INNOVATION IN LANGUAGE LEARNING International Conference

# Blended Intensive Programmes as an Innovative and Interdisciplinary Learning Approach

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**Abstract**

*The current generation of students lives in a VUCA world. This means that learning must adapt to these ongoing challenges. As developments follow each other rapidly, they create a volatile environment. Despite the abundance of data, these developments are often unpredictable and remain uncertain. Furthermore, societal and professional challenges are often significant and complex, comprising many intertwined components, unknown aspects, and often having a substantial impact and profound consequences that affect many people, both directly and indirectly, in ambiguous ways. Blended Intensive Programmes (BIPs) offer a short, innovative and intensive curriculum designed to enable students to address selected topics predominantly in an interdisciplinary setting and are one way of meeting these challenges in tertiary education. This approach considers the selected topic as a system — a sum of problems that is greater than the sum of its parts, and that is directly interrelated. Consequently, students, lecturers, and external professionals from various fields must collaborate to generate new knowledge. This contribution describes the preparatory steps, the execution and the results of a sequence of BIPs in the fields of architecture, economics and innovation studies, and their impact on lifelong learning, as a reference example. The first part reflects on content development, administrative, and organisational aspects, as well as on their impact on curricular classes. The second part of the discussion addresses the execution, its challenges, and the evaluation components for the further programme development.*

**Keywords:** *Higher education, VUCA, BIPs, interdisciplinarity, educational challenges*

## 1. Introduction

### *1.1 VUCA-World*

VUCA [1] stands for volatility, uncertainty, complexity, and ambiguity, capturing the fast-paced, unpredictable, and multifaceted context in which today's students live and work. It underscores the challenges which organisations and educational institutions encounter as they navigate rapid shifts, interconnected systems, and often unclear circumstances. At the same time, VUCA drives the creation of student programmes designed to equip learners with the skills needed to thrive amid these challenges. In a VUCA world, change is not only unavoidable but something to anticipate and prepare for.

Within higher education, VUCA manifests in the development of instructional technology, generating uncertainty for both students and instructors. The wide range of tools and methodologies contributes to the complexity of teaching – especially in an online setting. Virtual classrooms clearly differ from in-person scenarios, introducing ambiguity through fewer face-to-face interactions and greater reliance on digital platforms. Without the benefit of body language or subtle cues, instructors lose critical, real-time feedback on communication flow.

To address these issues, a Blended Intensive Programme was developed to broaden students' perspectives on learning and prepare them to become VUCA-resilient professionals. Central to this curriculum are the four Cs of 21st-century skills; these encompass critical thinking for problem exploration and resolution, cross-cultural communication, interdisciplinary collaboration, and creative experimentation with new methods and tools to deliver high-quality outcomes [2, p. 48].

### *1.2 Erasmus+ Blended Intensive Programmes*

Erasmus+ Blended Intensive Programmes (BIPs) are short and intensive study programmes which are based on a specific topic with a defined curriculum in an international partnership [3]. In general, BIPs are designed for students and academic staff in a specific group size. The BIP conditions encompass that at least three universities with a valid Erasmus Charter for Higher Education from three programme countries – eligible countries which can fully participate in all actions of the Erasmus+ programme – take part in the BIP partnership. Furthermore, one requirement of the programme is that at least ten participants from universities of the partnership are taught in this intensive course.

The course structure from the participants' perspective includes a mandatory virtual component and a physical mobility of five to thirty days in a programme country at a certain point in time in an international group. The virtual component can take place before, during and after the physical mobility. Ideally, it should be supported by innovative methods and IT tools.

The potential for BIPs according to the concept of the European Commission lies in the cooperation with external partners, for example local stakeholders, and in the interdisciplinarity of the approach [4]. The overall aim is to solve societal challenges and to apply knowledge in a real-world context by using innovative teaching methods and different learning approaches.

## 2. Blended Intensive Programme *Changing Cities*

Currently, European cities are undergoing unprecedented transformation. From changes in how people live and work to the rapid adoption of new technologies and the emergence of complex urban challenges, the pace of change has never been faster. In response to this dynamic landscape, a consortium of four higher education institutions (HEIs) was formed and launched the *BIP Changing Cities* initiative in 2022. This innovative short study programme combines online learning with in-person experiences, equipping students from diverse academic backgrounds with the knowledge and skills to critically engage with and actively shape the future of urban life across Europe.

