

ENGAGEMENT ACCELERATOR FOR STUDENT LEARNING AND SOCIO-ECONOMIC IMPACT

# Manual for Designing Digital Community Engagement Courses



Co-funded by the European Union

## **Table of Contents**

Part 1: Introduction to DICE	3
1. About the Manual for Designing Digital Community Engagement Courses	3
2. What is Community Engagement?	4
3. Digital Community Engagement - DICE	5
4. Community engagement (CE) versus Digital community engagement DICE	6
5. The Importance of Community Engagement in European Universities	8
6. Challenges Faced by Traditional Community Engagement	9
7. Digital Community Engagement as a Game Changer	10
8. Case Studies: Digital Community Engagement in European Universities	12
9. DICE for European Educators	13
10. Benefits for Students	37
Part 2: Step-by-Step Guidelines on how to use the DICE ACCELERATOR	40
References	47



## PART 1: Introduction to Digital Community Engagement DICE

# 1. About the Manual for Designing Digital Community Engagement Courses

To empower educators in designing innovative and engaging Digital Community Engagement (DICE) courses, we developed a comprehensive Manual for Designing Digital Community Engagement Courses. This manual provides a practical guide to designing DICE courses that foster learners' motivation and development.

Building upon the knowledge gained through <u>DICE value maps</u> both for <u>students</u> and <u>social impact</u>, we created a <u>digital accelerator</u> (diceaccelerator.eu/), a web-based platform that offers educators and course directors a structured and guided (selfpaced) approach to creating their own individual DICE initiatives. This platform breaks down the complex process of designing DICE courses that support student learning and social impact generation into a series of actionable steps. The digital accelerator will guide participants through every stage of the design process, empowering them with entrepreneurial and process management skills. By providing a collaborative learning environment, the platform facilitates the development of ideas into implementable DICE solutions. University educators and course directors are the primary beneficiaries of the "Manual for Designing Digital Community Engagement Courses" and the Digital



Co-funded by the European Union

Accelerator. These resources are designed to provide educators the necessary methodological support, skills enhancement, and mentoring to integrate digital CE strategies effectively into their courses, study programs, or university divisions. DICE courses provide an opportunity for educators to enhance their digital, managerial, and entrepreneurial skills; while also equipping their students with the skills they need to succeed in today's competitive world.

The "Manual for Designing Digital Community Engagement Courses" and the Digital Accelerator were designed within <u>DICE project</u> (project number: 2022-1-SK01-KA220-HED-000087668) that has a two-pronged initiative, namely, it aims to revolutionize university education by leveraging technology to enhance community engagement and to support educators with innovative digital tools and knowledge to upgrade their curriculum.

#### 2. What is Community Engagement?

Community engagement (CE) is a reciprocal relationship between universities and their communities that involves mutually beneficial interactions that address community needs and enhance the learning, teaching, and research experience of university students and faculty [1].

**Community Engagement can take many forms, o**ne of these is communitybased research, where universities collaborate with community partners to address issues that are significant to the community. Another form is service learning, which combines classroom learning with practical community service, providing students with real-world experience. Volunteerism is another crucial aspect, as it encourages both students and faculty to contribute their time and skills to local community organizations. Additionally, partnerships between universities and community organizations can address shared goals, facilitating collective action. Lastly, policy advocacy plays a role in community engagement by influencing public policy decisions

that affect community members, ensuring their needs are represented in the policymaking process. [2,3] These various approaches collectively enable universities to build strong, meaningful connections with their communities while providing students with opportunities for practical learning and social impact.

#### 3. Digital community engagement DICE

Digital community engagement (DICE) [4] is a subset of community engagement that utilizes technology to connect with community members and foster collaborations. It leverages the power of online platforms, social media, and digital tools to bridge geographical barriers, expand participation, and enhance the effectiveness of community engagement initiatives.

#### **DICE is particularly beneficial for organizations that seek to** [5,6]:

- Expand their reach and engage with a global audience;
- Increase participation in community initiatives;
- Gather data and insights to inform their strategies;
- Implement cost-effective and scalable engagement programs;

#### **Examples of DICE initiatives** [7,8] **include:**

- Online forums for community discussions and feedback;
- Virtual events and workshops;
- Social media campaigns to promote community engagement;
- Online surveys and polls to gather community input;
- Online platforms for collaborative projects and volunteer opportunities;

DICE has revolutionized community engagement by providing organizations with powerful tools to connect, collaborate, and address community challenges in a more effective and inclusive manner. As technology continues to evolve, DICE is likely to play



Co-funded by the European Union

an even more significant role in fostering civic engagement and strengthening communities worldwide.



# 4. Community engagement (CE) versus Digital community engagement DICE

Community engagement and digital community engagement [9, 10] are two closely related concepts that both involve fostering connections and collaborations between individuals and organizations, like universities, within a community. However, they differ in the mediums they utilize and the reach they can achieve.

Feature	Community Engagement	Digital Community Engagement
Medium	In-person interactions, local events, partnerships	Online platforms, social media, digital tools
Reach	Limited by geographical proximity	Wider reach, can connect with individuals worldwide
Flexibility	Adaptable to diverse community preferences	Offers more flexibility in engagement formats and timing
Scalability	May face challenges in scaling up participation	Can reach a larger audience and facilitate participation from more individuals
Data collection	Limited data collection opportunities	Richer data collection capabilities through online engagement



Co-funded by the European Union

While community engagement refers to traditional methods of connecting with community members, such as face-to-face interactions, in-person events, and local partnerships, it involves building relationships, sharing information, and collaborating on projects to address community needs. Digital community engagement leverages the power of technology to connect with a wider audience and engage with community members beyond geographical boundaries. It utilizes online platforms, social media, and digital tools to facilitate conversations, share ideas, and collaborate on initiatives. Key aspects [11,12] of community engagement include:

**Inclusivity:** The aim is to involve all stakeholders within a community, ensuring that diverse voices are heard and considered in decision-making processes. This is crucial for building trust and cooperation between your university and the community.

**Partnership:** Community engagement involves forming partnerships and collaborations between various stakeholders, including residents, community organizations, businesses, and institutions. These collaborations harness the unique strengths and perspectives of each group to address community challenges and implement effective solutions.

**Two-Way Communication:** Effective community engagement fosters open and transparent communication. It allows for feedback, dialogue, and information sharing between the community and the engaged entities. This is essential for building mutual understanding and ensuring that your university's efforts are aligned with the community's needs and priorities.



**Empowerment:** Community engagement seeks to empower community members by involving them in the decision-making process and encouraging them to take an active



Co-funded by the European Union

role in improving their own communities. This empowerment can lead to increased civic engagement, social cohesion, and sustainable community development.

**Social Responsibility:** It embodies a sense of social responsibility where you, as an institution, recognize your duty to contribute positively to the well-being of the communities you impact. Community engagement is a way for your university to fulfil its social responsibility and make a positive impact on the lives of your neighbours'."

# 5. The Importance of Community Engagement in European Universities

European universities have a long history of community engagement. They serve as knowledge hubs, driving innovation, social development, and economic growth within their regions. Through active involvement with local communities, universities become not only educators but also active contributors to societal progress. **CE is increasingly recognized for its value in European universities** [13, 6, 14]:

- CE can help universities identify and address the needs of their communities, leading to positive social and economic outcomes.
- CE can provide students with valuable hands-on learning experiences that connect their academic work to the real world.
- CE can help students develop civic skills and become responsible members of their communities.
- CE can build strong relationships between universities and their communities, leading to increased trust and collaboration.

#### Key benefits of community engagement include [11,10,12, 15]:

• **Civic Responsibility:** universities play a crucial role in shaping the next generation of responsible citizens. By encouraging students to actively engage in community



Co-funded by the European Union

projects and initiatives, they instill in them a strong sense of civic duty and commitment to the well-being of their communities. This hands-on experience empowers students to become active participants in shaping a better world.

- **Mutual Learning:** community engagement is a two-way process where universities not only contribute to their communities but also learn from them. By engaging meaningfully with residents, universities gain valuable insights into local needs, aspirations, and experiences. This reciprocal learning fosters a deeper understanding of the community, enabling universities to adapt their offerings and research to better address the community's needs.
- Economic Development: universities are not just ivory towers of academia; they are active players in the economic landscape of their regions. By forging partnerships and collaborations with local businesses, entrepreneurs, and community organizations, universities can drive economic growth and prosperity. These partnerships can stimulate research and innovation, foster entrepreneurship, and attract talent and investment, creating a thriving and vibrant community.

### 6. Challenges Faced by Traditional Community Engagement

While traditional community engagement offers significant value, it faces challenges like logistical limitations, resource constraints, and time-intensive interactions, which can reduce the effectiveness of university-community partnerships. Geographical distances further complicate engagement efforts, limiting the reach to underserved communities. Additionally, traditional models often rely on physical proximity, making it harder to scale up or sustain programs, while limited funding restricts the development of innovative projects. Despite its many benefits, traditional community engagement can face challenges, [10,13,16, 17] such as:



Co-funded by the European Union

- Traditional community engagement models often rely on physical proximity, which can limit their reach to underserved communities.
- Traditional community engagement can be time-consuming for both students and faculty, which can make it difficult to sustain or scale up programs.
- Funding for traditional community engagement can be limited, which can hinder the development and implementation of innovative projects.

