Unfortunately, this is not always the case in all countries, and even when it is, this requirement is sometimes waived due to difficulties in finding qualified teachers and trainers.

Our findings also suggest that training in the use of ICT should be framed within a broader educational context to increase its impact on the quality of education, as reflected in higher competency levels of teachers and trainers. From our semi-structured interviews, we also conclude that ICT training for teachers still has a long way to go. In fact, most teachers told us that their knowledge of ICT and digital resources was primarily self-taught and self-directed. When ICT training was mandated, it was often experienced as rudimentary and basic. Our survey, on the other hand, confirmed that when teachers did have a broader general educational background, they could make better use of ICT training to perform at higher levels of proficiency with ICT equipment. By prioritising the development of a broad educational foundation and emphasising the importance of ICT training within that context, we can enhance the quality of education in TVET and better prepare teachers and trainers to meet the evolving needs of the workforce.

Our recommendations for the implementation of e-assessment in education entails the following suggestions towards the strengthening of professional development and educational background for teachers:

1. Integration of Comprehensive ICT Training in Teacher Certification and training programs for TVET educators:
 - Emphasise the integration of comprehensive ICT training within teacher certification programs and training programs for TVET educators.
 - Ensure that future teachers and TVET educators receive thorough training in digital technologies, pedagogical practices, and innovative

teaching methods to effectively integrate e-assessment (technology) in their classrooms.

- Recognize the importance of deep and sophisticated knowledge of ICT, going beyond rudimentary and basic skills, to enhance instructional practices and promote advanced technological integration in TVET education.

2. Continuous Professional Development and Support:

- **Mandatory Pedagogical Training for TVET Teachers without Teaching Certification:** Implement a policy that requires TVET teachers to undergo mandatory pedagogical training to enhance their educational background. This training should focus on core pedagogical principles, instructional design, assessment strategies, and classroom management techniques.
- Provide ongoing professional development opportunities for teachers and TVET educators, focusing on advancing their deep ICT competencies, especially as it relates to e-assessment.
- Allocate dedicated resources for continuous professional development, including funding for attending relevant training programs, conferences, workshops, and seminars that cover advanced ICT concepts, e-assessment and instructional strategies.
- Foster collaboration and peer learning among teachers through communities of practice and online platforms, encouraging the exchange of advanced ICT knowledge and best practices in vocational training.

3. Collaboration with Educational Institutions, Industry, and Research Organizations:

- Establish partnerships and collaborations between educational institutions, industry stakeholders, and research organisations to bridge the gap between education and industry needs.
- Encourage joint initiatives that promote the integration of advanced ICT in teaching and learning, leveraging the expertise and resources of industry and research organisations.
- Support research and evaluation studies on effective strategies for incorporating advanced ICT tools, techniques, and emerging technologies in e-assessment in vocational training.

4. Inclusive and Enhanced ICT Training:

- Provide mandatory and inclusive ICT training programs (including e-assessment) for teachers and TVET educators, addressing various proficiency levels and catering to diverse needs.
- Diversify and enhance ICT training opportunities, including online courses, workshops, and collaborative learning communities that delve into advanced ICT concepts and applications.

- Collaborate with technology companies, educational organisations, and government agencies to offer specialised training programs that focus on deep ICT knowledge and sophisticated integration strategies for TVET educators.
5. Strengthening Supportive Infrastructure:
- Invest in the development and maintenance of robust ICT infrastructure in schools, educational institutions, and TVET centres.
 - Ensure reliable internet connectivity, up-to-date hardware and software, and technical support systems that can support advanced ICT tools and applications.
 - Address disparities in access to technology and digital resources, particularly in underserved areas, to ensure all TVET educators have the opportunity to develop deep ICT knowledge.
6. Recognition and Incentives for Advanced ICT Integration:
- Recognize and reward teachers and TVET educators who demonstrate advanced integration of ICT in their teaching practices, showcasing deep ICT knowledge and sophisticated instructional strategies.
 - Establish an award system or professional recognition program that highlights innovative and effective use of advanced ICT in vocational education.
 - Provide incentives such as financial rewards, career advancement opportunities, or additional resources to encourage TVET educators to pursue advanced ICT training and develop deep expertise in their instructional practices.

E-Portfolios, Europass and Microcredentials

The use of technology has led to new ways of presenting competences with increasing demand for flexible, portable, and recognized documentation of skills and achievements. E-portfolios, microcredentials, and Europass⁵ offer different features and benefits, and each is used differently by VET schools, vocational work placements and industry.

