Practice of Social Survey Methods in Environmental Design Courses and Exploration of Ideological and Political Connotation

Ying Bai¹,a, Shang Hua²,b*

¹,²School of Art and Design, Guangzhou Institute of Technology, Guangzhou 510000, Guangdong, China

Abstract. Ideological and Political Education in the Curriculum is a new type of teaching concept. The author of the Guangzhou Polytechnic Institute of Environmental Design professional courses as an example, to find out the urgent problems, combined with the PSPL research method for the ecological design of artificial engineering practice class research means research an old district in Guangzhou environmental space as an entry point, through the street environment and the residents of the study and analysis, analysis of the problems, put forward the design strategy and program, on the It provides design and ideas for the protection and development of urban renewal, and at the same time, builds a new mode of teaching with the connotation of thinking and politics for the professional course of environmental design, which is based on the practice of actual knowledge.

1 Research background

In recent years, the Ministry of Education has issued the Implementation Outline of the Project for Improving the Quality of Ideological and Political Work in Colleges and Universities, which puts forward the need to "vigorously promote the classroom teaching reform with the goal of 'ideological and political education in the curriculum' ...... to sort out the elements of ideological and political education and the functions of ideological and political education carried by the various specialized courses. The Programme for the Promotion of Ideological and Political Education of the Curriculum and the Functions of Ideological and Political Education of the Professional Courses are put forward to "vigorously promote the reform of classroom teaching with the goal of 'ideological and political education.'”

"To comprehensively promote the construction of curriculum ideology and politics is to put value guidance in the teaching of knowledge and the cultivation of abilities, and to help students shape a correct worldview, outlook on life and values.” Curriculum Civics and Politics provides us with a new teaching concept and teaching thinking, which enables us to pay attention to the guiding effect of theory on practice, practice the ideology of "knowledge and action in unity," think about practice from the perspective of theory, and then re-understand the theory from the results of course, which breaks through the teaching drawbacks of focusing on theory but not practice or focusing on training but not theory and promotes the further improvement of the professional teaching level.[1]

2 The Importance of Ideological and Political Connotation in Cultivating Environmental Design Talents

The PSPL surveys enable an understanding of how people are using a space and comparisons of city public spaces and levels of use (walkability) over space and time, allowing cities to monitor their changes, compare themselves to other cities and/or provide quantifiable results.[2] This method is an assessment for the quality of urban public space and conditions of public life of citizens and can help planners and designers better understand how people use the existing public space, and explore the relations of public space to public life.[3]

Labor practice is guided by the simple concepts of traditional culture, such as "practice produces true knowledge," "self-knowledge," "knowledge and action," etc. Participation in practice should be broader than classroom-level activities. In addition, it should be directly integrated into university life and social service labor practice, and the knowledge should be used through comprehensive practical activities. The author has been working in private colleges and universities for more than ten years, and summed up the past teaching problems of environmental design courses in Guangzhou Polytechnic Institute as follows: colleges and universities in the opening of the ecological design professional curriculum are relatively similar to the environmental design professional training of talents in the phenomenon.

¹Email: baiying1984@gzist.edu.cn, ²Email: shanghua139@163.com

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of homogenization is severe, the lack of professional characteristics and modernity. Teaching objectives need to be clarified, which will lead to a lack of professional teaching of the inner core of the training, focus on the surface of the movement, and affect the arrangement of teaching courses. Lack of cultivation of students' logical thinking will ultimately lead to the action of talents in this profession being too blind.[4] Therefore, when conceptualizing the overall framework of the content of the professional curriculum, it is necessary to consider a great deal of preliminary preparatory work, mid-term progress control, and later feedback on the quality of learning. Themes of practice are in line with local development and processes. They are flexibly deployed in conjunction with the actual needs of students to ensure that the practical activities of the program go smoothly and achieve the pre-set training objectives.

The connotation of ideological and political education and political connotation and environmental design teaching also cultivates students' ideology and behavioral habits of "unity of knowledge and action." Through the combination of knowledge imparting and value leading, students can find the beauty of life and realize their self-worth in the artistic creation that practices excellent values, expresses their views with the values manifested in their works, and influences more people. They will tell their opinions and influence more people with the values shown in their careers.[5]

3 Exploration of Social Research Methods in Practical Teaching of Spatial Design Courses

Professor Zhan Heping of Nanjing Arts Institute puts forward in the series of papers on teaching exploration that "the change of teaching objectives and contents will inevitably bring about the change of teaching methods." [6] The training program for applied undergraduate talents of environmental design majors contains theoretical discussions and practical courses, and the suitable approach to space design occupies a large proportion of the ecological design courses. In the valuable part of the course, with the "unity of knowledge and action" as the dominant element of the ideological and political factors, the teaching mode incorporates the PSPL research method to guide the students to design the practical tools for thinking and exploring, so that the students can "teach and do as one." The teaching mode incorporates the PSPL research method to guide students to design practical thinking and exploring tools so that students can "unite teaching and doing," focusing on students' labor experience and ability to observe society.

3.1. Thematic design practice topic task design

Course Objective Setting: ergonomics course based on the PSPL research method in the subject objective setting, the theme of the competition related to the renovation of the old campus in Guangzhou, exploring the historical lineage, listening to the voices of the masses, and feeling the urban landscape, aiming at exploring the innovative mode of combining the protection of historical and cultural heritage and urban renewal, focusing on the aging group and social hotspots as the object, short-term workshop as the teaching carrier, practical research, field survey, social interviews and other research methods as the primary basis, to adapt the design innovation results to the social craze and serve the society. The course should take design practice research as the design process, use valid data as the design basis, and through the specific practice of standardized research methods, students can apply their understanding and knowledge of space to expand their spatial experience, with the primary purpose of enhancing their spatial analysis ability and design innovation ability.[7]

Course content and framework:

In the organization of course teaching, pay attention to the combination of investigation method guidance and research, followed by the variety of relevant events to transform the design results and social services. For example, the teaching framework diagram of the ergonomics practice course is shown in Figure 1.

