

The Role of The "In-Between-Space" in Activating The Knowledge Society in The City

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Abstract

The world is witnessing a new phase in the development of human societies. Since the 1990s, there have been serious discussions about the best way to deal with new technologies and knowledge developments, thereby improving the quality of life away from the depletion of natural resources. Therefore, new concepts emerged, most distinctly the "**knowledge society**" concept, which represents the characteristics and product of the times. Knowledge represents the raw material in which a state economy is transformed into a knowledge economy based on the investment of the human mind to achieve a competitive state with comprehensive development. Higher education and universities are the essential pillar of this society where knowledge is produced and shared. Therefore, with their architecture, spaces, and relations with society, universities must respond to these developments and provide an enabling, empowering environment for this concept to meet its needs and requirements. Hence the question arises about the qualities and characteristics that the architectural and urban spaces need to become suitable for activating the Knowledge society. This issue although mentioned several previous literature rather indirectly, is still unaddressed comprehensively. Thus the aim of the article is present a theoretical framework comprising indicators of the characteristics of the spaces incubating the activities of the knowledge society. The research suggests the **in-between space** to activate the knowledge society. It is the space for convergence of the knowledge production centre community, represented by universities and other community segments in the city. The research concluded that the Urban/Architectural dimension is one of the main dimensions of the knowledge society, as it represents one of the types of infrastructure, which is considered one of the pillars of activating the knowledge society. In addition to achieving the goal through three levels of research, the knowledge society interacts and shows the connection between the university and the city in various forms and relationships: the level of the **University-city relationship** (integration relationship), the level of **Buildings - open areas** (informal buildings, green spaces, public spaces, walkways), The level of **interior spaces**.

Keywords: knowledge society, In-between space, Incubator Empowerment Spaces.

Introduction

Over the past two decades, the world has witnessed a great movement at various levels to recognise the importance, location and impact of the knowledge society on man's future. It is a reality and a strategic choice for States, their peoples and their Governments and represents the instrument of social, economic, political and cultural change during the present century. This current proposal has emerged globally and locally because the knowledge society focuses on developing countries that seek comprehensive human renaissance and international organisations, including the United Nations. Arab countries have made numerous attempts, depending on their circumstances, degree of progress and capabilities in this field, and they have begun to put forward their programs and visions on building this society in its various dimensions, including the urban dimension as an infrastructure that enables individuals to interact and share knowledge. This concept was essentially embodied in the Iraqi Ministry of Higher Education and Scientific Research speeches through the call for a transformation to a knowledge society. It was considered the new framework through which society and the economy would rise, achieve development principles, and place the state among competitive countries. While some countries argue that their societies are already part of the knowledge society, many other societies - including ours - are still far from the traits of the society. So we have to move forward to take actual steps towards this transformation from universities to knowledge-producing centres and provide an architectural model of the incubating and enabling environment for this society, which is what research has looked like in the space of water between its various forms and its locations. The previous literature and global examples derive the most important indicators of the interactive features of the functions of the knowledge society. The economic, social and technological dimensions on which the knowledge society is based are described to achieve the research objective. The research then focuses on the physical dimension, its particular field. The research then establishes its concept for the space of the participants through three topics.

The first topic focuses on studying the concept of a knowledge society in general and focuses on the importance of the urban/Architecture dimension and the role of universities in activating this society. As for the **second topic**, it focuses on studying the concept of in-between, its locations, its forms, and the nature of the relations through which it is composed in order to reach the model of the in-between space that contributes to revitalising the knowledge society between universities and cities through its multiple design and locations. **The research followed the analytical and comparative descriptive approach.** To place the theoretical framework indicators for research within the three levels proposed by the researcher based on the previous knowledge in preparation for the transition to the applied study, which is **the third topic** that includes the study of a global example and its analysis according to the research indicators, represented by **the Vienna University for Economic Sciences (UW)**. Finally, the researchers recommend the most important conclusions and recommendations to Iraqi universities.

1. Phase I : Knowledge: Knowledge is not confined within a narrow sense of the historical accumulation of information. It is constantly evolving, and human thought evolves with record speed. It is one of the fundamental achievements of human beings, through which their abilities are built. It can be considered as a means of innovation, marketing, competition, and high-quality production. This has allowed for the expansion of the size of the economy and improved levels of national income. It has become necessary to keep pace with development and rapid progress, through continuous learning, in order to invest in and renew expertise and create new jobs in order to reach the primary goal of development, which is the well-being of living.(1)

1.1 Knowledge Society Appearance: The term first appeared in 1969 by Peter Durker¹, a professor at the university. Its use deepened in the 1990s through detailed studies of the concept published by Ruben Mansell and Nikoister. The emergence of this term coincided with the birth of concepts of lifelong learning and learned societies. Lozon stated that the knowledge society is the last stage of the development of human societies up to the present time. The first stage was the fishing community. The second stage was the formation of human communities and settlements, represented by the agricultural community, and the transition to industrial society at the end of the 18th and 19th centuries.(2) Figure (1)

