

Digital Community Engagement Handbook

TUKE, UAH, IUL, Helix, ACEEU

www.diceaccelerator.eu



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 Chapter 1

Introduction

As universities expand their reach beyond the physical campus, digital platforms offer powerful opportunities to connect students, faculty, and external stakeholders in more inclusive, flexible, and impactful ways. This handbook is developed to serve as a **practical guide for higher education leaders**, providing step-by-step strategies to design, implement, and sustain effective digital engagement initiatives. The handbook reflects the broader vision of **the DICE Accelerator Project** (www.diceaccelerator.eu), a European initiative focused on digital transformation, innovation, creativity, and entrepreneurship in education.

DICE promotes cross-sectoral collaboration and the use of digital tools to address societal challenges through education. In alignment with this mission, the handbook helps institutions harness digital engagement as a catalyst for **positive social change**, institutional innovation, and deeper collaboration with diverse communities. Through this handbook, readers will:

- Explore the core principles and frameworks underpinning Digital Community Engagement;
- Gain access to best practices and real-life examples from European institutions;
- Understand how digital tools and platforms can support inclusive, sustainable, and student-centered engagement strategies;
- Learn how to foster a values-driven culture of engagement across the institution.
- Ultimately, the purpose of this handbook is to **empower universities to create vibrant digital communities** that foster participation, shared learning, and societal impact.

1.1. Target audience

This handbook is tailored to the needs of individuals and teams responsible for shaping engagement strategies in higher education, including:

- **University and department leaders** driving institutional development and outreach;
- **Academic staff** engaged in curriculum design, student-centered learning, and community partnership building;
- **Engagement officers, programme directors, and administrative professionals** seeking to integrate digital engagement into institutional strategies;
- **Faculty members and coordinators** interested in enhancing student engagement, collaboration, and learning outcomes through digital means.

It is also relevant for cross-functional teams working on digital transformation, internationalisation, lifelong learning, and social impact initiatives within the higher education sector.

1.2. Scope and objectives

The handbook offers a structured and actionable framework to support the design and execution of Digital Community Engagement initiatives. Its key objectives are to:

- **Provide practical guidance** for integrating DICE into institutional and departmental strategies;
- **Showcase best practices** and lessons learned from successful initiatives across Europe, including those emerging from the DICE Accelerator;
- **Facilitate the use of digital platforms** to foster collaboration among students, academic staff, and external communities;
- **Support institutional innovation** through flexible, scalable, and inclusive engagement models;

- **Address common barriers** such as digital inequality, accessibility gaps, and stakeholder disengagement.

By drawing on real-world examples and tools, this handbook equips leaders with the insight and inspiration needed to **develop sustainable digital ecosystems** that enhance student experiences and strengthen university-community relationships.





Chapter 2

Digital Community Engagement framework

2.1. Definition of Digital Community Engagement

Digital Community Engagement (DICE) refers to the use of **digital tools, platforms, and strategies** to foster **collaborative, inclusive, and sustained interactions** between higher education institutions and their wider communities—locally, nationally, and globally. It encompasses a broad range of activities aimed at promoting **mutual learning, co-creation, and social impact**, by connecting **students, academic staff, civic organisations, industry partners, and citizens** in digital spaces. DICE builds on traditional community engagement practices but expands their reach and accessibility through technology.

Key characteristics of DICE

- **Digital-first or digitally enhanced:** Engagement takes place through platforms such as learning management systems, social media, digital forums, collaborative tools, or immersive environments (e.g. VR).
- **Reciprocal and inclusive:** Prioritises participation, co-ownership, and diversity of voices—including underrepresented and geographically remote communities.
- **Purpose-driven:** Oriented towards addressing shared challenges, generating knowledge, and fostering innovation and social responsibility.
- **Integrated into institutional missions:** Linked to teaching, research, and third mission goals (public service, societal impact).

Examples of DICE in practice

- A university co-designs a virtual hackathon with local entrepreneurs to tackle sustainability issues.
- Faculty and students collaborate with NGOs via an online platform to develop digital resources for migrant support.
- A hybrid lecture series invites citizen experts to co-create research questions in public health via video conferencing tools.

Examples of Digital Community Engagement projects

1. DICE Accelerator Project

The DICE Accelerator is a European initiative aimed at fostering innovation, creativity, and entrepreneurship in education. It emphasizes the importance of digital transformation in education, promoting partnerships that leverage technology to address societal challenges. The DICE framework empowers institutions to drive positive social change through education and community collaboration. **Website:** www.diceaccelerator.eu

2. Digital Communities Project

The “Digital Communities” project focuses on ensuring that local communities and rural areas have the opportunity to develop digital skills. It applies an inclusive approach to include the local population of rural areas, not only in training activities but also in developing the activities to be offered. **Website:** www.digital-communities.eu

3. DE-BIAS Project

The DE-BIAS project has launched a Community Engagement Methodology aimed at inspiring community engagement practices within Galleries, Libraries, Archives, and Museums (GLAMs) across Europe. This guide provides resources, reflections,

and recommendations for cultural heritage institutions to enhance their community engagement strategies. **Europeana PRO**. **More Information: [DE-BIAS Community Engagement Methodology](#)**

4. Maptionnaire: Best Practices in Digital Community Engagement

Maptionnaire, a Finnish platform, has outlined six best practices for organizing Digital Community Engagement. Finland, known for its community-centric governance and digitalization, provides insights into how digitalized community engagement enables city administration and residents to collaborate effectively (maptionnaire.com). **Read More: [6 Best Practices for Organizing Digital Community Engagement](#)**

5. OECD's Beginner's Guide to Digital Community Engagement

The OECD has developed a comprehensive guide to support both beginners and seasoned practitioners in understanding the basics of Digital Community Engagement. This resource is valuable for institutions looking to initiate or enhance their digital engagement strategies. **Observatory of Public Sector Innovation**. **Access the Guide: [The Beginner's Guide to Digital Community Engagement](#)**

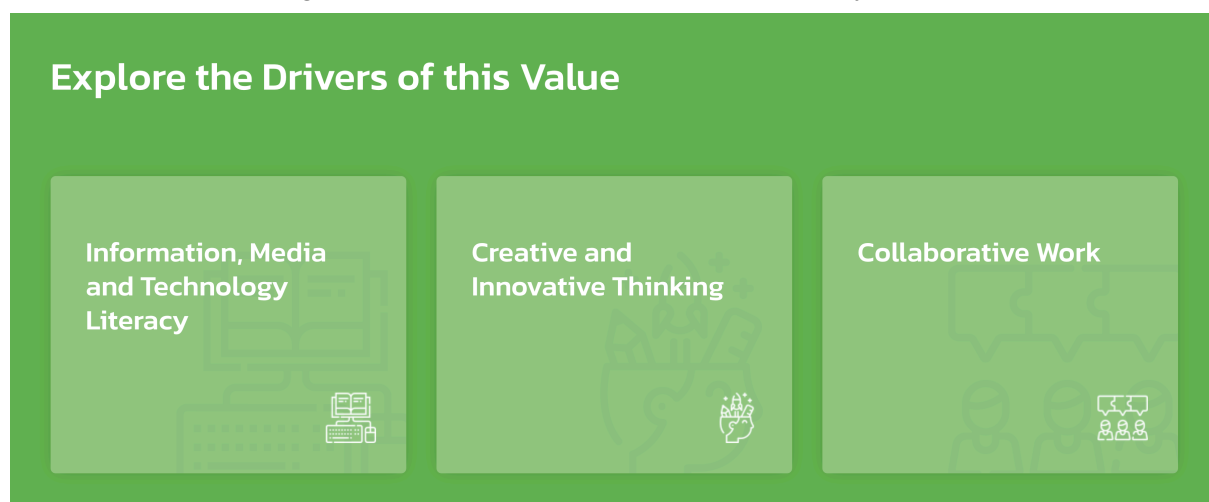
2.2. Core elements of the DICE framework

The value-based approach

Value Maps are widely used in marketing and business as effective visual tools for analysing and understanding the different elements that generate value for specific stakeholder groups. They help to identify key areas for improvement and guide targeted actions to strengthen value creation.

Within the DICE framework, Value Maps have been innovatively adapted to the educational context. They provide a practical structure for educators and course leaders to review their courses, identify areas requiring enhancement, and determine how improvements can best be achieved. Each Value Map (see Figure 3 and Figure 4) specifies distinct drivers (Figure 1) and each driver in turn resources (Figure 2) that educators can draw upon to design and refine DICE courses.

Figure 1 — Drivers of the Value “21st Century Skills”



The aim is to enhance the overall value that Digital Community Engagement provides—both through improved student learning and by generating greater social impact. This reflects a value-based approach to course design and evaluation.

Value Maps are presented in a multi-level format, centred on two primary stakeholder groups: students and communities. The identified values are organised by stakeholder relevance and further categorised according to specific value drivers. Alongside the articulation of values and drivers, the maps offer practical tools, suggested activities, and relevant references to support educators in designing or refining courses that incorporate a Digital Community Engagement component.

Figure 2 — Resources of the Driver “Collaborative Work”

Explore the Resources of this Driver



EntreComp Into Action – Get Inspired, Make It Happen: A User Guide to the European Entrepreneurship Competence Framework

This guide is a tool for those individuals and organisations who wish to explore why, when and how they can use EntreComp, the European Entrepreneurship Competence Framework. The entrepreneurial competence is increasingly recognised as a competence for life, relevant to personal development and fulfilment, finding and progressing in employment, as well as initiating new ventures. This guide is intended to inspire more actors to get involved and join a community of participants committed to embedding these competencies for life into education, communities, work and enterprise.

