

Research Article

Promoting Urban Planners for Sustainable Development: Responsive Education in Transforming City Regions

Capacitar a los urbanistas para el desarrollo sostenible: Educación reactiva en Transformación de Regiones Urbanas

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Abstract

Introduction: Unprecedented urban growth poses social and environmental challenges that require integrated planning and interdisciplinary education. Universities, particularly postgraduate programmes such as Transforming City Regions, have a crucial role to play in addressing these challenges. **Methodology:** This study uses a combination of theoretical and practical analysis and questionnaires to examine the impact of the Transforming City Regions programme on the education of future urban planners. **Findings:** The paper finds that students wishing to pursue a career in urban planning have a multidisciplinary educational background, which provides them with appropriate characteristics for urban planning. **Discussion:** Although initially challenging, students improve their practical application of theoretical knowledge throughout the Master's programme. The emphasis on research skills and critical analysis is crucial for the development of new areas and

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sustainable cities. **Conclusions:** The paper concludes that university Master's programmes provide a robust education in urban planning, capable of addressing current issues, but requiring continuous review processes to enhance learning.

Keywords: urban space design; new urban goals; transforming city regions; collaborative work; interdisciplinarity; integrated urban planning; European education pathways; 2030 Agenda.

Resumen

Introducción: El crecimiento urbano sin precedentes plantea retos sociales y medioambientales que requieren una planificación integrada y una educación interdisciplinar. Las universidades tienen un papel crucial a la hora de abordar tales retos, en particular, los programas de postgrado, como Transforming City Regions. **Metodología:** Mediante una metodología que combina el análisis teórico y práctico, así como cuestionarios, se analiza el impacto de Transforming City Regions en la formación de los futuros urbanistas. **Resultados:** Entre los resultados obtenidos, se observa que los estudiantes que desean continuar en el urbanismo tienen una educación multidisciplinar que les otorga habilidades idóneas para la planificación urbana. **Discusiones:** Se ha demostrado que, a pesar de las dificultades iniciales para aplicar los conocimientos teóricos a la práctica, es posible mejorar estos conocimientos tras superar los estudios de máster. El desarrollo de un enfoque en investigación y análisis crítico, además de habilidades profesionales, genera una línea importante para el desarrollo de nuevas áreas y ciudades sostenibles. **Conclusiones:** La formación de máster universitario proporciona una sólida base en urbanismo, capaz de dar respuesta a los problemas actuales, pero que requiere un proceso de revisión para seguir creciendo y mejorando el aprendizaje en el planeamiento urbano.

Palabras clave: diseño de espacios urbanos; nuevos objetivos urbanos; transformación de regiones urbanas; trabajo colaborativo; interdisciplinaria; integrar la planificación urbana; itinerarios educativos europeos; Agenda 2030.

1. Introduction

In recent decades, urban areas have grown exponentially, reaching unprecedented scales and speeds. This rapid urban development has created significant social and environmental challenges. On the one hand, social challenges are directly linked to urbanisation, so that new issues such as social cohesion, the development of urban amenities, lack of adequate infrastructure, housing shortages and problems in the land market appear directly on the urban scene. It is therefore crucial for urban planners to provide intelligent responses to urban change, taking into account possible self-organisation in and of cities and urban communities (Rauws *et al.*, 2020). Another response is to influence the inertia of cities and regions towards monocentrism, as has happened in areas such as Paris or Madrid. In this sense, new models of development as polycentric city-regions have been proposed, such as those currently being developed in the German Ruhr region (Reicher *et al.*, 2015). On the other hand, environmental challenges such as land degradation, loss of biodiversity, use of non-renewable energy and increased climate risks are driven by relentless urban growth.

Such processes not only threaten natural ecosystems, but also contribute significantly to climate change through deforestation and the reduction of green areas that act as carbon sinks. Poor planning and lack of sustainable development policies increase the vulnerability of cities to natural disasters and extreme weather events, threatening the safety and well-being of their inhabitants (Donoso & Reicher, 2023). In this context, it is imperative that urban planners and policy makers adopt integrated approaches that combine environmental

protection with urban expansion (Lehmann, 2023). The implementation of green infrastructure, such as urban parks, green roofs and ecological corridors, can mitigate some of these impacts by improving air quality, regulating temperature and providing recreational spaces for urban populations. Sustainable cities can play a crucial role in combating climate change.

