

# DigiFuse

DIGITAL FUSION ENVIRONMENTS

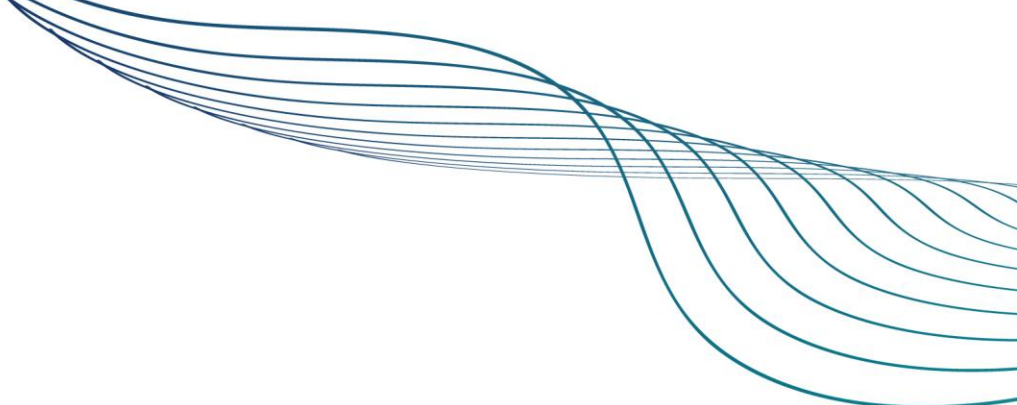
## First Contours Method

[Aproximar, Portugal]

Name of the Author(s)

Rita Domingos | Aproximar

**Funded by the European Union.** Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.



# Table of Contents

|   |           |
|---|-----------|
| <b>Chapter 1 – Introduction .....</b>           | <b>2</b>  |
| 1.1. What is DigiFusE .....                     | 3         |
| 1.2. Why this method .....                      | 4         |
| 1.3. How is the method build up .....           | 5         |
| <b>Chapter 2 – DigiFusE Strategic.....</b>      | <b>7</b>  |
| 2.1 Introduction.....                           | 8         |
| 2.2 Desk Research.....                          | 9         |
| 2.3 Field Research.....                         | 11        |
| <b>Chapter 3 – DigiFusE Organizational.....</b> | <b>13</b> |
| 3.1 Introduction.....                           | 14        |
| 3.2 Desk Research.....                          | 15        |
| 3.3 Field Research.....                         | 17        |
| <b>Chapter 4 – DigiFusE Informational .....</b> | <b>19</b> |
| 4.1 Introduction.....                           | 20        |
| 4.2 Desk research .....                         | 21        |
| 4.3 Field research .....                        | 23        |
| <b>Chapter 5 – DigiFusE Technical .....</b>     | <b>26</b> |
| 5.1. Introduction.....                          | 27        |
| 5.2. Desk research .....                        | 28        |
| 5.4. Field research .....                       | 30        |
| <b>References.....</b>                          | <b>32</b> |

# **Chapter 1 – Introduction**



## 1.1. What is DigiFusE

The DigiFusE project aims to produce a practical, evidence-based guideline for successful digital educational environments to support (closed) facilities for vulnerable people. To do so, it will analyse the extent and challenges involved and consider strategic, organizational, informational and technical aspects, taking into account both the different stakeholders and the specific safety aspects relevant to these types of environments.

DigiFusE will as such be characterized by a community of practice, sharing experiences with already embedded digital educational environments of the partners (BLEEP for reintegration into society and the labour market, TRIANGLE and PERSPEKTIVE for vocational qualifications) and research on effective methods for vulnerable target groups, recognizing the importance of self-development and effective learning in (closed) care institutions and addressing the increasing demands and needs of these institutions to keep up with current developments in the digital society.

The project will be using three different educational areas:

**BLEEP:** a blended learning environment designed to integrate traditional and digital learning methods. It supports staff in prisons by providing a similar framework for acquiring new skills and approaches and is aimed at teachers, mentors, social workers and reintegration trainers.

**TRIANGLE:** a secure digital education system developed for vocational skills within closed institutions, encompassing formal and non-formal education. TRIANGLE addresses the challenge of building skills and developing portfolios in a secure internet environment and can be used in an open environment.

**PERSPEKTIVE:** Promoting the reintegration of (former) prisoners into the labor market. It enables an exchange of experts and prisons from seven European countries at working level. The project partners are developing a handbook with educational activities to strengthen the social and professional skills of inmates, which will be transferred to an online platform and made available to European prisons as part of DigiFusE.

The project consortium consists of partners from the Netherlands, Germany, Italy, Turkiye, Portugal, France and EAEA and EPEA as European organisations:

ClickF1 (Netherlands)

Westdeutscher Handwerkskammertag (Germany)  
Aproximar (Portugal)  
STEPS (Italy)  
EAEA (Belgium)  
KOVALI (Turkye)  
EPEA (Norway)  
Smart Corrections (France)

More information on the project website: <https://www.digifuse.eu/>

## 1.2. Why this method

The project consortium includes partners from Portugal, the Netherlands, Germany, Italy, Turkey, Belgium, France and North Macedonia, bringing together knowledge and expertise from a practical, operational and theoretical point of view. In DigiFusE partners are organized according to their specialty: development group (organizations that research, develop, implement and train with a focus on a national case: STePS (IT), Click-F1 (NL), Aproximar (PT), KOVAL (TK), WHKT - Westdeutscher Handwerkskammertag (GM); Advisor group (organizations that give advice, research, train and disseminate with the focus on the organizations above and with focus on international situations: EPEA (MK) and EAEA (BE)) and an expert (international expert on the use and impact of technology and secured digital systems in closed environments: Steven van de Steene).