*Changing Cities* is a four ECTS multidisciplinary and international student project aiming to explore the multifaceted intersection of urban transformation and sustainability by focusing on the ways in which cities can become more liveable and resilient. The student teams consist of participants specialising in the fields of International Business, Management Studies with a focus on innovation, Architecture and Urban Design; their home institutions are Inholland UAS in the Netherlands, FH JOANNEUM UAS in Graz, Austria, Centria UAS in Kokkola, Finland, and CEU San Pablo in Madrid, Spain.

In the academic year of 2022/2023, Inholland University of Applied Sciences, Domain Business, Finance & Law, in Rotterdam hosted the first edition of *Changing Cities* to address challenges in the harbour area in the city of Rotterdam. The aim was to gain new insights from various countries and to share best practices to further develop sustainability in urban transformation. This idea was continued with the second BIP in 2024, focusing on societal urban transformation under the theme of *Hybrid Nomad*, which was hosted by FH JOANNEUM University of Applied Sciences, Institute of Architecture and Construction Engineering in Graz, Austria. The third edition of *Changing Cities*, hosted by CEU San Pablo in Madrid in April 2025, centred on climate synergies and climate resilience. By focussing on neighbourhood-scale interventions, students collaborated to design environmentally friendly urban realms that respond to local climate challenges.

**Table 1.** Overview of individual BIPS within the *Changing Cities* programme

| Academic year | Host institution | Topic | ECTS | Miscellaneous |
|---|---|---|---|---|
| 2022/2023 | Inholland UAS | The Rotterdam Armada | 4 | Municipality of Rotterdam |
| 2023/2024 | FH JOANNEUM UAS | Hybrid Nomad | 4 | KIUBO |
| 2024/2025 | CEU San Pablo | Climate Resilience | 4 | Municipality of Madrid – Office of the New General Plan |
| 2025/2026 | Centria UAS | To be defined | 4 | To be defined |

### *2.1 The Key Topics of the Programme and the Deliverables*

The blended intensive programme focuses on the concept of smart cities as a solution to current urban challenges. It is designed for students in different domains, emphasising an interdisciplinary approach which integrates the Quality, Health, Safety, and Environment (QHSE) principles.

This means that students in urban planning and design explore methods for creating urban spaces that prioritise human well-being and environmental commitment. The QHSE principles guide the design of cities which are not only functional and aesthetically pleasing but also equitable and resilient. Additionally, the topic of sustainable built environments emphasises the need for resilience in the face of climate change and further related challenges. By using green infrastructure, energy-efficient buildings, and cutting-edge environmental technologies, participants learn how to design sustainable built environments which align with the QHSE standards.

Urban transportation and mobility focus on developing transport solutions which are both environmentally sound and socially inclusive. The programme also analyses the role of the private sector in driving innovation while maintaining a strong commitment to safety, equity, and environmental responsibility. From a business perspective, housing and urban development explore how cities can address issues of affordability and accessibility. This includes an analysis of market dynamics, private investment strategies, and regulatory frameworks, which offers business study students to gain real-world information from the local stakeholders and consider these through the lens of the QHSE principles to ensure ethical and sustainable urban growth.

Lastly, social inclusion and equity are a central theme extending throughout the programme. Participants engage with the challenges of gentrification, segregation, and unequal access to urban resources. Through inclusive planning strategies which embed the QHSE principles, the programme aims to equip students with the tools to design cities that serve all residents fairly and effectively.