1.2 Knowledge Society : It is the society that generates, creates, processes and shares knowledge and enables all members of society to use it to improve human living conditions and raise the quality of life (3). The mathematician Keith Devlin defined it as "a world whose basic drive and real stewardship drive the economy is knowledge. Life in that society requires a basic understanding of what knowledge is, how it is created, and how it is passed from one individual to another. A correct understanding of knowledge must be built on a solid scientific foundation" (4). The concept is defined in the United Nations Development Program (UNDP) as "that society is fundamentally based on the diffusion and efficient production of knowledge, its function in all areas: economy, civil society, politics and private life, all the way to the elevation of the human condition". Finally, it is a society in which institutions, organisations and governments enable individuals and knowledge to develop without limits and open opportunities for all kinds of knowledge to be produced and widely used throughout society. It involves all members of society in its formation and uses; it supports high quality and life safety. This goal can be achieved at a reasonable level through the participation of all people in mass production, the extensive use of different types of knowledge, the rearrangement of social institutions and organisations, and the treatment of people as wealth and knowledge as a primary material. Thus, a knowledge society is a collective mind or a distinctive way of life that society may adopt (5)



Figure (1) The stages of development of human societies / researcher

1.3 Knowledge Society Characteristics: The characteristics of the knowledge society were mentioned (6) in the following manner:

- **Knowledge:** The use and investment of knowledge, and it is being considered the leading competing player in this society, since the evaluation of goods in it is not only measured in material terms, as was spent on it, for example, but attention is given to the amount of knowledge that leads to its production because capital in it are individuals and knowledge
- **Innovation:** Through reason and thought, new knowledge and innovations are generated. It is a society that supports innovators and innovators. It provides them with infrastructure and services, including an enabling and nurturing environment.
- **Educated community:** developing an education style, leveraging technological evolution, adopting modern policies such as lifelong learning programs, and the universities' physical response to this change. It will produce qualified individuals for a knowledge society that targets a certain kind of learning, not traditional education. It will equip individuals to perform tasks that directly contact the community and solve its problems.
- **Applying ideas:** The short time lag between developing ideas and their application and utilisation process. It is a society that supports creative ideas and achieves the desired balance between the needs of society, universities and the labour market.
- **Technology:** It is a form of infrastructure on which the knowledge society is very dependent, through advanced information and communications technology, making it easier to get knowledge and information and store and circulate it.

It can be said that the complementarity of learning systems, the role of universities, innovative ideas, experts and academics, and the actual communication between the university and the city, and consequently between the city and the university communities,

¹ Peter Durker: American economic writer, born in Vienna in 1909-2005. His contemporaries agreed that he is the godfather of management science. He has authored more than 40 books in the fields of politics, economics, and management.

in order to achieve a state of harmony between knowledge circulating, especially in universities first, and society's needs second, and the requirements of the labour market third. All this interaction must have a physical environment that incubates specialists and experts to lay down the broad lines of work and manage knowledge in a sound and targeted way, in addition to embracing innovators and adopting their projects and ideas. Therefore, by studying the characteristics of the knowledge society, **the research suggests the presence of an influential character that represents one of the forms of the infrastructure, represented by the spatial infrastructure that contributes to the activation of this society, such as research centres, centres of innovation and innovation, incubators and incubators built according to modern communication and information technology. The research must be close to universities, as they need the appropriate spatial infrastructure, close to the source of science, learning and knowledge in cities, represented by universities**

- **Infrastructure: It is provided by various forms: physical infrastructures, such as innovation centres, higher education institutions, incubators, etc., and technology, represented by all the modern technology services.**

1.4 Foundations of the Knowledge Society

1. **Education and its institutions:** Its mission is to train educated members of this community and give them the skill of dialogue, communication and scientific thinking. It also promotes lifelong learning principles and policies that reward individuals' access to the right to education and training and skills acquisition, especially in dealing with technology. Finally, citizens can be rehabilitated according to their specialisations in various fields, each according to their roles, to invest their knowledge in the comprehensive development process. As for the institutions, they are service places for the knowledge society, whose essential role lies in the fact that they include, among their various spheres, whether official or unofficial, the activities and interactions of the knowledge society, in terms of circulation, production, publishing, and employment. They are an incubator environment for these interactions, providing a material and ground infrastructure for individuals, both inside and outside.
2. **Infrastructure:** Some believe that technology is an essential pillar because it facilitates the rapid and easy dissemination of knowledge and sharing among individuals. It also facilitates research processes and the advanced software and technologies through which innovations can be refined and implemented in less time and effort.
3. **Behaviour control:** The need to disseminate fundamental values and principles that are essential to the activation of the knowledge society, such as preserving privacy, freedom of thought, protecting property, preserving rights in innovations, and all that would achieve positive interaction and participation in this society in the presence of variables, rapid development and openness to the whole world. In addition to training members of society in this transformation and instilling in them a spirit of participation, exchanging ideas and dialogue, and dealing with the positive aspects of technology.
4. **Leadership and management**

These aspects previously presented must move correctly within studied plans and a clear vision to be put on the right path to activating the knowledge society accurately and realistically. This is where the role of governments first appears and the management of universities, academics, and specialists directly because they have the experience and knowledge that enable them to refine the knowledge of others and get the best out of them. (7) . Figure (2)

The stages of the city's transformation of a knowledge society can be summarised by:

The transition to a knowledge society in a city is done through interdependent, interrelated processes and phases, each based on the other, at the same time having the same importance, starting with the phase of creating an enabling environment incubating for that knowledge society, involving two aspects: First: physical aspect, which will be the focus of research and will be discussed in detail. It is providing infrastructure, both buildings and spaces, such as knowledge spaces, centres, nurseries and any other space that can function as an incubator; activating universities, which perform their various roles, whether cognitive or administrative and whose position within society qualifies them and the nature of their activities for this role. This aspect also includes technological infrastructure such as modern means of communication, an advanced and renewable database, and electronic devices that facilitate the exchange and dissemination of knowledge.