Government institutions are aware of the impact of urbanisation on the planet and what it means for future generations. This is reflected in the inclusion of Goal 11, Sustainable Cities and Communities, in the Sustainable Development Goals (SDGs). This aims to mitigate uncontrolled urban growth, promote the creation of neighbourhoods with adequate services and open spaces, and the proper development of urban infrastructure (United Nations 2018). Following the adoption of the 2030 Agenda in 2015, various agendas have been developed at national and international level. In the European Union, it is worth mentioning the appearance of the European Urban Agenda in 2016 (European Commission, 2016), followed by some countries, such as Spain, with its own Urban Agenda in 2019 (European Commission, 2019). Another example is the Leipzig Charter, which recently proposed the concept of Sustainable European Cities (European Commission, 2020). However, many other local agendas should adapt to the new conditions and urban dynamics of recent years. The European Union is therefore working on a continental scale, which implies a greater complexity of the urban phenomenon. This implies the convergence of layers coming from different cultural and social contexts. In this sense, the European Urban Agenda attempts to cover a heterogeneous field with great difficulty.

The European Urban Agenda is based on three pillars: better regulation, better financing and better knowledge (European Commission, 2016). It is undeniable that these three pillars are essential for sustainable urban development. However, the improvement of knowledge must be carried out by higher education institutions. This is not only an urban challenge, but also a societal one, as it is about educating future generations to face the challenges of the future. In many cases, urban development is understood exclusively from an economic perspective, but this should not be the case, as it implies a decrease in urban complexity (Duxbury *et al.*, 2016). This requires different knowledge and perspectives, such as architecture, geography, anthropology, engineering and even philosophy. Accordingly, contemporary urbanism needs to be interdisciplinary (Costa *et al.*, 2015).

In response to the need for interdisciplinarity in urban planning practice, the Transforming City Regions (TCR) master's programme has been designed taking into account the complexity of urban development. The Master's level is presented as the optimal space for the teaching of urban planning, where it is inserted in a transversal and reciprocal way (De Alba & Porlán, 2017). It allows the integration of different disciplines and perspectives, which is hardly possible at the bachelor level. Since the academic year 2019/2020, Transforming City Regions (TCR) appears within the research and teaching activities of the Chair of Urban Design and the Institute of Urban Design and European Urbanism at the Faculty of Architecture of RWTH Aachen University (RWTH) in Germany. The programme is divided into four semesters with a total of 120 ECTS. The core competences acquired are the development of multidisciplinary knowledge; scientific solutions; analysis of complex urban problems; deepening the understanding of urban change and regional structures; advancing methodological and technical tools; and communicating urban concepts, ideas and policies to a wider audience (Reicher, 2024).

In terms of the subjects and courses developed in the TCR, it is made up of compulsory, compulsory elective and elective modules (Table 1). This diversity allows the curriculum to address the dynamics of contemporary cities at different scales: neighbourhood, city and

region. The different scales are explored in the first three semesters through Integrated Project I (neighbourhood scale), Integrated Project II (city scale) and Integrated Project III (regional scale). The fourth semester is dedicated to the Master's thesis, in which students must put into practice the urban planning knowledge acquired in the previous semesters, integrating urban theoretical concepts and using advanced technologies and methodologies, such as GIS. The structure of the programme promotes the understanding of urban phenomena from different perspectives, such as urban, architectural, landscape, ecological, economic, heritage, cultural, social, etc. The result is transversal perspectives that allow for a comprehensive understanding of cities (Monclús *et al.*, 2022). Finally, such transversal perspectives are made possible by a multidisciplinary teaching staff, as well as lecturers from different educational centres, who combine experience with knowledge.

Table 1.

TCR Master's Degree Programme.

Semesters	Courses	Type of courses	Credit Points
1	Integrated Project I	Elective compulsory	15
	Urban transformation I	Compulsory	3
	Planning & design for changing cities	Compulsory	3
	Evolving environment.	Compulsory	3
	Transforming landscapes		
	Impromptu courses	Elective compulsory	6
2	Integrated Project II	Elective compulsory	15
	Urban transformation II	Compulsory	3
	Changing societies & economies	Compulsory	3
	Territorial analysis, digital tools	Compulsory	3
	European urban policies & territorial governing structures	Compulsory	3
	Research module (2 nd or 3 rd semester)	Elective compulsory	6
3	Integrated Project III	Elective compulsory	15
	Multiple scales of urban planning and design	Compulsory	
	Elective course	Elective	3
	Elective course	Elective	3
	Transit	Elective	3
	Research module (2 nd or 3 rd semester)	Elective compulsory	6
4	Master Thesis	Elective compulsory	30