All in all, the programme approach stipulates a clear focus on interdisciplinary collaboration in combination with real-world case studies to foster the students' practical skills. This means the aim is to equip the students to be responsible stakeholders in shaping sustainable, safe, and inclusive urban futures. To do so the following assignments were established:

**Table 2.** Student deliverables

| Stage | Deliverables | ECTS Credits |
|---|---|---|
| **1** | ▪ Poster presentation of the chosen concept based on best practice examples<br>▪ Questionnaire for a defined group of respondents to gain information at the beginning of the physical week (participative aspect) | 1.25 |
| **2 = physical week** | ▪ Persuasive design proposal presentation in the form of an architectural competition<br>▪ Analogue or digital model respectively video clip (reel) | 1.5 |
| **3** | ▪ Presentable written outcome (summary or report) or video recap<br>▪ Peer assessment form which is included in the summary | 1.25 |

### *2.2 A Smart Armada for the Empty Harbours in Rotterdam*

The *Changing Cities Battle* in the Rotterdam harbour area was a project in which international teams of five students each collaborated on an assignment issued by the municipality of Rotterdam and its external partners. The project assignment was related to the topics of urban food supply, safety and social environment as well as liveability including the Sustainable Development Goals (SDG).

During the online sessions the students familiarised themselves with the key general concepts of smart cities and selected best practice examples to prepare themselves for the assignments during the physical week in Rotterdam. Starting from building a strong team identity in the online sessions, an innovative concept to win the client in the competition was to be developed.

### *2.3 Hybrid Nomad in Graz*

The selected project area for the second *Changing Cities* edition is characterised by shared economy, new work environment and traditional buildings – mostly used by younger generations – which are often inconsistent in their use over the diverse stages of life. As traditional real estate is partly unable to adapt to the contemporary dynamic requirements, the hybrid nomadic living concept was chosen as the central topic of the student assignment to meet the current demands for not only more flexible, but

also sustainable living and working environments. The future demand for living and working space will largely have to be met by refurbishing existing buildings and densifying inner-city locations, as land sealing is one of the greatest ecological challenges in the densely populated areas of industrialised countries. To react to this ecological pressure and seal less soil, innovative approaches such as the conversion of existing structures or alternative solutions such as adding storeys are more in demand than ever. Hence, these new approaches and concepts for dealing with flexible living and working environments in an urban context require a fundamental rethinking in architecture and directly relate to the QHSE principles.

In detail, the aim of the student assignment was to investigate how a former factory building and its annexes can be repurposed, revitalised, and built over in the most resource-efficient and largely climate-neutral way possible. For that reason, the students were encouraged to develop creative and sustainable solutions that meet the current demands on urban spaces, emphasising the principles of adaptability, sustainability, and cost-effectiveness in a modular construction. In addition, it was requested to define a sustainable mix of uses for living, working, and catering as well as to consider how these modular structures can provide adaptable and multifunctional architectural solutions. The modular system (room cells, prefabricated elements) itself could be chosen according to the students' design proposals, but care must have been taken to ensure that the individual modules can be transported by a standard lorry or railway carriage to keep costs low.

### *2.4 Climate Resilience in Madrid*

In the urban transformation context, the third edition of *Changing Cities* centred on urban climate challenges, aiming towards environmentally friendly urban realms, by addressing urban ecosystems, local entrepreneurship, services and mobility in the neighbourhood scale. As widely known, Madrid's urban structure requires more greening than most European capitals to avoid the consequences of extreme heat.

The programme proposed the research and the intervention in the transformation of cities by respecting again the QHSE principles. Parks and gardens mix with buildings, public space and urban systems to become a multilayered green infrastructure fostering biodiversity and urban ecosystems. In the need of spaces which foster comfort, wellbeing and health, both mental and physical, the challenges of climate change formed one core aspect in the student assignment. Hence, the aim was to propose solutions to the Madrid Office of the New General Plan which combine environmental aspects with new approaches to services, sustainable tourism, local entrepreneurship and carbon free mobility. Some of those key aspects concentrated on were the improvement of microclimates and urban comfort through green spaces which help mitigate extreme weather, foster biodiversity, and enhance place-making. These natural areas serve both human and non-human actors, supporting ecological balance and improving overall urban liveability. Urban agriculture and agroecological practices also contribute to this vision by integrating food production into city life. These approaches clearly strengthen local food systems, promote public health, and reinforce green infrastructure, connecting production with consumption in sustainable ways. Together with reduced individual car mobility and efficient energy systems, this concept represents a comprehensive shift towards regenerative, inclusive, and ecologically responsible cities.