Based on this structure, the project's activities will be aligned as follows:

- i) A SWOT based on research with the needs of staff and target groups
- ii) A method based on SOIT layers: Strategy, Organization, Information, Technical
- iii) A DigiFusE training and advise system based on the method.

- iv) An open access website with the method and training - 3 improved education environments: BLEEP/re-integration, Triangle and PERSPECTIVE/vocational skills

Through this methodology we intend to contribute to the development of good learning methods and the introduction of different types of digital solutions to support learning in (close) institutions, promoting digital skills and competences, initial and continuous training for teachers, trainers and other education staff and contributing to new learning and teaching methods and approaches in EU.

### The target group

As part of the DigiFusE project Aproximar focuses on education environment TRIANGLE (co-financed by the European Union's Erasmus+ Program), the vocational skill platform, exploring strategies that help to enhance its use within the emerging adults justice context. Through close cooperation and continuous feedback, Aproximar aims to maximize the impact the platform can have on emerging adults, ensuring that TRIANGLE effectively supports the personal development, social reintegration and future prospects of its users.

After analysing and systematizing the information obtained through the consultation process, it will be incorporated into the development of the DigiFusE method and will contribute to the development of a digital learning offer adjusted to the concrete reality of emerging adults justice in Portugal.

## 1.3. How is the method build up

During the analysis and research process, we interviewed interlocutors from distinct levels of information (considering the SOIT method) and relationships with the Justice System and Juvenile Detention Centres in Portugal, seeking to broaden the view of the TRIANGLE implementation context. In relation to the distinct levels of information analysis method based on SOIT layers:

- at strategic level: The participants included in this level were selected because of the strategic and decisive positions they occupy in the direction

of Juvenile Justice in Portugal, in the direction of the Juveniles Detention Centers, but also because of their professional experience and academic knowledge related to institutions that include closed regimes. At this level we were able to include some of the most nationally recognized individuals with knowledge of the subject.

- at the organizational level: At this level were included the coordinators and assistant managers of Juvenile Detention Centers and the Young Prison Facility. These are the professionals responsible for the general coordination of the activities and in providing support to their respective directions.
- at information level: At this level of analysis, were included professionals who have different responsibilities in Juvenile Detention Centres and in the Young Prison Facility such as program managers, tutors, psychologists and social reintegration technicians, in general. These are the professionals who, through their different positions and responsibilities, interact directly with young people deprived of their liberty, having a key role in their pos-release process.
- at technical level: The computer and technological support of close institutions within the context of emerging adults justice is provided by the Central Services team that we were unable to cover in the consultation process. Alternatively, at this level we involved professionals who carry out activities directly related to ICT in Juvenile Detention Centres and in the Young Prison Facility, or who has some specific area of training related to this field, to ascertain the main needs from an informatic and technological point of view, along with other.

# Chapter 2 – DigiFusE Strategic



## 2.1 Introduction

Promoting the social reintegration of emerging adults deprived of their liberty implies considering the challenges that emerge from the process of progressive digitalization experienced in contemporary societies. From this perspective, promoting a harmonious transition between the context of deprivation of liberty and the natural environment is fundamental.

The SWOT analysis at the strategic level, considering the dimensions of strengths, weaknesses, opportunities and threats, was based on the following questions:

- Do you think investment in digital education is, or should be, a strategic priority of the Directorate-General of Reintegration and Prison Services (DGRSP) for Juvenile Detention Centres? Why?
- What do you see as DGRSP's main ambitions regarding promoting digital education and the use of digital tools in educational environments with closed regimes?
- What kind of articulation or liaison exists between the DGRSP and entities (local, national or European) relevant to the implementation of initiatives focused on digital education in closed educational environments?
- To what extent are professionals in the Justice System familiar with the TRIANGLE initiative?
- What is the general perception of professionals regarding the TRIANGLE initiative (positive, negative or neutral)?
- In what aspects can we strategically evolve in boosting the digital area in closed educational environments?
- What links, partnerships or collaborations do you think are important, but still lacking, to strengthen the sector's capacity to develop digital solutions?
- What factors or strategic challenges can hinder the implementation and use of digital tools such as DigiFusE/TRIANGLE in closed educational environments?
- How can the DigiFusE/TRIANGLE initiative make a strategic contribution to closed educational environments?
- How do you think this initiative can influence national policies related to the use of digital tools in the justice system?

## 2.2 Desk Research

At a strategic level, the literature mentions the relevance of narratives and public discourse when it comes to investing in digital education in institutions that include closed regimes within the context of the Judicial System.

Ross, Wood, Baird, & Lundberg (2024) highlight the importance of effective communication with the public, arguing that framing digital education for prisoners as an investment in community safety — rather than a luxury — can be essential to mitigating unfounded resistance.

Globally, a favorable public discourse can be a relevant driver of strategic dynamics, contributing to the development of successful digital transformation plans based on political will and the necessary funding.

In this context it is important to consider education in close environments as a fundamental right. In this line, the United Nations Special Rapporteur on the right to education has affirmed that incarcerated persons retain the right to education and that penal institutions should facilitate the access (Muñoz, 2009).

Institutions with close regimes, being juvenile detention centres or prisons, must be more than warehouses and, through an articulated set of strategies, contribute to the reintegration of individuals into society. Several studies argue that, in the 21st century, meaningful access to digital tools is increasingly recognized as an essential component of exercising basic educational rights and, in this line “education for prisoners is important, not only as a basic human right (...) but in order to break the cycle of reoffending by providing qualifications and skills for employment on release” (cit) (Pike & Adams, 2012)

From this broad perspective, digital literacy and access to information are central elements of the educational process today, implying the need to consider digital inclusion in juvenile detention centres and prisons as a logical extension of these existing rights frameworks.