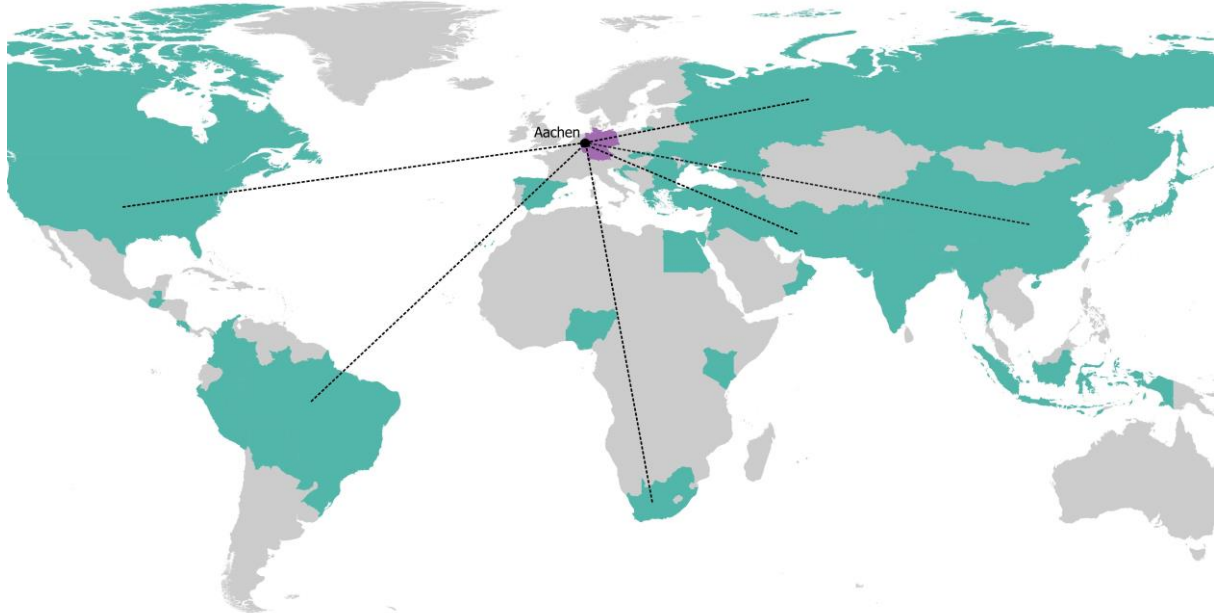
Source: Own elaboration (2024).

TCR is a dynamic and integrative Master's programme, in which a variety of disciplines related to urban planning find a place. In addition to the interdisciplinary component, there is also an international component. TCR students come from all over the world (Figure 1). This is made possible by the fact that the TCR is one of the few Master's programmes in Germany that is taught entirely in English. This facilitates the integration of international students with diverse cultural backgrounds. It also leads to greater complexity in teaching (Bain, 2004), but also to an enrichment of the field of urban planning and personal skills. In addition, both the Masters and the Chair in which it is integrated are part of the ENHANCE University Alliance pilot programme European Education Pathways. This programme creates a network of ten renowned European universities: Chalmers Tekniska Högskola AB (Sweden), Eidgenössische Technische Hochschule Zürich (Switzerland), Politechnika

Gdańska (Poland), Norges Teknisk-Naturvitenskapelige Universitet (Norway), Politecnico di Milano (Italy), Rheinisch-Westfälische Technische Hochschule Aachen (Germany), Technische Universität Berlin (Germany), Technische Universiteit Delft (The Netherlands); Universitat Politècnica de València (Spain); and Politechnika Warszawska (Poland) (Fuchs *et al.*, 2023).

Figure 1.

Map of countries of TCR students in the world.



Source: Own elaboration (2024).

Against this background, the main question we address in this paper is whether a Master's degree is the appropriate setting for future urban planners and the level for effective training. Several objectives are derived from these questions. The main objective is to examine the successful integration of urban planning and urban design in the curriculum, taking into account students' expectations and European institutional objectives. This is a multifaceted challenge in which urban planning needs to be continuously updated and developed. The underlying objectives are to compare the background and level of different students with the final results of the Master's thesis, to understand the scale of the urban planning project in each semester, and to familiarise students from different disciplines with urban planning. This makes it possible to verify whether the objectives set for teaching and learning in Transforming City Regions have been achieved.