Second aspect: Moral values are the part that adopts the process of establishing the values, principles, and ideas that contribute to building the desired knowledge society. The most important task of this group is to prepare the member of the knowledge society since this person is the leading influencer and actor in this society.

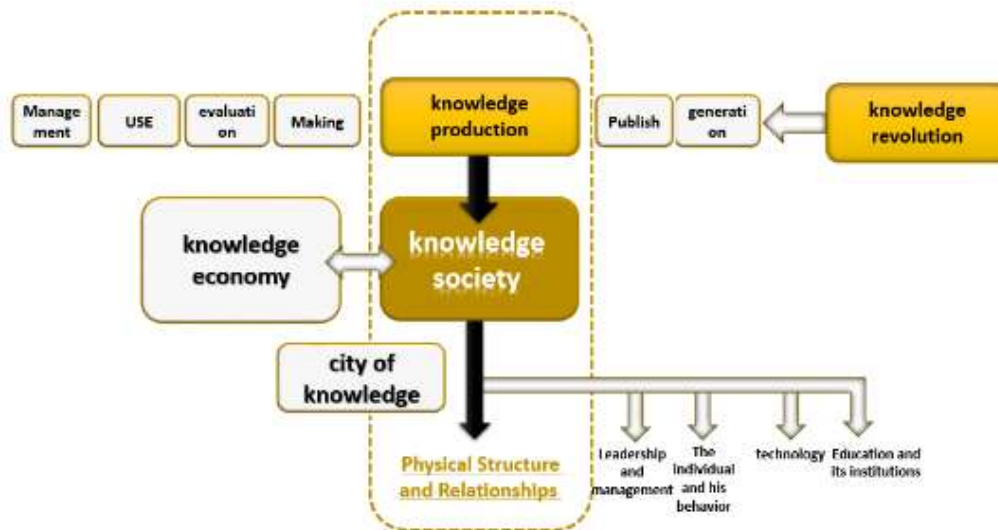


Figure (2) Knowledge Society and Physical Structure/Researcher

1.5 The knowledge society Dimensions

The knowledge society has many dimensions that each society must utilise to make it resilient in front of challenges and competition. Most of the resources covered by the researcher will mention the dimensions agreed upon.

1. **Economic Dimension:** Information in a knowledge society is the primary commodity or service and the main source of value-added, job creation and economic rationalisation, which means that the society that produces information and uses it in its various aspects and activities is the society that can compete and impose itself.
2. **Social Dimension:** This dimension is illustrated by the prevalence of a certain degree of knowledge culture in society and raising awareness of technology, the importance of knowledge, and its role in man's daily life. Society here is called upon to renew and develop rapidly for the individual, especially if we know that change will affect the foundations of work itself and the individual in the first place. Therefore, we will see the birth of a new human actor seeking to exploit his abilities and potential and belonging to knowledge workers who narrow the gap between mental and manual work, as there is no effectiveness in working without knowledge of its specialised strengths.
3. **Technological dimension:** This dimension is illustrated by the spread, supremacy and application of information technology in various spheres of life, in the factory, farm, office or school. This means that attention should be paid to the media and information technology, adapted and adapted to the objective conditions of each society, provided the necessary communication and communication technology infrastructure and made accessible to all. (8)

The researcher made another conclusion: The urban dimension: This dimension is illustrated by the need for sustainable spatial systems in cities that support the transformation process of the city society into a knowledge society. By creating incubating enabling environments and effective knowledge spaces, which represent the infrastructure that contributes to participation and interdependence between members of society, educational institutions (academics and students) and governments.

Through the previous, it is possible to reach a procedural definition of the concept of the knowledge society, which is a concept that describes groups of individuals who have a common interest or purpose, who work to collect their knowledge together, exchange it, share it, use it more widely, and continuously add to it and perform operations on it. This work takes place within enabling incubating environments and spaces that contribute, through their characteristics, to activating the spirit of creativity, innovation and participation within the team in order to reach the best use of that knowledge to employ it in community service and solve its problems. In addition to generating and investing in new knowledge and innovations. This society considers "knowledge" as the raw material for the state's economy and places the human mind and innovations as critical for production and investment. With society acquiring the status of a "knowledge society", the state's economy turns into a "knowledge economy" away from the depletion of natural resources. Higher education institutions, especially universities, and their formal and informal spaces are among the essential pillars of this society in cities.

