



IMPACT REPORT

Scouts for Green Apprenticeship

Digital Credentials "Scout for GreenApprenticeship - SDG in VET"



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Impact Report

Work package 4 - Digital Credentials "Scouts for GreenApprenticeship —SDG in VET"

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Table of Contents

Scouts4GreenApp Impact Report	3
1. Executive Summary.....	3
2. Introduction.....	4
3. Objectives.....	4
4. Activities & Initiatives	5
5. Stakeholder Engagement	7
6. Performance & Outcomes	9
7. Qualitative Impact & Themes	10
8. Challenges & Lessons Learned	13
9. Strategic Insights & Recommendations.....	14
10. Conclusion	15

Scouts4GreenApp Impact Report

This report is designed to clearly communicate the measurable and qualitative impacts of the Scouts4GreenApp, ensuring all stakeholders—users, partners, and funders—can understand the value and outcomes of the initiative. Therefore, it records the use and features of the progressive web app. It follows best practices in impact reporting, combining data, narrative, and stakeholder voices for a comprehensive report.

1. Executive Summary

The Scouts4GreenApp Erasmus+ project has produced a set of complementary products that together support the integration of sustainability into vocational education and training (VET). These include a modular web-based / mobile learning app with missions and pathways on ecological, economic, and social sustainability; a curriculum and training materials that translate the SDGs into concrete learning outcomes and activities; and a White Paper and brochure that analyse how sustainability is currently embedded in VET systems and provide strategic guidance for VET providers and companies.

In addition, the project offers resources for running a national and European “Scouts4GreenApp Challenge” to engage learners in practical sustainability projects. Together, these products are designed to be used before, during, and after mobilities or internships, helping learners, trainers, and companies systematically embed green practices into vocational training and workplace processes.

The Scouts4GreenApp is an educational digital tool designed to promote sustainability awareness and action among VET learners, teachers, and institutions. It is designed as progressive web app (PWA), thus being server-based with a shortcut on mobile devices. Through interactive, gamified missions aligned with the UN Sustainable Development Goals (SDGs), the app introduces users to ecological, economic, and social dimensions of sustainability. Its structured pathways encourage reflection, teamwork, and the application of green practices in both classroom and workplace contexts, helping to nurture a new generation of environmentally conscious professionals.

The app’s broader mission is to bridge the gap between sustainability policy and vocational practice by equipping learners with practical green skills and fostering stronger collaboration between schools, training providers, and industry. It aims to make sustainability a core component of vocational curricula and to inspire behavioural and systemic change across the VET ecosystem.

This impact report assesses how the Scouts4GreenApp contributes to these goals by gathering qualitative feedback from educators, trainers, and other VET professionals. It explores user experiences, industry relevance, and implementation insights, providing evidence of the app’s pedagogical value and recommendations for its wider adoption and future development.

The key highlights of the implementation of the app include the awareness for sustainability in the VET system among the target group. For many people involved in the development and piloting this was the first time they have been exposed to this topic in their daily work lives. Although the integration of sustainability into VET is required in some partner countries, it is practically not applied anywhere. Thus, the app and its materials gave the companies a chance to integrate the topic into their programmes and most importantly made the learners familiar with it in a format they like and are

accustomed to. The material was so well received that further training in sustainability and a long-term use of the app in major companies is planned.

2. Introduction

The Scouts4GreenApp is a progressive web application (PWA) developed to enhance environmental awareness and action among learners and staff in vocational education and training (VET). Designed as an engaging, accessible, and multilingual learning tool, the app integrates the flexibility of web-based technology with the interactivity of mobile use, enabling users to explore sustainability principles through practical missions, challenges, and real-life examples. Its main objectives include strengthening green competences, encouraging sustainable behaviour in schools and workplaces, and supporting VET institutions in aligning their practices with the European Green Deal and Sustainable Development Goals.

The app targets both VET learners and educators, fostering collaborative learning that links theory with local sustainability actions. By addressing key challenges such as waste reduction, responsible consumption, energy efficiency, and sustainable mobility, the Scouts4GreenApp bridges the gap between digital innovation and environmental responsibility. It demonstrates how gamified digital tools can motivate behavioural change, encourage peer learning, and contribute to long-term environmental awareness within vocational education.