2. Methodology

As a methodological approach, a strategy of applying theory to practice and vice versa has been adopted, generating dual learning (De Alba & Porlán, 2017). To this end, the concepts acquired in lectures, courses and conferences are applied in the practical work of the different modules of urban planning teaching, as well as the process in the opposite direction. Thus, the practical work, in which designs are carried out at different scales, from the neighbourhood to the city and the region, has been taken as a reference to evaluate the quality of the work and the progress of the students from the first to the last semester.

On the other hand, in order to measure the interdisciplinary skills in the curriculum, an evaluation has been carried out through interviews at the beginning and at the end of the

Master's programme, in order to accurately measure the students' expectations (Ostos Prieto, 2021). The interviews covered several key aspects, such as multidisciplinary, soft skills, hard skills, digitalisation, internationalisation, knowledge transformation, research orientation and professional practice orientation (Molina Liñán *et al.*, 2023). These aspects are considered fundamental in assessing not only the programme's suitability to meet the demands of the current labour market, but also its ability to provide comprehensive training adapted to a globalised and digitised environment.

In addition to the surveys, detailed information was collected about the students, including their previous education at Bachelor level, their place of origin and the outcomes achieved in the different modules of the Master's degree through their practical projects. The projects allow the development of real-world problems involving redevelopment approaches and the integration of planning and design at an urban and regional scale (Neuman, 2016). This information is crucial to understanding the student's educational and professional background in urban planning. For example, knowing the student's place of origin allows for an analysis of the urban planning educational context they have previously received, which is relevant for adapting the content of the Master's degree to specific needs.

The combination of surveys and theoretical-practical focus group workshops constitutes a comprehensive methodological approach that allows a thorough and dynamic assessment of the match between students' expectations and the objectives of the Master's programme. This approach, supported by detailed data collection and analysis, guarantees an interdisciplinary and high quality education adapted to the current needs of urban planning in Europe.

This methodological approach incorporates feedback loops where data collected from surveys and project evaluations are used to continuously improve the curriculum. By aligning the programme with the evolving demands of the labour market and advances in urban planning, the Master's degree ensures that students are well equipped with the necessary skills and knowledge. This dynamic and iterative process not only enhances the educational experience, but also ensures that the training remains relevant and effective in preparing students for their professional careers in a globalised and digitised environment.

3. Results

The findings highlighted the need to address the challenges of European urbanism through collaboration and teaching. By working together, students were able to integrate ideas from different disciplines and create planning education that promotes a comprehensive understanding of urban problems and facilitates innovative and sustainable solutions to global crises. The paper thus emphasises the importance of planning education evolving in response to contemporary social and spatial challenges, particularly in Europe.

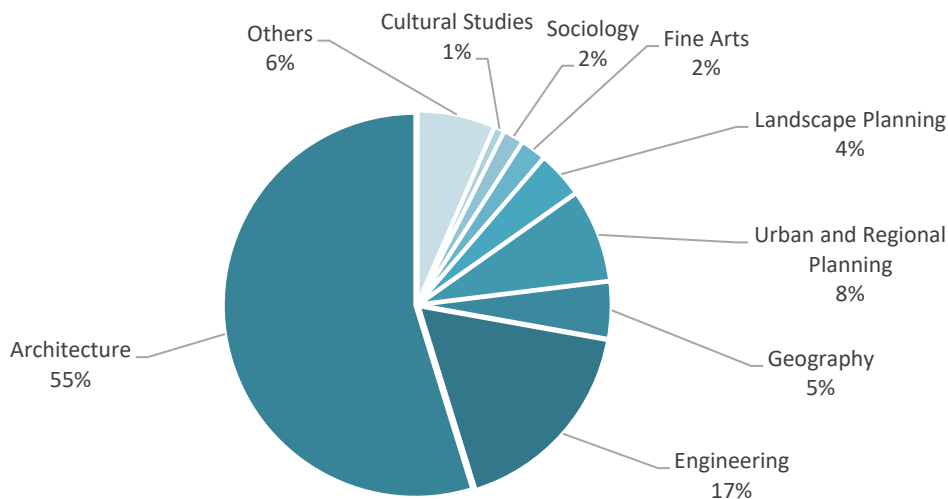
In order to get a first idea of the cultural and international diversity of the TCR students, a map has been drawn showing the different countries (Figure 1). This great diversity implies not only different socio-cultural contexts, but also different knowledge bases according to the universities and studies in the places of origin. The figure shows that a large number of students come mainly from Europe, the Middle East and Asia, as opposed to countries from the African or American continents. This diversity of geographical and academic backgrounds enriches the programme by offering a wider range of perspectives and approaches to urban problems. The inclusion of students from different parts of the world also reflects the global nature of urban challenges and the need for solutions that are applicable to different cultural and environmental contexts. Such diversity fosters an environment where students can learn from each other's experiences, creating a truly