Recognition and Standardization: Europass is a widely recognized and standardised framework for documenting qualifications and skills across European countries. It provides a common format for presenting credentials, making it easier for individuals to showcase their qualifications across borders.

However, e-portfolios and microcredentials offer more flexibility and customization options, allowing individuals to showcase a broader range of skills and achievements beyond traditional qualifications.

Flexibility and Customization: E-portfolios provide individuals with the ability to create a personalised showcase of their work, skills, and experiences. They can include a variety of artefacts, such as documents, multimedia, and reflections, enabling a comprehensive representation of one's abilities. E-portfolios allow for greater flexibility in capturing both formal and informal learning experiences, making them suitable for lifelong learners who want to document a diverse range of skills and achievements.

Skill-specific Recognition: Microcredentials are focused on recognizing specific skills or competencies. They offer targeted and bite-sized learning experiences, allowing individuals to acquire skills in a more modular and flexible manner. Microcredentials often align closely with industry needs and can be earned through various online platforms, educational institutions, or professional organisations. They provide a way for individuals to showcase their up-to-date skills and demonstrate their relevance in rapidly changing job markets.

Technological Advancements: The rise of digital technologies has facilitated the development and adoption of e-portfolios and microcredentials. With the availability of online platforms and tools, individuals can easily create and share their e-portfolios and access microcredential programs. This technological advancement

⁵ <https://europa.eu/europass/en>

has increased competition among providers of e-portfolio platforms and microcredential offerings, leading to a wider range of options for individuals to choose from.

Shift in Learning Paradigms: Traditional qualifications alone may not fully capture the breadth of an individual's skills and achievements. There is a growing recognition of the value of lifelong learning, continuous professional development, and non-formal learning experiences. E-portfolios and microcredentials cater to this shift by providing a more comprehensive and dynamic representation of an individual's capabilities.

Individual Empowerment: The use of tools like e-portfolios, microcredentials, and Europass is ultimately driven by the desire to empower individuals to take ownership of their learning and professional development. These tools aim to provide individuals with greater control over how they represent their skills and credentials, allowing them to present a more holistic and up-to-date profile to potential employers or educational institutions.

It's important to note that these tools and approaches are not in competition. For instance, individuals can use e-portfolios to showcase a diverse range of skills and experiences, while also including microcredentials as evidence of specific competencies. Additionally, Europass can serve as a standardised framework for documenting formal qualifications, which can be supplemented by e-portfolios and microcredentials to provide a more comprehensive picture of an individual's abilities.

Who Owns Data?

Data ownership is a complex and contested issue in the context of e-assessment in vocational education. There are many stakeholders involved, such as learners, teachers, institutions, employers, regulators and technology providers, who may have different rights and responsibilities regarding the creation, access, use and control of data generated by e-assessment activities⁶

Protecting and respecting data

The privacy and security of learners' data is essential for ensuring their trust, confidence and safety in e-assessment.

According to UNESCO guide titled “Personal Data and Privacy Protection in Online Learning: Guidance for Students, Teachers and Parents⁷”, measures that can be taken to protect and respect learners' data include :

- Adopt a clear and transparent privacy policy that informs learners about the purpose, scope, duration, and recipients of data collection, processing, and sharing.
- Obtain informed consent from learners before collecting, using, or disclosing their data, and allowing them to withdraw their consent at any time.
- Educate learners about the risks and benefits of data sharing, and empower them to control their own data and privacy settings.

In another publication from UNESCO titled “Minding the data: protecting learners' privacy and security⁸” the proposed measures for protecting learner's data and privacy, include

- Comply with relevant laws and regulations on data protection, such as the General Data Protection Regulation (GDPR) in the European Union
- Respect learners' rights to access, rectify, erase, restrict, or object to the processing of their data, and to data portability

6

https://avetra.org.au/resources/Documents/Conference%20Archives/Conference%20Archives%202018/AVETRA_2018_E-assessments_for_learningpptx.pptx

7

<https://iite.unesco.org/wp-content/uploads/2020/06/Personal-Data-and-Privacy-Protection-in-Online-Learning-Guidance-for-Students-Teachers-and-Parents-V1.0.pdf>

⁸ <https://unesdoc.unesco.org/ark:/48223/pf0000381494>.