REFERENCE
framework, skills



OpenIdeo

OpenIdeo is an innovation platform where people from all corners of the world collaboratively tackle some of the toughest global issues by launching challenges, programs, and other tailored experiences.

TOOL
collaboration, innovation, platform, problem-solving



Collaborative Online International Learning

COIL is a pedagogical method that promotes intercultural exchange by virtual mobility. Using internet-based tools, students and staff connect across borders in a class or educational project which is part of the curriculum. By working together from geographically distant locations and different linguistic backgrounds, students acquire intercultural competencies and experiences across shared learning environments. COIL involves a structured cooperation between faculty members and students of similar or related disciplines. COIL projects can take place completely online or be supplemented by physical exchanges (blended programme).

METHODOLOGY
learning, methods, tool



Bringing NextGen Cups to Market: It Takes a Village

Local cafes, cities, and students joined the NextGen Consortium's collaborative efforts to advance reusable, recyclable, and compostable cup solutions in pilots across the San Francisco Bay Area.

CASE STUDY
collaboration, sustainability

There are two specific Value Maps; the **Value Map for Social Impact** focuses on actions and strategies to strengthen community engagement (Figure 3), and the **Value Map for Student Learning** emphasises the enhancement of educational outcomes and the fulfilment of student learning priorities. (Figure 4)

Figure 3 — Value Map for Social Impact

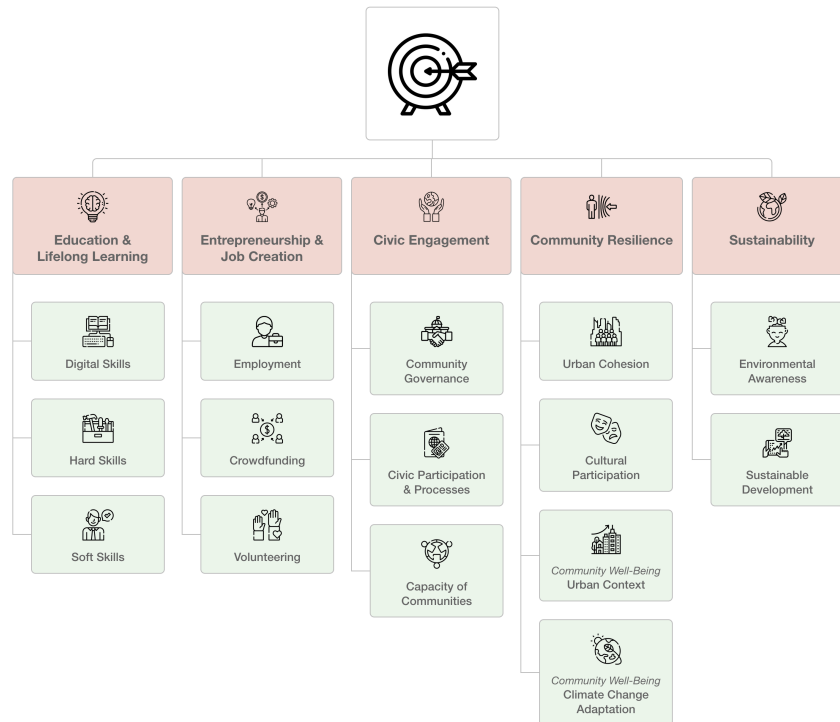
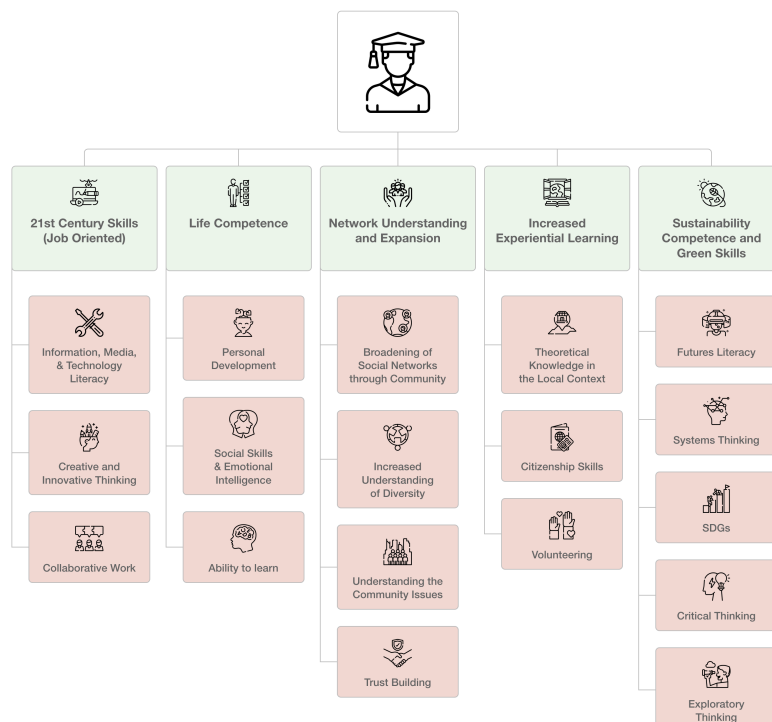


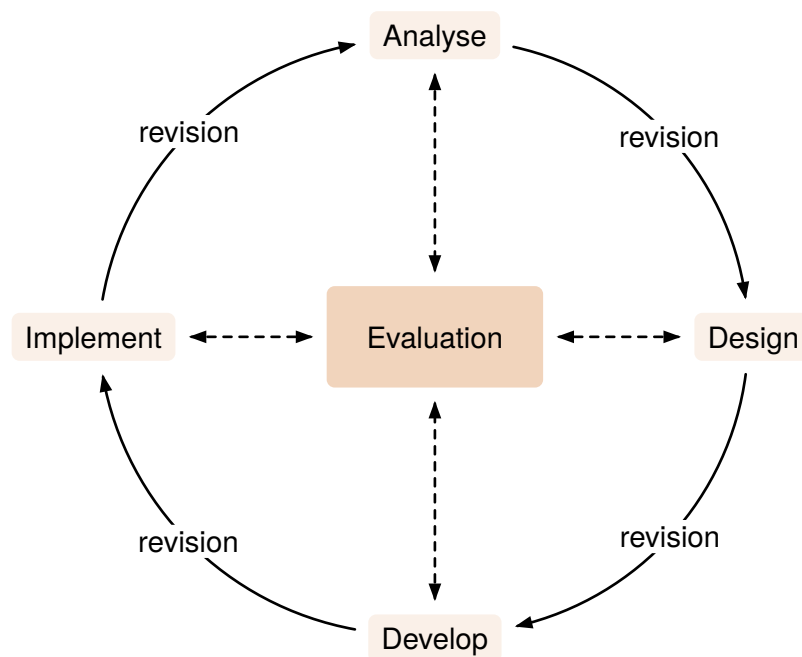
Figure 4 — Value Map for Student Learning



The ADDIE model in relation to the six phases of the DICE accelerator

The DICE Framework for Digital Community Engagement is structured around **six phases of the DICE Accelerator**, which represent a value-driven, innovation-oriented process of planning, developing, and sustaining digital engagement. These phases form the backbone of the framework. To ensure methodological rigour and alignment with established instructional design practice, each of the six phases can be connected to the **ADDIE model**. This connection clarifies how DICE activities are systematically designed, implemented, and improved, while keeping stakeholder values and co-creation at the centre.

Figure 5 — Diagramme of the ADDIE model

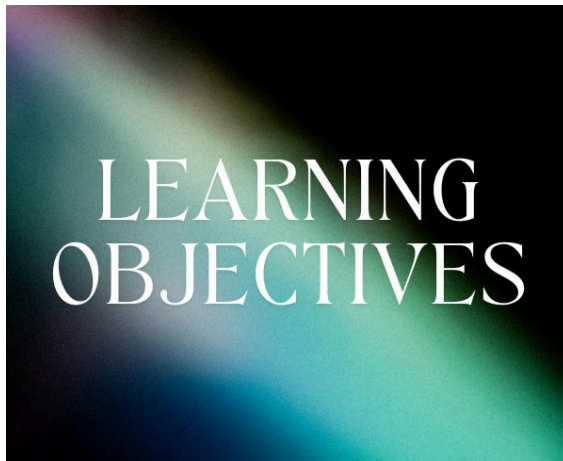


1. Value Selection → Analysis (ADDIE)



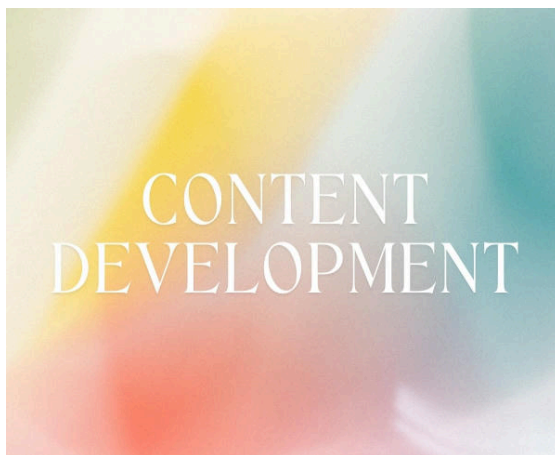
In this initial phase, institutions and stakeholders define the **values** that guide their engagement. This involves assessing goals, community needs, digital readiness, and barriers such as the digital divide. Just as in ADDIE's Analysis stage, this phase ensures that engagement is rooted in real challenges, opportunities, and priorities.

