Reviving Cityscapes: Taipei's Education-Oriented Development (E.O.D.) in a Shifting Landscape

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Abstract

Urbanization presents a multitude of challenges, and Taipei, Taiwan, grapples with a unique one: declining birth rates and an aging population have resulted in surplus school capacity. In response, Taipei has pioneered Education-Oriented Development (E.O.D.), a novel approach that leverages existing schools to revitalize neighborhoods, promote social inclusion, and stimulate economic growth.

E.O.D. extends beyond physical infrastructure. It re-envisions schools as multifunctional community hubs, fostering lifelong learning and collaboration between residents, businesses, and educational institutions. Underutilized spaces are transformed into accessible community centers, parks, libraries, or cultural facilities, invigorating surrounding areas. E.O.D. prioritizes equitable access, fostering social cohesion, and addressing pre-existing disparities. By nurturing innovation and collaboration, E.O.D. can act as a catalyst for local businesses and economic expansion.

This study delves into a specific E.O.D. project in Taipei, employing a multifaceted analysis to assess its impact on educational outcomes, community engagement, and economic revitalization. Successes and challenges will be meticulously examined. Through the E.O.D. initiative, Taipei exemplifies how urban challenges can be springboards for innovative solutions. By harnessing the transformative power of education, cities can convert underutilized spaces into vibrant community hubs, fostering inclusion, economic development, and a brighter future for all.

Keywords: Education-Oriented Development (E.O.D.), Urban Development, Declining School Enrollment, Underutilized Educational Facilities, Community Hubs, Lifelong Learning, Social Cohesion

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Background

Taiwan is confronting a rapidly aging population, with the National Development Council projecting a surge in the proportion of citizens aged 65 and over, reaching 20% by 2025 and a staggering 30% by 2050 (National Development Council, Taiwan). This demographic shift mirrors trends observed in developed nations, posing significant challenges for social services and healthcare systems (Lin, 2023). Notably, major urban centers like Taipei will likely experience a more concentrated elderly population than the national average.

Compounding this demographic phenomenon is a documented decline in student enrollment across all educational levels (except preschool) between 2016 and 2021 (Ministry of Education, Taiwan, as cited in Taipei Times, 2022). This decline stems from Taiwan's low fertility rate, with projections indicating a potential annual decrease of 20,000 primary school students and 8,800 junior high school students over the next decade (China Daily, 2022). Consequently, the total student population in Taiwan is expected to fall below 1 million by 2029 (China Daily, 2022).

One critical challenge of the aging population is the dwindling number of school-age children. This decline has already begun and is projected to continue, leading to underutilized school buildings in Taipei. Statistics reveal that a staggering 78% of school buildings in Taipei are over 50 years old, with nearly 70% of classrooms across the city's 236 schools slated for reconstruction within the next 15 years. In the context of urban development, this situation necessitates a paradigm shift in how we approach school reconstruction, especially considering the need for repair and renovation in many of these aging buildings. Underutilizing these facilities presents a multifaceted problem. Firstly, it represents a significant waste of resources. Secondly, it can lead to the deterioration of school infrastructure. Finally, underutilized schools can make attracting and retaining qualified teachers difficult.

However, Taipei's surplus of school buildings presents a unique opportunity to create innovative and community-oriented spaces. Repurposing these buildings offers various possibilities:

1. Senior Centers or Long-Term Care Facilities: Converting schools into senior centers or long-term care facilities would directly address the aging population's needs by providing a safe and supportive environment for older adults.
2. Community Centers or Libraries: Transforming schools into community centers or libraries would create vibrant spaces for people to gather, socialize, and engage in lifelong learning.

3. Revenue Generation Through Rentals: Renting out school buildings to businesses or organizations could generate revenue for the city and potentially create new employment opportunities.

Repurposing school buildings necessitates careful planning and consideration of various factors. Nonetheless, it represents a crucial opportunity to adapt to Taiwan's changing demographics and create dynamic spaces that cater to the community's evolving needs.

Definition of EOD

Education-Oriented Development (EOD) is a comprehensive urban planning strategy implemented in Taipei City. EOD prioritizes the positive interaction between educational institutions and the surrounding community. This framework leverages the resources and infrastructure of schools to cultivate a mutually beneficial environment that fosters learning, development, and economic vitality.