International documents such as the Declaration of Principles of the World Summit on the Information Society (WSIS) (2003) and the United Nations resolutions on Internet access emphasize that the benefits of digital connectivity must be accessible to all social segments.

Excluding individuals who are deprived of their liberty from access to digital resources is a renewed form of vulnerabilities and inequality, reinforcing the argument that modern rehabilitation must address digital exclusion as a facet of social exclusion. Reisdorf and Jewkes (2016) point out that deprivation of liberty leads to “supercharged digital exclusion” to the extent that individuals, often from disadvantaged circumstances, experienced an even greater widening of their digital skills and access gap during their years deprived of liberty (Reisdorf, DeCook, Foster, Cobbina, & LaCourse, 2021).

Digital tools are increasingly used in the daily life of contemporary social organizations - from access to public services, job opportunities, communication with others or financial management itself - so it is important to ensure that individuals deprived of their liberty have the digital literacy necessary for a successful reintegration into society.

Juvenile detention centres and prisons are publicly funded and often operate on tight budgets. The literature notes that digital education programmes require sustained investment in infrastructure, equipment and training, with funding needs being a documented obstacle.

Ross *et al.* (2024) note that budget shortfalls often hinder innovation but also emphasize that strategic partnerships with the private sector can contribute to the solution.

Another important point to highlight at this level is the contribution of digital learning initiatives to the core goals of incarceration. Many authors emphasize that rehabilitation — particularly through education and skills training — can play a key role in promoting long-term public safety.

Globally, at a strategically point of view, digital transformation in close institutions within justice context is positioned as a bridge from custody to community, aligning the rehabilitation mission with the reality of a digital society.

## 2.3 Field Research

The information gathered at strategic level leads us to the conclusion that, globally, digital education is a **strategic priority for close care institutions**, particularly included in **Judicial System**.

The investments made by the DGRSP in fostering digital environments in emerging adults justice context are recognized, notably through the exploration of strategies for implementing a secure internet network that allows it to be used regularly for the emerging adults deprived from liberty and integrated into the dynamics of the institutions. However, this has not yet been achieved.

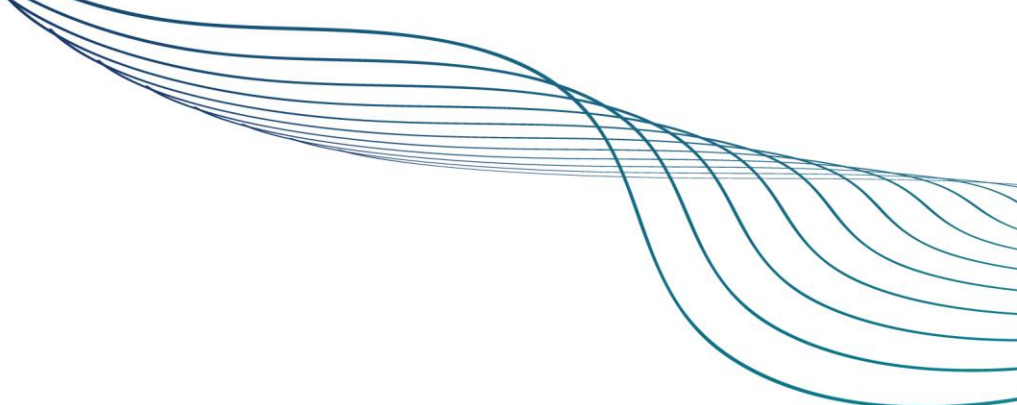
In this process, the main concern relates to the **safety dimension**, ensuring that the development of digital educational environments guarantees it.

Another relevant aspect that emerges in the field research was the perspective that the **training** for emerging adults deprived of their liberty **should be combined with a broader perspective of education for the law and citizenship, being central in the process of their social reintegration**.

In this process, coordination with external entities (e.g., civil society organizations, universities, and public institutions) is seen as both positive and necessary, as it enhances the response capacity of closed educational settings at this level.

From a broader perspective, it is noted that professionals have limited knowledge of the TRIANGLE Platform, due to its recent introduction and its pilot implementation in only one Juvenile Detention Centre (Navarro de Paiva). Nevertheless, there is recognition of its potential contribution to advancing digital education in these contexts.

The consultation process observed the importance of approaching **digital expansion** in closed-regime institutions from a **broader perspective**, recognizing its potential both to support the social reintegration of emerging adults and to drive



institutional innovation through the modernization of processes, culture, and technologies. An effective strategy should address both dimensions in a balanced way.

### Opportunities and threats

Concerns about **funding and sustainability** were identified during the field research, both in terms of installing secure internet, maintaining hardware and software, and upgrading resources to promote the expansion of digital education.

On the other hand, the importance of investing in digital training is recognized as a key element in promoting the social reintegration of emerging adults, **combined with a broader perspective of education for the law and citizenship, and took place gradually and aligned, in a broader perspective, with a path of empowerment and autonomy.**

In this process, including the **TRIANGLE Platform is relevant**, namely at an early stage in the digital training process - a process that should be flexible and adjustable to the specific needs of the juvenile detention centres and prisons, that could be progressively extended, in conjunction with the path to autonomy and empowerment also developed by the youngster during their internment measure.

# Chapter 3 – DigiFuse Organizational



## 3.1 Introduction

Considering the expansion and improvement of digital educational environments in closed care institutions implies considering an integrated and holistic approach, leveraging resources and synergies, thus optimizing results.

It is necessary to consider dimensions such as technical and human resources, particularly regarding the digital training of the professionals involved. It is necessary to be deeply knowledgeable about the specific needs and potentialities of the institutions, adapting strategies to their specific configuration.