2. Learning Outcomes & Methodology Design → Design (ADDIE)



Once values are established, the focus shifts to formulating learning outcomes and selecting appropriate methodologies. This corresponds to ADDIE's *Design* stage, where objectives, strategies, and delivery modes (hybrid, synchronous, asynchronous) are defined. At this stage, DICE emphasises inclusivity, flexibility, and stakeholder co-creation.

3. Content Development → Development (ADDIE)



Institutions then create and curate content, resources, and toolkits, aligning with ADDIE's *Development* phase. This is where digital modules, interactive platforms, and templates are produced, often piloted in small-scale iterations. Within DICE, this is the point where innovation, experimentation, and technological integration come to life.

4. Implementation → Implementation (ADDIE)

Engagement activities are launched and facilitated in real-world contexts. Like ADDIE's *Implementation* phase, this involves delivering programmes through the DICE Accelerator and partner networks, supporting participants, and enabling collaboration across students, staff, and communities. It is where planned strategies are put into practice.

5. Assessment → Evaluation (ADDIE)



The final phase in the DICE Accelerator focuses on **assessing outcomes and measuring impact**, also part of ADDIE's Evaluation. Through formal assessment processes, institutions can verify whether engagement strategies have met their objectives and contributed to meaningful change in communities.

6. Feedback and Improvement → Evaluation (ADDIE)



After implementation, DICE activities are continuously refined through feedback mechanisms, digital analytics, and stakeholder consultations. This maps directly to ADDIE's *Evaluation* stage, ensuring quality, inclusivity, and relevance while fostering accountability and sustainability.

By **starting with the six phases of the Accelerator** and then mapping them to ADDIE, the handbook places emphasis on the unique DICE process, while still showing how it benefits from the robustness of an internationally recognised instructional design model. This prevents confusion, ensures coherence, and highlights the innovation of the Accelerator.

Digital Community Engagement in practice — the DICE Accelerator

The **Digital Accelerator Platform (DICE Accelerator)** is the practical implementation tool of the **DICE Framework**, developed to support higher education institutions in embedding **Digital Community Engagement (DICE)** into their teaching, partnerships, and institutional strategies. Designed as a **web-based platform**, the DICE accelerator provides structured guidance, digital tools, and resources to help educators and engagement leaders plan, execute, and evaluate digital engagement activities effectively.

Purpose of the DICE Accelerator

- Guide educators through the **design of digital engagement activities** using value-based and challenge-led methodologies;
- Provide a **collaborative space** for co-creation between universities, students, and community partners;
- Serve as a **repository of best practices**, templates, and engagement tools;
- Encourage **continuous evaluation and iteration** of DICE initiatives.

Core features

1. Course Design Assistant

A step-by-step design tool that helps educators plan DICE courses aligned with institutional values, engagement goals, and stakeholder needs.

2. Challenge-Based Learning Templates

Ready-to-use formats for integrating real-world problems into the learning process, supporting experiential and co-creative pedagogies.

3. Resource Library

Access to case studies, examples of effective DICE strategies, video tutorials, and downloadable toolkits.

4. Value Reflection Tools

Tools to help educators and learners examine how values shape decisions, priorities, and long-term impacts in DICE contexts.

Built-in prompts and guidance help educators ensure that each element of their course or initiative aligns with key engagement values (e.g., inclusion, sustainability, collaboration), involving universities and external partners (e.g., NGOs, civic actors, local governments).

Educators using the DICE Accelerator can:

- Co-design a hybrid DICE module involving students and civil society actors;
- Select from a catalogue of real-life challenges submitted by community partners;
- Use integrated reflection tools to ensure alignment with institutional missions and societal values;

Strategic Importance: the DICE Accelerator transforms abstract engagement strategies into **concrete, implementable actions** by:

- Bridging the gap between policy and practice;
- Encouraging cross-institutional collaboration;
- Supporting the professional development of academic staff in digital innovation.

2.3. Relevance to higher education

The **DICE Accelerator** provides a structured, scalable, and methodologically coherent framework for embedding **Digital Community Engagement (DICE)** into higher education curricula. Its relevance lies in its capacity to support a structural transformation in how universities design and deliver teaching and learning experiences, while at the same time fulfilling their institutional mission as drivers of social innovation and digital citizenship. By aligning academic learning with real-world challenges and community needs, DICE enables

higher education institutions (HEIs) to move beyond discipline-bound pedagogical models and adopt more inclusive, participatory, and socially responsive forms of education.

Through its tools and methodology, DICE supports the integration of civic values, digital tools, and ethical awareness into the academic experience. This fosters a type of learning that is rigorous, knowledge-driven, impact-oriented, and community-connected. Piloting activities carried out in three distinct higher education contexts—TUKE (Slovakia), UAH (Spain), and IUL (Italy)—have demonstrated the versatility and adaptability of the DICE model across cultural, disciplinary, and institutional settings. The pilots validated the pedagogical consistency of the framework and confirmed its capacity to enhance HEIs' ability to implement learning paths grounded in values and directed toward tangible social outcomes. In the case of IUL, DICE was adopted within three university courses focusing on digital communication, multimedia design, and adult education. Students engaged in real-world co-design activities with local startups from the IUL Virtual Incubator, developing campaigns, training content, and digital artefacts addressing societal challenges. This process was guided by tools such as the Value Maps and Value Finders, which ensured that each learning experience was framed around ethical, civic, and community-driven objectives.

The DICE framework provides higher education institutions with:

- a model to align academic curricula with societal challenges and civic responsibility;
- a flexible digital infrastructure supporting blended, online, and lifelong learning pathways;
- tools to facilitate the integration of community-based projects into formal education;
- mechanisms to support faculty collaboration across departments and disciplines;
- opportunities to reinforce third mission activities with measurable educational value;
- pedagogical structures that promote student agency, ethical reasoning, and digital competence.

At the core of the project is a redefinition of the student's role—from passive recipient of information to active contributor within collaborative, community-linked ecosystems. This shift fosters both academic knowledge and transversal competences such as critical thinking, digital fluency, problem-solving, and ethical reasoning. These skills are increasingly essential for employability and civic participation.

The methodology also promotes the empowerment of educators and academic staff. It offers them a coherent structure and digital infrastructure for innovating pedagogical practices, collaborating across departments, and embedding mission-driven learning into curricular design. Moreover, the DICE model is designed to be flexible and compatible with a wide range of institutional profiles and teaching formats. Its components—such as the DICE Accelerator platform, the **Content Management System (CMS)**, and the value-based activity maps—can be easily adapted to online, blended, or face-to-face learning, as well as to lifelong learning and continuing education programmes. This modularity allows for integration not only at the course level, but also within broader institutional objectives, aligning DICE with strategies related to quality assurance, digital transition, third mission activities, and community partnerships.

DICE also fosters collaboration between academia, civil society, and industry, creating shared spaces for dialogue and co-design. The inclusion of external stakeholders—NGOs, startups, local authorities, and cultural organisations—into the learning process enhances the authenticity and impact of academic activities. It promotes long-term partnerships that reinforce the societal role of the university and positions HEIs as dynamic actors within local innovation

ecosystems. By equipping institutions with a coherent pedagogical and technological model, DICE supports their capacity to contribute meaningfully to digital transformation, democratic resilience, and sustainable development.

2.4. Barriers to effective DICE

While digital tools offer transformative potential for community engagement in higher education, institutions often face several **systemic and practical barriers** that can hinder implementation and impact. Identifying and addressing these challenges is essential for designing inclusive, effective, and sustainable digital engagement strategies.



IMPORTANT!

Key barriers

- **Digital Divide:** Unequal access to devices, internet connectivity, and digital literacy skills can limit participation—especially among underserved student groups or community stakeholders in rural and low-resource settings.
- **Institutional Resistance and Silos:** A lack of institutional buy-in or fragmented digital infrastructure can create inconsistencies in strategy and hinder cross-departmental collaboration.
- **Limited Staff Capacity and Digital Competence:** Educators and administrators may lack the training, confidence, or time to integrate digital tools into their engagement practice.
- **Technological Overload and Tool Fatigue:** The abundance of platforms, apps, and learning environments can overwhelm users and dilute engagement when tools are poorly integrated or lack clarity of purpose.
- **Ethical and Data Security Concerns:** Digital engagement raises privacy, consent, and data management issues—particularly when dealing with minors, vulnerable groups, or sensitive topics.
- **Difficulty Measuring Impact:** Without consistent frameworks and digital evaluation tools, universities often struggle to assess the real social, educational, or civic impact of their DICE initiatives.

2.5. Opportunities created by digital technologies

Despite these challenges, digital technologies unlock significant opportunities to expand, enrich, and innovate community engagement in higher education. When thoughtfully applied, digital engagement fosters equity, co-creation, and global reach.

- **Scalability and Reach:** digital platforms remove geographic limitations, enabling universities to connect with a broader and more diverse range of stakeholders — including international partners, remote learners, and diaspora communities.
- **Flexibility and Inclusion:** asynchronous formats, captioned content, and mobile-friendly tools make participation more inclusive for people with varied schedules, abilities, and needs.
- **Real-Time Collaboration and Co-Creation:** Shared online workspaces and virtual whiteboards allow students, staff, and community actors to co-design solutions to real-world problems in real time.

- **Use of Immersive Technologies:** AR/VR and digital twins enhance experiential learning and simulate complex environments (e.g., urban planning or public health interventions), bringing new depth to engagement projects.
- **Enhanced Storytelling and Communication:** multimedia tools (podcasts, social videos, infographics) empower students and communities to share narratives, advocate for change, and document impact.
- **Data-Driven Decision-Making:** Digital analytics help educators monitor participation, refine strategies, and demonstrate accountability to funders, institutional leaders, and public stakeholders.