dynamic and engaging learning atmosphere.

The international aspect of the Master's programme exposes students to diverse urban planning paradigms and practices from different parts of the world. This global perspective is invaluable in fostering a more holistic understanding of urban problems and solutions, thereby enriching the students' educational journey and professional readiness. Urban planning education in Europe benefits greatly from diversity and international cooperation. The integration of different disciplines and cooperation between students from different geographical and academic backgrounds is essential to develop innovative and sustainable solutions to contemporary urban problems. This collaborative and multidisciplinary approach not only enhances the quality of education, but also prepares students for the complex challenges of global urbanism in the 21st century.

Figure 2.

Graph of student disciplines prior to the TCR.



Source: Own elaboration (2024).

On the other hand, the different studies and disciplines of the students prior to the TCR Master's degree were counted (Figure 2). First of all, it can be observed that participation in the Master's programme is made up of more than eight different disciplines, all of them related to the field of urbanism and planning. However, it is noticeable that there are more people who have studied architecture than other disciplines such as engineering or geography, and the difference is even greater when compared to sociology or culture. This prevalence of students with an architectural background highlights the importance of design in the field of urban planning. Architecture, with its focus on creating functional and aesthetically pleasing spaces, provides a solid basis for addressing urban challenges. However, this concentration of architects also underlines the need for greater interdisciplinarity in urban planning education.

It is important to integrate more perspectives from other disciplines, such as sociology, which provides an in-depth understanding of the social and cultural dynamics that influence urban life, or engineering, which provides essential technical knowledge for urban infrastructure. Geography provides a broad understanding of the spatial and environmental context in which cities develop. The inclusion of these disciplines can enrich the Master's programme and allow for a more holistic approach to urban planning. In addition, the

diversity of students' academic backgrounds can encourage greater creativity and innovation in problem solving. Students with sociology backgrounds can bring perspectives on how urban spaces affect communities, while those with cultural backgrounds can highlight the importance of preserving cultural heritage in urban development. Combining these different perspectives can lead to more balanced and sustainable urban solutions that not only respond to current needs, but also anticipate and mitigate future challenges.

As we have seen, there is a great diversity in the Masters programmes, both in terms of countries and fields of knowledge. It is therefore important to know the expectations of the students at the beginning of the Masters course. This, together with their starting level, is necessary to assess the difficulties they will face and the complexity of the courses they have enrolled in. To this end, several questionnaires were administered at the beginning of the first semester, measuring five levels of knowledge (Table 2). For the sake of anonymity and data protection, these are given as percentages, without specifying areas of knowledge or countries of origin. The purpose of this table is to place urban knowledge on a learning ladder and to measure the impact of the Master's degree at the beginning and at the end. Therefore, at the end of the Master's thesis, questions are asked again to find out the level of the students.

Table 2.

Table of learning categories in TCR.

Level	Category	Starting Master %	After Master Thesis %
1	Critical thinking and development of project ideas	0%	64%
2	Critical thinking in urban planning	0%	27%
3	Developing ideas and understanding of different urban scales	11%	9%
4	Basic knowledge of urban planning	57%	0%
5	Blank and short answers to the questions	32%	0%

Source: Own elaboration (2024).

If we look at the five levels in the table, they have been ordered from the least complex (level 5) to the most complex (level 1). The lowest level consists of blank answers or just short sentences. The fourth level consists of basic knowledge of urban planning, such as knowing the urban parameters of density, occupation, global uses, detailed uses, etc. The third level is the one where the understanding of the different urban scales and levels allows the development of proposals and ideas for their application in the field of urban planning. Subsequently, the second level is a more theoretical point where urban dynamics such as urban growth, governance, social cooperation, etc. begin to be understood. Finally, the first and highest level of the table represents the link between the critical thinking of level two and the development of project ideas in the field of urban planning, i.e. students can apply complex thinking to urban reality.