Why Choose a PWA for Scouts4GreenApp

Progressive Web Apps (PWAs) were selected for the Scouts4GreenApp due to their ability to deliver native-like experiences using a single web codebase, ensuring broad cross-platform accessibility for VET learners and staff on desktops, iOS, Android, and low-end devices without separate app store builds.

Offline functionality via service workers enables caching of missions, challenges, and sustainability content, allowing users in rural or low-connectivity areas—common in VET fieldwork—to access materials anytime, supporting uninterrupted green skill-building aligned with European Green Deal goals.

High engagement stems from home-screen installation, and fast loading, which boost user retention in gamified learning on topics like waste reduction and energy efficiency, while reducing development costs and carbon footprint through efficient data use.

In terms of sustainable use, this approach also offers the chance to adept the material if need be and update it across all available devices without the need to go through app store certification again. Thus, the content can be keep available for free for anyone for longer.

3. Objectives

The Scouts4GreenApp PWA anchors ecological, economic, and social sustainability directly into vocational education and training (VET) programs, targeting learners and staff during learning mobilities and work-based learning to build practical green skills for everyday application.

It qualifies and sensitizes participants for a labour market shaped by sustainable development and digitalization, raising awareness of green industries, climate-friendly VET careers, and healthy choices that combat climate change through challenge-based environmental learning.

The app boosts understanding of the United Nations Sustainable Development Goals (SDGs) and European Green Deal via gamified missions, linking theory to real-world actions like sustainable mobility and energy efficiency during internships.

It promotes hands-on green activities, including waste reduction, responsible consumption, and local sustainability pilots, empowering users to track progress and earn micro-credentials aligned with the EU GreenComp framework.

Finally, the PWA equips VET providers and companies to develop sustainability projects, integrating green practices into operations through app-supported peer challenges, fostering green entrepreneurship and community impact across Europe.

4. Activities & Initiatives

Major Activities

VET learners and staff use the Scouts4GreenApp PWA as a pocket-sized digital training tool throughout learning mobilities and work-based learning (WBL), accessing modular content on ecological, economic, and social sustainability before, during, and after internships or in their daily VET experience to apply green practices in real-time company settings. All activities are organized along three learning pathways that correspond to the three aspects of sustainability. Nevertheless, the individual activities can also be performed on their own and in the order of choice by the user.

The app supports on-the-job sustainability integration, where learners conduct waste audits, promote responsible consumption, or introduce energy efficiency measures in companies.

Staff leverage trainer notes and curriculum resources that work in combination with the PWA to guide learners, embedding SDGs and Green Deal principles into VET programs through bite-sized modules on for example biodiversity, circular economy, and inclusion during WBL phases.

The Scouts4GreenApp PWA prepares the users for the national and international challenges under the EU SDG Challenge, where VET learners develop innovative, job-related sustainability projects during mobilities or work-based learning, such as implementing waste audits or green procurement in hosting companies. Winners receive recognition, certificates, and invitations to showcase at events like the EU challenge in Brussels, with projects documented as best practices to inspire companies and future VET programs across Europe. These activities promote collaboration, creativity, and real-world application, directly supporting climate action and green entrepreneurship in business settings.

Learning Pathways

The app offers three masterclass pathways in a micro-credential framework: ecological sustainability covering biodiversity, climate action, and resource efficiency; economic sustainability focusing on circular economy, green industries, and sustainable business models; and social sustainability addressing inclusion, responsible consumption, and equitable labour practices. Each pathway includes bite-sized modules with case studies, quizzes, videos, and practical exercises tailored to VET contexts, allowing users to stack credentials upon completion for formal recognition aligned with EU GreenComp and SDGs. Pathways support individualized pacing with offline access, ensuring applicability during internships or daily work. All pathways are stand-alone learning structures with individual learning components that do not need to be performed in a specific order. While the app suggests learning pathways, users are free to choose their own way of advancing through the app. All progress is recorded on the users individual cache, allowing them to pick up again where they left off without transmitting info to a central server.

Key Features

Gamified elements include missions, on-the-go challenges, progress badges, and drag-and-drop activities to sustain engagement, with push notifications reminding users of tasks like tracking energy savings or documenting progress. Multilingual support, peer networking for project sharing, and trainer notes in the accompanying curriculum enable staff to guide learners, while PWA capabilities provide home-screen installation, fast loading, and data syncing for low-connectivity environments. Integration with work-based learning allows uploading evidence of company projects, fostering long-term use beyond mobilities through modular, reusable content.