Chapter 3

Best practices for Digital Community Engagement

To validate the DICE Accelerator in a practical setting, a pilot programme was carried out to gather feedback from educators and course directors on both the content of the Digital Community Courses and the functionality of the Accelerator platform. The DICE Accelerator is designed to provide educators and course directors with the necessary knowledge, tools, and a structured environment to effectively deliver courses focused on Digital Community Engagement.

Between February and April 2025, a total of nine educators from three European universities participated in the pilot testing:

- 3 educators from the Technical University of Košice, Slovakia
- 3 educators from the University of Alcalá de Henares, Spain
- 3 educators from IUL Telematic University, Italy

The Accelerator methodology was integrated into nine distinct courses across various disciplines, including project management, marketing, communication strategies, adult education, journalism, and chemistry. The following section presents key findings from the piloting phase, with a specific focus on best practices for Digital Community Engagement within the institutional context. A comprehensive analysis of the piloting outcomes is available in the **Best Practices Report**.

Figure 6 — Cover of “DICE Best Practice Report”



3.1. DICE best practices

Over the compiled insights gathered from the various activities undertaken by the nine educators during the DICE Accelerator piloting phase, a total of 198 good practices were identified, covering all phases of the DICE Accelerator methodology. These practices were

grouped into 12 thematic clusters, each reflecting a core aspect of the DICE activities in higher education and offering educators examples and tips to embed these practices in course design, providing checklists and alignment visuals to support practical implementation.

Table 1 — Clusters of best practices identified during DICE piloting.

1 Real-World Learning in Professional Environments	2 Community Participation and Social Impact	3 Value-Based Learning and Ethics	4 Creativity and Digital Storytelling
5 Digital Entrepreneurship and Innovation	6 Use of Digital Tools and Skills Development	7 Student-Centered and Experiential Learning	8 Instructional Design and e-learning
9 Horizontal Knowledge & Multidisciplinary Exchange	10 Tools for Value Orientation	11 Co-Design and Collaboration with External Partners	12 Sustainability, Open Resources and Accessibility

INFO

You can click any best practice cluster in the table and go directly to its definition.

Promoting these best practices from an institutional perspective is essential for universities looking to transition towards a socially oriented, digitally informed version of the future of higher education. These tools improve the learning of the students, but also the institutional role of the university as an active participant in social transformation:

- *Clusters 1: Real-World Learning in Professional Environments* and *5: Digital Entrepreneurship and Innovation*, for instance, focus on the interface between academic knowledge and real-world professional challenges,
- *Cluster 7: Student-Centred and Experiential Learning* supports students' active role in their learning.

Combined, they provide substantive bases towards graduating students with the skills, worldviews, and civic responsibilities of a globally interconnected world.

On an institutional level, this embedding is carried out by integrating practices within the strategic goals of the institution, especially through the realisation of the university's third mission: social involvement and knowledge transfer.

- Systematised activities, such as those in *Cluster 2: Community Participation and Social Impact*, *Cluster 11: Co-Design and Collaboration with External Partners*, and *Cluster 3: Value-based Learning and Ethics*, can produce common frameworks, training opportunities, and scalable models that intensify and harmonise these activities.

- Groups like *Cluster 6: Use of Digital Tools and Skills Development* and *Cluster 9: Horizontal Knowledge & Multidisciplinary Exchange* foster interdisciplinary and cross-department collaboration and cooperation, ensuring that innovation in teaching and learning is rich, diverse, and inclusive.

DICE should, however, not be an undertaking only pursued by individual teachers. For Digital Community Engagement to be truly integrated into the higher education landscape, institutional commitment is necessary. Universities must go beyond piecemeal initiatives and ensure that a structural framework exists that generates sustainability and visibility in the long term. A good start in this direction would be the establishment of a Community Engagement or Service-Learning Unit. Such a unit would become a hub for the coordination of interdisciplinary teams, among faculties, students, and external partners, and an advisor for planning and assessing learning experiences with social impact. It would also be a repository of best practices, digital tools and resources, to avoid duplicating efforts and make sure that successful models are scaled up.

Below you will find a summary of the 12 best practices identified in the piloting phase:

1. Real-world learning in professional environments



This cluster promotes authentic learning by bridging academic theory with real-world application. Students worked on projects with start-ups and external stakeholders, often through virtual incubators. Activities included creating e-learning materials, designing digital solutions, and conducting awareness campaigns using platforms such as Padlet and podcasting tools.

These projects boosted student motivation, encouraged ownership of learning, and developed entrepreneurial skills. Assessment focused on practical implementation and impact, not just theoretical understanding. Educators are encouraged to incorporate digital tools, real partnerships, and meaningful assessment to ensure relevance and foster innovation.

2. Community participation and social impact



This cluster centres on civic engagement and social change. Students collaborated with local organisations, NGOs, and underrepresented communities to co-design projects addressing real societal issues, such as accessibility, sustainability, and inclusion. Digital tools like Padlet, mapping platforms and social media support participatory learning. Students were encouraged to reflect critically and share their work publicly for community validation. For effective implementation, educators should identify genuine community needs and create opportunities for external feedback and collaboration.

3. Value-Based Learning and Ethics



In this group, the focus is on cultivating ethical awareness and personal values. Tools like the DICE Value Maps and Value Finders helped students reflect on the values that mattered most to them and their communities. Students explored topics like inclusion, resilience, and digital ethics through civic projects and collaborative learning. These practices promoted empathy and moral reasoning by exposing students to unfamiliar social realities. They were also encouraged to reflect on the social consequences of their digital contributions. Ethics should be embedded across

all phases of DICE activities, from planning to assessment, to ensure deeper learning and responsible digital citizenship.

4. Creativity and digital storytelling



Digital storytelling emerged as a powerful tool for expression, civic engagement and critical reflection. Students created podcasts, videos, Wikipedia entries, and multimedia content to explore complex social themes and connect with diverse audiences. Creativity was not only a goal but a process, through collaborative design thinking, empathy-driven content creation, and experimentation with tools such as Audacity or GIMP. Creative practices increase engagement, especially when students publish work on open platforms, allowing them to see their content's reach and relevance.

5. Digital entrepreneurship and innovation



This cluster highlights hands-on, digitally driven entrepreneurship. Students engaged in projects involving start-ups, applying knowledge in areas like cloud computing, e-learning, and digital marketing. Academic content was connected to real business needs, enabling students to build solutions for societal problems while developing professional skills. Educators are advised to foster entrepreneurial thinking and link student efforts to both economic and social innovation.

6. Use of digital tools and skills development



Digital tools are essential for modern education. This cluster shows how platforms like Canva, Google Docs, Moodle, and Slack were used to simulate professional work, facilitate collaboration, and support reflection. Activities ranged from Wikipedia editing and media production to real-time communication and feedback loops, making learning more interactive and applicable. Educators should select tools aligned with course goals, encourage student autonomy in tool selection, and embed reflection and assessment at all stages.

7. Student-centred and experiential learning



This cluster places students at the heart of the learning process. Learners were encouraged to set their own goals, select tools, and define project roles, enhancing motivation and personal relevance. Experiential learning included project-based tasks, iterative design, and public presentations. Activities were tailored to different learner profiles, including adults and early-stage entrepreneurs. Educators are encouraged to co-create flexible learning paths and treat learning as a collaborative venture between teacher and student.

8. Instructional design and e-learning



Effective course design is critical in digital education. This cluster focuses on building structured, interactive e-learning environments using LMSs like Moodle and WeSchool, combined with tools like Inkscape, Padlet, and Audacity. Instructional design was aligned with community needs, with learning objectives co-developed alongside civic goals. Courses integrated community input and peer feedback to create dynamic, relevant experiences. To apply these principles,

educators should select flexible platforms, embed real-world tasks, and design assessments that are both formative and participatory.

9. Horizontal knowledge and multidisciplinary exchange



This cluster promotes collaborative, non-hierarchical learning. Educators and students worked together as equals, often across disciplines and cultures. Activities included peer-to-peer learning, transdisciplinary projects, and collaborative problem-solving. The aim was to reflect the complexity of real-world challenges, encouraging collective ownership and co-responsibility. Educators should involve diverse participants, encourage shared decision-making, and use digital tools that support co-creation and team-based learning.

10. Tools for value orientation



This cluster revolves around using digital tools to guide value-based decision-making. Value Finders and Value Maps enabled students to align their projects with personal, social, and professional values, promoting motivation and authenticity. Reflection was central, with students using journals, forums, and peer assessments to evaluate their contributions and ethical positioning. Educators should introduce value tools early, encourage personalised project design, and use feedback to improve course alignment with learner priorities.

11. Co-design and collaboration with external partners



Authentic collaboration with external partners adds depth and realism to DICE projects. This cluster highlights the importance of involving stakeholders from the start, defining goals, designing tasks, and evaluating results. Activities ranged from working with Wikipedia editors to involving NGOs in assessing student outputs. These partnerships strengthened students' problem-solving and critical thinking. Teachers should co-create with partners from early stages, using shared platforms for planning, execution, and assessment, ensuring projects are socially embedded and rigorous.

12. Sustainability, open resources and accessibility



This final cluster addresses the long-term value of digital projects. Students created content (videos, repositories, campaigns) designed to be reused and shared. Accessibility and open formats were prioritised, promoting inclusion and social reach. For successful application, educators should design with accessibility in mind from the beginning, encourage the use of open licences, and build alignment with institutional goals on inclusion and sustainability.