1.6 Architecture and the knowledge Society

Edvinsson's first definition of knowledge cities was designed to promote knowledge.(9) SGS defined them as a city of a knowledge economy and a knowledge society driven by highly valued exports, created through intellectual power, technology, and research, to develop community living standards and provide economic and cultural support. It invests in members of society through training and education.It is a city whose society is a knowledge society that targets innovators, research centres, educational institutions and companies (10) The nature of the architectural issues researched, which receive the most attention in the dissertations of the knowledge society, is aimed at exploring new ways in design and innovation. The studies presented global examples of buildings and functions that play a significant role in activating the knowledge society through the activities, location, spaces, and events

within them, such as the museum, the exhibition, and the library. The condition is that they are dealt with in ways that meet the requirements of the knowledge society and contribute to its activation, not by using them as buildings and using traditional functions, but by trying to use and operate in innovative ways. By focusing on community issues, harnessing contemporary technology, and innovating new design methods, the studies emphasised an essential vocabulary. NAI Rotterda,(11) emphasised the choice of a form and location suitable for the elected intellectual and physical environment to contribute to the activation of the knowledge society in the city, in addition to the fact that the building must accommodate the ongoing changes in the demand and supply of contemporary knowledge. The study of John Azora (12) emphasised the role of buildings with cultural content in economic and urban development. They serve as a driving space for ideas, culture, technology, the economy and society. In addition, they are important places of living, solidarity and creativity, and intersections and interactions between different poles, which serve as a factor for the revitalisation, renewal and transformation of the city's society into a knowledge society. These elements, along with the use of technology and means of communication and the development of the spirit of the knowledge society in individuals, are designed to create a lively, attractive, connected and innovative city. Caroline Weng & Chung Joy, Greater emphasis was placed on the role of technology in the knowledge society and education, the development of means of education, and attracting talented and creative people. By having a solid non-traditional ground for changing the terms of knowledge production and dissemination. Innovation centres, places of diversity and functionality, catalysts, cultural interaction, the instilling of creative and innovative analytical thinking skills and, finally, the support of group learning by problem-solving through work teams. (13)

1.7 knowledge space

Despite the newness of this term, there are several historical examples of these spaces in various forms, including places where knowledge is freely shared in Greek cities, such as the meeting spaces that are often open, because of the belief that innovations and knowledge are mainly created through dialogue, and this makes learning and participation among the most critical influencers in the theory of knowledge-making.(14) Therefore, there must be a ground that includes the various activities of society and knowledge economy, whose activities must be carried out within the boundaries of an appropriate and suitable urban environment. Every knowledge activity must require a knowledge space or a catalytic and incubating knowledge region. This knowledge is the main engine in urban development and directly affects building knowledge and living.(15) This knowledge environment is concerned with exchanging knowledge; whether internal or external, it affects what surrounds it. At its heart is the ability to generate and apply knowledge to create new ideas and innovations that stimulate the production of all that is competitive, to promote and develop society and the city. The acquisition of knowledge assets in the city - educational and research institutions and cultural centres - benefits its inhabitants by promoting a sense of satisfaction, benefits and participation of all in life activities. Moreover, this will enhance the quality of life, making the city attractive to knowledge workers - such as researchers and skilled individuals - to live and learn.(16) Komminos believes that there must be three levels in the city to activate the knowledge society and become competitive cities: **Level 1:** The physical knowledge space brings together knowledge-intensive actors within this physical space **Level 2:** Institutions combining learning and innovation, **level 3:** Digital spaces for communication and interaction.(17)

Knowledge space can be defined as a space based on knowledge and an incubator for it, the catalyst for innovation, and an attractive factor for staying in the city through its activities. Members of the community are part of an extensive social interaction and creativity system. The most important reason for its success is making the society successful through dialogue, participation and knowledge exchange, offering features such as easy access to knowledge and approaching universities spatially as a critical factor in the supply and utilisation of knowledge. Therefore, the city and university must be integrated to activate the knowledge society and create an attractive enabling and interactive environment from which the city and university community benefit.

2. Phase II: In-between as Space

The first person to think about this concept in 1994 was the thinker Henry Bergson, who asked him to become an existentialist, and he considered the arc of movement a model for him. Bergson says that instead of having stable relationships between entities, objects, and identities, there is a sense of the region or the only frame of movement. The concept of in-between has come to be undefined, threatening to disrupt the identities that are made up of it. This concept has been permeated by many contemporary philosophers such as Meres, Dreida, Doluz. It often comes within the time-lapse, the repetition, the difference, Grosz see in-between as the moment of becoming for diffusion and openness, a space for change that interacts with the events within it, so it must constantly be reconstituted.(18) As for the study of Mazloum's study states that the distance between an area between two worlds is for change, exchange, connection, movement between bilaterals, and fixed identities. We need this movement in the space between the two worlds for interaction between them. At the same time, it is a means of creating space and thinking. It is an act that shows the architecture of space utilising its physical elements, without which space becomes nothing but space, what space between space and space are parts that are not part of each other.(19) The space between the two is "A space of the AND", located between contradictions. Its importance comes through its connection with the concepts of separation and connection. It represents the virtual interface between the different bilaterals, such as the outside and the inside, or the two different uses, such as education/commercial, health/housing. Therefore it is a place for change, innovation and communication. It presented a vision of the space between being in a continuous double change and characterised as instability, uncertainty and lack of a defined identity. (20)The importance of the in-between space comes through its definition of the nature of the relations between the outside and the inside, where it acts as a mediator, an overlap zone and an entity that includes both the outer and the internal, where it includes the urban and the architectural and comes to link public spaces with cultural and social life. It is dynamic to create vibrant, recognised environments and appear as places for holding events, activities, and gatherings. Noordin sees the in-between space as a result of the overlap of the outside, which represents the city's urban context with the inner side and its various uses, to create a third space between us. He calls for not stopping the facades of buildings, but instead integrating them and linking them functionally and physically with the outside via this

interconnected between, to create an intermediate urban space that can be recognised as a place to communicate with the community and gather and hold events and activities (21)