In the case of the TCR, a comparison has been made in Table 2 at two important and decisive points: at the beginning of the Master's programme and after the Master's thesis. The students at the beginning of their studies show the influence of the different contexts, as well

as a low level of understanding of the urban phenomenon. 32% give short or blank answers, while 57% have a basic knowledge of urban planning. At the same time, there is a small group of students who are able to design and implement more complex urban ideas. In general, it is to be expected that the top two levels are at 0%, as this is the range that the Masters programme aims to teach at the end of the four semesters. On the other hand, the percentages after the completion of the Master's thesis are distributed between levels one and three. This means that, on the learning ladder, students have managed to move from levels four and five, now at 0%, to the higher levels. In this sense, 64% have acquired the knowledge related to critical thinking and its application to design ideas in urban areas. In contrast, 27 have acquired advanced ideas about the city and region, but still find it difficult to apply them in a practical and professional way. Finally, only a small proportion of graduates are able to develop ideas and understand the urban phenomenon at different scales.

Figure 3.

Urban projects by TCR students. Left, first semester and right, fourth semester.



Source: Projects made by Stella Moulara (left) and Wasila Parvez (right).

In addition to insights from statistical information, further results are obtained through graphical examples of some of the projects carried out. As the TCR is a Master's degree in Urban Planning with a strong emphasis on graphics and design, soft and hard skills have been taken into account, as well as the use of digital tools and the work capacity of the students. The ability to learn software such as AUTOCAD, QGIS, Photoshop, Illustrator, the ability to work in multidisciplinary teams and the knowledge of urban planning were measured. For this purpose, different urban projects from the first and last semesters were compared (Figure 3). The analysis of these works requires specific and advanced knowledge of urbanism, which the TCR teachers have. Thus, through the different visions and people actively working in the Master's programme, it is possible to observe a certain evolution

between the work on the left and that on the right. It shows the evolution of the students from simpler and more straightforward urban ideas to the conceptualisation of more complex urban phenomena.

The comparison of these works has made it possible to see that TCR objectives such as urban design, analytical thinking, research skills, data analysis, synthesis and presentation skills, software skills or visual representation of ideas, become acquired skills for the students. There is a clear progression of knowledge across the different semesters. Finally, as a final part of the transfer and dissemination process, the work is published on the TCR website (<https://tcr.rwth-aachen.de/>). This is not only part of the Master's exhibition of results, but also creates an opportunity for students to publicly present the urban planning work they have developed.

4. Discussion

During the discussion of the results, the most relevant aspects from which information was obtained are commented on, as well as possible shortcomings or opportunities that may be developed in the near future in the field of TCR. As this is a recently created Master's degree, there is still a long way to go and obstacles to overcome. Therefore, it is hoped that the completion of this research will contribute to and support the development of the study of urban planning education and teaching.

One of the aspects that can be highlighted in relation to the diversity of students' backgrounds is that, in principle, this is not a barrier to learning the discipline of urban planning. On the contrary, the diversity of backgrounds and education enriches the learning process and brings multiple perspectives to the study of urban planning (Neuman, 2016). On the other hand, it is important to comment on the existing differences in the existence of different disciplines involved in urban planning.

Urbanism is at the intersection of fields such as architecture, engineering, sociology, economics and ecology, among others (Capel, 2011). Students often come with specialisms in some of these areas, which gives them an advantage in certain aspects, but also means that they may have gaps in others. For example, a student with a sociology background may have a deep understanding of the social implications of urban development, but may lack technical skills in design software. This becomes a problem when students are unfamiliar with essential software such as CAD, Photoshop, Illustrator or QGIS. Lack of familiarity with this software can make it difficult to learn basic urban design parameters, such as urban density. However, experience has shown that with time and practice, most students can acquire the necessary skills to use these tools effectively. Furthermore, this problem is greatly mitigated by working in multidisciplinary teams, where students can learn from each other and complement each other's knowledge.