3.2. The lessons learned from piloting

While the DICE Accelerator has proven to be a valuable tool (based on positive feedback from pilot implementations), there are possible limitations to consider. The following part represents the lessons learned from the pilot phase, along with practical tips for addressing challenges and important considerations for anyone planning to create or adapt a course on Digital Community Engagement.

1. Preparing for the start of the course

Before launching a course on Digital Community Engagement, it's important to recognise that terms like “*community engagement*”, “*Digital Community Engagement*”, or “*values*” can feel vague or abstract to students or even to educators. Without some initial guidance, they may struggle to connect with the concepts or understand their practical implications. If the course includes co-creating learning objectives or selecting values with students, this requires additional time and thoughtful preparation.

Tip 1

Start with a short introductory session to clarify key terms. This helps create a shared understanding and ensures that everyone, educators and students alike, is on the same page from the beginning.

Tip 2

Faculty should take time to explore the **DICE Accelerator** ahead of the course. If students will be actively involved in co-designing parts of the course, it's helpful to give them access to the tool as well and let them have enough time to explore it on their own, before it's formally introduced in class.

2. Selecting appropriate digital tools for the course

Overly complex digital tools can hinder student learning and may feel intimidating, particularly for those with limited technical experience. Choosing the right tools is essential for creating a supportive learning environment.

Tip 1

Prioritise simplicity when selecting tools. Choose intuitive or beginner-friendly alternatives (e.g., using Canva instead of GIMP for basic design tasks).

Tip 2

Introduce digital tools gradually. Begin with basic functions and only move to more advanced features once students are comfortable. Regularly seek student feedback on tool usability and be prepared to adjust the approach based on their experiences.

3. Methodological barriers

Even with a well-structured course design, certain methodological challenges, such as low levels of engagement or limited digital participation, can still arise. Involving community members in the design of learning activities from the beginning can help foster their engagement, as it creates a sense of ownership.

Tip 1

Engage community members early in the planning process to ensure their commitment and reflect their needs at the same time.

Tip 2

Break participation down into smaller, more manageable tasks to reduce overwhelm.

4. Evaluation and feedback traps

The DICE framework offers several approaches to evaluation and feedback, such as self-assessment and rubric-based peer review. However, these evaluation methods can lack objectivity and consistency, especially when students are evaluating community impact, or, on the other hand, feedback from external community members can be hard to align with academic standards.

Tip 1

Use separate academic evaluation and feedback for students and for external parties, using the latter for more formative assessment or reflection. Develop detailed, transparent rubrics with specific criteria for both academic and community outcomes.

Tip 2

Offer students and community members short workshops on how to give constructive, objective feedback.

5. Coordination and collaboration challenges

DICE activities frequently involve working with members from various faculties, disciplines, and external stakeholders, such as community groups. However, without effective coordination among all participants, the learning experience can become fragmented.

Tip 1

Define clear roles and expectations from the get-go. When collaborating with external partners, consider formalising the partnership through a collaboration agreement or memorandum of understanding (MoU).

Tip 2

Designate one person to act as a facilitator. This person should be responsible for maintaining alignment and communication between teachers, students, and external stakeholders.

6. The gap between theory and practice

Students often struggle to apply theoretical knowledge to practical applications. Community or digital community courses are ideal to overcome this issue.

Tip 1

Incorporate real-world challenges into coursework, enabling students to solve actual problems using theoretical knowledge.

Tip 2

Partner with startups and tech companies to co-design assignments or develop mentorship programs.

3.3. Promising future directions in DICE

As universities continue to involve the process of digitalisation more and more, there is also a space to focus on the Digital Community Engagement. The DICE framework has laid the groundwork for integrating community-driven, digitally supported practices into academic courses. Drawn from the piloting experience and educators' feedback, the following strategies show promising ways to sustain and expand Digital Community Engagement in higher education.

Real-time projects

Universities should consider integrating live, project-based collaborations into coursework, where students co-develop solutions with community partners (e.g. start-ups, NGOs, etc.) in real-time and with direct feedback from seasoned experts. Platforms like MS Teams, Slack, or Discord can serve as virtual collaboration hubs or "Digital Living Labs." It's a space for live experimentation, guided learning and direct community input.

Collaborative content creation

Students can co-create digital content (e.g., infographics, videos, blog posts) with community partners that address real community needs. This not only builds digital literacy but also fosters empathy towards community issues and real-world problem-solving skills.

Peer-learning and community platforms

Creating a shared digital platform for students, faculty, and community to exchange resources, ideas, and feedback can be very beneficial, as it helps keep ideas flowing and encourages everyone to learn from each other.

Virtual workshops and interactive webinars

Inviting industry experts to lead virtual workshops and having students present their work in public online forums can strengthen the connection between academia and the broader community.

Innovative assessment models

Inspired by the DICE Accelerator, new assessment models that include community feedback as part of student evaluation are worth exploring.

Immersive technologies and gamification

Tools such as virtual and augmented reality, or gamification techniques (e.g. using points, badges, and leaderboards), can make community engagement projects more interactive and engaging for students

Continuous feedback and evaluation

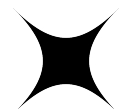
To ensure the long-term impact of DICE, it is essential to implement regular feedback mechanisms, such as student questionnaires and stakeholder interviews, to help monitor the effectiveness of activities.

Institutional collaboration and resource sharing

Collaboration across departments and with other institutions (e.g., sharing repositories of useful resources, best practices, lessons learned, etc.) can amplify the impact of DICE activities.

The pilot of the DICE Accelerator uncovered many practical insights and useful ways to bring Digital Community Engagement into teaching. The twelve thematic clusters offer educators clear examples and tools to help connect classroom learning with real-world experiences, while also encouraging students to take an active role in society. Nonetheless, the pilot also revealed some important challenges to keep in mind when introducing Digital Community Engagement, like making sure key concepts are clear for all stakeholders, dealing with practicalities in methodology settings, and the importance of coordination with external partners. Looking ahead, the DICE framework shows real promise for universities that want to combine social engagement with digital innovation. By using flexible and collaborative approaches, like real-time projects, co-creating digital content, and exploring new technologies, higher education can help prepare students to be digitally skilled, socially aware, and ready to contribute.

Making Digital Community Engagement a lasting and meaningful part of modern higher education will, however, also depend on institutional support and a continuous effort to improve and expand these practices. This topic is explored more in [Section 5](#).





Chapter 4

Digital tools and platforms for engagement

The DICE project places digital technology at the heart of its approach to community engagement in higher education. Rather than treating technology as a support element, DICE considers it a **strategic layer** that enables institutions to integrate civic values, ethical awareness, and social responsibility into the design and delivery of learning experiences.

The project's digital tools were developed to be **pedagogically aligned**, **user-friendly**, and **scalable**. They support the co-construction of value-oriented learning pathways by both educators and students, and they promote collaboration with external stakeholders. Tools such as the DICE Accelerator platform, the Content Management System (CMS), and the Value Maps and Finders enable **participatory and reflective practices** across institutional settings.

This digital layer strengthens the connection between academic content and real-world challenges. It supports diverse learning formats—blended, online, or lifelong learning—and enhances the **traceability**, **accountability**, and **scalability** of engagement-based education.

The following sections present the key digital tools developed within the project, describe their pedagogical value, and provide concrete examples of implementation. Particular attention is given to their adaptability across different institutions and their contribution to embedding civic engagement into higher education.

4.1. Overview of recommended digital platforms and tools

Within the DICE project, digital platforms are not treated as neutral infrastructures. They act as active mediators of learning, civic engagement, and institutional collaboration. The technological choices made across pilot sites aimed to connect pedagogical intentions with operational needs, ensuring that learning activities were adaptable, inclusive, and community-oriented.

Digital tools were selected based on three essential criteria: low entry thresholds, modularity, and ease of integration within existing systems. This allowed each higher education institution to choose tools compatible with their infrastructure while ensuring accessibility for all users. The platforms supported both synchronous and asynchronous interactions, enabling students to co-create artefacts, reflect on their experiences, and maintain dialogue with peers, faculty, and external stakeholders.

In practical terms, these digital environments enabled:

- the development of engagement-based learning pathways combining curricular and extracurricular dimensions;
- the use of reflective instruments such as digital diaries and multimedia storytelling;
- the collection of feedback to support continuous improvement cycles.

The IUL pilot provides a clear example of this integration. Students used the institutional LMS to access blended modules on civic design and media production. They uploaded multimedia reflections, completed self-assessment tasks, and interacted with community partners. This learning flow was guided by DICE instruments such as the Value Finder, which aligned students' work with civic and ethical priorities.

The use of flexible, lightweight tools — rather than bespoke or proprietary systems — was a deliberate choice. Institutions often opted for widely available solutions (e.g., Google Workspace, Padlet, institutional CMS), which required minimal training and ensured long-term sustainability. This aligns with findings from (Fawns 2022), who emphasises the value of

embedding technologies into pedagogy through iterative design and local adaptation, rather than rigid top-down schemes.

More broadly, the digital layer of DICE reflects current trends in higher education that promote participatory, experiential, and impact-oriented learning (Biesta 2011; Redecker et al. 2011). The selected platforms allowed universities to document and monitor engagement activities, improve communication between internal and external actors, and build a repository of civic-oriented educational content. The emphasis on traceability and accountability also supports long-term institutional integration and future scaling.

4.2. Implementation strategies for universities

Integrating Digital Community Engagement within higher education requires both pedagogical alignment and institutional commitment. Rather than promoting a fixed model, the DICE project supports flexible configurations that adapt to different academic settings while maintaining coherence with civic learning objectives.