#### 7. Digital Community Engagement as a Game Changer

With the rise of digital technologies, universities across Europe have harnessed the power of digital community engagement. Platforms like websites, social media, and online collaboration tools have revolutionized how universities connect and interact with their communities, enhancing outreach and collaboration. Advantages of digital community engagement, [18,19,20] include:

- Geographical Accessibility: in today's interconnected world, geographical barriers no longer impede university engagement with communities. Digital platforms provide universities with the opportunity to overcome physical boundaries and engage with individuals and groups regardless of their geographical location. This is especially empowering in a European context, where universities are often spread across vast distances and serve diverse communities. Through virtual spaces, universities can maintain ongoing interactions with remote or underrepresented groups, thereby enhancing inclusivity and fostering stronger ties between institutions and their broader communities.
- Efficiency and Scalability: The digital transformation of community engagement allows universities to reach a larger audience in a more efficient and scalable manner. Rather than being limited by physical presence, universities can engage with an expanded community base through online platforms. This scalability enables institutions to maximize their reach, addressing the needs of a wider and



Co-funded by the European Union

more diverse population. The ability to engage with many community members simultaneously enhances the university's impact, making it possible to address local issues more comprehensively and with greater efficiency.

- Data-Driven Insights: One of the key advantages of digital engagement is the ability to collect and analyse data. Digital platforms offer universities the opportunity to gather valuable data on community needs, aspirations, and challenges through surveys, feedback forms, and engagement analytics. This data-driven approach provides universities with insights that can be used to fine-tune engagement strategies. By understanding what resonates most with the community, universities can tailor their initiatives to be more effective and responsive to local issues, ensuring that their community engagement efforts are not only impactful but also aligned with the community's specific needs and priorities.
- Engagement Diversity: Technology provides a dynamic and diverse array of engagement methods that cater to the various needs and preferences of community members. Webinars, online forums, collaborative digital projects, and virtual workshops represent just a few of the ways universities can engage with their communities. These platforms are not only flexible in terms of format but also inclusive, accommodating individuals with different accessibility needs and technological proficiencies. This diverse approach ensures that engagement is accessible to all members of the community, regardless of their background or location, fostering an inclusive and participatory environment that encourages active involvement from everyone.

Digital platforms are transforming the landscape of community engagement, offering universities the ability to break down geographical barriers, scale their efforts, make data-driven decisions, and offer a range of diverse, inclusive engagement opportunities. This creates more effective, impactful, and sustainable community partnerships.





# 8. Case Studies: Digital Community Engagement in European Universities

To illustrate the potential of DICE, here are three case studies of European universities that have successfully implemented DICE initiatives:

**Case Study 1: University of Amsterdam (Netherlands): t**he University of Amsterdam has implemented a digital community engagement platform that connects students, faculty, and residents. Through this platform, the university has initiated collaborative projects on urban sustainability, arts, and culture, fostering a sense of shared responsibility for the city's future [21].

**Case Study 2: University of Barcelona (Spain): t**he University of Barcelona employs an online portal to engage with its community in innovative ways. They offer free online courses, webinars, and virtual events on a variety of topics. This initiative has not only improved the university's visibility but also empowered the community with accessible educational resources [22].

**Case Study 3: University College Dublin (Ireland): U**niversity College Dublin utilizes a social media campaign, #UCDCommunity, to actively engage with its local community. The campaign shares stories, initiatives, and collaborations, fostering a sense of unity and shared vision for societal progress [23].

Community engagement remains a cornerstone of higher education in Europe [24], with universities committed to addressing societal challenges and fostering positive change. The shift toward digital community engagement has expanded the horizons of collaboration and interaction. European universities are at the forefront of embracing digital technologies to ensure they can engage effectively with their communities, irrespective of geographical boundaries. As digital platforms continue to evolve, they present exciting opportunities for universities to create lasting, mutually beneficial partnerships with the communities they serve.



#### 9. DICE for European Educators

Educators are indeed at the heart of fostering effective community engagement and shaping future leaders who are prepared to tackle societal challenges. By incorporating Digital Community Engagement (DICE) into their teaching practices, they can amplify their students' potential to contribute meaningfully to their communities. Through DICE, educators can not only enhance their own skills but also ensure their students are equipped with the knowledge and tools necessary to succeed in an increasingly digital and interconnected world.

#### The Role of Educators in DICE:

- Educators have the opportunity to transform traditional course structures into more dynamic, engaging, and impactful experiences by integrating digital tools and strategies. DICE courses are designed to challenge students to use technology creatively to solve community issues. These courses blend theory and practice, allowing students to apply what they have learned in real-world contexts, ultimately fostering a deeper understanding of the issues at hand.
- DICE courses not only focus on community engagement but also nurture the entrepreneurial spirit. Educators play a critical role in helping students understand how to design, implement, and manage digital community engagement initiatives. They can guide students in thinking strategically, organizing resources, and creating sustainable solutions. Furthermore, educators can introduce students to the complexities of project management, including budgeting, timelines, and stakeholder coordination.
- DICE encourages collaboration among students, educators, and community stakeholders. Educators can facilitate a collaborative learning environment that encourages teamwork and peer learning. By using digital tools such as online discussion platforms, virtual workspaces, and collaborative project management



Co-funded by the European Union

software, educators can foster an environment where students can share ideas, provide feedback, and work together to solve problems.

The Role of DICE in Educator Development: DICE accelerator offers invaluable support for educators, providing methodological support to help integrate digital community engagement strategies effectively into their courses, programs, and university divisions. By participating in the accelerator, educators can enhance their digital literacy, develop teaching materials that incorporate digital tools, and access mentoring to continuously improve their approach. Through DICE, educators also enhance their students' skills in digital literacy, managerial expertise, and entrepreneurship. This multidimensional approach equips students with the tools they need to thrive in both digital and physical community engagement efforts. They will have the opportunity to tackle real-world issues using technology, enhancing their employability and giving them the experience needed to become leaders in the field.

The Impact of Educators on Community Engagement: in addition to preparing students for active participation in community engagement, educators themselves serve as pivotal figures in promoting social change. They are advocates for social justice and sustainability, using their expertise to guide students through complex community-based projects that directly benefit society. Educators can lead projects, collaborate with local stakeholders, and serve as community ambassadors, further strengthening the ties between educational institutions and the communities they serve. Their commitment to civic values, social justice, and education makes them indispensable agents of change. As mentors, role models, and advocates, educators play a critical role in building stronger, more resilient communities that can tackle social, environmental, and economic challenges.



Co-funded by the European Union

#### **1.** Utilize interactive learning platforms and digital tools [27]

To enhance engagement and motivation in your community engagement courses, you can strategically incorporate gamification elements such as points, badges, and leaderboards. Here's how you can implement these elements into your course:

Assigning Points for Course Activities and Milestones: you may award points for a range of activities, including participation in discussions, completion of assignments, and contributions to group projects. Points can be differentiated by the difficulty of the tasks, with more challenging activities, such as comprehensive assignments or detailed project contributions, earning higher points. Displaying students' progress on a points leaderboard allows them to track their achievements, fostering a sense of accomplishment and encouraging friendly competition.

**Introducing Badges to Recognize Exceptional Contributions:** badges can be awarded for specific achievements, such as demonstrating outstanding teamwork, providing insightful contributions, or showcasing creativity in solutions. These badges should be visually represented through icons or images, making them more tangible and rewarding. Students may collect and display these badges on their profiles, which not only motivates them but also enables peers to recognize their efforts.

**Implementing Leaderboards to Foster Healthy Competition:** public leaderboards can display the top achievers based on their points or badges, creating a sense of healthy competition among students. By regularly updating these leaderboards, you will keep students engaged and motivated to improve their performance. This competition encourages students to put in more effort and reach new milestones, enhancing the overall learning experience.



Co-funded by the European Union



Integrating Gamification into Course Activities and Challenges: interactive quizzes, games, and role-playing elements can make learning more dynamic and engaging. For instance, quizzes may be time-bound or have tiered levels of difficulty, with more points awarded for correct answers on higher levels. Role-playing simulations can allow students to assume the roles of community leaders, project managers, or social workers, making decisions that impact virtual communities. Incorporating scavenger hunts or treasure hunts focused on community issues can further enrich this gamified learning experience.

**Promoting Collaboration and Teamwork Through Gamification:** group tasks where collective performance determines the reward can foster teamwork. You may design challenges that require students to collaborate and support one another, creating opportunities for peer feedback. Collaborative community engagement projects can also be gamified, where students earn points or badges based on their teamwork, and the group's overall success is reflected in the points earned.

**Gamifying Community Engagement Projects:** you can reward students for actively participating in real-world community outreach initiatives, such as volunteering, engaging in social campaigns, or addressing local issues. Special badges or recognitions can be awarded for impactful contributions, and leaderboards can track progress across these initiatives, showing how individual efforts contribute to larger social impacts. This will keep students motivated to engage and help them see the real-world value of their actions.



Co-funded by the European Union

By incorporating these gamification strategies into your course, you will create a highly interactive and motivating environment. This will not only encourage students to learn but also actively engage in community-driven projects, making a tangible impact on society.



#### Tools:

- Moodle is a popular open-source learning management system (LMS) that offers a variety of gamification features, such as badges, leaderboards, and quests.
- Kahoot! is a game-based learning platform that allows instructors to create interactive quizzes, surveys, and presentations.
- ClassDojo is a classroom management tool that uses gamification to encourage positive behavior and engagement.
- Flipgrid is a video discussion platform that allows students to record and share short videos in response to prompts or questions.
- Nearpod is a presentation tool that allows instructors to embed interactive activities, such as polls, quizzes, and videos, into their presentations.