The SWOT analysis at the organizational level, considering the dimensions of strengths, weaknesses, opportunities and threats, was based on the following questions:

- What digital capabilities and resources are currently available to support the implementation of initiatives such as DigiFusE/TRIANGLE in closed educational environments?
- Are there internal processes or systems that stand out for their effectiveness in supporting digital education initiatives?
- What specific skills and experiences do professionals in closed educational environments have that you consider relevant for implementing initiatives like DigiFusE/TRIANGLE?
- What limitations do you identify in the (physical/material) resources of your organization/sector that could affect the implementation of digital systems in closed educational environments?
- What limitations do you identify in the (human) resources of your organization/sector that could affect the implementation of digital systems in closed educational environments?
- Does your organization/sector face difficulties in retaining professionals or attracting new talent?
- Do you think that the professionals involved (probation officers, teachers, trainees) have sufficient knowledge of the DigiFusE/TRIANGLE initiative to present it effectively to young people?
- Could the lack of coordination between professionals compromise the optimal use of DigiFusE/TRIANGLE by young people?

- Do you consider it relevant to strengthen the training of the professionals involved (reintegration technicians, teachers, trainees) in digital education skills?
- Could the DigiFusE/TRIANGLE initiative be an opportunity to optimize your organization's strategies for promoting digital education?

## 3.2 Desk Research

A relevant theme in literature at the organizational level is the role of prison **staff and institutional culture** in promoting improvement and expansion of digital environments, which seems to us be applicable to the context of emerging adults justice in Portugal.

The relevance of **training and consultancy for professionals** is highlighted to enhance and broaden their perspective on technological transformations in line with established routines, favouring their implementation (Elison, Ward, Davies, & Moody, 2014; Jewkes & Reisdorf, 2016; Van De Steene & Knight, 2017; McDougall *et al.*, 2017; Ross *et al.*, 2024).

Therefore, engaging prison staff early on, alongside well-structured training programs and clear communication strategies, is crucial to reducing resistance and fostering institutional commitment to digital initiatives (McDougall, Pearson, Torgerson, & Garcia-Reyes, 2017).

Decision-making and management of structural aspects such as institutional timetabling, allocation of physical spaces, access to educational programming, and the procurement and maintenance of information and communication technologies (ICTs) infrastructure are essential in the development of a method that aims to improve and expand digital environments.

Studies indicates that it's not enough to have educational technologies available because their use could be limited by logistical constraints, such as restricted access hours, conflicting work schedules, or inadequate digital infrastructure (McDougall *et al.*, 2017; Van De Steene & Knight, 2017; Ross *et al.*, 2024). At the same time, it is important to recognise that decision-making at institutional level is often shaped by

wider institutional priorities, with security and discipline taking precedence over the pedagogical dimension - and this is a difficult balance to strike (Pike & Adams, 2012; Reisdorf & Jewkes, 2016; Van De Steene & Knight, 2017; Ross *et al.*, 2024).

This consolidates the importance at organizational level of **alignment between multiple stakeholders** (the prison service, education contractors, security staff, etc.) in the common goal of promoting the improvement of the digital educational environment. As is pointed by Van De Steene and Knight (2017), is necessary a multi-level coordination including individual prison officers up through facility managers to the central prison system administration.

Tackling these challenges **demands a systemic approach**—one that encourages collaboration across agencies (including security, IT and educational personnel), **aligns institutional objectives with national rehabilitation policies**, and cultivates a **shared understanding of digital learning's role in the social reintegration** (Pike & Adams, 2012; United Nations Office on Drugs and Crime, 2017; MsGreevy, 2017).

To improve digital environments in close care institutions is necessary not only staff goodwill but also their training in specific skills and capacities. Strategies at this level could include, for example, workshops or peer-learning for officers.

**Partnering with external organizations** to support or deliver digital training programs can help address staffing shortages; however, it may also create continuity challenges, as such initiatives often end when the partnership concludes.

Building organizational capacity for digital transformation involves comprehensive training for all staff levels and smart utilization of external expertise. Digital transformation in a prison setting must contend with complex organizational structures and often bureaucratic systems.

At the organizational level, a key challenge is to keep the **alignment between departments**, leading to systems and programs being developed considering educational usability and having proper technical support. In this sense, a needs-based planning approach is suggested, ensuring coordination between departments: security, IT and education.

The relevance of a cross-cutting approach at a national level is consolidated, covering the different closed care institutions - applied to the Portuguese study context, the emerging adults justice. A coordinated approach could include a central repository of approved digital content accessible to all prisons, a standardized national learning management system and interoperable data systems to track inmates' progress.

Another important aspect is **extending beyond the prison walls by aligning with community-based reintegration services**, training providers, and employers.

In conclusion, the organizational level shows us that close institutions within emerging adults justice context cannot be transformed in isolation; a coherent and articulated movement and collaboration is needed.

## 3.3 Field Research

Even though each institution consulted has its own operating dynamics, in general, had in common that they had physical resources, such as computers (albeit few) and facilities, as library spaces, which could be used for improving and expand digital educational environments (although this can be a challenge in some contexts).

It is not possible to have secure access to the internet available for use of emerging adults, which impossibility their general applicability in pedagogical activities in institutions, and conducts to a reduced use by emerging adults, primarily to meet specific needs (e.g. shopping, training inscription), and take place **under human control**. Often access to the computer and internet is led by the technician and the young person just observes, without having any real experience of using it.

The institutions and technical teams have shown interest in exploring possibilities to improve and expand digital educational environments and **openness to investing in this training path**, so that it is operationally viable.