Three main lines of implementation emerged during the pilot phase:

1. **Curricular integration:** Many universities adopted modular, value-based learning units embedded in existing courses. These units were delivered through institutional LMSs and included a mix of asynchronous content, reflective activities, and civic project work. For instance, in one of IUL's pilots, students engaged in real-world challenges through a blended learning format, developing transversal skills without altering the course structure.
2. **Cross-departmental collaboration:** DICE was also used to promote collaboration between faculties. Where civic engagement intersected with transversal priorities — such as sustainability, digital literacy, or social responsibility — educators from different departments contributed to joint learning pathways. Digital platforms supported this distributed model by facilitating coordination and content sharing.
3. **Institutional integration:** Some pilots focused on aligning DICE with the university's third mission. In these cases, engagement activities were embedded in broader strategic plans. Digital tools played a key role by enabling the traceability of civic initiatives, the collection of measurable outputs, and the documentation of partnerships with external actors.

Across these implementations, tools were selected based on their ability to support continuity, flexibility, and long-term relevance. As discussed in recent literature (Leal Filho et al. 2021; Bovill, Cook-Sather, and Felten 2011), meaningful civic engagement depends not only on student participation, but also on institutional structures that sustain it. The DICE model responds to this need by offering a modular toolkit and adaptable pathways, designed to support multiple learning formats — including online, blended, and lifelong learning.

4.3. Innovative technologies

In DICE, technological innovation is not understood as a pursuit of novelty for its own sake. Instead, it is framed as a lever to transform pedagogical practice and build institutional capacity. Technologies have been selected and used based on their ability to support civic learning and engagement in real-world contexts, within sustainable and replicable models. Rather than focusing on cutting-edge tools, the project has adopted digital solutions that are accessible, adaptable, and aligned with educational needs. A key example of this is the use of value-based mapping tools—such as the **DICE Value Map and Value Finder**—which help educators

and learners align activities with ethical principles, community challenges, and stakeholder expectations. These tools are simple from a technical perspective, but they introduce a methodological shift that centres curriculum design around civic and social impact.

Another significant element has been the deployment of modular platforms based on a CMS infrastructure. These platforms allow for the integration of community-based tasks with moments of reflection, self-assessment, and peer feedback. In several pilot implementations, they supported dynamic learning pathways adapted to both online and blended settings. The digital dimension of DICE also includes asynchronous, multimodal communication tools. These tools enabled students to document their learning through podcasts, video diaries, or collaborative journals. Often, these artefacts were co-created with local stakeholders and served not only as outputs but also as tools for assessing the process and outcomes of engagement activities.

One illustrative example comes from the IUL pilot. The institutional LMS was reconfigured to include reflection prompts, media uploads, and value-based evaluation tools. Students recorded short reflections after key engagement phases, using targeted prompts derived from the Value Finder. This configuration enabled an ongoing dialogue among students, instructors, and community actors, strengthening the continuity of engagement across digital and physical settings.

Overall, the technological innovations introduced by the DICE project can be grouped into three core functions:

- Tools for mapping and alignment, which support the connection between academic content and civic or ethical frameworks;
- Environments for interaction and co-design, which facilitate collaboration between students, educators, and community stakeholders;
- Instruments for reflection and feedback, which structure self-assessment and metacognitive learning.

These technologies were intentionally lightweight and interoperable. The aim was to reduce complexity and ensure viability beyond the project timeline. Instead of investing in costly infrastructure, the project focused on tools that could adapt to diverse institutional conditions and pedagogical models.

Recent literature confirms the value of this approach. As noted by Biesta (2022) and Laurillard (2012), educational technologies are most effective when embedded in participatory and value-driven learning environments. In this sense, the DICE model offers a replicable way to integrate innovation into higher education practices, aligning technological choices with social relevance, institutional missions, and democratic responsibility.



Sustainability, impact, evaluation and long-term strategy development

For the DICE project, we aim to embed DICE as an important strategic, pedagogical, and institutional agenda of higher education institutions. Ensuring sustainability of the DICE project results and the DICE agenda itself, requires institutionalisation, culture-building, collaboration and networking, and the alignment of teaching and learning with DICE values, using the DICE Accelerator and the Value Maps as practical instruments.

5.1. Institutionalisation of Digital Community Engagement

Institutionalising Digital Community Engagement (DICE) refers to embedding it as a regular, valued and strategically supported element of teaching and learning in higher education institutions (HEIs). Rather than being an activity of a few motivated individuals, Digital Community Engagement becomes a collective institutional responsibility integrated into **strategy, policy, infrastructure, curriculum, and culture**. This systemic transition ensures that DICE is recognised as a core function of the modern university.

Strategic alignment

At the strategic level, DICE supports and strengthens the three core missions of European higher education: education, research, and third mission. It is particularly aligned with universities' third mission of fostering civic impact and public value, and with the European Union's broader digital transformation and sustainability agendas. When integrated into institutional development plans and civic engagement strategies, DICE allows HEIs to present engagement as a defining part of their social contract with society (Laredo 2007).

In this sense, DICE is both a pedagogical method and a reflection of the university's identity as a socially responsive and digitally enabled institution. This positioning is particularly significant in times of crisis, as shown during the COVID-19 pandemic, where HEIs with existing civic and digital strategies were better equipped to respond flexibly and inclusively (Gallagher et al., 2021).

Policy and governance structures

A robust policy and governance framework is important for sustainable DICE. HEIs that seek to institutionalise engagement must move beyond aspirational rhetoric and introduce formal mechanisms that integrate digital civic learning into academic policy. This can include:

- Integrating DICE into course approval procedures and curriculum reform policies
- Developing engagement-focused learning outcomes across disciplines
- Appointing DICE coordinators or establishing advisory boards to oversee strategic alignment and accountability (Sandmann 2006)

Such mechanisms institutionalise responsibility and facilitate long-term planning, evaluation, and resource allocation. For example, the University of Alcalá, one of the DICE partners, has included digital engagement into its institutional roadmap, positioning it as a key pillar of participatory and inclusive learning.

Organisation structures

From an organisational perspective, DICE can be made effective when housed within institutional units that coordinate innovation in teaching, civic outreach, or digital transformation. For instance, centres for teaching and learning, digital education offices, and civic engagement hubs can act as focal points for designing and implementing DICE activities. These units can

offer training, establish partnerships, and serve as knowledge hubs for staff and students alike (Muwanguzi, Serunjogi, and Edward 2023). Embedding community liaison officers or instructional designers in academic departments further ensures that engagement is decentralised and reaches across faculties.

Curriculum and quality assurance integration

Integrating DICE into the curriculum ensures that students engage with societal challenges as part of their academic journey. This may include:

- Embedding DICE in core modules and elective courses
- Recognising engagement through ECTS credits or diploma supplements
- Using reflective civic portfolios, digital storytelling, or community project reports as forms of assessment

Quality assurance systems should include DICE-relevant indicators, drawing on frameworks such as the DICE Value Maps, DigCompEdu, and national standards for civic learning. These indicators can focus on experiential learning, systems thinking, network building, and sustainability competencies (European Commission 2023).

Cultural inclusion

While policy and structure are crucial, institutionalisation also depends on culture. Creating a university-wide narrative that embraces engagement as a core value requires intentional communication. Internal messaging, staff induction programmes, faculty ambassador schemes, and campus branding can all reinforce DICE's significance.

Annual engagement festivals, digital storytelling events, and student showcases are valuable ways to signal institutional pride in community partnerships. Recognising staff contributions to DICE in promotion or award criteria is equally important in fostering a culture where civic engagement is seen as academic excellence (Sandbulte, Kropczynski, and Carroll 2019; Hart, Northmore, and Gerhardt 2009).

Ecosystem support

External networks and alliances play a vital role in embedding Digital Community Engagement into institutional strategy and practice. By participating in pan-European initiatives such as the European University Association (EUA), Campus Compact, the Engagement Scholarship Consortium, and the Global University Network for Innovation (GUNI), HEIs can access structured peer learning, benchmarking frameworks, and policy advocacy platforms. These networks can provide capacity-building resources and support HEIs in aligning engagement practices with European values of social inclusion, democratic participation, and sustainability. According to Farnell (2020), such alliances are vital for institutional learning and the development of a shared vision for civic and community engagement across diverse national contexts. The DICE Value Maps can serve as a shared language in these dialogues, helping institutions define, evaluate, and improve their civic impact in digital settings.

Table 2 — Institutionalisation strategies for Digital Community Engagement in HEIs.

Dimension	Description	Sources
<i>Strategic alignment</i>	Embed DICE into university missions and development plans	(Laredo 2007)
<i>Policy and governance</i>	Formalise DICE through course policies, curriculum reforms, and advisory roles	(Sandmann 2006)
<i>Organisational structures</i>	Establish support structures like civic engagement centres and instructional design units, and community liaison offices	(Mwanguzi, Serunjogi, and Edward 2023)
<i>Curriculum and QA integration</i>	Include DICE into courses, modules and QA indicators	(European Commission 2023)
<i>Cultural integration</i>	Promote civic engagement narratives, recognising faculty contributions and hosting student-community engagement events	(Sandbulte, Kropczynski, and Carroll 2019; Hart, Northmore, and Gerhardt 2009)
<i>Ecosystem support</i>	Participate in networks that advocate DICE values	(Farnell 2020)

5.2. Building a culture of Digital Community Engagement

Culture in higher education shapes what is valued, prioritized and rewarded. It influences behaviour and expectations through formal rules, shared narratives, norms, and emotional investments (Tierney 1988). Establishing a culture of Digital Community Engagement goes beyond developing policies. It is about building a mindset where civic responsibility, co-creation, and digital participation are integral to the institutional identity.