2. Integrate virtual reality (VR) and augmented reality (AR) experiences to provide immersive and interactive learning opportunities. [28]

**Virtual Reality (VR):** to enhance the learning experience in community engagement courses, integrating immersive virtual experiences is an effective strategy. Virtual reality (VR) can be used to immerse students in realistic simulations that allow them to engage in community-based scenarios. For example, students can virtually participate in community meetings, where they can navigate the dynamics of group discussions, decision-making, and collaboration. Alternatively, they could work on virtual community development projects, tackling challenges such as resource

allocation, conflict resolution, or organizing initiatives for social good. These simulations could help students develop critical skills in problem-solving, teamwork, and communication within the context of community engagement. Another powerful use of VR in education is virtual field trips. By creating virtual tours to historical sites, museums, or community landmarks, students can gain a deeper understanding of the cultural, social, and historical contexts that shape community engagement. These trips can be especially valuable for exposing students to diverse perspectives and broadening their understanding of societal issues from a global or local lens.



A VR field trip to a community centre working with underserved populations may be able to provide students with a firsthand look at the challenges and solutions that realworld community engagement professionals encounter. Additionally, designing interactive VR games and simulations can further enhance students' comprehension of community engagement concepts. In these simulations, students might take on roles such as community organizers, project managers, or social workers tasked with solving a pressing social issue. By managing a community development project or working through scenarios such as organizing resources, mediating conflicts, or addressing public health concerns, students can practice the strategies and decision-making skills they would need in real-world community engagement roles. These immersive experiences can be both educational and engaging, offering students a more dynamic and hands-on approach to learning.





Augmented Reality (AR): incorporating Augmented Reality (AR) into community engagement education offers an innovative approach to enhancing students' understanding of key concepts. By overlaying digital information on top of the real world, AR can provide students with valuable contextual insights that deepen their learning experience. For instance, students can use AR to visualize critical data about community needs, such as local poverty rates, access to services, or environmental challenges. This could help them understand the socio-economic context of their community engagement projects and shape their approach accordingly. Additionally, creating AR scavenger hunts or challenges allows students to embark on interactive explorations of their communities. Through these activities, students can actively engage with their surroundings, uncovering important information about their environment while applying theoretical knowledge in a hands-on manner. These ARdriven activities can encourage critical thinking, problem-solving, and a deeper connection to the community. Moreover, AR tools can facilitate data collection and insights gathering in real time. For example, students could use AR to document various aspects of their communities—such as photographing and categorizing graffiti, measuring the size of a community garden, or assessing the condition of public spaces. This would not only give students an opportunity to directly engage with community issues but also allow them to gather relevant data that can be used to inform their projects. By leveraging AR technology, students can gain a more immersive and interactive learning experience, fostering both creativity and practical skills in community engagement.



#### Tools:

- Meta Quest: Meta Quest is a stand-alone VR headset that does not require a computer or gaming console.
- HTC Vive: HTC Vive is a high-end VR headset that requires a powerful computer and a gaming-grade graphics card.



Co-funded by the European Union

- Oculus Rift: Oculus Rift is a discontinued VR headset that was previously owned by Facebook.
- Windows Mixed Reality: Windows Mixed Reality is a platform that supports a variety of VR headsets, including the HP Reverb G2, Samsung Odyssey+, and Lenovo Explorer.
- Google ARCore: Google ARCore is an open-source platform that allows developers to create AR experiences for Android devices.
- Apple ARKit: Apple ARKit is a platform that allows developers to create AR experiences for iOS devices.
- Unity: Unity is a game engine that can be used to create both VR and AR experiences.
- Unreal Engine: Unreal Engine is a game engine that can also be used to create VR and AR experiences.

#### 3. Interactive Online Simulations [29]

To create immersive simulations for students, design activities that allow them to step into the roles of community engagement professionals, such as community organizers, social workers, or environmental activists. These simulations should be designed to replicate real-world challenges and scenarios that these professionals might face in their day-to-day work. For example, students might be tasked with managing community disputes, developing social impact projects, or addressing social inequities. Each simulation should include decision-making prompts and branching paths, enabling students to explore various strategies and see the outcomes of their decisions. This will allow students to experience the consequences of their actions in a controlled environment, providing a safe space for learning from mistakes and successes. By incorporating feedback throughout the simulation, students will be encouraged to reflect on their decisions, receive guidance on improving their strategies, and ultimately develop more effective community engagement practices. To enhance



the authenticity and relevance of the learning experience, connect the simulations to real-world data and case studies. For instance, students could analyse actual data sets related to community needs, environmental challenges, or social issues. Additionally, integrating interviews with community members or consultations with experts will provide students with deeper insights and perspectives, helping them understand the complexities of community engagement from a practical standpoint. This approach will not only make the simulations more realistic but also bridge the gap between theory and practice, ensuring that students are well-prepared for their future careers in community engagement.

#### **Digital Simulation Platforms:**

- SimuLearn offers a wide range of interactive simulations for various DICE disciplines, including digital marketing, web development, and user experience design.
- GamEffective provides a platform for creating and deploying customized interactive simulations, enabling instructors to tailor simulations to specific course objectives and student needs.
- Learnosity offers a suite of tools for creating and delivering interactive simulations, including drag-and-drop activities, simulations, and assessment questions.

#### Hardware-Based Simulation Platforms:

- HaptX provides haptic feedback gloves that allow users to experience virtual objects and environments with a sense of touch, enhancing the realism of simulations.
- VIVE Pro Eye combines a VR headset with eye-tracking technology, enabling advanced interactions and personalized learning experiences.
- Microsoft HoloLens 2 is a mixed reality headset that overlays digital elements onto the real world, creating immersive and interactive learning environments.



Co-funded by the European Union

#### Serious Games Platforms:

- Unreal Engine is a game engine widely used to create interactive simulations and serious games, offering advanced graphics, physics, and artificial intelligence capabilities.
- Unity is another popular game engine that can be used to develop simulations and serious games, particularly for mobile platforms.
- Construct 3 is a drag-and-drop game development platform that simplifies the process of creating simulations and serious games without requiring programming expertise.

#### **Case Studies** [21, 22, 23]

When selecting case studies, it is essential to include a diverse range of community engagement contexts, such as social justice initiatives, environmental campaigns, and disaster relief efforts. These cases should be used to provide students with a comprehensive understanding of the various approaches and challenges that arise in different types of community engagement. Involving students in the analysis of these case studies will enable them to identify key issues, evaluate strategies, and propose potential solutions to the challenges presented. Additionally, case studies serve as an excellent tool for facilitating discussions on important topics such as ethical considerations, cultural sensitivities, and the overall impact of community engagement initiatives. These discussions will encourage students to critically assess the approaches taken in each case and understand the broader implications of community-focused work.





Students should also be encouraged to connect these case studies to their own experiences, perspectives, and values, which can enrich their learning and promote deeper engagement with the material. To further enhance the learning experience, students can be provided with opportunities to create their own case studies, based on their own research, observations, or community engagement projects. This not only promotes active learning but also allows students to apply theoretical concepts to practical, real-world situations. The case studies from three prominent European universities—University of Amsterdam, University of Barcelona, and University College Dublin—serve as valuable examples of successful community engagement through digital platforms, online portals, and social media campaigns. These initiatives include collaborative projects, the development of accessible educational resources, and efforts to foster unity and shared societal visions. Studying these examples will allow students to draw insights from well-established practices and inspire them to design their own community engagement strategies.

## 4. Utilize social media platforms to facilitate collaboration, discussions, and peer-to-peer learning. [29, 30]

Teachers should create dedicated social media groups or pages for your DICE courses to build an interactive learning environment. Establish a private Facebook group or Slack channel where students can engage in discussions, share resources, and collaborate on projects. Use Twitter to create hashtags specific to your DICE courses, encouraging students to post updates, ask questions, and share reflections. Leverage LinkedIn to connect with industry professionals and communities of practice, enriching the course experience with real-world connections. Encourage both asynchronous and synchronous discussions by posting questions, prompts, and discussion topics on social media platforms. Schedule live Q&A sessions or online group discussions using platforms like Zoom or Google Meet to offer immediate interaction. Utilize social media features like polls, quizzes, and surveys to gather



feedback and keep students actively involved in discussions. Foster peer-to-peer learning and support by creating online forums or groups where students can ask questions, seek help, and offer mutual support. Organize peer-to-peer mentoring programs or buddy systems, connecting students with peers who share similar interests or expertise. Encourage students to share their learning experiences, tips, and resources through social media posts or blog entries, strengthening the sense of community. Integrate social media into course activities and assignments by requiring students to create posts or infographics that showcase their learning outcomes or project findings. Assign group projects that involve collaborating on social media campaigns or community engagement initiatives. Incorporate social media analytics into assignments to assess student engagement and measure the impact of their work. Promote responsible social media usage and digital citizenship by establishing clear guidelines for ethical conduct and online behavior. Provide training on digital citizenship, cyberbullying, and copyright laws to ensure that students navigate the online world responsibly. Encourage respect for diverse perspectives and help students avoid spreading misinformation or engaging in harmful online behavior. Finally, emphasize real-world problem-solving and community engagement in your courses. Develop projects that align with the needs and challenges of local communities. Partner with community organizations to provide students with hands-on experience addressing real-world issues. Encourage students to develop innovative solutions, applying their knowledge to create positive community impact, and foster crosscultural understanding through these engagement projects.