Made possible through an international collaboration

Notable partnerships and collaborations form a cornerstone of the Scouts4GreenApp project's success. The initiative is a collaborative Erasmus+ project that unites partners from Austria, Belgium, Finland, Germany, Portugal, and Slovenia, including vocational education and training providers, regional organizations, and sustainability-focused institutions. This multinational consortium leverages diverse expertise to embed ecological, economic, and social sustainability deeply into VET mobilities and curricula.

Key efforts include cooperation with regional and national VET providers who use the app's tools to sensitize learners and staff to green skills and Sustainable Development Goals (SDGs). The project also partners with companies hosting VET learners, enabling real-life sustainability projects within businesses, such as waste reduction and energy efficiency initiatives.

The Scouts4GreenApp consortium actively engages with European networks and policy makers, contributing to broader EU goals around the European Green Deal and digital transformation in education. Through these collaborations, the project enhances its impact on youth empowerment, green entrepreneurship, and sustainable employment pathways, ensuring the app and its associated learning materials remain relevant and effective across diverse educational and cultural contexts.

These partnerships also facilitate the organization of national and international sustainability challenges, showcasing innovative learner projects at high-profile EU events, thereby enhancing visibility and promoting exchange of best practices among VET communities across Europe. This well-integrated collaboration model boosts scalability and sustainability of the app's educational impact beyond the project's lifetime.

In summary, the Scouts4GreenApp project exemplifies a successful transnational partnership framework dedicated to fostering sustainability competences in vocational education, supported by robust institutional cooperation and engagement with the EU's sustainability agenda.

5. Stakeholder Engagement

Overall, 74 VET learners all over Europe (Portugal, Belgium, Slovenia, Austria, Finland and Germany) have tested the Scouts4GreenApp. This helped the consortium further develop the content and technical aspects of the app while at the same time made the app more popular in Europe. Furthermore, the consortium received valuable feedback from the users themselves.

In the following, the answers are summarized.

The learners were between the ages of 15 and 35 and thus comprised a rather wide span, including different situations in life. There were slightly less females (22) than males (25). All of them were active in work-based learning, either in school or in companies where they are apprentices or interns.

Concerning the active use of the app, most users opened it rather occasionally with most of them less than once a week (30) or even less than once a month (12). This is actually in line with the intention of the app since it is designed to be used next to the actual work and not exclusively. Nevertheless, ten users used it several times a week or at least once a week (8). A small portion of the users applied the app even daily (2) or several times a day (1).

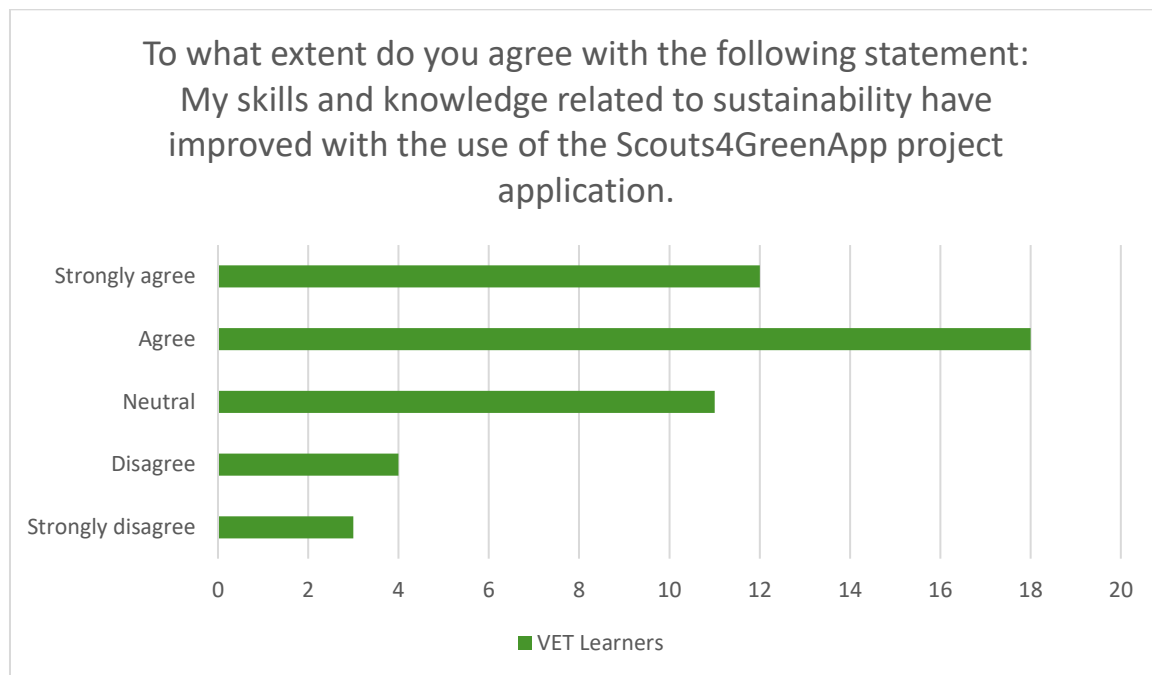
When looking at the pathways that the users chose most, all three have their relevance with a slight lead of the ecological pathway (27). Right behind it was the economic pathway with 20 users while the social pathway was the preferences of 19 VET learners. Some even selected more than one masterclass and therefore gave credit to the fact that sustainability is more than green practices and that all three parts are intertwined.