From structural change to cultural commitment

Institutionalisation focuses on structural mechanisms such as policy reforms and curriculum integration, whereas cultural transformation targets the deeper, less visible elements of change. A culture of DICE emerges when faculty, staff, students, and external partners see engagement not as a compliance task but as a shared institutional value. This shift involves emotional buy-in, ethical commitment, and the creation of meaningful experiences that reflect community-responsive education (Sandmann 2006; Glass and Fitzgerald 2010).

Leadership plays a pivotal role here. When institutional leaders publicly champion DICE, provide dedicated budgets, and articulate engagement as a strategic imperative, they create a climate of legitimacy and aspiration. Such support also encourages distributed leadership, empowering educators, departments, and student groups to take initiative and innovate (Hall, Tandon, and Tremblay 2015).

Shared understanding and language

Having a common reference point is an enabler of cultural change in higher education. The DICE Accelerator and Value Maps provide such a language by framing Digital Community Engagement as a teaching method and civic ethos. These tools help staff and students articulate learning goals, assess societal impact, and align their practices with values such as sustainability, inclusion, and democratic participation (Tijmsma, Urias, and Zweekhorst 2023).

Moreover, when tools like these are incorporated into faculty development, course design, or student orientation, they help normalise engagement as part of institutional life. This approach creates alignment across institutional layers, from the classroom to strategic planning, and fosters a shared understanding of what DICE is about.

Empowering faculty as agents of change

Cultural change requires that academics feel equipped to embrace risks, test new methods, and learn with their peers. HEIs can support this by creating professional development opportunities that promote collaborative reflection and experimentation. Workshops, peer mentoring schemes, and communities of practice focused on DICE provide valuable spaces for capacity-building (McTaggart and Nixon 2014; Beauchamp, Schwartz, and Pisacreta 2020).

Importantly, recognition mechanisms must reflect this cultural shift. Including engagement activities in promotion and tenure pathways sends a powerful message that DICE is central to teaching excellence. Teaching awards or small grants for civic digital projects further incentivise and legitimise this work (Fitzgerald et al. 2016).

Students as cultural agents

Students play an important role in promoting higher education institutional culture. When students are invited to design, lead, and evaluate engagement activities, they embody DICE values through lived practice. Opportunities such as student-led digital civic labs, virtual town halls, and co-created service-learning projects can help students to develop technical and collaborative skills, as well as an increased sense of civic responsibility (Freudhofmayer and Resch 2024).

Recognition mechanisms, such as digital badges, civic transcripts, or diploma supplements, can reflect these contributions and signal their academic legitimacy, thereby encouraging students to engage more with their communities. These instruments can also make students' civic learning visible to employers, communities, and future institutions (European Student Engagement Project 2021).

Symbols, narratives and rituals

Culture is shaped as much by stories and symbols as by structures. Telling the story of DICE through internal communication channels such as newsletters, student and faculty spotlights, podcasts, and social media can foster pride, identity, and momentum. Branding DICE visually across the institution (for example, through banners, taglines, or dedicated platforms) makes it tangible and present.

Celebratory events such as annual engagement festivals, digital community showcases, or thematic civic weeks can also become part of the university calendar. These rituals embed civic engagement in the rhythms of institutional life and create platforms for dialogue, creativity, and recognition (Sandbulte, Kropczynski, and Carroll 2019; Cream and Manners 2020).

Monitoring and reflecting

Sustaining a culture of DICE requires continuous reflection. HEIs can develop engagement dashboards that track participation, course integration, and tool usage (e.g., the DICE Accelerator). Surveys and focus groups can provide qualitative insights into how faculty and students perceive DICE and what supports or hinders their involvement (Farnell 2020).

This data can inform institutional strategy and pinpoint areas for improvement, whether it be support for educators, clarity of communication, or inclusion of diverse student voices. In addition to being a tool for accountability, monitoring fosters group learning and responsiveness (Laredo 2007).

Table 3 — Dimensions of a culture of Digital Community Engagement in HEIs.

Dimension	Description	Sources
<i>Cultural importance</i>	Engagement is embraced as an ethical and educational core value	(Sandmann 2006)
<i>Leadership and empowerment</i>	Leadership should advocate Digital Community Engagement	(Hall, Tandon, and Tremblay 2015)
<i>Common language and tools</i>	Visual media, inclusive language, and campus-wide engagement branding supports Digital Community Engagement	(Sandbulte, Kropczynski, and Carroll 2019; Cream and Manners 2020)
<i>Faculty and peer learning</i>	Peer learning structures, like workshops and seminars, help educators integrate DICE into their practice and build community	(McTaggart and Nixon 2014; Beauchamp, Schwartz, and Pisacreta 2020; Fitzgerald et al. 2016)
<i>Students agency</i>	Students shape culture by leading projects, co-designing courses, and earning recognition through micro-credentials and student-led labs	(Freudhofmayer and Resch 2024; 2024; European STudent Engagement Project 2021)
<i>Assessing cultural shifts</i>	Cultural shifts can be monitored via surveys, tool usage data, and integration of engagement indicators into institutional performance dashboards	(Farnell 2020; Laredo 2007)

5.3. Collaboration and networking for Digital Community Engagement

Collaboration remains at the heart of Digital Community Engagement. As evidence shows, digital technologies enable students and institutions alike to transcend boundaries by fostering partnerships that are inclusive, interdisciplinary, and responsive to societal needs. In the

digital age, such collaboration is no longer confined to the physical space, and it depends on the capacity to build trust, share infrastructure, and co-create knowledge across virtual environments (Gqwabaza & Maqoqa, 2024).

Collaboration can take many forms. University–community partnerships are foundational, connecting HEIs with local NGOs, grassroots movements, and municipalities to co-design projects. These co-designed digital projects (e.g. virtual town halls, online storytelling, data collection apps) allow communities to be active knowledge producers (Sandmann, 2006; Sandbulte et al., 2019). These kinds of relationships are often long-term and anchored in shared values. Equally important are inter-institutional collaborations, where universities share digital tools, develop joint courses, or participate in peer learning projects. The EU-funded DICE project, for instance, exemplifies the power of cross-institutional innovation.

Digital Community Engagement encourages collaboration with academia, government, businesses, and civil society. These cross-sectoral partnerships promote innovation in areas of digital inclusion, and climate adaptation. Corporate actors may contribute through corporate social responsibility (CSR) initiatives, while municipalities bring policy alignment and local knowledge (Carayannis & Campbell, 2009; Mazzucato, 2018). Participation in regional or European networks enables HEIs to scale their work, access funding, and shape policy. Examples of such networks include the European Consortium of Innovative Universities (ECIU) and European Association of Service-Learning in Higher Education (EASLHE).

Enabling conditions for DICE collaboration

- **Shared vision and reciprocity:** Effective collaboration needs shared understanding of aligned goals, mutual respect, and reciprocal benefits. Clear role definitions and formal agreements (e.g. memoranda of understanding) help build trust and set clear direction (Bringle & Clayton, 2012; Enos & Morton, 2003).
- **Digital infrastructure and access:** HEIs must invest in secure, inclusive, and user-friendly digital platforms that support communication, co-production, and accessibility. This includes tools for asynchronous collaboration, real-time interaction, and digital project management. Importantly, digital equity should be at the forefront to avoid exacerbating existing inequalities (Berman, 2022; Gottschalk & Weise, 2023).
- **Dedicated role setting:** Community liaisons, engagement coordinators, or digital animators play vital roles in managing partnerships, mediating expectations, and translating between institutional and community logics (Sandmann et al., 2009). Their presence ensures continuity and responsiveness.
- **Institutional support:** Enduring digital partnerships and networking require institutional buy-in, which can be demonstrated through institutional strategies, providing funding lines, rewarding engagement in promotion criteria, and integrating engagement into teaching and research policies. Without structural support, even well-intentioned partnerships can stagnate or collapse (Hart & Northmore, 2011; Furco, 2010; Holland, 2011).
- **Time investment and relationship-building:** Trust and reciprocity, especially across digital spaces, require long-term relational investment. Many community actors feel that universities often engage with them in ways that are one-sided (e.g. seeking data) without offering meaningful benefits in return. Sustainable partnerships, even digital ones, require relational time: unstructured conversations, ongoing presence, and personal rapport-building (Enos & Morton, 2003; Ahmed, 2012).

- **Balanced power dynamics:** Although digital spaces foster inclusion, it does not automatically translate to fairness and equality. Without careful design, university-led partnerships risk reinforcing existing hierarchies through control over agendas, language, or technology. To support meaningful engagement, it's essential to address power imbalances, prioritize inclusive design, and ensure participatory decision-making in digital platforms (Fraser, 2005; Costanza-Chock, 2020; Williamson & Hogan, 2020).
- **Students benefit** from these collaborative structures as well. Digital placements, civic hackathons, and innovation labs allow students to engage with real-world challenges while building skills in communication, problem-solving, and intercultural understanding. These activities directly support the competencies outlined in the Student Learning Value Map. Digital Community Engagement also aligns with the evolving idea of internationalisation. Joint digital courses and virtual exchanges can foster global citizenship by allowing students to develop international collaboration skills, appreciate multiple perspectives, and contribute meaningfully to the sustainable development goals (SDGs).

Table 4 — Collaborations and networking strategies in DICE.