#### Tools:

• Facebook: Facebook is a popular social media platform with a large user base. It can be used to create a DICE course page, share announcements, and connect with students.



Co-funded by the European Union

- Twitter: Twitter is a microblogging platform that allows users to share short messages, known as tweets. DICE instructors can use Twitter to share updates about their courses, ask questions, and connect with other DICE professionals.
- Instagram: Instagram is a photo and video sharing platform that is popular among younger generations. DICE instructors can use Instagram to share images and videos from their courses, showcase student work, and connect with potential students.
- LinkedIn: LinkedIn is a professional networking platform where DICE instructors can connect with potential employers and students. It can also be used to share industry news and resources.
- YouTube: YouTube is a video-sharing platform where DICE instructors can upload lectures, tutorials, and other course materials. It can also be used to create video-based assignments and projects.

## 5. Develop course projects that align with community needs and challenges [31]

Imagine you're in a course designed to make a real-world impact. In this course, you're tasked with identifying local communities or organizations facing specific challenges. You'll design projects that not only address these issues but also provide solutions that directly benefit the community. You'll have the opportunity to work closely with community members and organizations, gathering their feedback and refining your project proposals. The best part? Your project outcomes will be evaluated as part of your course assessment, ensuring that your work leaves a lasting and meaningful impact. As you progress, you'll partner with local organizations and community groups, collaborating with nonprofits and social enterprises. These community experts will guide you as you develop your projects, and in turn, you'll be able to share your expertise with them. This two-way exchange of knowledge will be a key part of your learning experience. You'll also have opportunities to immerse yourself



in community events, workshops, and training sessions organized by these partners, fostering deeper connections and learning opportunities. Innovation will be at the heart of your work. You'll be encouraged to think creatively and challenge existing solutions, proposing new, more effective, and sustainable approaches. Brainstorming, prototyping, and testing your ideas in a supportive environment will help you refine your solutions. Throughout the course, your innovative work will be celebrated—whether through presentations, workshops, or community demonstrations, showcasing how you've contributed to solving real-world problems. In addition to focusing on local solutions, you'll also engage with diverse cultures and backgrounds. The course materials and assignments will encourage you to incorporate diverse perspectives, and you'll have the chance to work with community members from different backgrounds. Field trips, cultural exchanges, and community service projects will promote cross-cultural understanding, while workshops on intercultural communication, empathy, and respectful dialogue will deepen your appreciation for diversity.

#### **Community Engagement Platforms**

- <u>DICE</u> Digital Community Engagement Accelerator for student learning and socio-economic impact. The Digital Accelerator is highly innovative as it is directed to support you as university educators and course directors in the process of innovating your teaching practices.
- BetterLife Bringing Excellence to Transformative Engaged Research in Life Sciences through Integrated Digital Centres and toolkits. Its primary mission is to assist early career researchers (ECRs) in amplifying social engagement within your research endeavours, enabling you to actively address societal challenges across varied regional ecosystems. Comprising a range of resources, the centre incorporates toolkits – comprising diverse tools tailored to support socially engaged research – a capacity-building structure to enhance your competencies and skills,



Co-funded by the European Union

and additional features that foster a seamless connection between science and society.

- <u>RiecoLab</u> is a novel way research and development are being performed in universities to ensure immediate commercialization (spin-offs) and involvement of a large number of internal stakeholders (academic and non-academic staff, students).
- <u>GlobalGiving</u> connects you and organizations with grassroots nonprofits around the world, providing a platform to support projects addressing a wide range of social, environmental, and economic challenges.
- **IdeaScale** is a crowdsourcing platform that facilitates collaboration between you and communities to identify and address challenges. It allows you to submit ideas, vote for the most promising ones, and collaborate on solutions.
- **MySociety's** tools help you in local communities to engage with your governments and improve civic participation. Its platform, FixMyStreet, allows you to report local issues to local authorities.
- **Small World Projects** connects you, as travelers, with volunteer opportunities in developing communities. It provides a platform that finds projects aligned with your interests and skills, such as education, health, or environmental protection.
- **VolunteerMatch** connects you as volunteers with nonprofit organizations seeking assistance in various areas, including education, healthcare, animal welfare, and environmental conservation.

#### 6. Provide multiple pathways to success [32]

Acknowledge that you all learn in different ways and have varying strengths and weaknesses (Embrace Diverse Assessment Methods). Instead of relying solely on traditional assessment methods like exams, offer a variety of options that cater to diverse learning styles and provide multiple pathways to demonstrate mastery of concepts. Portfolios can encourage you all to compile a collection of your work,



including assignments, projects, and reflections, to showcase your progress and demonstrate your understanding of key concepts. Presentations may provide opportunities for you to present your ideas and findings to the class or a broader audience. This can be done through oral presentations, multimedia presentations, or interactive demonstrations. Creative projects will encourage you to apply your knowledge and skills in creative ways, such as designing prototypes, creating digital artworks, or developing mobile apps. Nurture a Supportive Learning Environment, create a classroom atmosphere where you all feel comfortable asking questions, seeking help, and taking risks. Implement flexible deadlines and accommodations to meet the needs of students with diverse learning styles and backgrounds. Offer individualized support and mentorship to help you all who may be struggling with the course material. Foster open communication and encourage you to ask questions without fear of judgment. Create a safe space for you to express your ideas, share your concerns, and seek guidance. Recognize and celebrate the achievements of all of you, regardless of your learning styles, backgrounds, or pace.



#### **Online Course Platforms**

 Coursera offers a vast library of online courses and specializations in various DICE disciplines, from web development to digital marketing. It provides flexible learning options, including self-paced courses, video lectures, and interactive exercises.



Co-funded by the European Union

- edX is another leading provider of online courses and MOOCs (massive open online courses) in DICE fields. It offers a variety of learning paths, including certificate programs, micro-credentials, and professional development courses.
- Khan Academy provides a free, comprehensive platform for learning STEM subjects, including DICE-related topics like programming, web development, and data science. It offers interactive tutorials, practice exercises, and personalized learning plans.
- ARIEES helps universities (and potentially adult training centres) improve their entrepreneurship courses by infusing impact investment know-how.

#### Skill Development Platforms

- Udacity focuses on providing industry-aligned skills training in DICE fields. It offers nanodegrees, which are intensive, focused programs that prepare you all for specific job roles.
- Codecademy offers interactive coding tutorials, coding challenges, and career tracks to help you learn programming languages and develop marketable skills.
- Pluralsight provides a subscription-based platform with a library of online courses, tutorials, and hands-on projects in various DICE disciplines.

#### Career Resource Platforms

- Indeed is a widely used job search platform that offers a wide range of DICE-related job postings. It allows you all to filter results by location, experience level, and specific skills.
- LinkedIn is a professional networking platform where DICE graduates can connect with potential employers, find job openings, and showcase your skills and experience.
- Glassdoor provides company reviews, salary information, and interview tips to help you all make informed career decisions.





Co-funded by the European Union

#### 7. Leverage technology to enhance collaboration and communication [33]

Create online forums and discussion boards, establish dedicated discussion forums for specific topics, projects, or course modules. In a DICE course on social entrepreneurship, establish a forum for you all to discuss your ideas for social impact projects, seek feedback from peers, and collaborate on project proposals. Encourage you to post questions, share ideas, and engage in discussions with your peers and instructors. Prompt you to post questions about course concepts, share your perspectives on current events, and engage in discussions about ethical considerations in digital community engagement. Set up threaded conversations to facilitate organized and focused discussions. Use threads to categorize discussions by topic, project, or class module, ensuring that conversations remain focused and easy to follow. Implement features like polls, surveys, and annotations to promote active participation and peer-to-peer learning. Use polls to gather your opinions on course topics, surveys to assess your understanding, and annotations to highlight key points in discussions.

#### Tools:

- Reddit is a massive online forum with communities dedicated to various topics, including DICE fields like web development, digital marketing, and game development. You all can post questions, share resources, and engage in discussions with others.
- **Stack Overflow** is a Q&A website specifically for programmers, but it also has a large community of DICE professionals who can answer questions and provide guidance.
- **DevForum** is the official forum for the Unity game engine, but it is also a valuable resource for DICE professionals using other game engines or working in related fields.



Co-funded by the European Union

• **BetterLife (Human) Ecosystem Integration Lab** aims to facilitate collaboration, knowledge exchange, and engagement within the life sciences research community and foster early career researchers' development in the life science field.

Implement video conferencing tools, schedule regular virtual meetings for group projects, class discussions, and one-on-one consultations. Conduct weekly virtual meetings for group project discussions, schedule virtual office hours for you all to seek individualized guidance and organize virtual guest lectures with experts in the field of DICE. Utilize screen sharing capabilities to present work, collaborate on documents, and showcase projects. Leverage screen sharing to showcase project prototypes, collaborate on group presentations, and present findings from research projects. Enable real-time chat features for instant communication and question-answer sessions. Use chat features to facilitate quick questions and answers during virtual meetings, encourage informal discussions between you all, and provide support for those who may be shy or hesitant to speak up. Record and share video meetings for those who miss sessions or need to review discussions. Record video meetings to provide you with access to missed sessions, enable you to review discussions at your own pace, and create a repository of valuable learning content.