The PWA set out to teach the Sustainable Development Goals (SDGs) of the United Nations. According to the VET Learners that tested it, this was done successfully with 23 saying the transfer of knowledge is effective. A further 13 said it was even very effective. However, some only saw some effectiveness (10) or even no effectiveness (3). This may be due to the fact that not all users start with the same knowledge. For those that are already familiar with the SDGs, the app might not offer so many new insights since it is intentionally rather basic to make sure all learners can become familiar with sustainability.

Naturally, everyone has their favourites. So when asked what they liked most in the app, the learners gave quite a variety of answers. It ranged from the ease of understanding and using it (3) to the accumulation of all important information in one place in an engaging way with a great overview (5). While four users went as far as saying that the entire app and its teaching was their favourite, others specifically highlighted the test and quizzes (4) as well as the real life examples and the connection to the learning material in their apprenticeship that helped them understand how they can contribute to sustainability (3). One person each also mentioned the practical aspect of the app as well as the general topics of sustainable development and awareness for global warming that are raised in the app.

What is noteworthy is, that a vast majority of VET learners found that the app served its purpose in the sense that it supported them in improving their knowledge about the SDGs. A total of 62.5 % agreed or even strongly agreed with the statement, that their skills and knowledge related to sustainability have improved with the use of the Scouts4GreenApp project application. These numbers

show perfectly that the PWA meets the target and is designed in a way that is attractive to the target group and thus keeps them engaged, helping them to learn more about sustainability.



Something similar is reflected in the next rating where most (24) find the application (very) easy to use. A lot of thought has been put into developing a storyline which resonates with the target group (as can be seen in the Functional Specification Document). This seems to have been successful. Naturally, there is always room for improvement with five users saying the app is moderately easy to use and five and four finding it difficult or even very difficult to use respectively. These statements need to be further questioned and would allow the consortium to further advance the app. Depending on the answers this might open the floor for a follow-up project, evolving the app as the information about sustainability keeps evolving.

In case of further development, the VET learners gave a couple of suggestions for improvement that concerned the system and performance of the app. Some want it easier and simpler (1) and also faster (3). Others gave tips to improve the look with more visuals (4) and a different background (1).

On the technical side a smoother functionality on the mobile phone is wanted (4). Since the app was designed as PWA the format should be further tested on different phones and thus adapted.

At the same time the users seemed to enjoy the app that much that they want additional content (3) – often in the format of more quizzes. Another suggestion was to support with project ideas for the SDG Challenge that is to follow.

In terms of faster access to content two users suggested to be able to pass on answers in quizzes even when they were wrong. This is something the developers have intentionally excluded since a solid knowledge base is important for developing actions in sustainability. Nevertheless, instant feedback as suggested once seems a good idea to help the users improve.

Overall, the suggestions mostly reflect the positive experience the VET learners had with the app and show that there is always room for improvement, especially in such a fast-paced material as a learning app.

6. Performance & Outcomes

Before the start of the progressive web application, the consortium has conducted an Europe-wide research to find out how well known the SDGs and the Green Deal are in the VET ecosystem in all partnering countries. Knowledge and engagement with the SDGs in the Scouts4GreenApp country reports showed that awareness is present but often superficial, with clear interest in learning more and linking SDGs to concrete vocational pathways.