1. EOD as a Response to Demographic Shifts

The EOD project is a long-term urban planning initiative addressing Taiwan's aging population and declining birth rate. It tackles the need for reconstruction in nearly 70% of classrooms across Taipei City's 236 schools over the next 15 years. EOD evaluates incorporating community-demanded public services, such as childcare and elder care facilities, into the reconstruction process. This strategy emphasizes the integrated use of land and buildings to promote the co-development and co-prosperity of schools and communities.

2. Guiding Principles of EOD

The planning principles of EOD adhere to the "5E" framework:

- Education: Prioritizing the development of educational facilities.
- Economy: Optimizing land-use efficiency for economic benefit.
- Ecology: Implementing environmentally friendly practices in construction and renovation.
- Equity: Ensuring developments meet the needs of all citizens.
- Evolution: Promoting sustainable urban development for the future.

EOD integrates disaster prevention and resilient city concepts into developing or renovating public facilities. Regional development and public service needs are also factored into the planning process.

3. EOD: A Vision for a Sustainable Future

EOD represents a comprehensive and forward-thinking approach to confronting the challenges an aging population poses, a declining birth rate, and the imperative for school reconstruction. It constitutes a key element in Taipei City's efforts to create a more sustainable, livable, and resilient future. While a significant undertaking, EOD is essential for the city's long-term well-being. This project will ensure Taipei City remains a vibrant and livable place for generations to come.

4. Core Principles of EOD

- Synergy Between Schools and Communities: EOD fosters collaboration between schools and community stakeholders, encompassing residents, businesses, and other organizations. Through collaboration, schools and communities can share resources, develop joint programs, and create a more vibrant and supportive learning environment.
- Redevelopment of Underutilized School Space: Shifting demographics and declining birth rates can lead to a surplus of underutilized space within school districts. EOD promotes the repurposing of these spaces for community benefit. This could involve converting unused classrooms into after-school programs, libraries, or community centers.
- Enhanced Educational Opportunities: EOD recognizes the potential of schools to serve as hubs for lifelong learning. This could encompass offering adult education programs, vocational training, or cultural events that benefit students and the broader community.
- Economic Revitalization: Schools can function as anchors for economic development. EOD encourages partnerships with local businesses to provide educational opportunities for students, such as internships or job shadowing programs. Additionally, repurposed school facilities can house new businesses, generating revenue for the community.

The Process of EOD

EOD is an urban planning strategy focused on leveraging municipal land for educational purposes. The process commences with citywide data collection. This data encompasses attribute maps related to municipal land distribution, land-use zoning, buildings, and other relevant factors. An overlapping map analysis is then conducted to identify potential EOD sites. Following this analysis, a minimum of seven potential bases are chosen and proposed for development. These bases aim to address the city's need for renovation or new construction of municipal buildings and land use, while also considering the unique characteristics of each base.

The planning principles, considerations, and objectives for each target site are subsequently formulated in a step-by-step manner. The operational procedures are then categorized based on the target's primary function: "school" or "non-school (other organizations)." Both categories follow a four-step process.

For situations involving the reconstruction of government agency facilities, the EOD process provides a framework for collaboration between government agencies and the competent authorities of purposeful undertakings. This collaboration involves the integration and utilization of existing buildings or sites. The competent authorities actively participate in reviewing, evaluating, and preparing the development plan. This collaborative approach aims to achieve a balance between educational, economic, ecological, equitable, and progressive goals, ultimately contributing to sound urban development.