2.1 The in-between space and the relationship of the interior and exterior

There was an architectural tendency to separate the interior from the outside to reinforce the idea of shelter from the inside. However, the inside and the outside are not without each other. This essential relationship has been served by elements like openings and visual access and has evolved. The functional approach of the walls, doors, and outside windows is necessary but insufficient for human desire. The threshold appears as a third type of area that can improve the entire quality of living spaces by converting the threshold from a tension line to an interface. Physical links between the inside and outside must be defined to distinguish their unique identities and create an appropriate interaction. This appropriate interaction can create a sense of coherence and complementarity between these two worlds. It is more about connectivity so that if it develops, it creates another space that's not in or out but makes up some features of every kind. This mysterious moment of a spatial experience can be called "**In-Between.**" Examples of items that are connected in and out are holes, entrances, balconies, etc. Sometimes, this connection goes beyond just being an element and creates architectural spaces that cannot be defined as internal or external and stand somewhere between these two spatial domains. This type of space is called different names, like intermediate, transitional, liminal or intra-spatial spaces, and this type of space plays a vital role in architecture.(22) Half-public or half-private space can be significant to users. It is influenced by its inhabitants' culture, beliefs, and past experiences. Some studies have also looked at intercultural design as a cultural topic.(23). According to Shahlai, three different methods can be identified to determine the connection between the two worlds in all architectural species. These methods include:

1. **Separation:** A two-dimensional element that provides physical or sensory access, such as a door or window. Any dividing line, not space
2. **mixing:** The line between inside and out is blurred, and this confusion is intentional. The creation of this approach depends on functional and cultural issues.
3. **Distance:** This connection can become interval by focusing on this line and converting it from a 2D element to a 3D area. This threshold can act as a space that provides dialectics between inside and outside and has features of each type.

In the first, there is a focus on the solid separation between the inside and the outside. There is a limited opportunity to benefit from the external environment. This may be a common approach, but it reduces the spaces of cohabitation coincidence and social spaces. The second type starts with partial openness and convergence with the two worlds. However, within maybe faint but existing borders, it may suffer from confusion between the private and the public and confusion in identity. The third type, the creation of interpersonal spaces, can be a suitable solution to achieve the qualities of the two worlds at the same time and at the same place to benefit from both, and can add joy and quality to them The administrative definition of the in-between space can be defined as follows: An interdisciplinary space, defined by its association with primary and dominant functions or buildings, between bilaterals as worlds or domains which may be different in usage (commercial/educational/residential) as well as formation (buildings/external environment such as plazas or green zones), representing an element of transition and assembly. It is both a means of connecting and separating. Its role comes in creating integrated spatial relationships. The in-between space is affected by design, implementation, and method of use. The behaviour of the individuals within it is influenced by its nature, as it is prepared for social interaction and cross-fertilisation between the different bilaterals, which may be critical between them, and through the intermediate between the occurrences of coexistence. This is why it is necessary to be hospitable, sustainable, resilient, vital, secure, and attractive to different segments of society, acting as a place for gathering, meeting, working, and exchanging ideas.

2.2 The Properties of In-Between space as a Third Space

Third space is a term first coined by the American scientist Ray Oldenburg at the end of the eighties in his book "The Great Good Place." It defines third places as a neutral social environment. In this hybrid public space, individuals can share and meet with other individuals, exchange ideas and experiences, and enjoy this experience. These are places that promote the building of society encourage individuals to stay there and always return to it through its atmosphere, in addition to providing an interactive environment in which they feel equal, develop their potential and present their ideas in a way that they cannot do elsewhere. Oldenburg believes that this place is essential for both communities and individuals. It embraces interactive life and contributes significantly to realising social ties, which contribute to these values. Of the city as a whole by investing these places in the overall development of individuals and society. It is the best place for activating public participation, developing businesses and practising the various life activities of the city community. It could be open or closed spaces .Oldenburg assumes that there must be three main places in every person's life that he/she frequents continuously, namely the home and the workplace, in addition to every third place, which may be a social centre, library, innovation centre, public park, entertainment centre, coffee shop, public space, and which he/she chooses carefully to feel the same containment as the house, while at the same time providing a participatory, interactive incubator environment that allows individuals to meet spontaneously or intentionally, whether they are strangers or friends from different classes. Dialogue, sharing, and exchange are the main factors in it(24). **The in-between three spaces** are one of the most important places to build society, linking people visually and spatially to multiple levels. It becomes a unique world, a place of reflection, communication and activity. They should be easily accessible, visible, attractive, and well lit. Moreover, they should be appropriately activated, from the right location to the use of materials and the addition of complementary elements that can be service or technical, such as technology services, communications, and recreational facilities. (25)

The idea of the In-Between space can be seen as a third space, from the idea of the empowering incubators and the knowledge spaces in the first topic, which contributes to the transformation of the city society into a knowledge society. This approach

is evident in the common characteristics between the two spaces and the goals. The locations, levels and forms of the in-between spaces activate the city society as a knowledge society. Therefore, this rapprochement supports the idea of research, which is represented in proposing in-between spaces as the incubators of innovators and the society as a whole, to achieve the main objective, which is the transformation of a knowledge society whose members invest their ideas, potentials and creativity in comprehensive economic, cultural and social development. Since universities are one of the essential pillars of the knowledge society, the relationship between the university and the city will be studied.