Baseline SDG awareness

In the European snapshot, low awareness and understanding of SDGs in VET and business were explicitly mentioned as a key barrier, with stakeholders calling for more targeted education and training on green skills and sustainable practices.

Interviews with VET stakeholders across several EU countries reported that awareness and practice of sustainability and SDGs vary strongly by sector, with some areas (e.g. larger companies, greener sectors) more advanced than others.

Country example: Finland

In the Finnish national report, four out of six interviewed young adults and adults had never heard of the SDGs, while the two who knew them could only name one or two goals, such as no poverty or gender equality.

At the same time, around two-thirds of respondents expected SDG-related topics to affect their lives or work and explicitly said they wanted more information on how to apply SDGs in everyday life, vocational careers, and communication with citizens.

Interest and engagement tendencies

When asked what they want to learn, respondents emphasized very applied aspects: how to use SDGs in daily work, how to communicate them in simple language, and how SDGs connect to vocational careers in green industries, renewable energy, or sustainable agriculture.

At European level, interviewees highlighted SDG 13 (climate action), SDG 7 (clean energy), SDG 12 (responsible consumption and production), and SDG 4 (quality education) as the most urgent, indicating that climate, energy and education were perceived as priority engagement areas.

The research reports identified “lack of awareness” and “limited expertise” on SDGs in VET as concrete needs and barriers, framing SDG literacy itself as a key outcome area for tools like Scouts4GreenApp.

This underlines that VET was expected to deliver SDG-related competences to all students, but current knowledge was uneven.

Compared to the results highlighted it can be concluded that the VET learners are now more aware of the SDGs and their relevance for their work life. They not only have more knowledge, they also identified the Scouts4GreenApp PWA as an encompassing resource where information is store and from where they can test and apply their knowledge to their daily life.

To further develop the information, many students also used the app to get inspired for project ideas and thus applied for the EU SDG Challenge that is to follow this app development. The challenge calls on the young learners to put their newly acquired knowledge into action and develop a concept for a sustainability project in their companies. The influence of the app went this far that more learners sought to work on the social sustainability of their surroundings – a pathway that has been previously mostly overlooked.

7. Qualitative Impact & Themes

To understand more about the qualitative impact of the Scouts4GreenApp PWA, the partners interviewed three VET providers and tutors each to understand how well the app fits into the existing work-based learning schemes and how beneficial the material is in teaching the learners about sustainability. Here is what they said.

Role and Experience in Vocational Education and Training

The interviewed professionals collectively bring extensive expertise in vocational education and training (VET), covering a wide range of sectors, learner profiles, and institutional contexts. Their experience spans between 7 and 20 years in teaching, training management, and innovation within VET systems. Several participants hold specialist roles such as ICT and mechatronics educators, integration and sustainability teachers, and training coordinators responsible for large groups of apprentices.

They work across both school-based and company-based VET environments, supporting learners with diverse needs—including young people with special educational requirements and those facing labour market disadvantages. Their roles often extend beyond classroom instruction to include curriculum design, digitalisation initiatives, and partnerships with industry.

A strong emphasis on modernisation and innovation characterises their professional practice. Many have been actively engaged in Erasmus+ and other EU-funded projects focusing on sustainability, green skills, and the integration of digital tools into vocational training. Others coordinate international mobility stays for apprentices and trainers, supporting cross-border learning and exchange.

Overall, the interviewees represent a rich cross-section of contemporary VET practice—combining pedagogical expertise, practical industry collaboration, and a shared commitment to making vocational training more inclusive, sustainable, and future-oriented.

App Usability and Content

Overall, participants described their experience using the Scouts4GreenApp as highly positive, emphasizing its intuitive navigation, engaging layout, and visually appealing design. The bottom navigation bar and structured learning pathways were frequently mentioned as effective supports for orientation and task completion. The gamified missions and use of personas captured learners' attention—particularly Generation Z—by providing relatable examples and a storyline that kept users motivated. Although some suggested adding an onboarding tutorial and a glossary for technical terms, the majority found the user experience smooth and accessible across devices, with only minor performance issues noted on older tablets.