#### Tools:

- **Zoom** is a popular video conferencing tool that offers a variety of features, including screen sharing, recording, and breakout rooms.
- **Google Meet** is a cloud-based video conferencing tool that is integrated with other Google Workspace applications.
- **Microsoft Teams** is a collaboration platform that includes video conferencing, chat, and file sharing capabilities.



Co-funded by the European Union

Utilize cloud-based collaboration platforms, share a cloud-based folder containing course handouts, lecture notes, and additional resources, allowing you all to access them from anywhere and collaborate on project documents simultaneously. Implement real-time editing tools for collaborative document creation and revision. Use real-time editing tools to allow you all to work on project documents simultaneously, track changes, and provide feedback in real-time. Integrate comments and annotations to provide feedback and engage in discussions on shared documents. Use comments and annotations to provide detailed feedback on your work, encourage peer-to-peer feedback, and foster discussions on specific aspects of projects. Enable version control to track changes and revert to previous versions if needed. Implement version control to maintain a record of all changes made to documents, allow you all to revert to previous versions if necessary, and track the evolution of project work.

#### Tools:

- **Workspace** is a suite of cloud-based productivity tools, including Gmail, Calendar, Drive, Docs, Sheets, Slides, and Forms. It allows you all to collaborate on documents, presentations, spreadsheets, and other files in real-time.
- Microsoft 365 is a similar suite of cloud-based productivity tools, including Outlook, Teams, OneDrive, Word, Excel, PowerPoint, and OneNote. It offers similar functionalities as Google Workspace and is a popular choice for businesses and organizations.
- **Asana** is a project management platform that helps you all organize, plan, and track your tasks. It allows you to create projects, assign tasks, set deadlines, and track progress.



Co-funded by the European Union

Employ technology for real-time feedback and personalized learning interventions, utilize online quizzes to assess your comprehension of course concepts, conduct polls to gauge your opinions on specific topics, and incorporate formative assessments throughout the course to identify areas for improvement. Provide immediate feedback to you through automated grading or personalized comments from instructors. Utilize automated grading tools for multiple-choice quizzes, provide personalized comments on written assignments, and offer feedback on your projects. Use adaptive learning systems to personalize course materials and provide targeted interventions based on your individual needs. Implement adaptive learning systems to tailor course materials and activities to each of your learning styles and paces, provide personalized feedback based on your performance, and offer additional resources or support for struggling students. Implement the usage of chatbots or virtual assistants to offer guided support, answer questions, and provide personalized learning recommendations. Utilize chatbots or virtual assistants to provide you with 24/7 support, answer common questions about course materials, and suggest personalized learning resources based on your current progress.

#### Tools:

- **Kahoot!** is a gamified quiz platform that allows you to create interactive quizzes, surveys, and presentations. It makes learning more engaging and fun for you all.
- **Socrative** is another gamified quiz platform that enables you to create interactive quizzes, polls, and exit tickets. It is particularly useful for formative assessment and feedback.
- **SurveyMonkey** is a survey platform that lets you create surveys, polls, and questionnaires to gather data from students. It can be used for formative assessment, research, and community engagement.



Co-funded by the European Union

- **Mentimeter** is a presentation platform that allows you to create interactive presentations with polls, questions, and quizzes. It can make presentations more engaging and interactive for you all.
- **Forms** is a free online tool that enables you to create surveys, quizzes, and questionnaires. It integrates with other Google Workspace applications and can be easily shared and embedded into other documents or websites.
- **Quizizz** is a gamified quiz platform that lets you create interactive quizzes, challenges, and tournaments. It is particularly popular for formative assessment and promoting friendly competition among you all.
- **Quizlet** is a digital flashcard platform that lets you create and share flashcards, study sets, and games. It's useful for vocabulary building, concept memorization, and practice exercises.
- **Poll Everywhere** is a cloud-based polling platform that you can use to create multiple-choice quizzes and polls. It offers a variety of question types and allows instructors to collect your responses in real-time. It can also be integrated with other learning management systems (LMS).
- **CheckMyAnswers** is a free online tool that you can use to grade multiple-choice quizzes and exams. It is particularly helpful for grading large numbers of student responses quickly and efficiently.

In the following there are some examples of adaptive learning systems (ALS) platforms that can be used to personalize course materials in education:

**Knewton** is a cloud-based platform that delivers personalized learning experiences for you all by adapting to your individual needs and learning styles. It uses adaptive algorithms to select the most appropriate learning content based on your progress, performance, and preferences.

Adapt2Learn is another cloud-based platform that provides adaptive learning solutions for higher education. It offers a variety of features, including personalized learning



paths, adaptive assessments, and data-driven reporting. Adapt2Learn is used by schools and universities around the world to improve your engagement and learning outcomes.

**Pearson SuccessPath** is an adaptive learning platform integrated with Pearson's MyLabs and Mastering platforms. It provides personalized instruction and assessment for a variety of DICE courses, including web development, digital marketing, and data science.

**Amazon Alexa Skills Kit (ASK)** is a platform that allows developers to create voicecontrolled skills for Amazon Alexa devices. DICE educators can use ASK to create skills that provide you all with access to course materials, answer questions, and give feedback on assignments.

**Google Dialogflow** is another platform that allows developers to create conversational interfaces. DICE educators can use Dialogflow to create chatbots that interact with you all in natural language, answer questions, and provide support.

**Microsoft Bot Framework** is a platform that allows developers to create and publish chatbots and conversational experiences. DICE educators can use Bot Framework to create chatbots that integrate with Microsoft services, such as Office 365 and Azure.

**Rasa** is an open-source framework for building conversational AI applications. DICE educators can use Rasa to create chatbots tailored to your specific course needs and questions.

**Wit.ai** is a cloud-based platform that provides natural language processing APIs. DICE educators can use Wit.ai to build chatbots that understand and respond to your natural language inputs, making them more user-friendly for you all.

#### 8. Encourage creativity and innovation [34]

**Create a stimulating and supportive environment for creativity,** incorporate activities that encourage divergent thinking, such as brainstorming sessions, mind

Co-funded by the European Union

maps, and design thinking exercises. For instance, in a DICE course on digital marketing, facilitate a brainstorming session to generate creative ideas for a social media campaign for a local non-profit organization. Encourage you all to question assumptions, challenge conventional thinking, and explore unconventional solutions. In a DICE course on data visualization, challenge you to create visually appealing and impactful data visualizations using unconventional techniques. Provide opportunities for you to work in diverse teams and collaborate with peers from different backgrounds and perspectives. In a DICE course on mobile app development, assign you to cross-disciplinary teams of developers, designers, and marketing specialists.

Provide opportunities for experimentation and exploration, encourage you to experiment with different technologies, tools, and platforms. In a DICE course on web development, provide you with access to a variety of programming languages, frameworks, and design tools to experiment with different approaches. Challenge you to create prototypes, mock-ups, or working models of your ideas. In a DICE course on user experience design, require you to create low-fidelity prototypes of mobile apps to test user interactions and gather feedback. Provide opportunities for you to present your work and receive feedback from peers and instructors. Organize regular design critique sessions, hackathons, or portfolio reviews to showcase your work and encourage peerto-peer feedback.



**Foster a culture of innovation and risk-taking in the classroom,** emphasize the importance of failure as a learning opportunity. Create a safe space for you to experiment with new ideas without fear of judgment or failure. Reward you for taking risks, trying new things, and pushing the boundaries of your creativity. Recognize and



celebrate achievements that demonstrate your willingness to experiment and innovate. Incorporate real-world challenges and case studies that encourage you to apply your creativity to solve real-world problems. In a DICE course on community engagement, require you to develop and implement a social innovation project to address a community need.

Celebrate creativity and recognize your unique contributions, host exhibitions, workshops, or competitions to showcase your work and celebrate creativity. Organize a digital art festival to showcase student-created digital artwork, animations, or interactive installations. Invite industry experts, creative professionals, and thought leaders to the classroom to share their experiences and inspire you. Organize guest lectures with designers, developers, social entrepreneurs, and other creative individuals to showcase the diversity of career paths in DICE. Establish a gallery or archive to showcase your work and provide a platform for sharing creativity with the larger community.

In conclusion, community engagement is not just a noble endeavor; it is a strategic imperative for European universities. By embracing DICE, universities can enhance their impact, strengthen their ties to their communities, and contribute to a more prosperous and equitable society.



#### 10. Benefits for Students [35, 36]

By immersing yourselves in courses that have been reimagined to embrace the power of digital community engagement, you can embark on a transformative educational journey. Digital community engagement fosters a more personalized and collaborative learning environment, leading to improved engagement, a deeper understanding of course material, and enhanced knowledge retention.

1. Enhanced Learning Outcomes, digital community engagement creates a collaborative learning environment where you can share insights, ask questions,



Co-funded by the European Union

and receive feedback from both peers and instructors. This interactive approach encourages active participation, leading to a deeper understanding of course concepts. The engaging nature of digital community engagement activities helps you retain information more effectively. By actively participating in discussions, collaborating on projects, and receiving real-time feedback, you are more likely to internalize key concepts and apply them to your learning.