2.3 In-Between the University and the City

Oscar Newman and Louis Sert ideas' in 1963 counted the university as a small part of the city as a whole and a laboratory for urban design. One of its most important features is a multi-purpose organisation in teaching, scientific research, and community service. Therefore, it has its social entity because it is a society that is the basic fabric of human relations and that allows for the multiplicity of societies within it. In modern society, the research capacity of universities is coupled with the advancement of society, which is one of the determinants of a city's wealth. Since the 1990s, the general policy of States has emphasised the need for the development of the knowledge economy and the rehabilitation of societies into knowledge societies for qualitative improvement of living conditions. As a result, new development strategies have been re-established to involve universities. Thus, the status of universities has risen more than ever, as they have become a significant variable affecting the economy, culture, society, innovation and the city's public body. Edwards says universities are a place to build bridges with the community. A university and a city can develop a mutual relationship through informal structures that can be used by the community, such as sports halls, libraries, lecture halls, creative and research centres, incubators and others. It can be used frequently by university staff and the general public and thus has become a place without multi-disciplinary, multi-cultural walls. These buildings should be welcoming, exciting, and uplifting.(26) Thus, campus design needs welcoming and informal spaces to encourage people to talk, interact, and even work in small groups with flexible spaces that include opportunities for an informal meeting, which supports education. The role of these spaces and buildings in the dynamic of creating more productive societies for scientific research and knowledge should be understood.(27) This approach enriches and increases people's encounters and shares their ideas within these interactive spaces in a vibrant urban environment. The campus should be viewed as a "network" of learning, discovery, and dialogue between students, professors, and society as a whole. In the challenging economic climate of the contemporary period, the campus must be designed efficiently and effectively. It needs a network of interdisciplinary places that are not controlled by departments but evolved on neutral ground and that can be equipped with equipment and technologies for use by the community, the city community, and the university community, with the help of usability and management experts that can be hired from academics at universities for knowledge-building.(28) The Boys study suggests bringing the outside in through intersectional initiatives between education, business, and the community. For example, White space at the University of Albertay makes WhiteSpace unique. It is not its architecture but the multiplicity of layers through which students, professors, researchers, and participants intersect. It is one of the most modern and innovative learning spaces in the UK. It ignored the official zoning and rebuilt the relationship between different aspects at the university's level(29). As a result, physical space between the university and urban public areas has increased. The role of open spaces on campus as cultural and recreational infrastructure in the city has also expanded. Because university integration with cities and their connectivity to the community are generally low, university campuses will be poorly positioned as service spaces unless specific events or areas are planned for public use.(30)

Universities in urban areas are building meeting areas between the university and the city, such as open, large-scale spaces close to entry points or borders where the university meets the city. These open spaces attempt to foster communication between the university and the city community. By creating a new multi-use building that will host recreational, commercial, and cultural events, as well as other events related to the exchange of knowledge and ideas and the promotion of innovation, the aim is to strengthen the social role of the university and rehabilitate the role of the local community. Increasing the interaction of the campus with the city and the cooperation between them will help develop both.(31)

The first and most important standard in the physical relations of the campus and the city is the university's location. If we consider the campus as a neighbourhood, its edge and centre affect the physical relations between the campus and the city. Buildings, open spaces, and transportation play key roles in the physical relationship between the campus and the city. The edge of the campus must be delineated, and it is better defined by buildings and open spaces rather than walls and fences. Squares and streets should be designed as representative areas frequently used by citizens and campus users for daily activities. The jobs taken into consideration on the edge of campus should be general, such as open spaces, scientific parks, public buildings, research and innovation centres, etc. The shape of open spaces on the edge of the campus should also be hospitable to the city. The pedestrian and bicycle paths (sustainable transport) of universities can be seen as an opportunity to connect this path to the city. The continuation of pedestrian paths and bike lanes across the city reduces traffic, encourages walking and cycling, leading to increased social interaction that helps sustainability.(32) Figure (3)

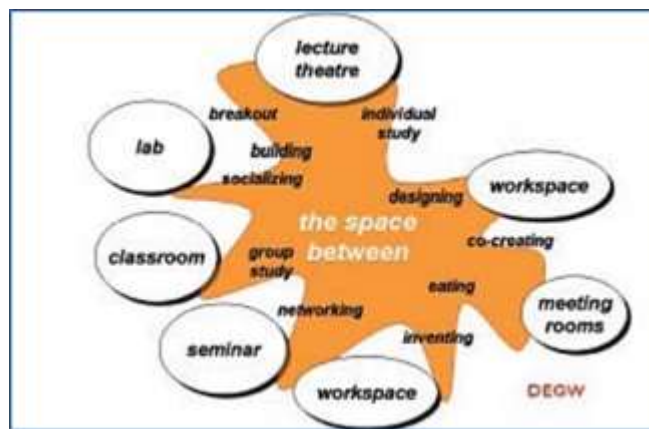


Figure (3) The in-between space (one of the interactive spaces for informal learning)/ Source: Dugdale