In terms of content, the app was praised for its strong alignment with sustainability education and real-world challenges faced in vocational training and workplaces. The three learning pathways—

ecological, economic, and social—were regarded as well-balanced and relevant to both teaching objectives and current industry developments in digitalisation and green transition. Trainers valued the app's focus on personal accountability, resource conservation, and sustainable behaviours, noting that it effectively supports the goal of shaping learners into environmentally conscious professionals. While participants acknowledged that practical transfer to specific sectors still relies on company-level adaptation, they agreed that the app offers a solid framework and meaningful starting point for integrating sustainability into vocational education.

Industry Relevance and Impact

Participants agreed that the Scouts4GreenApp successfully addresses a growing need in vocational education and training for sustainability-focused learning. Companies increasingly expect trainees to understand environmental compliance, energy efficiency, and sustainable resource management — competencies that the app introduces in a clear and engaging way. Through gamified missions and relatable examples, learners become more conscious of their environmental footprint, which translates into more responsible behaviour both in school and during internships. Several educators reported that after using the app, students showed stronger interest in sustainability topics and greater readiness to apply green practices in real-world contexts.

Specific needs of companies and trainees were met through the app's accessible structure and its integration of SDG-related content. Teachers appreciated how its missions supported the development of both green and transversal skills, such as teamwork, reflection, and problem-solving — qualities sought by employers. However, many respondents emphasized the need for more sector-specific modules, particularly in areas like ICT, mechatronics, electrical engineering, and industrial automation, to better reflect operational realities and technical applications.

While the app effectively fosters awareness and motivation, several potential gaps were identified. These include the limited linkage between the 17 Sustainable Development Goals (SDGs), the absence of deeper exploration of real-world trade-offs between goals, and a lack of localized or company-based case studies. Educators also recommended enhanced teacher dashboards and data analytics to monitor learner performance more precisely, along with improved interoperability with existing Learning Management Systems (LMS).

In terms of impact, the app was found to support both educational and operational outcomes. Teachers successfully integrated it into transversal learning modules, sometimes turning digital missions into live sustainability audits or class projects. This approach not only reinforced learning outcomes but also encouraged practical process improvements within schools and companies. By introducing sustainability through a learner-friendly, self-paced format, the app contributes to preparing a more environmentally aware workforce—one equipped to bring greener thinking and behaviour to the workplace.

Implementation and Adoption

Participants generally viewed the implementation of the Scouts4GreenApp as feasible, with no major technical barriers reported, but they highlighted several practical and organisational challenges. The most frequent concerns related to limited time within existing training schedules, low learner willingness to engage with additional content in their free time, and varying levels of digital literacy among both trainers and trainees. Some also mentioned infrastructure issues (e.g., device access, Wi-Fi) and occasional difficulties with access links or URLs. Resistance from less tech-savvy staff and

those unfamiliar with education for sustainable development was seen as a possible obstacle, alongside the need to better coordinate use of the app between schools and host companies.

To support successful adoption, participants stressed the importance of clear pedagogical integration and ready-to-use materials. Suggested resources included teacher training modules on how to embed the app in lessons, ready-made lesson plans linked to specific missions, and trainer-oriented guidelines or monitoring templates. Short onboarding tutorials, user guides, and printable or video-based instructions for learners were also recommended. Multilingual support (e.g., Slovene, Croatian, Hungarian) and better alignment with national qualifications frameworks or institutional LMS would further facilitate uptake.

Motivation and recognition mechanisms were seen as valuable levers for adoption. Participants proposed digital badges, certificates (ideally linkable to tools such as Europass), leaderboards, and peer-sharing features to acknowledge learners' efforts and boost engagement. Additionally, providing evidence or resources that demonstrate the app's positive impact on learning and behaviour change could help convince management to allocate time and institutional support for its systematic use in VET programmes.

Feedback and Suggestions

Participants provided constructive feedback focused on enhancing interactivity, personalization, and pedagogical depth within the Scouts4GreenApp.

A central theme was gamification and engagement. Multiple respondents recommended adding progress indicators—such as visual growth elements (e.g., a greening tree or turning wheel)—as well as points, badges, or micro credentials linked to Europass Digital Credentials. These features would recognize learner achievement and sustain motivation over time. Participants also suggested a “warm-up” phase for beginners less familiar or initially uninterested in sustainability topics, helping them engage gradually before tackling the main missions.