- 2. Developed Critical Thinking and Problem-Solving Skills, online communities give you access to diverse perspectives, challenging your assumptions and encouraging you to think critically about various viewpoints. Exposure to different thought processes fosters your critical thinking and problem-solving abilities. Participating in group projects and discussions within digital communities allows you to practice collaborative problem-solving. Through teamwork and shared responsibilities, you will identify problems, generate solutions, and make informed decisions.
- 3. Strengthened Communication and Collaboration Skills online discussions and group projects provide opportunities to refine your written and verbal communication skills. You will learn to articulate your ideas clearly, respond effectively to feedback, and collaborate to achieve shared goals. Interacting with peers from diverse backgrounds in online communities enhances your empathy and interpersonal skills. You will actively listen, respect different perspectives, and navigate social interactions with respect and effectiveness.
- 4. Increased Motivation and Engagement digital community engagement enables instructors to tailor learning experiences to your needs and preferences. These personalized approaches boost your motivation and deepen your engagement by fostering a stronger connection to the learning process. Online tools and platforms offer real-time feedback and support, allowing you to address questions quickly and receive guidance. This immediacy enhances your motivation and encourages active participation.
- 5. **Broadened Perspectives and Intercultural Understanding** online communities connect you with students globally, exposing you to diverse cultures, traditions, and viewpoints. This cross-cultural exchange promotes intercultural understanding and



Co-funded by the European Union

empathy. Digital community engagement facilitates collaboration on projects and initiatives with peers from different countries and backgrounds. These international experiences broaden your perspectives and prepare you for success in a globalized workforce.





Co-funded by the European Union

# Part 2: Step-by-Step Guidelines on how to use the DICE ACCELERATOR

The DICE Project innovatively adopts the accelerator program model, typically associated with start-up development, to enhance digital community engagement initiatives. This project creates a scalable and adaptable acceleration program designed to bolster community engagement efforts. It specifically targets the enhancement of student learning experiences and contributes positively to socio-economic development through digital means. By breaking down the complexities of digitalizing community engagement into manageable components, the DICE Project empowers university educators and program directors. It provides them with the tools and methodologies necessary to design and implement effective digital community engagement courses, fostering innovative teaching practices and generating significant social impact.

#### **Accelerator format**

The <u>DICE Accelerator</u> is a web-based platform that offers educators and course directors a structured and facilitated self-guided way to create their individual digital CE courses. The platform breaks down the complex question of "how digital CE can support student learning and social impact generation and build this knowledge into daily courses" by using six phases following the ADDIE Model.

The ADDIE Model is a design framework for instructional designers and training developers to develop courses. It structures the process into Analyse, Design, Develop, Implement, and Evaluate, to easily guide educators into designing courses. The DICE



Co-funded by the European Union

Accelerator follows these stages to cover the necessary steps to embed CE into digital courses. This is possible because the platform provides a learning and collaboration environment to develop ideas into implementable digital CE solutions.

The <u>DICE Accelerator</u> is structured in three sections (in each of the phases):

- **Description:** presents general information about the phase, including characteristics, objectives, and tools.
- **Tools:** includes 3-5 tools for each phase. Each tool has a specific goal and a short description.
- **Video:** provides a detailed explanation of the usage of tools using examples



#### Step by step guide on using the Accelerator phases and resources

#### 1. Analysis



**Understanding Needs and Objectives**: As a professor, you begin by carefully examining your course context. Using the **DICE Accelerator resources**, you explore the **DICE value maps** to identify the engagement values that align with your students' needs and your desired social impact. This analysis phase ensures you have a clear understanding of your audience and the goals of your course.

In analysis, you dig deeper into **Phase I: Value Selection**. Use the DICE Accelerator to select a key engagement value that forms the foundation of your course design. By aligning this value with your students' needs or the community's needs, you create a meaningful framework that will guide the rest of your planning. This ensures your course maximizes its potential to enhance student learning and create positive social impact.

#### 2. Design

**Structuring Your Course**: With your value selected, you turn to the **DICE Accelerator resources** to start structuring your course. You outline core topics, choose delivery methods, and plan interactive activities that keep learners engaged. Your design phase ensures that every element of the course aligns with your chosen engagement value. Here we have two phases:

**Phase II: Learning Objectives**: In this phase, you use the **DICE Accelerator** to develop clear and specific **Learning Objectives (LOs)**. These objectives are crafted to boost digital community engagement and are tailored to meet the needs you identified earlier. They set the direction and help your students see the bigger purpose of the course.

**Phase III: Methodology Design**: Here, you leverage the **DICE Accelerator's Manual guidance** to design the teaching methodology. You review various instructional strategies and choose the one that best suits your course and your students. This phase includes planning materials, activities, and learning pathways that bring your engagement objectives to life.



Co-funded by the European Union

#### 3. Develop

**Creating Course Materials:** Now it's time to create the materials that will bring your plan into action. You use the **DICE Manual suggested tools** to help you develop presentations, online modules, workshop activities, and multimedia resources. Your focus is on making these materials engaging and relevant to digital community engagement.

Lean into **Phase IV: Content Development**. Using the **DICE Accelerator resources**, you integrate digital community engagement content directly into your course. You refine the syllabus and fine-tune each lesson to ensure your course provides real-world value and encourages authentic engagement by getting insights from the DICE experience heighted in the **DICE Best practice report and the Handbook**.

#### 4. Implement

**Delivering Your Course**: When it's time to deliver your course, you rely on the structure and resources you've built. You facilitate activities, discussions, and interactive elements that connect students to digital community engagement, making sure your course is dynamic and meaningful.

#### 5. Evaluate

**Measuring Effectiveness:** After teaching, you gather feedback and measure how well your course met its engagement goals. The **DICE Accelerator** offers practical tools for collecting feedback through surveys or interviews, helping you assess changes in student knowledge and attitudes.

Review Phases V and VI:

**Phase V: Assessment:** You use the **DICE Accelerator** to evaluate your students' learning outcomes. It provides assessment tools that help you see how students apply



Co-funded by the European Union

digital community engagement in practice, ensuring they're making meaningful connections.

**Phase VI: Feedback and Modification:** Finally, you use the **DICE Accelerator** to refine your course based on the feedback you've collected. This phase helps you improve future iterations of your course—enhancing accessibility, relevance, and impact for your students and your community.

To enhance usability, the <u>DICE Accelerator</u> incorporates a series of instructional videos that demonstrate how to utilize each tool effectively. These videos serve as introduction to each phase of the acceleration process, explaining objectives and key considerations, they also ensure that educators can see the tools in action, helping bridge the gap between theoretical frameworks and practical implementation.

#### **Case Study: The Accelerator in Action**

Dr. Alex has been teaching Environmental Science at the university for over 15 years. They feel it's time to refresh their course to better connect it to real-world issues. They're eager to integrate digital community engagement (DICE) into their curriculum where students engage with communities (local or online) using digital tools to address environmental challenges. After discussing this with colleagues, Dr. Alex learns about the DICE Accelerator and decides to give it a try.

Getting Familiar: Dr. Alex logs in to the Accelerator platform and starts by watching the Video Overview and the DICE Manual videos to understand the features and benefits. Once confident navigating the platform, they head to the Learning Area to explore the Value Maps and familiarize themselves with the six phases of the Accelerator.

**Phase I: Value Selection:** In this phase, Dr. Alex identifies what social impact their updated Environmental Science course should have, and which student skills will amplify this impact. They use:



Co-funded by the European Union

- The Social Impact Value Finder to pinpoint the course's potential impact, and
- The **Student Learning Value Finder** to highlight skills for their students to develop.

For this course, Dr. Alex identifies **sustainable practices** (social impact) and **critical thinking about environmental challenges** (student learning) as key values.

**Phase II: Learning Objectives:** Next, Dr. Alex sets specific learning objectives, incorporating digital engagement strategies. They watch the video in the **Learning Objectives** phase to guide them in crafting objectives that combine environmental science content with digital community engagement.

**Phases III and IV: Methodology and Content Development:** Dr. Alex dives into the resources, videos, and examples offered by the **DICE Accelerator** to build a creative methodology. They decide to integrate a **community-based digital mapping project**:

- Students will use digital mapping tools (like Google Earth or GIS platforms) to identify local environmental issues.
- They'll collaborate via online platforms (e.g., Slack, WhatsApp) to coordinate their work.
- Students will reach out to local community groups online, gathering insights and stories about issues such as waste management, green spaces, or water pollution.

Each group will then propose a digital solution or initiative, like creating an **interactive digital campaign, virtual awareness events**, or **online petitions** to address the issue.

**Phase V: Assessment:** To assess the projects, Dr. Alex adopts digital tools that support collaborative evaluation. They use **Padlet** to allow each group to document their process—highlighting how they engaged with the community, what insights they gained, and how feasible their digital solutions are.



Co-funded by the European Union

**Phase VI: Feedback:** To refine the course further, Dr. Alex collects feedback from students using digital tools like **Moodle** or **Google Forms**. Students share their experiences—what worked, what challenges they faced, and what digital tools or approaches they found most useful. Dr. Alex uses this feedback to adjust the next iteration of the course.

**SOLUTION to a Digital Community Engagement Course:** Students start by selecting an environmental issue in their local or online communities—this might be plastic waste, air pollution, biodiversity conservation, or green transportation. Using digital tools, they map the issue, gather community input, and propose a specific, actionable digital solution—like an online environmental education campaign, a digital platform for sharing green practices, or a virtual volunteer program.