2.4 Indicators

The research indicators were categorized into three levels. The In-Between space interacts between the different shapes and levels within the campus to form a space, building, or relationship. The university integrates with the city and, therefore, the university community and the city community; through this integration, the knowledge society is activated

Table 1 : indicators of the theoretical framework

Table 2: Indicators extracted from the research / researcher

Levels		Indicators	Possible Values
1	University-city relationship	Relationship levels	physical - social - economic
		relationship patterns	integration - isolation
		bonding elements	Gates - fences and walls - paths - buildings - open spaces
		Location	Vital- interactive - clear
		Flexibility	Flexibility of Use - Flexibility of Design
		Attraction	Through design - through activities
2	Buildings	Location	accessibility - transportation - close to the edge-Vitality
		Form	Clarity, perception, sense of safety, visual supervision, identity, attraction, openness
		Function	Museums - exhibitions - theaters - cultural facilities - sports facilities - playgrounds - clubs - social centers - shopping centers - eating places - religious buildings - libraries - business incubators - science and technology parks - innovation centers - research centers - learning and teaching centers
		external environment	Ports of Entry - Services - Interconnection
	Open Spaces	walkways	Environmentally Protected - Pedestrian Friendly - Serendipitous Encounters
		Green Spaces	Site - Functions - Empowerment - Services
3	Interior Spaces	Flexibility	Flexibility of management (Employment) - flexibility of design
		Uses	Jobs - Events
		Technology	Equipment - Networks
		Activities	Scientific activities - recreational activities - social activities
		perceptual characteristics	Proportion and scale - colors - lighting

3. Examples: The Vienna University of Economics and Business(WU)The campus will be analyzed according to the three levels mentioned above, and the indicators will be tested.

Level 1: The level of campus engagement with the city is binary (university-city): The campus is an integral part of the city, a compact structure with it, an interactive educational landscape that combines the students' university life with the open space of the community. The university's administrators believe that the fences or barriers are incompatible with their vision of the University of the Future, as they put it. The removal of traditional boundaries has created a genuine urban link between the university and the city and a new public space in the city for social, cultural, and political life that meets the different needs of society. The Campus WU is an open and accessible space for the public that promotes this openness towards the city and a sense of security and social communication. In order to enhance this



Figure (4) The boundaries of the UW within the city of Vienna / <https://www.google.com/maps/@48.200801,16.4068106,14.45a,35y.39.08t/data=!3m1!1e3>

communication, the university is linked to a clear path with the city, which cuts through the campus, extending between gates, to form a multi-use path that is expanded once to form a square and stopping areas and is lost once to appear as walkers. The buildings are distributed on both sides to provide the user with recreational, cultural, and other services. shows the trajectory. The top priority in planning the campus in this integrated way with the city was to provide an environment for WU students, staff and members of the community as a whole to help them work productively.(33) Figure (4) (5)



Figure (5) The path connecting the buildings and continuing between the gates to the outside

<https://www.google.com/maps/@48.200801,16.4068106,1445a,35y,39.08t/data=!3m1!1e3>

Level 2: Campus Component Level (Buildings-Open Spaces): The connection between the university and the city is achieved through another level: the university's buildings and open spaces, which connect the city with the university through the joint use of the two communities, the city community and the university community. The campus provides 55,000 m² of green areas open to the general public, which are recreational and service areas for the entire city of Vienna. This network connects the university's buildings and interacts with each other. The WU campus can be considered a pedestrian zone and the movement of cars and service vehicles is restricted to the eastern part of the campus. Fig (6) shows the open areas of the university and how they interact with the campus. Walkways connect university parts to provide a welcoming atmosphere, creating a unique and distinctive experience of moving between buildings. This experience is not only about recreation, enjoying the landscape and sitting, but also includes facilities that can be used by the general public in the city, not only students and university staff, which include service and recreational facilities, educational streets, and places for activities that can be used during university holidays. These open areas are often equipped with flexible furniture that can be used in more than one form, in addition to being smart furniture equipped with technological services such as chargers and wifi, in addition to smart screens, advertising and indicative panels and the use of water bodies, as well as playing places for different ages and practising hobbies such as drawing, playing and others.(34)



Figure (6) The green and open areas inside the campus

<https://www.google.com/maps/@48.200801,16.4068106,1445a,35y,39.08t/data=!3m1!1e3>

As for the buildings, the university campus consists of six buildings, which include formal buildings such as educational and administrative buildings, in addition to informal buildings that are used by the city community as a whole, such as libraries, a learning centre, stores, bakeries, sports centres, restaurants, and a kindergarten. These buildings interact with each other through the ground floors that achieve communication. The entrances to the buildings, corridors, and views were designed to complement each other. These buildings are surrounded by walkways and environmentally protected areas serviced by technology that helps walk, share, and achieve chance encounters. In addition to the functional link, the university is linked visually with the surroundings, as some of its buildings were clad with material-mono with multiple degrees of transparency and particular angles of inclination to reflect the sky and the green areas that surround it, to generate a merger of buildings with the environment. As for the upper floors, they reflect views of the Vienna Center and the Parter Park.(35) **Figure (7)**



Figure (7) The outer spaces Pictures of the University of Vienna /[Vienna University wu - Bing images](https://www.bing.com/images)

Level 3: The level of the interior spaces: at this level one of the university buildings will be displayed, whose interior spaces represent the spaces between the active spaces of the knowledge society.