Content expansion and customization was another recurring suggestion. Stakeholders called for more sector-specific missions and real-world case studies to strengthen relevance across vocational fields such as mechatronics, ICT, and industrial automation. Additional recommendations included integrating short quizzes, polls, or reflection prompts after each mission, offering teachers the ability to track individual student progress, and representing gender diversity more visibly in avatars and mission visuals.

In terms of technical and pedagogical features, offline capability was seen as essential to enable use in rural or low-connectivity environments. Participants also proposed integrating the app into national qualification or credit systems (such as ECVET) and ensuring compatibility with institutional Learning Management Systems (LMS).

Best practices and lessons learned highlighted several factors for long-term success:

- Maintaining simplicity, clarity, and visual appeal to attract both students and educators.
- Using co-creation approaches, where students can propose missions, fostering ownership and creativity.
- Implementing regular feedback loops between users, teachers, and companies to adapt content over time.

- Leveraging blended learning strategies to combine app-based activities with real-world or classroom tasks for deeper impact.

Overall, users valued the app's modular and mobile-friendly design but emphasized that aligning its ongoing development with user feedback, workplace relevance, and gamified learning principles will be key to sustaining engagement and maximizing educational value.

Final Thoughts

Participants unanimously recognized the Scouts4GreenApp as more than a digital learning tool—it represents a catalyst for cultural change in VET. By linking schools, learners, and industry, it fosters a shared sense of responsibility for advancing sustainability and supports the broader transition toward greener economies.

The app was praised for effectively bridging the gap between high-level sustainability policies, such as the UN Sustainable Development Goals (SDGs), and day-to-day vocational training practice. Its structured and engaging design helps translate abstract policy ambitions into tangible learning experiences and workplace behaviours. Participants saw this as a model for integrating sustainability not only into individual learning but also into institutional strategies and industry partnerships.

They highlighted the app's flexibility, scalability, and clear pedagogical value—features that make it suitable for diverse sectors and national contexts. By incorporating elements such as digital credentialing, SDG-based missions, and applied learning tasks, it supports both competence development and systemic change within VET institutions.

For successful long-term impact, respondents strongly recommended continued teacher training, alignment with national curricula, and policy-level support. With such backing, the Scouts4GreenApp PWA could become a core component of the European Green VET strategy—helping embed sustainability as a defining principle of modern vocational education.

8. Challenges & Lessons Learned

During the planning and implementation of the app the consortium encountered several hurdles that were mostly concerning the data security of the users. The partners planned to ask for as little data as possible and thus refrained from requiring profiles and log-in details. To ensure that the progress of the app works smoothly despite this circumstance they had to adopt the technical set-up to ensure that the information is only saved on the local devices of the individual users.

In terms of the organisations, no issues were encountered. All partners agreed on the general idea and process of the application. Only when the details and the individual steps were developed, more intense discussion were needed to ensure that the material is self-explanatory and engaging. The latter thus was no issue since many VET providers, mentors and learners were interested to test and apply it. Sustainability is an important topic for many of them – in their work and their private life. However, in the general VET or work-based learning it still plays a minor role and is often not even part of the curriculum. For this reason, the app and its ready-to-use content filled a gap that many perceived, as can be seen in the interview reflections above.

What can be deducted from the process of the development of the progressive web app is that more time and insights from the target group would enhance the quality of the app even further. While the content was well thought-out and developed, it might have been beneficial to test it in the business context with the target group for an extended period of time to ensure it fits most circumstances.

9. Strategic Insights & Recommendations

Key strategic insights

The evidence gathered through testing, interviews, and stakeholder reflections shows that Scouts4GreenApp successfully closes a critical gap between SDG policy frameworks and day-to-day VET practice. Learners report improved knowledge of sustainability and SDGs, while teachers confirm that the app makes abstract concepts concrete through missions, quizzes, and workplace-related examples. At the same time, the baseline mapping has shown that SDG awareness in VET was previously uneven and often superficial, underlining that the app responds directly to an identified system-level need.

Another central insight is that the combination of PWA technology, gamification, and modular pathways resonates strongly with the target group but must be accompanied by clear pedagogical integration. The PWA format enables low-barrier, cross-device access and local data storage, which supports both data protection and long-term free availability. However, feedback from both learners and trainers stresses that impact is highest when app use is embedded into lessons, WBL tasks, or SDG challenges, rather than left to voluntary, ad-hoc use in learners' free time.