Table 1. Build first, demolish later, promote by phases

Step 1: Municipally Owned Land Start-Up Consolidation
1-1. Self-Assessment
1-2. Formation of Working Group
Step 2. Assessment of Needs
2-1. Check if there is any public land in the vicinity that can be consolidated.
2-2. Base horizontal consolidation and review of release to other municipal needs bases
2-3. Review of Vertical Integration of Buildings to Release Floor Space for Public Use
2-4. Collecting local opinion and organizing local briefing sessions
Step 3. Advance Assessment of the Base
3-1. Preliminary Advance Planning Assessment
3-2. Recognizing the need for agency land
3-3. Convene coordination meetings with local organizations and communicate with the community.
3-4. Amendments to the Advance Planning Appraisal Report to be submitted to the City for approval
Step 4. Development Program
4-1. Initiate Development Program
4-2. Land Acquisition and Changes in Urban Plans
4-3. Detailed design, supervision, and construction work
4-4. Build first, demolish later, promote by phases

Evaluation and Integration of EOD Sites

1. Evaluation for Consolidation of Public Land

This section outlines the process for evaluating the potential for consolidating public land surrounding an EOD site. The aim is to maximize land utilization for the project. The governmental authority employs the following procedures:

- Inventory of Public Land: A comprehensive inventory is conducted to identify all public lands (municipal, state, and other county-owned) within a 500-meter radius of the EOD base.
- Selection for Consolidation: Public land with the greatest potential for inclusion in the EOD project is prioritized. Preference is given to city-owned land due to streamlined administrative processes.
- Consultation with Management Agency: The management agency responsible for the identified public land is consulted to determine if the land is suitable for demolition and reconstruction as part of the consolidated EOD site.
- Project Boundary Determination: Based on the results of the previous steps, the final project boundary encompassing the EOD base and potential consolidation areas is established.

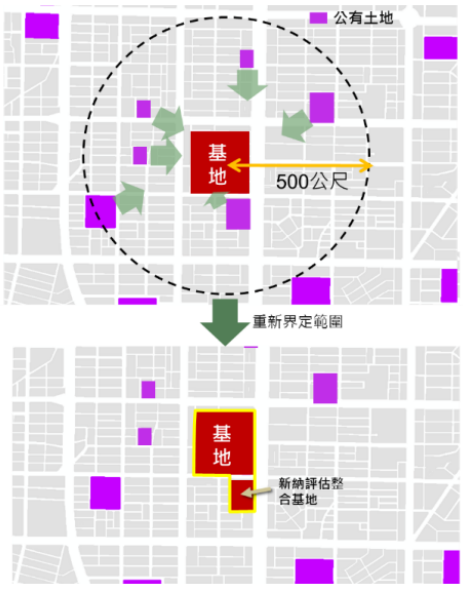

Figure 1. The concept of consolidation of public land

2. Horizontal Integration of Sites and Review for Release to Municipal Reserve Sites:

Following the evaluation for consolidation, a horizontal integration analysis is conducted to assess the potential for further optimizing land use within the project boundary. This analysis considers the following:

- Feasibility of Spatial Reorganization: The feasibility of integrating facilities and services between the EOD base and other lands within the

project boundary is evaluated. This may involve spatial rearrangement to maximize efficiency.

- Maintaining Original Municipal Functions: Throughout the integration process, the existing municipal functions of the involved lands are prioritized. The principle of "build first, demolish later" is applied to minimize disruption to ongoing operations. Relocation strategies and feasibility assessments are conducted to ensure the continued functionality of municipal services and protect users' rights and interests.
- Release of Land/Building Space: The potential for releasing surplus land or building space within the consolidated site for other municipal uses is explored. This may include public facilities, public welfare facilities, or the creation of a municipal reserve base for future development.
- Phased Development Planning: Based on the findings of the horizontal integration analysis, an initial plan for the development schedule or phased development concepts for the EOD site is formulated.

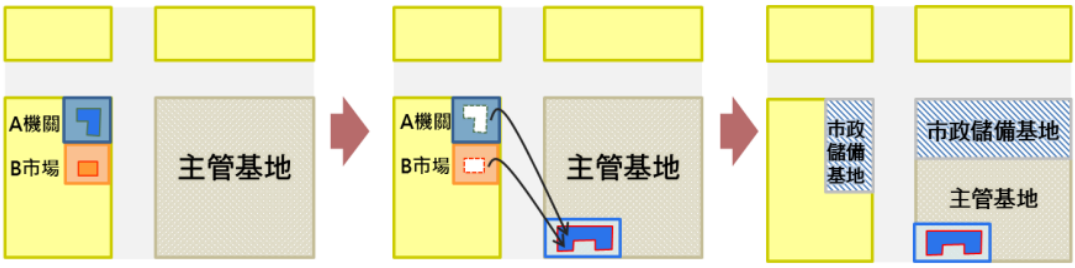

Figure 2. Horizontal Integration of Sites

3. Vertical Integration of Buildings and Review for Public Use:

Beyond horizontal considerations, a vertical integration analysis is conducted to optimize the use of space within the EOD site's buildings. The following principles guide this analysis:

- Multi-purpose Complex Use: Buildings within the EOD site should be designed to maximize space utilization with a focus on multi-purpose functionality.
- Release of Surplus Space: If spare floors or spaces exist within the buildings, these areas should be evaluated for potential use as public facilities (municipal or community) or public welfare facilities.
- Balancing Public Access with Specific Functions: For specific functions within the EOD site that may require a secure design (e.g., care for the disabled and childcare centers), measures should be explored to balance the need for public access with the specific requirements of the function.

Public Childcare Center

Public Library

Daycare Center for Elderly

Figure 3. Vertical Integration of Buildings

4. Public Participation and Needs Assessment:

In addition to the internal evaluation processes, the government should actively engage with the local community to gather public input. This may involve:

- Identifying Local Needs: Collecting information on the needs and ideas of the local community for public facilities within the vicinity of the EOD site.
- Local Briefing Sessions: Organizing local briefing sessions to gather public opinions on the proposed EOD development plans. This feedback can be used to inform subsequent planning and evaluation stages.
- Collaboration with Local Authorities: The government may collaborate with the Civil Affairs Bureau or the mayors of administrative districts to facilitate communication with local communities and handle administrative matters related to public meetings.

EOD vs. Studentification

While both Education-Oriented Development (EOD) and studentification involve the concentration of educational institutions within a particular area, they represent distinct concepts with contrasting effects on surrounding neighborhoods.

Studentification, a term introduced by Smith (2002), describes the phenomenon where neighborhoods experience a significant increase in student residents, often due to the expansion of Higher Education Institutions (HEIs). Traditionally, student housing included Houses of Multiple Occupancy (HMOs). However, purpose-built student flats are becoming increasingly common.

The impact of studentification can be analyzed through a four-dimensional framework:

- Social Dimension: The influx of students, typically young, single, and forming distinct social groups, can lead to the displacement or replacement of existing residents.
- Cultural Dimension: A large student population fosters a shared cultural experience, characterized by specific lifestyles, consumption patterns, and a demand for retail and service offerings tailored to their needs.
- Economic Dimension: Studentification often triggers a rise in property prices and a shift in the housing stock. Neighborhoods may see a decline in owner-occupation, replaced by an increase in private rented accommodation and HMOs.
- Physical Dimension: The physical impact of studentification varies by context. In some cases, it may lead to improvements in neighborhood infrastructure. Conversely, in others, it may result in a decline due to increased noise or strain on local amenities.

While both EOD and studentification center around educational institutions, their influences on surrounding neighborhoods diverge significantly. EOD, as outlined in previous sections, emphasizes a strategic approach to educational development. This approach aims to leverage municipal land use and resources to create educational facilities that serve the community. By design, EOD initiatives often incorporate considerations for public facilities and green spaces, potentially enhancing the overall character of the neighborhood.

In contrast, studentification, driven by market forces, can have negative consequences for existing residents. The influx of students may disrupt the community's social fabric, strain local resources, and contribute to rising housing costs.

Table 2. The Comparison of EOD and Studentification

Dimension	EOD Influence	Studentification Influence
Social	Potential for increased community engagement	Disruption of existing social fabric
Cultural	Enrichment through cultural exchange	Potential homogenization of local culture

Economic	Measured growth, potential for job creation	Increased housing costs, pressure on local businesses
Physical	Upgraded infrastructure, green spaces	Potential strain on amenities, noise pollution

Key Aspects of EOD

Taipei's EOD program extends beyond conventional educational models by cultivating a cityscape that fosters lifelong learning and collaborative endeavors. Several key features characterize this approach:

- Integrated Educational Facilities: The city strategically integrates educational facilities like well-designed campuses into the urban fabric. This fosters easy access for students and encourages collaboration between institutions.
- Cultural Learning Spaces: Urban planning incorporates cultural and learning spaces such as libraries, museums, and community learning centers. These spaces contribute to a rich environment that supports lifelong learning opportunities.
- Pedestrian-Friendly Design: EOD prioritizes the creation of pedestrian-friendly areas surrounding educational institutions. This enhances safety, encourages walking and cycling, and promotes public transportation use.
- Community Engagement: EOD emphasizes active engagement with local communities. Understanding resident needs and preferences through this engagement ensures that urban projects align with community aspirations.
- Innovation Hubs: Taipei strategically locates innovation hubs and research centers near educational institutions. This proximity fosters collaboration between academia, industry, and government, driving innovation and economic growth.
- Green Spaces and Sustainability: EOD integrates green spaces, parks, and recreational areas into development projects. This enhances the quality of life for residents and provides spaces for relaxation and outdoor learning. Sustainability features, including energy-efficient designs and green building practices, are prioritized.
- Technological Integration: Taipei leverages technology to support education. This may involve creating smart campuses or utilizing digital tools for teaching and learning.
- Mixed-Use Developments: EOD projects often incorporate mixed-use spaces that combine residential, commercial, and educational facilities. This creates vibrant and dynamic neighborhoods.
- Lifelong Learning Opportunities: The program promotes lifelong learning by offering diverse educational programs for all ages. This approach fosters continuous personal and professional development.

Model for Future-Oriented Cities and Community Planning

Taipei's EOD program presents a compelling vision for a city that prioritizes learning and innovation. By integrating education, culture, and sustainability into urban planning, EOD fosters a vibrant and dynamic environment that benefits residents of all ages. This approach strengthens the city's educational system and cultivates a culture of lifelong learning, collaboration, and economic growth. As Taipei continues implementing EOD, it serves as a model for other cities seeking to create a future-oriented, knowledge-based society.

Community planning plays a crucial role in shaping resident well-being and prosperity. By embracing EOD principles and moving beyond traditional infrastructure development, communities can harness their potential to become hubs of education and lifelong learning. EOD fosters a vibrant environment that caters to the diverse needs of its population. Here are some additional considerations for community-focused EOD:

1. Expanded Social Services: EOD can be leveraged to provide a wider range of social services, particularly for those who are economically disadvantaged or outside the traditional care system, such as migrant workers.
2. Community Cohesion: EOD initiatives can strengthen community policing and improve children's play safety, fostering a stronger sense of community cohesion.
3. Flexible Education and Learning: EOD can encourage a more flexible approach to education and learning. This may involve expanding educational offerings on school sites to cater to the diverse ethnic groups within the community.
4. Multicultural Coexistence: EOD can create opportunities for all generations, professions, and ethnicities to participate and contribute to the community space.

By incorporating these elements, EOD has the potential to transform communities into vibrant hubs of learning and social cohesion. It can empower residents, particularly those from disadvantaged backgrounds, and foster a sense of shared identity that transcends age, profession, and ethnicity. Ultimately, education-oriented development paves the way for a more inclusive, resilient, and enriching community experience for all.

Conclusion

Education-Oriented Development (EOD) presents a novel and comprehensive urban planning strategy with the potential to address the challenges posed by demographic shifts and a changing educational landscape. Taipei's EOD program exemplifies a proactive approach that leverages underutilized school buildings to create multipurpose spaces catering to the community's evolving needs. This approach fosters a collaborative environment

where educational institutions, residents, and businesses work together to cultivate a vibrant and sustainable city.

The core principles of EOD, embodied in the "5E" framework (Education, Economy, Ecology, Equity, and Evolution), prioritize educational development, economic vitality, environmental sustainability, and equitable access to resources. EOD's emphasis on community engagement ensures that urban projects align with resident aspirations and promote social cohesion.

The success of Taipei's EOD program highlights its potential as a model for other cities seeking to create future-oriented, knowledge-based societies. By integrating education, culture, and sustainability into urban planning, EOD fosters a dynamic environment that benefits residents of all ages. Furthermore, by embracing EOD principles and expanding its scope beyond traditional infrastructure development, communities can transform themselves into hubs of lifelong learning and social capital. EOD offers a promising approach to creating inclusive, resilient, and enriching communities for the 21st century.

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