In terms of human resources, the technical teams have elements with solid experience of working with emerging adults deprived of their liberty and describe positive dynamics established with trainers of Professionals Training Courses (promoted in institutions by the Justice Protocol Centre) that are aligned with optimizing youngster's digital training. However, it is important to consider potential challenges in the allocation of human resources, as well as the implementation of concrete initiatives to promote digital literacy, within the broader context of the institutions' operations.

Although the improvement of digital environment is recognized as relevant across the board, it must be aligned with the concrete reality of the institutions, making its operationalization feasible.

The consultation in the field emphasized that **building professional capacity in digital skills** is a key element for driving improvements in digital environments. The differences in terms of digital skills between technicians and emerging adults were pointed out, so strengthening technicians' skills at this level, particularly in line with a method that favours the process of digital expansion, was highlighted. An additional challenge at this level is to train youngsters to improve these skills, as well as to apply them with a view to respecting the law and to exercising citizenship.

### Opportunities and threats

Concerns about the dimension of security in the use of digital resources, particularly the internet, **especially given its potential connection with crime**, both previously practiced by emerging adults and leading to their deprivation of liberty, and as a potential opportunity for future transgressive practices, were highlighted in the field research.

Articulations with external organizations and professionals in the process of improving and expanding digital educational environments was pointed out as an opportunity.

Explore a method of improving and expanding digital education environments within closed care institutions in the Justice System that adopts a **flexible configuration which can be adapted to the specific realities of each institution**, could be an opportunity.

# **Chapter 4 – DigiFuse Informational**



## 4.1 Introduction

Informational level is crucial to better understanding how the process of improvement and expand digital environments in close care institutions attending to the needs of each target group.

The information layer in close care institutions highlights that content is central to digital improvement. Understanding the configuration of educational materials, data and learning outcomes is fundamental to the goal of developing a digital education method.

The SWOT analysis at the informational level, continuing to follow the dimensions of strengths, weaknesses, opportunities and threats, was based on the following questions:

- What digital content resources are currently available to young people in closed educational environments and under what conditions? How do you assess their effectiveness?
- Are there defined processes for providing information (e.g. legal rights, health services or visits)?
- How accessible is the digital content available to young people with different levels of literacy or language proficiency?
- Are there any gaps or under-addressed topics in the digital content that is currently available to young people?
- What obstacles hinder access to digital content (such as language barriers, low literacy or technological limitations)?
- How often do young people report doubts or misunderstandings about rules, rights or services?
- Is the communication format (oral, written, visual) effective for all profiles of young people?
- Are there external factors (such as legal or political reforms) that could affect the way digital information/content is transmitted to young people?
- Do young people have enough digital skills to use a platform like TRIANGLE?
- Can reading difficulties or a lack of interest in written content compromise the use of TRIANGLE?

- Can a partnership with DigiFusE/TRIANGLE contribute to access to more specialized or comprehensive digital information/content?
- Are there opportunities to adapt digital content through TRIANGLE to meet the diverse cultural or linguistic needs of young people?

## 4.2 Desk research

Digital technologies are an important means of expanding educational resources, namely through e-books, offline databases, or controlled internet access.

According to Champion & Edgar (2013), secure and controlled access to computers enables transformation in three main areas: education, contact with the family and preparation for social reintegration. In terms of education, it would mean providing resources ranging from basic programs to university degrees - which would only be possible through digital delivery in a resource-constrained prison/close institutional environment.

When considering this access, it is important not only to consider the technical dimension, but also how security policies severely restrict the availability of information.

Looking at it from a broader perspective, Van De Steene & Knight (2017) notes that digitizing records and processes in prisons (including education records) “**facilitates better management of prison resources**” and breaks down silos of information. Allowing inmates to view their own progress reports and account balances via kiosks, for example, not only empowers them with direct access to information but also can contribute to significantly reduces the staff’s workload by minimizing routine queries. This process implies to think through a broader spectrum of expansion of the digital environment in closed care institutions.

Offline solutions could be another innovative approach in environments where internet connectivity isn’t a possibility (e.g. offline digital libraries or pre-loaded tablets). In this context, it is essential to ensure that the content remains current and relevant, which may require a regular updating process (even through the physical transfer of data).

It is important to consider ICT in close care institutions, such within emerging adults justice context, not only as a tool useful for digital inclusion but also as a catalyst for pedagogical transformation.

The need to personalise learning paths can be boosted with the use of digital technologies, making available opportunities to engage with content at their own space and according to their specific needs.

According to literature, this approach could be particularly **beneficial for learners with educational difficulties or neurodivergent profiles** (e.g. dyslexia, who may struggle in traditional classroom environments).

On the other hand, the resource an interactive, multisensory, and multimedia tools **enhances motivation and retention**, contributing to higher levels of engagement and perceived relevance (Champion & Edgar, 2013).

Associate in the training offer **short modular courses** or micro-learning opportunities as well as **longer-term training programmes** (providing opportunities for both those serving short and long-term custodial sentences) is important.

These pedagogical benefits reflect those found in mainstream education and reinforce the importance of integrating technology as a core educational approach, rather than merely a compensatory tool for limited access.

A productive use of ICT could promote autonomy, self-reflection and **future-orientated thinking – crucial dimensions for promoting future social reintegration** (UNESCO Institute for Lifelong Learning, 2021).

When providing digital training resources, obstacles may arise related to complicated enrolment procedures, security clearances, or limited slots as deterrents. At his level, digital solutions can help by **scaling capacity** – e-learning is not zero-sum in the way a classroom seat is.

Champion and Edgar (2013) highlighted that the integration of ICT can help bosting access bottlenecks caused by waitlists, as a significantly larger number of prisoners can participate in self-paced online courses simultaneously, compared to the limited capacity of traditional classroom sessions.