The ethical and legal implications of collecting, storing, sharing and analysing assessment data

The ethical and legal implications of collecting, storing, sharing and analysing data from e-assessment are significant and complex. They involve balancing the interests and rights of different stakeholders, such as learners, teachers, institutions, employers, regulators and technology providers, as well as respecting the values and principles of society at large.

The data collected from e-assessment should be protected from unauthorised access, modification, disclosure or loss. The data should also respect the privacy and confidentiality of the learners and other data subjects. The data should only be collected, used and shared with the consent of the data subjects or on other lawful grounds. The data should also comply with the relevant laws and regulations on data protection, such as the General Data Protection Regulation (GDPR) in the European Union⁹

E-assessment data may belong to different stakeholders, such as learners, educators, institutions, platforms, etc. Therefore, e-assessment data should be managed with respect and accountability, and acknowledge the rights and responsibilities of each stakeholder. The data should not be manipulated, distorted or misused for purposes that are inconsistent with the original objectives of e-assessment. The data collected from e-assessment should be accurate, reliable, relevant and representative of the learners' performance and learning outcomes. The data should also be analysed and interpreted with appropriate methods and tools that ensure validity and reliability¹⁰.

Ownership and control

Ownership and control of e-assessment data may involve different entities, such as learners, educators, institutions, platforms, and funding agencies. Each entity may have different rights and responsibilities regarding the data, depending on factors such as the type, source, purpose, and use of the data.

One possible way to distribute and negotiate ownership and control of e-assessment data is to establish clear and transparent data governance policies and agreements among the stakeholders. Data governance refers to the processes and structures

⁹ <https://www.sciencedirect.com/science/article/pii/S0267364918302012>

¹⁰

<https://www.mckinsey.com/capabilities/mckinsey-digital/our-insights/data-ethics-what-it-means-and-what-it-takes>

that define how data are collected, stored, shared, analysed, and used within an organisation or a network of organisations¹¹. Data governance policies and agreements should specify the roles and responsibilities of each stakeholder, the rules and standards for data quality and security, the mechanisms for data access and sharing, the procedures for data retention and disposal, and the methods for resolving data-related disputes or issues.

Another possible way to distribute and negotiate ownership and control of e-assessment data is to adopt ethical principles and guidelines for responsible data practices. Ethical principles and guidelines can help stakeholders to respect the rights and interests of each other, as well as the values and norms of the society. Ethical principles and guidelines can also help stakeholders to balance the benefits and risks of using e-assessment data for different purposes, such as learning improvement, educational research, or policy making.

The European Commission's Guidelines on FAIR Data Management in Horizon 2020¹², provides recommendations for making research data findable, accessible, interoperable, and reusable.

¹¹ <https://ori.hhs.gov/images/ddblock/data.pdf>

¹²

https://ec.europa.eu/info/funding-tenders/opportunities/docs/2021-2027/common/guidance/rules-le-lear-fca_en.pdf

Technologies to improve feedback

Technology can play a significant role in enhancing the quality of feedback provided to students. Here are several ways technology can be used to improve feedback: By leveraging technology effectively, educators can enhance the quality of feedback provided to students, promote student engagement, and support their learning and growth. It is important to strike a balance between automated feedback and personalised, human interaction to create meaningful and effective feedback experiences.

Technology can indeed play a significant role in enhancing the quality of feedback provided to students by supporting student autonomy and self-regulation by allowing them to initiate, seek, and use feedback more effectively.¹³ Technology can also offer authentic and differentiated methods of feedback such as visual, audio, or video feedback that can be more engaging and effective for students and teachers¹⁴. It also facilitates the possibility to enable timely and consistent feedback that is legible, aligned with assessment criteria, and equitable for all students¹⁵

Following you can find some proposals for striking a balance between automated feedback and personalised, human interaction:

Use automated feedback to identify areas for improvement. Automated feedback tools can be helpful for identifying areas where students need to improve. For example, a grammar checker can identify grammar and spelling errors, and a plagiarism checker can identify instances of plagiarism. However, it is important to remember that automated feedback tools are not perfect. They can sometimes identify errors that are not actually errors, and they may not be able to identify all instances of plagiarism.

Use personalised, human interaction to provide feedback on areas for improvement. Once you have identified areas where students need to improve, it is important to provide them with personalised, human feedback. This feedback should be specific and constructive, and it should help students understand how they can improve their work. Personalised feedback can be provided in a variety of ways, such as through one-on-one meetings, group discussions, or online forums.