## 3. Learning Objectives and Development Process Overview

Apart from the thematic aspects of *Changing Cities* a clear focus was placed and agreed on within the consortium on the definition of learning objectives and outcomes as well as on the project assessment and evaluation of the interdisciplinary student teams.

The learning trajectory centred on the ability to design and present a service, a product, or a solution based on a given briefing. Central to this is developing a concept iteratively, incorporating user feedback to refine ideas into a working model. A strong emphasis is placed on selecting appropriate research methods to support the creative process and ensure the concept is grounded and effective (Stage 1). This means students are expected in Stage 2 to persuasively communicate their design proposals professionally to stakeholders or commissioners in the form of a competition, while integrating knowledge and best practices from their own field of study and cultural context, such as examples from their home country or city. Furthermore, the development process also includes actively processing feedback from peers and stakeholders, reflecting on growth in intercultural communication, and demonstrating competence in multidisciplinary teamwork (Stages 2 + 3) as these are key skills for working in diverse, real-world environments.

To guarantee a transparent and fair learning and assessment process learning outcome rubrics were defined by the consortium:

**Table 3.** Overview of learning outcome rubrics

| Rubric | Learning objective | Stage |
|---|---|---|
| 1 | Understand, analyse, discuss, and critically use topics related to *Changing Cities* and societal urban transformation processes and challenges through research and comparison of theory, evidence, examples, and best practices. | 1 |
| 2 | Develop a concept for a service / product / design or means based on a given briefing and responding to a multidisciplinary analysis of urban, social, and economic aspects and necessities. | 1 |
| 3 | Develop a model / prototype / site specific design of a site-based intervention / service / product. | 2 |
| 4 | Social and methodological learning outcomes. | 2 |
| 5 | Reflect on the value and meaning of the learning experience. | 3 |

## 4. The Project Execution and its Challenges

The project execution relies on a well-established consortium and a clearly defined schedule which enables the involved partners to embed the BIP into their academic semester activities. Apart from the administrative issues including financing and funding (e.g., applying for an organisation support (OS) budget), particular consideration needs to be given to the content design and assignment allocation of the online sessions (Master classes in stages 1 and 3) and the physical week (Stage 2). As the interdisciplinary teamwork rests on instructor input and current real-world cases studies, these sessions need to be planned meticulously (e.g., timeline, input overview for each masterclass, presentation slides for further consultation) to provide the students with the necessary information and an exchange platform which enables problem-free collaboration and cooperation. To prepare them for the sequence of online sessions and the different assignments sufficient time in the first online session needs to be reserved for online socialisation by carefully taking into consideration that the students have different professional and cultural backgrounds.

Despite the online socialisation, the physical week should ideally be started by a second socialisation round for group identification in the form of short joint activities to foster the collaborative work process. Furthermore, the students need sufficient time to explore the project environment by offering guided site visits and contact sessions with the external stakeholders. The physical week provides the interdisciplinary student teams to continue their work on the assignments while receiving further input and feedback by the instructors on a rotational principle respecting the different areas of expertise. The face-to-face week is complemented by some short lectures on related content such as how to give a persuasive presentation and by a cultural programme. Another lesson learned is that interdisciplinary work needs intensive guidance and sufficient time to discuss the different perspectives. Hence, a reflective phase (Stage 3) and individual as well as peer feedback are of utmost importance.

## 5. Conclusion

As the fourth edition of *Changing Cities* is still pending, a preliminary conclusion on the BIP cycle can be drawn so far. Given the fact that *Changing Cities* was selected as a best practice example by the Erasmus+ consortium, it clearly offers some potential for innovative and interdisciplinary learning which responsibly responds to current real-world demands within sustainable urban ecosystems.

In general, BIPs add significant value to teaching by promoting innovative and flexible pedagogical approaches which allow active student participation and foster student-centred learning, hence making education more interactive and inclusive. Additionally, they enhance digital teaching skills and support the integration of online tools into everyday teaching. Participating in BIPs encourages reflective practice, motivating instructors to regularly evaluate and improve their methods. Finally, BIPs contribute to internationalising the curriculum, bringing global perspectives into local classrooms and fostering intercultural understanding among both staff and students. In brief, they let the classroom grow bigger and open a wider range of opportunities to be accessed by the involved student cohort.

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