However, for this transition takes place is required re-engineering schedules and policies to allow inmates sufficient time on computers for learning, which could be an organisational issue. In this line, the interface and introduction to digital learning should be progressive and supportive. Some strategies like simple interfaces, basic digital literacy training, and peer mentoring can boost engagement.

Authors such as Jewkes and Reisdorf (2016) note that within the framework of a carefully controlled process, whitelisted internet access shows that inmates can learn to use email, job search portals and government websites safely, under supervision, and are relevant initiatives to promote skills development, but also standards of responsible use.

Practically, this means that programs in close care institutions should incorporate digital literacy objectives, have differentiated instruction for different skill levels, and provide practice opportunities real-life outcomes (Hearn, 2010). This dimension may involve, among others, including content in the curriculum that leads to certifications recognized outside or teaches skills that directly map to jobs and which are applicable to the future social reintegration process (e.g. learning how to make and use a CV and cover letter).

In summary, the Information layer in close care institutions points out that content is the key to improvement in the digital environment, emphasizing the importance of providing relevant educational materials in accessible formats, while leveraging data to personalize and enhance learning outcomes.

Digital platforms expand the possibilities for content diversity and adaptability, but their effectiveness depends the combination of factors such as a focus on developing competences.

## 4.3 Field research

The development of digital skills is promoted in most emerging adults through their participation in Adult Education and Training Courses (promoted in institutions by the Justice Protocol Centre), both in curricular units included in the courses and through initiatives by ICT trainers. Regarding internet access, this is mainly conducted by the trainer, making the content available visually, or, more occasionally, on an individual basis, **with human control and for training purposes.**

Apart from this formative context, only occasional initiations of youngsters contact with the internet are described and circumscribed, mainly, to meeting the concrete needs of young people (e.g. buying a product, researching and enrolling in training),

or as a reward, which enables access to this resource, although, it must be underlined, **always with human control**.

Across the board, emerging adults are recognized as having digital skills, particularly those that enable them to use the TRIANGLE platform, but the need for **a method that meets their individual needs** is emphasized. Vulnerabilities from a psychological point of view are noted among some youngsters, which can involve specialized care and intervention.

When considering the promotion of digital educational environments it is highlighted the necessity of including topics related to **the promotion of empathy in a digital environment, interpersonal relationships, critical thinking** (e.g. analysis of information, resistance to fake news and its propagation), acquisition of skills with practical applicability in needs related to the context of the natural environment of life (e.g. use of a CV, job search, use of digital services of public entities), from a perspective of intersection with education for citizenship and the law.

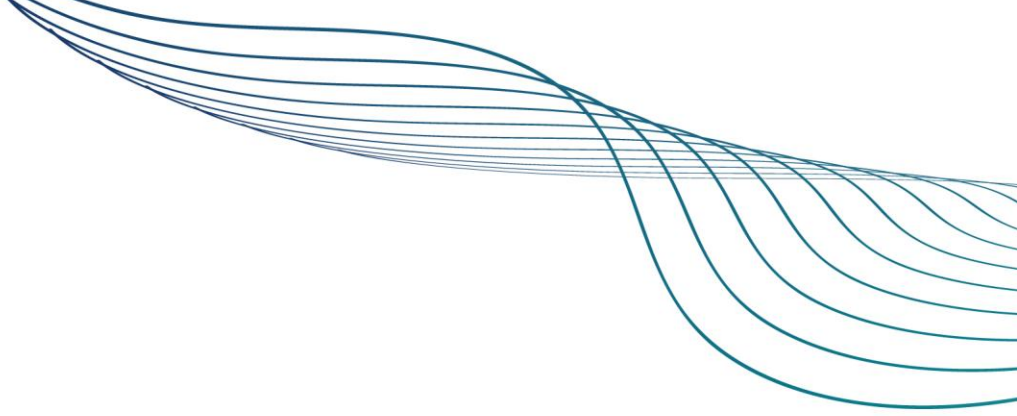
It is crucial that this digital educational environment **contributes to a more harmonious transition for the emerging adults between the context of deprivation of liberty and the environment of natural life**, contributing to their social reintegration.

## Opportunities and threats

Outside the formative framework (under the responsibility of the Justice Protocol Centre) in institutions within emerging adults justice context, the use of the internet for recreational or pedagogical purposes is not yet a general practice, mainly because the lack of an internet network that allows it to be used safely.

In the development of a method that contributes to the expansion of digital educational environments, it is important to consider the inclusion of topics correlated with an education for law and citizenship perspective, which promotes a more effective transition between the context of deprivation of liberty and the natural environment of life.

On the other hand, it is important to consider the configuration of this method itself, including **both content and tools that are adjusted** to their recipients, stimulating and facilitating their involvement and learning process.



Regarding pedagogical strategies, emerged from field research suggestions like **mentoring processes**, established in pairs, between emerging adults with more digital skills and others less confident in this area, pointed out as a positive strategy used in a training context and as a way of strengthening the digital environment. Related to professional training, the "**cascade**" methodology was highlighted as potentially relevant, making it possible to make the most of resources and enable the dissemination of information.

# Chapter 5 – DigiFuse Technical



## 5.1. Introduction

The technical level is a crucial dimension in the process of exploring the development and improvement of digital environments, particularly, in institutions with close regimes. Issues such as security, prevention, equipment and resources, both physical and financial, are particularly relevant in this context and have an impact on the operationalization of interventions geared towards digital expansion.