¹³ <https://www.edutopia.org/article/improving-feedback-and-fostering-collaboration-technology>.

¹⁴ <https://www.edutopia.org/article/tech-tools-help-teachers-and-students-exchange-feedback>

¹⁵ <http://www.enhancingfeedback.ed.ac.uk/documents/guide+for+academic+staff+FINAL.pdf>

Use technology to facilitate peer feedback. Peer feedback can be a valuable way for students to learn from each other. Technology can be used to facilitate peer feedback in a variety of ways, such as through online discussion forums, group projects, or collaborative assignments.

Recommendations for schools and education planners on how technology can be used to improve the quality of feedback to students.

Provide teachers with access to high-quality technology tools.

This includes tools for providing personalised, formative, immediate, and peer feedback. In order to provide teachers with access to high-quality technology tools: we recommend:

- Allocate funding for technology in the school budget. This will allow schools to purchase the latest technology tools, such as laptops, tablets, and interactive whiteboards.
- Provide teachers with professional development on how to use technology effectively. This training should cover the principles of effective technology use, as well as the specific features of the technology tools that they will be using.
- Create a culture of collaboration among teachers. This will encourage teachers to share ideas and resources, and to learn from each other about how to use technology effectively in the classroom.
- Partner with local businesses and organisations. This can provide schools with access to technology resources that they may not be able to afford on their own.

Provide teachers with training on how to use technology to provide feedback effectively.

This training should cover the principles of effective feedback, as well as the specific features of the technology tools that they will be using. Our recommendations on how to support teachers to use technology to provide feedback, include:

- Provide teachers with access to resources on effective feedback. This could include articles, books, and websites that discuss the principles of effective feedback, as well as specific examples of how to provide feedback using technology.
- Provide teachers with opportunities to practise providing feedback using technology. This could be done through workshops, online courses, or peer-to-peer coaching.
- Provide teachers with feedback on their own feedback. This could be done by a mentor, supervisor, or peer.

- Create a culture of feedback in the school. This means that feedback should be seen as an essential part of the learning process, and that both teachers and students should be encouraged to give and receive feedback regularly.

Make feedback data-driven.

Teachers should use data to track student progress and identify areas where students need additional support.

Data can help teachers identify students who are struggling. By tracking student grades, test scores, and participation data, teachers can identify students who are not meeting expectations. This information can be used to provide these students with additional support.

Data can be helpful to identify areas where students need additional instruction. By analysing student data, teachers can identify specific areas where students are struggling. This information can be used to plan lessons that address these areas.

Data can be used to track student progress over time. By tracking student grades, test scores, and participation data over time, teachers can see how students are progressing. This information can be used to make adjustments to instruction as needed.

Recommendations for using data to track student progress and identify areas where students need additional support:

- Collect data regularly. The more data you collect, the better you will be able to track student progress and identify areas where students need additional support.
- Use data to inform instruction. The data you collect should be used to inform your instruction. This means using the data to plan lessons that address the areas where students are struggling.
- Communicate with students and parents. It is important to communicate with students and parents about their progress. This will help to ensure that everyone is on the same page and that students are getting the support they need.

Using AI to improve quality feedback to students

Artificial Intelligence (AI) can play a significant role in enhancing the quality of feedback provided to students. While AI can enhance the quality of feedback, it is important to maintain a balance between automated feedback and human interaction. Combining the strengths of AI technology with the expertise and contextual understanding of teachers can result in personalised, meaningful, and effective feedback experiences for students.

Recommendations for using AI to improve the quality of feedback to students:

- Use AI to supplement, not replace, human feedback. AI can be a valuable tool for providing feedback to students, but it is important to remember that it is not a replacement for human feedback. Human teachers can provide feedback that is tailored to the individual needs of each student, and they can also provide encouragement and support.
- Be transparent with students about how AI is being used to provide feedback. Students should be aware that AI is being used to provide feedback, and they should be able to ask questions about how the AI is working. This will help to build trust between students and teachers.
- Use AI to provide feedback that is timely, specific, and actionable. Feedback should be provided as soon as possible after students have submitted their work. It should also be specific and actionable, so that students know what they need to do to improve their work.
- Use AI to provide feedback that is positive and encouraging. Feedback should be positive and encouraging, even when it is critical. This will help students to feel motivated to improve their work.