Finally, the feedback shows that Scouts4GreenApp acts as a catalyst for cultural and institutional change, not just as a stand-alone learning tool. Companies and VET providers used the app as an entry point to integrate sustainability topics into curricula, staff development, and workplace projects. The increased interest in the social sustainability pathway and the strong demand for further training indicate that the app stimulates new conversations and partnerships, including a visible shift from "green = environmental only" towards a more holistic view that includes social and economic dimensions of sustainability.

Recommendations for future improvements

1. Deepen and diversify content
 - Develop additional sector-specific missions (e.g. ICT, mechatronics, electrical engineering, tourism, health and care) to reflect concrete workplace realities and make it easier for trainers to plug missions into existing VET modules.
 - Extend coverage of SDG interlinkages and trade-offs, including real company case studies that show how environmental, social, and economic goals can reinforce or conflict with each other in practice.
2. Strengthen pedagogy and integration in VET
 - Produce ready-to-use teaching packs (lesson plans, worksheets, assessment rubrics) linked to specific missions and pathways, so that trainers can integrate the app into time-constrained timetables without extra preparation burden.

- Offer short online or hybrid teacher training sessions and micro-workshops that explain how to use the app alongside existing curricula, national qualification frameworks, and work-based learning schemes.
3. Enhance gamification, recognition, and learner motivation
 - Introduce more visible progress and feedback elements (e.g. a growing tree, progress bar, or “green score”), together with badges and stackable micro-credentials connected to existing tools such as Europass Digital Credentials.
 - Expand quiz formats, reflection prompts, and instant feedback on answers to support formative assessment, while preserving the requirement to master core knowledge before progressing to higher-level tasks.
 4. Improve technical performance and accessibility
 - Further optimise the PWA for older devices and a wider range of smartphones, focusing on loading times, stability, and smooth navigation to address reported performance issues.
 - Continue improving offline functionality and smart caching so learners in rural or low-connectivity areas can complete missions reliably during WBL and then synchronise evidence when they go online.
 5. Boost outreach, scaling, and community-building
 - Systematically link the app to the national and European Scouts4GreenApp Challenges by providing in-app templates and idea prompts for SDG projects, and by integrating a simple way to submit project ideas directly from the PWA.
 - Build a community space or light networking feature (even if hosted outside the PWA) where trainers and learners can share best practices, project concepts, and classroom scenarios, creating a living repository of use cases.
 6. Data-informed improvement and institutional anchoring
 - Where data protection rules permit, pilot an anonymised teacher dashboard that shows aggregate progress and engagement indicators, helping staff monitor learning outcomes and justify dedicated time for app use.
 - Work with ministries, chambers, and VET agencies to align the app’s micro-credentials and pathways with formal recognition systems, supporting inclusion of Scouts4GreenApp in institutional strategies and national Green VET policies.

10. Conclusion

Scouts4GreenApp has demonstrated that a thoughtfully designed PWA can significantly enhance SDG-related knowledge, awareness, and motivation among VET learners and staff. The impact report shows that the app not only improves understanding of sustainability and its relevance for work life, but also inspires concrete actions in companies—from waste reduction and energy-saving initiatives to socially oriented projects that strengthen inclusion and well-being. This combination of improved literacy, behavioural change, and workplace projects marks a substantial contribution to making sustainability a lived component of vocational education.

The qualitative insights confirm that the app is perceived as intuitive, engaging, and pedagogically meaningful, while the baseline research highlights just how urgently such tools are needed in VET systems where sustainability is often expected but not yet systematically implemented. The fact that learners used the app to prepare entries for the EU SDG Challenge, and that partners plan long-term use in major companies, underlines its role as a driver of both individual competence development and organisational transformation.

Next steps for Scouts4GreenApp centre on amplifying the EU SDG Challenge as the project's flagship initiative for translating app-based learning into real-world impact. Priority actions include integrating dedicated in-app prompts, templates, and submission tools directly within the PWA to streamline participation in national and European challenge rounds; organising a ceremony in Brussels to showcase winning projects and best practices; and expanding outreach through partnerships with VET networks to boost entries, particularly in underrepresented social sustainability areas. With targeted promotion, enhanced app linkage, and sustained consortium support, the EU SDG Challenge can evolve into a scalable platform that drives green entrepreneurship, fosters company-level sustainability pilots, and positions Scouts4GreenApp as a cornerstone of EU Green VET strategies – based on the knowledge received in the Scouts4GreenApp progressive web app.