The SWOT analysis at the technical level was based, namely, on the following questions:

- What technological systems (software, hardware, networks) are currently in operation?
- How reliable and scalable are these systems?
- Are there robust technical support and maintenance structures?
- Are data security and privacy measures already in place?
- Do the current systems respond adequately to the technical requirements of a project like TRIANGLE, or do they need improvement?
- Are there any performance problems (such as slowness, failures or limited capacity) in the systems used?
- To what extent does your organization/sector depend on external suppliers or third-party systems for technology management?
- Are there skills gaps in the teams to operate or manage technological systems?
- Are existing technological systems outdated or incompatible with TRIANGLE requirements?
- Can legal or regulatory changes compromise TRIANGLE's technical requirements?
- Can existing systems be updated or adapted to better meet the needs of the TRIANGLE?
- Are there opportunities for technological integration that could increase efficiency and information sharing?
- Is there support or funding available to implement technological tools associated with TRIANGLE?
- Are there conditions for young people to continue accessing and using TRIANGLE after leaving closed educational environments? How would this be possible and why?

- What content or functionalities could be included in TRIANGLE to encourage its use after leaving the closed educational environment?

## 5.2. Desk research

The literature indicates **infrastructure conditions and connectivity** as two central aspects at the technical level, framed in the prison context.

Many facilities were not built with modern IT or digital expansion in mind, leading to circumstances in which network cabling might be absent or limited, and there may be insufficient electrical outlets or space for computer labs. As pointed out by Jewkes and Reisdorf (2016) “infrastructure challenges, such as outdated hardware and lack of connectivity, hinder the effective use of new media technologies in prison”.

Connectivity is perhaps the most challenging issue, mainly regarding security concerns. In general, few prisons allow any direct internet connection for inmates and in these cases often rely on heavily firewalled and filtered networks, or a whitelisted set of websites (as in some Scandinavian prisons with “secure internet” labs) (Pike & Adams, 2012). The most common option is to deploy standalone intranets – secure servers within the prison that host content and applications without linking to the outside world.

To drive developments at this level it is necessary to upgrade the digital infrastructure, there being authors call for investments in prison IT comparable to those in schools or libraries.

On the other hand, **safety and control are central topics when considering the expansion of digital environments in custodial settings**. Any digital system designed in this context must rigorously safeguard these dimensions to avoid misuse and potential harm.

Some of the strategies used include, for example, a teaching tablet with a menu of approved applications (e.g. e-reader, maths tutor, job search tool). On the other hand, intranets systems could allow services like learning management systems, e-books, and even email-like messaging that is strictly internal or monitored. In situations

when internet access is provided, it often goes through proxy servers with heavy filtering.

The literature indicates that incidents of abuse have been relatively rare in documented programmes. The initial pilot initiatives allowing controlled email access for selected inmates, under full message supervision, demonstrated no security issues and, in fact, facilitated better interaction with families and prison authorities.

A relevant balance to be struck is between being "as close as possible" to external technology and "as safe as possible". Establishments should make modern and relevant technology available so that people deprived of their liberty can develop skills relevant to today's digital systems, in line with preventative measures to avoid security incidents.

The issue of maintenance and support is equally relevant, constituting a security dimension, signalling the need for **specialized professionals** assigned to establishments - which the literature indicates has not historically been a priority.

A **variety of tools and platforms** have been developed with the aim of making digital services available in prisons: i) Self-Service Kiosks (secure terminals that allow inmates to perform routine tasks electronically – such as submitting requests, checking their account balances, or accessing educational content); ii) Computer labs and classrooms (many prisons have introduced computer labs within their education departments which are typically a set of PCs in a monitored classroom, used for instructor-led or self-directed learning during allocated class times); iii) In-cell devices ( a more recent development is providing in-cell technologies, either as installed thin-client PCs/interactive TV screens, laptops, or tablets that inmates can use in their cells – allowing, namely, learners to study on their own schedule (within the prison's daily routine) and at their own space); iv) Learning Management Systems (LMS) (on the software side, prisons have adopted LMS platforms adapted for closed networks); v) Video conferencing and telepresence (not exclusively for education, video conferencing technology has started to appear in prisons for a range of uses, including virtual tutoring, remote university lectures, or mentorship sessions); vi) Specialized educational software (beyond general LMS and office software, there are tailored programs for certain learning).

When considering the expansion of digital educational environments, it is important to consider prospects and the emerging technologies like virtual reality (VR) and augmented reality (AR) or e-mentoring and social platforms, considering their

potential contribution. Crucially, any new technology in prisons will have to be introduced gradually and evaluated for both security and efficacy.

The literature indicates that **technology is not a universal solution**, and the way in which it is applied in the service of social reintegration is crucial, as it **should be used to empower and educate**, not only to control, assumption with broad applicability to the context of emerging adults justice (Knight & Van De Steene, 2017).

## 5.4. Field research

In line with evidenced by the literature, in field research emerged as a central topic the infrastructure conditions and connectivity.

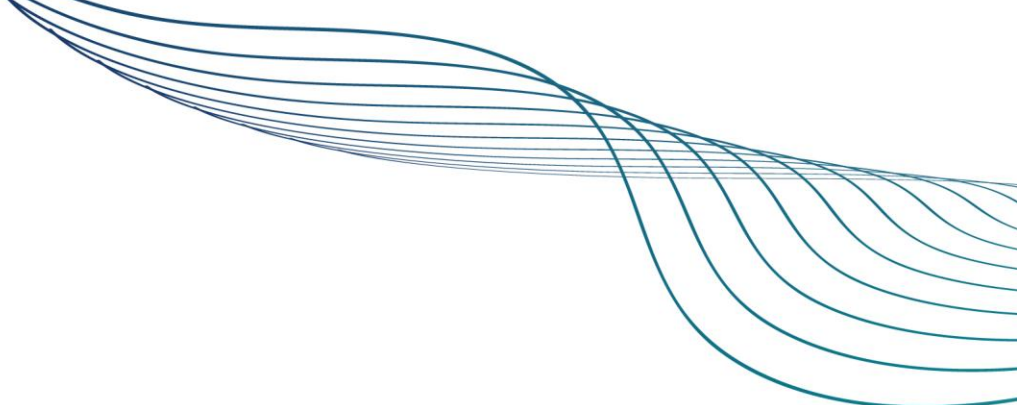
Efforts have been made to provide secure and widespread internet access for use of emerging adults within justice context, however this has not yet been achieved.