In terms of academic performance, the majority of students achieve the desired level at Master, with more than 90% achieving the objectives set. However, it was found that 27% of students acquire very advanced theoretical knowledge but find it more difficult to apply it in practice. This suggests that although the programme is generally successful, it could benefit from adjustments to enable students to further develop their research and critical analysis skills. It would therefore be interesting to direct this group towards research-based work rather than practice-based work. This would motivate them to continue their work in the field of urban planning from a scientific and academic point of view, leading to potential doctoral theses that could be developed after the completion of the Master's degree.

The remarkable progress observed between the first and last semesters of the Masters is testament to the development of students' understanding and skills. During this time, students acquire a deep understanding of the complexity of urbanism, addressing both theoretical and practical aspects. This development is achieved through a combination of theoretical courses, practical workshops and collaborative projects, which together provide a comprehensive education in the discipline (Ontiveros & Malo de Molina, 2015). However, there is still room for improvement in terms of providing more opportunities for interaction and exchange of ideas among students. Therefore, it would be beneficial to implement a blog or forum within the TCR website itself. This would be a new tool where students could interact and exchange ideas and experiences on urban planning and design. This type of platform would allow communication between students from the same year, from different semesters and even from previous years, fostering a collaborative and continuous learning environment.

Furthermore, establishing partnerships with local urban planning agencies or firms could provide students with real-world projects to work on, enhancing their practical skills and connecting them with potential employers. In addition, incorporating more field trips and site visits into the curriculum would provide students with first-hand exposure to urban planning challenges and solutions in different contexts, enriching their learning experience. Overall, while the Master's programme has made significant progress in preparing students for careers in urban planning, there are still opportunities for innovation and improvement to ensure that graduates are well equipped to deal with the complexities of contemporary urban environments.

5. Conclusions

In conclusion, it is important to highlight the important role of Transforming City Regions in the new urban developments of the 21st century, especially in the European context. This is underpinned by the current social and environmental challenges, which are not only reflected by international organisations and institutions through the SDGs or the Urban Agendas. This implies new challenges to which urban and regional planning must respond. In this scenario, public education and training play a crucial role. Such work is being carried out through the establishment of Transforming City Regions at RWTH Aachen University.

With regard to the questions raised in the introductory chapter, these have been explored and addressed throughout the text thanks to the methodology used. This method is based on a combination of the analysis of theoretical and practical work, as well as the formulation of questions to the Masters students. This process has helped to define more precisely the teaching model of urbanism at the TCR. It has also provided an evaluation that has identified both the strengths and the weaknesses of the Master's programme.

In terms of the diversity of backgrounds and training of students at TCR, this enriches the learning process by bringing multiple perspectives to the study of urbanism. While some students may have advantages in certain aspects due to their previous specialisations, they may also have gaps in other areas, highlighting the importance of working in multidisciplinary teams to complement their knowledge. This would in some cases support a lack of familiarity with essential tools and programmes, which may hinder the learning of basic urban planning concepts. However, experience has shown that most students can acquire these skills.

Overall, there is noticeable progress between the first and last semesters of the Masters, indicating significant development in terms of understanding and skills in urban planning.

This development is achieved through a combination of theoretical courses, practical workshops and collaborative projects. However, although the majority of students achieve the desired level in the Masters, a significant percentage find it difficult to apply their theoretical knowledge in practice. This does not mean that academic performance is compromised, as it is within the desired objectives, but rather that adjustments need to be made. In this sense, it is suggested that students' research and critical analysis skills should be strengthened, possibly directing them towards research-related work rather than professional work.

Despite the existence of a website as a digital platform to present the content and results of the TCR, there is a need for more interaction between students. The Master's programme offers a comprehensive, interdisciplinary education, full of workshops where ideas can be exchanged. However, once the Masters programme is over, this interaction disappears. Therefore, it is recommended to implement tools such as a blog, a forum or spaces in a virtual reality community where a collaborative and continuous learning environment can be fostered in TCR.

Finally, the TCR programme offers a solid education in urbanism, albeit with some challenges that can be addressed through further integration of digital tools and a stronger focus on research. Creating a space for interaction and exchange of ideas between students could further enhance learning and collaboration, benefiting both current and future students.