LC Learning Center : LC is the heart of the WU campus designed by Zaha Hadid to be more than just a library or a traditional learning centre, a place of gathering and sharing, a place of communication and meeting and an open 24-hour workspace, where most services and activities are concentrated, as well as a knowledge centre for researchers. The building has a central location that approaches one side of the university's outer limits. Through the site and function, the building acts as in-between space between the city, which connects the university to the city, both urban and knowledge. Its spaces are designed and organized to encourage innovation and communication by creating catalytic environments that incubate the occupants to help them think freely. After passing through the entrance hall and the ramps and stairwells, visitors move to the two top floors devoted entirely to the library, workplaces, and six research centres. The vast glass-fronted student work area provides a beautiful view of Porter Park. Because the department's colours denote the various areas within the building, the darker section of the building was allocated to the library with over 1,000,000 visitors per year and a collection of nearly 650,000 volumes, WU's library being the most extensive specialized

library in Austria. It is also one of the largest in the German-speaking region. The brightly coloured sections house the service units, where individuals find all the knowledge-based service centres here under one roof to be used by both the university and city communities. Additionally, the LC Building on the ground floor houses the WU Café and Halls that host public events such as panel discussions and public lectures in these halls, bringing together international business and economic experts to attend conferences and meetings. The LC Forum offers an ideal venue for large-scale events such as student celebrations and small exhibitions. All halls are equipped with global learning techniques to accommodate more than 500 people, and all halls are equipped with natural lighting and the latest technological equipment. Students can access the cafeteria and self-study areas through the atrium to work quietly, arranged in a spiral shape around it. Project rooms encourage communication and teamwork, and a mixture of quiet spaces and open spaces linked through slopes and ladders provides a dynamic, comfortable atmosphere for the occupants(36) **Figure (8)**



Figure (8) the interior spaces of the learning center building /[Colorful furnishing by STUA brights up Zaha Hadid’s Vienna University Of Economics And Business | Inspirationist](#)

Table 2 : Testing the examples according to the indicators of the theoretical framework / the researcher

Levels		Indicators	Indicators' Check
1	University-city relationship	Relationship levels	physical - social - economic
		relationship patterns	integration
		bonding elements	Paths, buildings, open spaces
		Location	Flow of entry, serviced by transportation, interaction area
		Flexibility	Possibility to change, add and adapt to future trends
		Attraction	Empowering innovators, holding social, scientific and recreational activities, attractive and welcoming design, social surroundings, ease of movement and awareness, providing incubating spaces
2	Buildings	Location	Public transportation, accessible roads, close to transportation stations, close to the university borders, located at the paths linked to the outside, with lively and interactive sites and not isolated
		Form	Safety and visual supervision, with identity and impression on the recipient, with welcoming and attractive entrances, openness and transparency in some parts
		Function	Exhibitions, theaters, cultural facilities, social centers, shopping centers and eating places, libraries, business incubators, science and technology parks, innovation centers and research centers, learning and teaching centers
		external environment	Clear and welcoming, functionally or visually connected to the environment, charging and WIFI ports, environmentally protected, various functions
	Open Spaces	walkways	Achieving a coincidence meeting, encouraging walking, shaded by trees, environmental protection methods
		Green Spaces	It fits with the university’s total area, with multiple functions: scientific, social, recreational, flexible, free spaces for individuals, technological services, environmental protection, shade spots and umbrellas, smart seats and furniture, waste receptacles and beverage machines

3	Interior Spaces	Flexibility	Tailored according to the methods of receiving knowledge: individual, lecture, groups, Halls and spaces of different sizes with the ability to change their size, change according to use, presentations, lectures, celebrations, seminars, user engagement as a product, flexibility of organization
		Uses	Social spaces: eating, sitting, brainstorming, movement areas, containing various activities, enabling: providing freedom for individuals to interact and exchange ideas, learning spaces: innovation, .learning, educational street, meditation and thinking
		Technology	Modern devices, display screens, tablets, charging connections, cameras, scientific devices to prepare innovation spaces, WIFI supported networks, available scientific sites
		Activities	Fit the size of the space with the occupants and take into account the colors
		perceptual characteristics	Scientific, recreational, social

Conclusion : Knowledge passes through several stages called the knowledge life cycle. The concept of the knowledge society appears at the third stage, which is the stage of knowledge production that depends mainly on innovation and innovators. The integrated relationship and the avoidance of solid physical boundaries such as fences and walls, and the transition to the use of natural elements such as trees, green areas and the university buildings themselves as elements between a buffer and a link between the two societies. **Therefore, the research suggested adding the urban dimension to the other dimensions of the knowledge society.** Universities consist of formal buildings that work to give the character of a knowledge society to the university community only, and other informal ones, through which the knowledge society is activated for the city community as a whole because it achieves integration between the two societies without harming the privacy of the university, between the university and the city, or in the form of a building or an external space that achieves communication between the two worlds, or in the form of internal spaces that play the role of a link through its activities, and design. Also, meeting the requirements of the labour market by universities is one of the essential aspects, but the integration must be more significant. It includes the social aspect. Universities and the educational system must meet the needs and requirements of society as a whole. The university is a large laboratory that contributes to developing solutions to society's problems. In addition to preparing the fundamental pillars of society and measuring their availability in universities.

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