In national reality, providing this internet network coverage involves **subcontracting to an external company**, since the one used by the Justice System, for security reasons, cannot be used for other purposes. Regarding to IT and technological support, it is provided to close institutions within the emerging adults justice by the Central Services of the DGRSP, and there is no decentralized support at local level.

Across the different levels of analysis, it is essential that this internet network operates with restricted access to a clearly defined set of digital resources, thereby ensuring the protection of information and minimizing security risks associated with their use.

The initiative implemented at Leiria's Young Prison Facility (EPL-J) serves as an inspiring example. Within a training framework (supported by the Justice Protocol Centre), the institution provides two computer rooms with controlled internet access, ensuring a secure digital environment. Security is maintained through a whitelist and blacklist system managed via URL and proxy control, while router settings restrict connectivity exclusively to authorized laptops.

At EPL-J, the compilation of approved websites was internally developed and subsequently submitted to DGRSP for authorization. The underlying security system was conceived by the IT instructor of vocational training program within the facility



in articulation with the institution's management. This internal solution has demonstrated its effectiveness in safely expanding access to digital educational resources for inmates enrolled in these courses.

It would be relevant involving the Office of Technology and Information in the consultation process to more precisely identifying the technical needs related to the promotion of digital environments within closed care institutions, although it wasn't possible.

## Opportunities and challenges

One of the challenges pointed was the infrastructures of close institutions within the emerging adults justice, particularly in terms of the length and thickness of the walls, poses challenges for network coverage, both with technical and financial nature.

Promoting the expansion and development of the digital environment within closed care institutions while ensuring different levels of security is a key requirement.

The experience developed in EPL-J in improvement of digital environment could be relevant in optimizing and standardizing digital solutions adapted to the context of close institutions within the emerging adults justice.

# References



Champion, N., & Edgar, K. (2013). *Through the Gateway: How Computers Can Transform Rehabilitation*. London: Prison Reform Trust and Prisoners' Education Trust.

Elison, S., Ward, J., Davies, G., & Moody, M. (2014). "Implementation of Computer-Assisted Therapy for Substance Misuse: A Qualitative Study of Breaking Free Online Using Rogers' Diffusion of Innovation Theory." *Drugs and Alcohol Today*, 14(4), 207–218. doi:10.1108/DAT-05-2014-0025.

Hearn, N. (2010). *Theory of Desistance* (Unpublished manuscript or presentation).

Jewkes, Y., & Reisdorf, B. C. (2016). "A Brave New World: The Problems and Opportunities Presented by New Media Technologies in Prisons." *Criminology & Criminal Justice*, 16(5), 534–551.

McDougall, C., Pearson, D. A. S., Torgerson, D. J., & Garcia-Reyes, M. (2017). "The Effect of Digital Technology on Prisoner Behavior and Reoffending: A Natural Stepped-Wedge Design." *Journal of Experimental Criminology*, 13(4), 455–482. doi:10.1007/s11292-017-9303-5.

Muñoz, V. (2009). *The Right to Education of Persons in Detention* (Report of the Special Rapporteur on the Right to Education, A/HRC/11/8). United Nations Human Rights Council

Pike, A., & Adams, A. (2012). "Digital Exclusion or Learning Exclusion? An Ethnographic Study of Adult Male Distance Learners in English Prisons." *Research in Learning Technology*, 20(1). doi:10.3402/rlt.v20i0.18620.

Reisdorf, B. C., & Jewkes, Y. (2016). "(B)Locked Sites: Cases of Internet Use in Three British Prisons." *Information, Communication & Society*, 19(6), 771–786. doi:10.1080/1369118X.2016.1153124.

Reisdorf, B. C., DeCook, J., Foster, M., Cobbina, J., & LaCourse, A. (2021): *Digital reentry: uses of and barriers to ICTs in the prisoner reentry process*, *Information, Communication & Society*, DOI: 10.1080/1369118X.2021.1924826

Ross, S., Wood, M. A., Baird, R., & Lundberg, K. (2024). "Shaping the Techno-Social Landscape of Corrections: How Values, Technology, and Culture Influence the Design of Correctional Service Delivery Applications." *Journal of Criminology*, 57(3), 294–312. doi:10.1177/26338076241255530.

United Nations Human Rights Council (2012). *The promotion, protection and enjoyment of human rights on the Internet* (Resolution 20/8, July 5, 2012).

United Nations Office on Drugs and Crime (2017). *Roadmap for the Development of Prison-based Rehabilitation Programmes*. Vienna: UNODC.

Van De Steene, S., & Knight, V. (2017). "Digital Transformation for Prisons: Developing a Needs-Based Strategy." *Probation Journal*, 64(3), 256–268. doi:10.1177/0264550517723722.

WSIS (2003). Declaration of Principles. World Summit on the Information Society, Geneva.

# DigiFuse

DIGITAL FUSION ENVIRONMENTS

[Funded by the European Union. Views and opinions expressed are however those of the author(s) only and do not necessarily reflect those of the European Union or the European Education and Culture Executive Agency (EACEA). Neither the European Union nor EACEA can be held responsible for them.]



Co-funded by  
the European Union

2024-1-NL01-KA220-ADU-000254951