Communities of Practice

Communities of practice play a crucial role in supporting educators by providing them with opportunities for collaboration, professional development, and knowledge sharing. Communities of practice bring together educators who share a common interest or expertise. By participating in these communities, educators can share their experiences, ideas, and resources with one another. This knowledge exchange helps to improve instructional practices, curriculum development, and problem-solving strategies. These platforms provide an important environment for collaboration, knowledge sharing, professional growth, and emotional support.¹⁶ In terms of e-assessment, a community of practice is an ideal space to share thoughts and findings after experimentation with a new tool or method. By sharing these experiences, educators may learn from each other's mistakes and collaborate to find innovative solutions.

The European Commission's Community of Practice playbook is a good place to start building a new network, or there are many useful and successful existing groups such as the JRC group on LinkedIn¹⁷ “DigCompEdu & SELFIEforTEACHERS Community”.

¹⁶ Teaching in a Digital Age: Guidelines for designing teaching and learning. Bates, A.W. 2019
<https://opentextbc.ca/teachinginadigitalage/chapter/6-7-experiential-learning/>

¹⁷ <https://www.linkedin.com/groups/12765111/>

Policy Recommendations

Below is a summary of the policy recommendations elaborated from the e-Assessment in VET project.

1. e-Assessment should be informed by clearly defined learning outcomes

Clearly define the learning outcomes and competencies that students are expected to achieve through vocational education and training. These outcomes should guide the design of e-assessment and the use of generative AI. Pay careful attention to fairness and validity when implementing generative AI for assessment. Make sure the AI systems used are reliable, unbiased, and accurately measure the desired competencies.

Regularly evaluate the effectiveness and impact of e-assessment. Collect feedback from educators, students, and industry stakeholders to identify areas for improvement and refine the assessment processes accordingly.

2. e-Assessment must be authentic assessment

Develop assessments that closely resemble real-world tasks and challenges relevant to the vocational field. Use generative AI to simulate scenarios and generate realistic problems for students to solve, reflecting the skills they will need in their future careers.

Rather than assessing isolated knowledge or skills, authentic assessment integrates different disciplines and assesses the application of knowledge across multiple domains. It encourages students to draw on a range of competencies to solve problems or complete projects.

Authentic assessments strive to create a realistic context or scenario that reflects the actual contexts in which the knowledge or skills are applied. They may also involve an authentic audience, such as peers, professionals, or community members who provide feedback or evaluate students' work.

3. Effective e-Assessment requires effective training and support

Offer training and support to both educators and students in effectively using e-assessment tools. Educators should understand how to create meaningful assessments, interpret AI-generated results, and provide feedback based on them. This should be embedded in initial teacher training and continued throughout educators' professional development. Students should receive guidance on how to engage with e-assessment formats and interpret their results.

Staff Training needs in specific digital skill areas we identified during the course of the project are;

- The use of E-portfolios
- Formative assessment using ICT
- Using ICT to give feedback to students

4. Get the balance right

Find the right balance between automation and human involvement in the assessment process. While AI can streamline certain aspects of assessment, human judgement and expertise are still crucial for evaluating complex skills that may require contextual understanding or subjective evaluation. AI can be a valuable tool for providing feedback to students, but it is important to remember that it is not a replacement for human feedback. Human teachers can provide feedback that is tailored to the individual needs of each student, and they can also provide encouragement and support.

5. e-Assessment must be Ethical and Compliant

Establish robust data privacy and security measures to protect student information when using digital tools for assessment. Follow best practices in data protection, anonymization, and compliance with relevant data regulations.

Be transparent with students about how AI is being used to provide feedback. Students should be aware that AI is being used to provide feedback, and they should be able to ask questions about how the AI is working. This will help to build trust between students and teachers.

6. Focus on Formative

The incorporation of more formative assessment practices in VET is essential to support learners' skill development, provide timely feedback, personalise instruction, enhance motivation and engagement, and align training with industry needs. By embracing formative assessment, VET institutions can create a learner-centred and adaptive environment that prepares individuals for success in their chosen vocational pathways.

7. Build Communities of Practice

Create a culture of collaboration amongst staff. Encourage sharing, networking, peer learning and cross pollination of ideas not only in your own workplace but between schools and colleges and businesses and academics. Actively encourage educators to share ideas and resources, and to learn from each other about how to use technology effectively in the classroom.