The **DICE Digital Accelerator** empowers educators like Dr. Alex to integrate digital tools into their courses, fostering deeper community engagement and real-world impact. By leveraging a wealth of digital resources, strategies, and interactive methodologies, professors can turn their traditional lectures into vibrant, 21st-century learning experiences—enhancing both community impact and student learning outcomes. The <u>DICE Accelerator</u> transforms the challenge of integrating digital community engagement into higher education by providing a structured, easy-to-follow process. Through its comprehensive toolkit, instructional videos, and real-world applications, it empowers educators to design and implement courses that enhance student learning while driving meaningful social change. By following the six-phase approach, instructors can confidently develop and refine their digital CE initiatives, ensuring lasting impact in both academia and society.



Co-funded by the European Union



#### **References:**

1. Aguilar-Gaxiola, S., et al. (2022). Assessing meaningful community engagement: A conceptual model to advance health equity through transformed systems for health. NAM perspectives, 2022.

2. Menon, S., & Suresh, M. (2020). Synergizing education, research, campus operations, and community engagements towards sustainability in higher education: A literature review. International Journal of Sustainability in Higher Education, 21(5), 1015-1051.

3. Fissi, S., et al. (2021). The path toward a sustainable green university: The case of the University of Florence. Journal of Cleaner Production, 279, 123655.

4. Tan, R. K., Wu, D., Day, S., Zhao, Y., Larson, H. J., Sylvia, S., ... & Tucker, J. D. (2022). Digital approaches to enhancing community engagement in clinical trials. NPJ digital medicine, 5(1), 37.

5. Mountain, A., et al. (2020). Canadian stroke best practice recommendations: Rehabilitation, recovery, and community participation following stroke. Part two: Transitions and community participation following stroke. International Journal of Stroke, 15(7), 789-806.

6. Fitzgerald, H. E., et al. (2020). The centrality of engagement in higher education. In H.E. Fitzgerald et al. (Eds.), Building the Field of Higher Education Engagement (pp. 201-219). Routledge.



Co-funded by the European Union

7. Network of Experts on Social Aspects of Education and Training. (2020). Community Engagement: A One-Pager. Retrieved from <u>https://nesetweb.eu/wp-</u> <u>content/uploads/2020/07/NESET\_OnePager\_CommunityEngagement.pdf</u>

8. University World News. (2021). Engaging with the Local Community: Strategies for Universities. Retrieved from https://www.universityworldnews.com/post.php?story=2021090314582245

9. Carayannis, E. G., & Morawska-Jancelewicz, J. (2022). The futures of Europe: Society 5.0 and Industry 5.0 as driving forces of future universities. Journal of the Knowledge Economy, 13(4), 3445-3471.

10. Avram, G. (2019). This Is Our City! Urban Communities Re-appropriating Their City: Digital Media and Collaborative City-Making in the Network Society. 10.1007/978-981-13-2694-3\_7.

11. de Waal, M., Lange, M., & Bouw, M. (2017). The Hackable City: Citymaking in a Platform Society. Architectural Design, 87(4), 50-57. 10.1002/ad.2131.

12. Virtual Days. (n.d.). The Role of Virtual Events in Education: Expanding Horizons. Retrieved from <u>https://www.virtualdays.com/the-role-of-virtual-events-in-education-expanding-horizons/</u>

13. Ćulum, B., Turk, M., & Ledić, J. (2015). Academics and community engagement: Comparative perspective from three European countries. Academic work and careers in Europe: Trends, challenges, perspectives, 133-150.

14. Universitat Oberta de Catalunya. (n.d.). Innovative Ways to Utilize Virtual Events for Customer Acquisition. Retrieved from <a href="https://aicontentfy.com/en/blog/innovative-ways-to-utilize-virtual-events-for-customer-acquisition">https://aicontentfy.com/en/blog/innovative-ways-to-utilize-virtual-events-for-customer-acquisition</a>

15. CIVIS - European Civic University. (n.d.). CIVIS Virtual Mobility Handbook. Retrieved from <a href="https://civis.eu/storage/files/civis-virtual-mobility-handbook.pdf">https://civis.eu/storage/files/civis-virtual-mobility-handbook.pdf</a>

16. Benneworth, P. (2018). Definitions, approaches and challenges to community engagement. Mapping and Critical Synthesis of Current State-of-the-Art on 39, 16.



Co-funded by the European Union

17. Amsterdam Smart City. (n.d.). Retrieved from https://amsterdamsmartcity.com/

18. University of Amsterdam. (n.d.). Responsible Digital Transformations. Retrieved from https://www.uva.nl/en/about-the-uva/about-the-university/strategy/theme-basedcollaboration/responsible-digital-transformations.html?cb

19. de Waal, M., Lange, M., & Bouw, M. (2017). The Hackable City: Citymaking in a Platform Society. Architectural Design, 87, 50-57. 10.1002/ad.2131.

20. Amsterdam University of Applied Sciences. (n.d.). Organising Smart City Projects. Retrieved from <u>http://www.hva.nl/binaries/content/assets/subsites/kc-be-</u> carem/assets\_11/organising\_smart\_city\_projects.pdf

21. University of Barcelona. (2021). Memòria d'activitats i indicadors de seguiment. Retrieved from <u>http://www.ub.edu/gtr/documents/memories/mem2021\_en.pdf</u>

22. University College Dublin. (n.d.). Impact Case Studies. Retrieved from <a href="https://www.ucd.ie/research/impact/casestudies/">https://www.ucd.ie/research/impact/casestudies/</a>

23. BlueCat Networks. (n.d.). Case Study: University College Dublin. Retrieved from <a href="https://bluecatnetworks.com/resources/case-study-university-college-dublin/">https://bluecatnetworks.com/resources/case-study-university-college-dublin/</a>

24. D2L. (n.d.). The University of the Future: How University College Dublin Sees It. Retrieved from <u>https://www.d2l.com/en-eu/blog/the-university-of-the-future-how-university-college-dublin-see-it/</u>

25. Enders, J., De Boer, H., File, J., Jongbloed, B., & Westerheijden, D. (2011). Reform of higher education in Europe. In Reform of higher education in Europe (pp. 1-10). Brill.

26. Chisale, P. B. (2019). Institutional practices shaping art education student-teacher attitudes towards community engagement (Doctoral dissertation, University of Pretoria).

27. Wolff, T. (2010). The power of collaborative solutions: Six principles and effective tools for building healthy communities. John Wiley & Sons.

28. Meier, E. B. (2021). Designing and using digital platforms for 21st century learning. Educational Technology Research and Development, 69(1), 217-220.



Co-funded by the European Union

29. Al-Gindy, A., Felix, C., Ahmed, A., Matoug, A., & Alkhidir, M. (2020). Virtual reality: Development of an integrated learning environment for education. International Journal of Information and Education Technology, 10(3), 171-175.

30. Beckem, J. M., & Watkins, M. (2012). Bringing life to learning: Immersive experiential learning simulations for online and blended courses. Journal of Asynchronous Learning Networks, 16(5), 61-70.

31. Casey, G., & Wells, M. (2015). Remixing to design learning: Social media and peer-topeer interaction. Journal of Learning Design, 8(1), 38-54.

32. Borup, J., Graham, C. R., West, R. E., Archambault, L., & Spring, K. J. (2020). Academic communities of engagement: An expansive lens for examining support structures in blended and online learning. Educational Technology Research and Development, 68, 807-832.

33. Gil, P. D., da Cruz Martins, S., Moro, S., & Costa, J. M. (2021). A data-driven approach to predict first-year students' academic success in higher education institutions. Education and Information Technologies, 26(2), 2165-2190.

34. Mokski, E., Leal Filho, W., Sehnem, S., & Andrade Guerra, J. B. S. O. D. (2023). Education for sustainable development in higher education institutions: an approach for effective interdisciplinarity. International Journal of Sustainability in Higher Education, 24(1), 96-117.

35. Owusu-Agyeman, Y. (2021). Transformational leadership and innovation in higher education: A participative process approach. International Journal of Leadership in Education, 24(5), 694-716.

36. Heidari, E., Mehrvarz, M., Marzooghi, R., & Stoyanov, S. (2021). The role of digital informal learning in the relationship between students' digital competence and academic engagement during the COVID-19 pandemic. Journal of Computer Assisted Learning, 37(4), 1154-1166.



Co-funded by the European Union

#### **ONLINE RESOURCES**

#### **Gamification Platforms**

1. Moodle: Bridges, P. C., & Hall, T. (2014). Active learning with Moodle: Engaging students in the classroom. Routledge.