Dimension	Description	Sources
<i>Types of collaboration</i>	Collaboration in Digital Community Engagement can occur through university-university collaborations and university-business partnerships	(Huang et al. 2018; Mutero and Chimbari 2021)
<i>Knowledge sharing and peer support</i>	Inter-institutional support and alliances enhance capacity-building through shared tools and learning	(DICE Accelerator Project 2022)
<i>Enablers of effective partnerships</i>	Effective partnerships require shared goals, well-defined roles, reciprocity, and digital infrastructures	(Bringle, Hatcher, and Clayton 2012; Enos and Morton 2003; Berman 2022; Gottschalk and Weise 2023; Fraser 2005; Costanza-Chock 2020; Williamson and Hogan 2020)

5.4. Benefits of including DICE in higher education

The integration of DICE into higher education offers a compelling array of benefits that extend across all levels of the academic ecosystem, including students, educators, institutions, and communities.

For students, DICE enriches learning by offering meaningful, applied, and socially embedded experiences. It helps develop a broad set of 21st-century skills, including digital literacy, systems thinking, and collaborative problem-solving. Perhaps more importantly, it fosters civic awareness, emotional intelligence, and a sense of responsibility, qualities that are increasingly critical in a complex, interconnected world.

Educators benefit from the relevance that DICE brings to their teaching. By engaging with community partners and real-world issues, they can revitalize course content, stimulate student engagement, and contribute to social impact. Participation in DICE also offers professional growth opportunities, such as recognition, interdisciplinary collaboration, and leadership roles in civic pedagogy.

At the institutional level, DICE reinforces strategic goals related to societal impact, innovation, and digital transformation. It helps position the university as a socially responsive actor, enhances graduate outcomes, and strengthens connections with local and international stakeholders. In a competitive global landscape, this alignment of education with social value can significantly boost institutional reputation. Communities alike benefit from the co-creation of knowledge and the problem-solving capacities that universities bring. DICE contributes to digital inclusion, civic capacity building, and social innovation, whether by supporting local initiatives, tackling sustainability challenges, or amplifying underrepresented voices. Benneworth, P., de Boer, H., & Jongbloed, B. (2015). Between good intentions and urgent stakeholder pressures: institutionalizing the universities' third mission in the Swedish context. *European Journal of Higher Education*, 5(3), 280-296.

Table 5 — Benefits of Digital Community Engagement by stakeholder group.

Stakeholder	Benefits	Sources
<i>Students</i>	21st-century skills, civic identity and participation, career readiness	(Finley 2011); (Galston 2001); (Voogt and Roblin 2012)
	Civic learning and leadership and civic mindedness	(Bowen and Berrien 2020)
	Social agency	(Felton and Clayton 2011)
<i>Educators and faculty</i>	Enriches pedagogy by introducing real-world challenges into the classroom	(Bringle, Hatcher, and Clayton 2012)
	Faculty engagement is acknowledged through awards, leadership opportunities, and impact metrics in research and teaching	(Saltmarsh et al. 2009)
	Digital Community Engagement can be an avenue for conducting, publishing and disseminating co-created research	(Hart and Northmore 2011)
<i>Institutional strategy and identity</i>	Improved institutional reputation, competitiveness, and public image	(Bringle and Hatcher 2009; Benneworth and others 2015)
	Third mission legitimacy	(Zomer and Benneworth 2011)
	Contributes to an inclusive innovation ecosystem	(Grobbelaar 2018)
<i>Societal and community outcomes</i>	Access to knowledge, empowerment and local capacity-building	(Buys and Bursnall 2007)
	Democratic and political participation	(Velasquez and LaRose 2014)
	DICE as an avenue for marginalized voices expression	(Stoecker 2016)
	Collaborative response to complex social challenges such as climate change.	(Derreth 2024)

5.5. Embedding value-based management and implementing DICE courses

Central to the DICE approach is the principle of value-based management. This means that both institutional and pedagogical decisions are guided by social, ethical, and developmental values such as inclusion, sustainability, co-creation, and mutual respect. These values are not abstract; they are operationalised through the DICE Value Maps.

The Social Impact Value Map provides a framework for identifying civic outcomes such as entrepreneurship, urban cohesion, and community wellbeing. The Student Learning Value Map focuses on competencies like creative thinking, trust-building, and future literacy. Together, they help educators and institutions design and evaluate engagement in ways that are both principled and measurable.

To institutionalise this approach, universities can embed value considerations into course approval processes, quality assurance systems, and partnership policies. Educators should be trained in ethical co-creation and reflective pedagogy, while stakeholders should be selected and engaged based on shared commitments to equity and inclusion.

The implementation of DICE courses can be facilitated by the DICE Accelerator, which guides educators through six phases: exploration, co-design, course design, implementation, evaluation, and reflection. This structured process ensures that digital tools and civic goals are aligned from the start. The Accelerator also provides templates, case studies, and coaching prompts to support educators at every step.

Scaling DICE courses institution-wide requires more than pedagogical tools. Institutions must allocate resources through teaching innovation grants, integrate DICE into faculty workload models, and offer IT and instructional support. Additionally, students must be prepared, and feedback loops and orientation modules can help guarantee that they are prepared to engage as civic actors in digital spaces.

Monitoring and evaluation are critical to sustainability. Courses should be assessed for their alignment with value indicators, student learning outcomes, and community impact. Regular reporting and stakeholder feedback can feed into institutional dashboards, ensuring accountability and guiding continuous improvement.



Phase 1: Strategic foundation

- ☐ Leadership Commitment: Secure senior leadership support with dedicated resources
- ☐ Mission Integration: Embed DICE into institutional strategic plans
- ☐ Stakeholder Assessment: Identify internal champions and potential community partners

Phase 2: Structural Essentials

Governance

- ☐ DICE Coordinator: Appoint dedicated DICE coordinator or champion
- ☐ Policy Integration: Include DICE criteria in course approval procedures
- ☐ Quality Framework: Integrate **DICE Value Maps** into QA systems

Infrastructure

- ☐ Digital Platform: Establish basic digital collaboration infrastructure
- ☐ Support Systems: Create faculty support for DICE course development

Phase 3: Faculty preparation

- ☐ Recognition Integration: Include DICE in faculty promotion/recognition criteria
- ☐ Community of Practice: Establish faculty learning group for DICE

Phase 4: Course implementation

- ☐ Platform Workshops: Facilitate hands-on sessions with **DICE Accelerator**'s six-phase course design process
- ☐ Pilot Courses: Launch initial DICE courses using DICE methodology
- ☐ Value-Based Design: Use DICE Value Maps for course planning and impact measurement
- ☐ Assessment Integration: Implement civic learning assessments with ECTS recognition

Phase 5: Partnership development

- ☐ Local Partnerships: Establish partnerships with community organizations
- ☐ Formal Agreements: Create MOUs with clear roles and mutual benefits
- ☐ Student Preparation: Orient students for community engagement activities

Phase 6: Evaluation and sustainability

- ☐ Impact Tracking: Use DICE Value Maps framework for ongoing evaluation
- ☐ Stakeholder Feedback: Implement regular feedback from all participants
- ☐ Continuous Improvement: Adjust based on evaluation findings

 Chapter 6

Conclusion

6.1. Summary of key insights

The DICE Handbook shows how Digital Community Engagement (DICE) offers a meaningful way to rethink higher education's role in society. It is not merely about adopting new technologies but about embedding digital tools and shared values deeply into teaching, learning, and institutional missions.

The digital platforms, such as the DICE Accelerator and Value Maps, serve as more than technical tools; they create spaces for students, educators, and communities to collaborate, reflect, and address real-world challenges together. Pilot runs of these platforms clearly demonstrated that when digital tools are intentionally aligned with participatory pedagogy and community values, they can foster meaningful engagement, enhance student learning, and build sustainable partnerships across diverse institutional and cultural contexts, as concluded in the documented best practices.

Collaboration stands out as a core pillar, as DICE dissolves traditional boundaries, fostering partnerships not only between universities and communities but also among institutions and across sectors like government, business, and civil society. For these partnerships to thrive, several enabling conditions are essential: a shared vision, strong digital infrastructure, clear roles, institutional support, time invested in relationship-building, and a conscious effort to balance power within digital spaces.

The benefits of DICE reach across stakeholders: students gain valuable 21st-century skills and civic identity; educators enhance their teaching and research; institutions reinforce their social impact and innovation capacities; and communities access knowledge, empowerment, and opportunities for democratic participation. Embedding a value-based approach ensures these initiatives uphold principles of inclusion, sustainability, and co-creation.

6.2. Future outlook

Looking forward, Digital Community Engagement has significant potential to become a strategic link connecting education, society, and digital innovation. As universities face increasingly complex social issues, DICE offers a flexible and values-driven framework for systemic change.

Greater institutional integration of community engagement is anticipated, through modular curricula, third mission strategies, and interdisciplinary approaches. Digital community ecosystems are expected to continue evolving, enabling collaboration, reflection, and social accountability through user-friendly, interconnected tools grounded in ethical frameworks.

To fully realize this potential, institutions must invest in capacity-building, staff development, and aligning their technological, pedagogical, and civic goals. Success lies not in pursuing technology for technology's sake but in intentional design guided by shared values and focused on local contexts.

As digital technologies evolve, new opportunities for co-creation and dialogue will arise. Institutions will need to deepen their commitment to inclusive infrastructure and reflexive practice to adapt to emerging societal and technological trends.

In the face of pressing global challenges, such as climate change, social inequality, and digital divides, DICE provides a compelling model for universities to fulfill their third mission: advancing social good through knowledge co-production and active community engagement. By fostering

digitally enabled, value-centered community engagement, higher education institutions can play a pivotal role in building resilient, inclusive, and sustainable societies.



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