6. References

- Bain, K. (2004). *What the Best College Teachers Do*. Harvard University Press.
- Capel, H. (2011). Los arquitectos como agentes urbanos y la enseñanza del urbanismo. *Ciudad Y Territorio Estudios Territoriales*, 43(169), 611-622. <https://recyt.fecyt.es/index.php/CyTET/article/view/76088>
- Costa, J. P., Ochoa, R., & Matos Silva, M. (2015). Enfrentando cuestiones urbanas. La enseñanza de la interdisciplinaridad por el proyecto de urbanismo. *On the W@terfront. Public Art. Urban Design. Civic Participation. Urban Regeneration*, 34(5), 5-24. <https://revistes.ub.edu/index.php/waterfront/article/view/18824>
- De Alba, N., & Porlán, R. (2017). La metodología de enseñanza. In R. Porlán, (Eds.). *Enseñanza Universitaria. Cómo Mejorarla* (37-53). Editorial Morata.
- Donoso, V. G., & Reicher, C. (2024). Strengthening the Legal Framework of Protected Areas in the Amazon to Combat Climate Change. *Blue Papers*, 3(1), 112-125. <https://doi.org/10.58981/bluepapers.2024.1.09>
- Duxbury, N., Hosagrahar, J., & Pascual, J. (2016). *Why must culture be at the heart of sustainable urban development?* UCLG United Cities and Local Governments.
- European Commission Directorate General for Regional and Urban Policy (2019). *Urban Agenda for the EU: Multilevel governance in action*. European Union.
- European Commission Directorate General for Regional and Urban Policy (2020). *The new Leipzig Charter. The transformative power of cities for the common good*. European Union.

- European Commission Directorate General for Regional and Urban Policy (2016). *Urban Agenda for the EU: Pact of Amsterdam*. European Union.
- Fuchs, L., Cuevas-Garcia, C., & Bombaerts, G. (2023). The societal role of universities and their alliances: the case of the EuroTeQ Engineering University. *Tert Educ Manag*, 29(1), 263-277. <https://doi.org/10.1007/s11233-023-09126-x>
- Lehmann, S. (2023). Reconnecting with nature: developing urban spaces in the age of climate change. *Emerald Open Research*, 1(5), 1-20. <https://doi.org/10.1108/EOR-05-2023-0001>
- Molina Liñán, M., Rodríguez Lora, J. A., Ostos Prieto, F. J., & Maruri Arana, A. (2023). Transfers between art, heritage and architecture: an experience of teaching innovation. In A. Martos Martínez et al. (Eds.). *Innovación docente e investigación en educación: nuevas tendencias para el cambio en la enseñanza superior* (131-138). Dykinson.
- Monclús, J., Raimundo, B., & Diez Medina, C. (2022). On Urban planning Theories, Urban Regeneration and Open Spaces. Explorations by PUPC. *VLC arquitectura. Research Journal*, 9(2), 249-273. <https://doi.org/10.4995/vlc.2022.17777>
- Neuman, M. (2016). Teaching collaborative and interdisciplinary service-based urban design and planning studios. *Journal of urban design*, 21(5), 596-615. <https://doi.org/10.1080/13574809.2015.1100962>
- Ontiveros, E., & Malo de Molina, J. (2015). Urbanismo desde una aproximación morfológica: Una experiencia didáctica. *Urbano*, 18(31), 74-84. <https://revistas.ubiobio.cl/index.php/RU/article/view/1067>
- Ostos Prieto, F. J. (2021). Ciclo de mejora docente en el Taller de Arquitectura. El modelo urbano como clave para la estrategia de proyecto. In R. Porlán, E. Navarro-Medina and A. F. Villarejo-Ramos (Eds.). *Ciclos de Mejora en el Aula. Año 2020. Experiencias de Innovación docente de la Universidad de Sevilla* (pp. 1110-1132). Editorial de la Universidad de Sevilla. <http://dx.doi.org/10.12795/9788447231003.053>
- Rauws, W., Cozzolino, S., & Moroni, S. (2020). Framework rules for self-organizing cities: Introduction. *Environment and Planning*, 47(2), 195-202. <https://doi.org/10.1177/2399808320905377>
- Reicher, C. (2024). *European Master of Science. Transforming City Regions. Semester Handbook*. Chair of Urban Design and Institute for Urban Design and European Urbanism. RWTH Aachen University.
- Reicher, C., Bayro-Kaiser, F., Jansen, H., & Polívka, J. (2015). *Polycentric City Regions in Transformation. The Ruhr Agglomeration in International Perspective*. Lit-Verlag.
- United Nations (2018). *The 2030 Agenda and the Sustainable Development Goals. An opportunity for Latin America and the Caribbean*. United Nations.

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