2. Kahoot!: Transform your teaching and learning. Retrieved from <a href="https://kahoot.com/">https://kahoot.com/</a>

3. ClassDojo: Create a positive classroom and connect with parents. Retrieved from <a href="https://www.classdojo.com/">https://www.classdojo.com/</a>

4. Flipgrid: Share video clips and have conversations. Retrieved from <a href="https://info.flip.com/en-us.html">https://info.flip.com/en-us.html</a>

5. Nearpod: Engage your students with interactive presentations. Retrieved from <a href="https://nearpod.com/">https://nearpod.com/</a>

### Virtual Reality (VR) and Augmented Reality (AR) Platforms

1. Meta Quest 2. Retrieved from <a href="https://www.meta.com/guest/products/guest-2/">https://www.meta.com/guest/products/guest-2/</a>

2. HTC Vive: HTC. (n.d.). HTC Vive. Retrieved from https://www.vive.com/us/

3. Oculus Rift. Retrieved from https://www.meta.com/experiences/pcvr/

4. Windows Mixed Reality. Retrieved from <u>https://www.microsoft.com/en-us/mixed-reality/windows-mixed-reality</u>

- 5. Google ARCore. Retrieved from <u>https://developers.google.com/ar</u>
- 6. Apple ARKit 2. Retrieved from <u>https://developer.apple.com/documentation/arkit/</u>
- 7. Unity Technologies. Retrieved from <a href="https://unity.com/">https://unity.com/</a>
- 8. Unreal Engine: Epic Games. Retrieved from <a href="https://www.unrealengine.com/">https://www.unrealengine.com/</a>



Co-funded by the European Union

#### **Digital Simulation Platforms**

1. SimulLearn. Virtual simulations for education and training. Retrieved from <a href="https://www.simulearnllc.com/">https://www.simulearnllc.com/</a>

2. GamEffective. Retrieved from <u>https://talentedlearning.com/lms-vendor-</u> <u>directory/gameffective/</u>

3. Learnosity: Interactive simulations, assessment, and learning tools. Retrieved from <a href="https://learnosity.com/">https://learnosity.com/</a>

$$\sim\sim\sim\sim\sim$$

#### Hardware-Based Simulation Platforms

1. HaptX: Retrieved from <a href="https://haptx.com/">https://haptx.com/</a>

2. VIVE Pro Eye: HTC. VIVE Pro Eye. Retrieved from https://www.vive.com/sea/product/vive-pro-eye/overview/

3. Microsoft HoloLens 2: Microsoft. Microsoft HoloLens 2. Retrieved from <a href="https://learn.microsoft.com/en-us/hololens/hololens-multiple-users">https://learn.microsoft.com/en-us/hololens/hololens-multiple-users</a>

#### **Serious Games Platforms**

1. Unreal Engine: Epic Games. Unreal Engine. Retrieved from <a href="https://www.unrealengine.com/">https://www.unrealengine.com/</a>

2. Unity: Unity Technologies. Unity. Retrieved from https://unity.com/

3. Construct 3: Scirra. Construct 3. Retrieved from https://www.construct.net/en

#### **Social Media Platforms**



- 1. Facebook. Retrieved from <u>https://www.facebook.com/</u>
- 2. Twitter. Retrieved from <a href="https://twitter.com/?lang=en">https://twitter.com/?lang=en</a>
- 3. Instagram. Instagram. Retrieved from <a href="https://www.instagram.com/">https://www.instagram.com/</a>
- 4. LinkedIn. Retrieved from https://www.linkedin.com/login
- 5. YouTube. Retrieved from <a href="https://www.youtube.com/">https://www.youtube.com/</a>

#### **Community Engagement Platforms**

1. GlobalGiving (2023). Connecting people, ideas, and resources to address the world's most pressing challenges. Retrieved from <a href="https://www.globalgiving.org/">https://www.globalgiving.org/</a>

2. IdeaScale (2023). The leading crowdsourcing platform for innovation. Retrieved from <a href="https://ideascale.com/">https://ideascale.com/</a>

3. MySociety (2023). Empowering communities worldwide to make a difference. Retrieved from <u>https://www.mysociety.org/</u>

4. FixMyStreet (2023). Get things fixed in your area. Retrieved from <a href="https://www.fixmystreet.com/">https://www.fixmystreet.com/</a>

5. Small World Projects (2023). International volunteering and cultural exchange. Retrieved from <a href="https://www.smallworldproject.com/">https://www.smallworldproject.com/</a>

6. VolunteerMatch (2023). Connecting nonprofits and volunteers. Retrieved from <a href="https://www.volunteermatch.org/">https://www.volunteermatch.org/</a>



#### **Online Course Platforms**

1. DICE (2025). DICE – Digital Community Engagement Accelerator. Digital Community Engagement Accelerator for student learning and socio-economic impact. Retrieved from <u>https://www.diceaccelerator.eu/</u>



Co-funded by the European Union

2. Coursera (2023). Online courses and specializations from top universities and institutions. Retrieved from <a href="https://www.coursera.org/">https://www.coursera.org/</a>

3. edX (2023). Online courses and MOOCs from top universities and institutions. Retrieved from <a href="https://www.edx.org/">https://www.edx.org/</a>

4. Khan Academy (2023). Free interactive learning resources for K-12 and beyond. Retrieved from <a href="https://www.khanacademy.org/">https://www.khanacademy.org/</a>



#### Skill Development Platforms

6. Udacity (2023). Online nanodegrees and courses for industry-aligned skills. Retrieved from <a href="https://www.udacity.com/">https://www.udacity.com/</a>

7. Codecademy (2023). Learn to code for free online. Retrieved from <a href="https://www.codecademy.com/">https://www.codecademy.com/</a>

8. Pluralsight (2023). Online training and learning platform for technology professionals. Retrieved from <u>https://www.pluralsight.com/</u>

9. ARIEES helps universities (and potentially adult training centres) to improve their entrepreneurship courses by infusing impact investment know-how. Retrieved from <a href="https://ariees.eu/">https://ariees.eu/</a>



#### **Career Resource Platforms**

1. Indeed (2023). Online job search platform. Retrieved from https://www.indeed.com/

2. LinkedIn (2023). Professional networking platform. Retrieved from <a href="https://www.linkedin.com/">https://www.linkedin.com/</a>



Co-funded by the European Union



#### Forums

1. Reddit (2023). Online forum for communities and discussions. Retrieved from <a href="https://www.reddit.com/">https://www.reddit.com/</a>

2. Stack Overflow (2023). Q&A website for programmers and developers. Retrieved from <a href="https://stackoverflow.com/">https://stackoverflow.com/</a>

3. DevForum (2023). Official forum for the Unity game engine. Retrieved from <a href="https://unity.com/community">https://unity.com/community</a>

4. BetterLife (Human) Ecosystem Integration Lab (2023). Open-source platform for collaborative projects. Retrieved from <a href="https://betterlifetools.eu/">https://betterlifetools.eu/</a>

#### Online conference tools

1. Zoom (2023). Video conferencing platform. Retrieved from https://zoom.us/

2. Google Meet (2023). Video conferencing platform. Retrieved from <a href="https://meet.google.com/">https://meet.google.com/</a>

3. Microsoft Teams (2023). Cloud-based collaboration platform. Retrieved from <a href="https://www.microsoft.com/en-us/microsoft-teams/group-chat-software">https://www.microsoft.com/en-us/microsoft-teams/group-chat-software</a>

4. Workspace (2023). Cloud-based productivity suite. Retrieved from <a href="https://workspace.google.com/">https://workspace.google.com/</a>

5. Microsoft 365 (2023). Cloud-based productivity suite. Retrieved from <a href="https://www.office.com/">https://www.office.com/</a>

- 6. Asana (2023). Project management platform. Retrieved from https://asana.com/
- 7. Kahoot! (2023). Gamified quiz platform. Retrieved from https://kahoot.com/



Co-funded by the European Union

8. Socrative (2023). Real-time quiz and polling platform. Retrieved from <a href="https://b.socrative.com/login/student/">https://b.socrative.com/login/student/</a>

9. SurveyMonkey (2023). Online survey platform. Retrieved from <a href="https://www.surveymonkey.com/">https://www.surveymonkey.com/</a>

10. Mentimeter (2023). Interactive presentation platform. Retrieved from <a href="https://www.mentimeter.com/">https://www.mentimeter.com/</a>

11. Forms (2023). Online form creation tool. Retrieved from <a href="https://docs.google.com/forms/">https://docs.google.com/forms/</a>

12. Quizizz (2023). Gamified quiz platform. Retrieved from https://quizizz.com/

13. Quizlet (2023). Digital flashcard platform. Retrieved from <a href="https://quizlet.com/">https://quizlet.com/</a>

14. Poll Everywhere (2023). Engage your audience with live polls, quizzes, and discussions. Retrieved from [https://www.polleverywhere.com/]

#### Adaptive Learning Systems (ALS) Platforms

1. Knewton (2023). Personalized learning platform for higher education. Retrieved from [https://support.knewton.com/s/article/Knewton-Adaptive-Learning-and-How-it-s-Unique]

2. Adapt2Learn (2023). Adaptive learning platform for K-12. Retrieved from <a href="https://hcie.csail.mit.edu/research/adapt2learn/adapt2learn.html">https://hcie.csail.mit.edu/research/adapt2learn/adapt2learn.html</a>]

3. Pearson SuccessPath (2023). Adaptive learning platform for corporate training. Retrieved from [https://www.pearson.com/languages/educators/connected-englishlearning-program/adult/university-success.html]

4. Amazon Alexa Skills Kit (ASK) (2023). Platform for building voice-activated skills for Alexa devices. Retrieved from [https://developer.amazon.com/en-US/alexa/alexa-skills-kit]



Co-funded by the European Union

5. Google Dialogflow (2023). Platform for building conversational AI agents. Retrieved from [https://cloud.google.com/products/conversational-agents]

6. Microsoft Bot Framework (2023). Platform for building chatbots and bots for messaging platforms. Retrieved from [https://dev.botframework.com]

7. Rasa (2023). Open-source framework for building conversational AI agents. Retrieved from [https://rasa.com/]

8. Wit.ai (2023). Natural language processing platform for developing chatbots and voice assistants. Retrieved from [https://wit.ai/]



Co-funded by the European Union