![Teaching and learning framework for ergonomics practice programme](image-url)
3.2 PSPL Research and Outcome Practices with Older Neighbourhoods in Guangzhou

3.2.1 Practical research in groups

The importance of public spaces at the scale of the neighborhood, as the places shaped and shared by local communities, in particular, becomes more and more acknowledged as a defining parameter for quality of life in a city, especially in relation to opportunities for fulfilling everyday needs for outdoor activities of recreation and sociability at close proximity to one’s home (Moreno et al. 2021). [8]

At the beginning of the practical course, students learned about the historical and cultural background of the community based on the basic principles of the topic of the event, learned about the specific methods of PSPL research, and carried out data collection and sorting according to specific methods and processes of the research. Combined with the professional knowledge of social workers, the course will include interviewing skills for communicating with the elderly and learning how to use empathy in language expression, which will serve as effective training and preparation for the practical research of the course. Taking the Da Dong community as an example, the evaluation table (Table 1) for data collection and analysis of the four types of operational methods of PSPL research is as follows:

<table>
<thead>
<tr>
<th>Data Collection Method</th>
<th>Data Processing</th>
<th>Analysis Method</th>
<th>Interview Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site Selection</td>
<td>Site selection</td>
<td>Site selection</td>
<td>Site selection</td>
</tr>
<tr>
<td>Data Acquisition</td>
<td>Data Acquisition</td>
<td>Data Acquisition</td>
<td>Data Acquisition</td>
</tr>
<tr>
<td>Data Processing</td>
<td>Data Processing</td>
<td>Data Processing</td>
<td>Data Processing</td>
</tr>
</tbody>
</table>

3.2.2 Analysis and evaluation of the current state of public space

Research Objects & Issues

The course is set to a high concentration of urban elderly community activities and parks and green spaces and their environmental design issues; the study uses a combination of random interviews with residents and on-site visits organized by the student group to visit the path to the Renxiu new community - Dadong Qiming community - Xianli community to conduct a detailed study of three points. To visit the path of the residents involved in the user to middle-aged and elderly users as the object of investigation, focusing on the investigation of middle-aged and elderly group behavioral characteristics, the type of leisure activities, and their concern for the satisfaction of the environmental facilities, etc., at the same time, the study also involves the analysis of the environmental design ergonomics and psychological factors of the elderly and other aspects of the problem, as shown in Figure 2.

Table 1. Evaluation table for data collection and analysis of four types of operational methods with PSPL research

<table>
<thead>
<tr>
<th>Step by step analysis</th>
<th>Cartography</th>
<th>On-site counting method</th>
<th>Field observation method</th>
<th>Interview method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site selection</td>
<td>Dense foot traffic, high frequency of vibrant venues vs. low space</td>
<td>The central area of the site and spaces dominated by pedestrian activities</td>
<td>Environmental quality and space carrier off</td>
<td>There are no special requirements, depending on the project block.</td>
</tr>
<tr>
<td>Data acquisition</td>
<td>Place, time, type, number of participants, etc.</td>
<td>Pedestrian flow data for the interior and exterior of buildings in the central area of the site and pedestrian spaces on the street.</td>
<td>Space quality, environment, materials, etc. evaluations</td>
<td>Street interviews and questionnaires</td>
</tr>
<tr>
<td>Data processing</td>
<td>Map measurements vs. legend data, routine vs. personality data, activity level peaks and troughs</td>
<td>Number of people walking at different times of the day on weekdays and non-weekdays on a full-time basis, number of people walking at different times on weekdays and non-weekdays in different seasons, etc.</td>
<td>12 Keywords 7 standard space synthesis Aggregate quality assessment data, space Environmental linkage assessment, etc.</td>
<td>Quantitative and qualitative data collection</td>
</tr>
</tbody>
</table>

Fig. 2. Status of research on the day
Behavioural characteristics of middle-aged and elderly people

In the parks, roadsides, squares, and other resting places close to the community, the type of activities and the survey of activity hours were recorded through observation for a certain period, clearly reflecting the activity pattern of the middle-aged and elderly groups, as shown in Table 2. The observation is 7:00~11:00, 4:00~7:00 is the peak activity time, followed by 2:00~4:00 in the afternoon, see Table 3. Changes in human body functions will change with age, combined with the physiological characteristics of natural aging and the needs of the elderly behavioral activities in the local old city, according to the research to explore the majority of the aging group generally to low-intensity activities; the community is mainly for public housing, high density of the building spacing, housing area is small, the public space is narrow, and the majority of the residents to form the law of the activities in the characteristics of the time to gather; in addition to the climate of Guangzhou in the summertime In addition, Guangzhou has a long and hot summer, which makes it essential for residents to take shelter from the heat and shade.

Table 2. Questionnaire on Types of Activities and Activity Characteristics

<table>
<thead>
<tr>
<th>period</th>
<th>Types of activities for older persons</th>
<th>Characteristics of the event</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00~8:30 am</td>
<td>Walking, jogging and other physical exercise (mainly for the elderly, in groups or alone)</td>
<td>Little aggregation of activities, many individual activities, short stay, demand for facilities</td>
</tr>
<tr>
<td>9:00 a.m. to 11:00 a.m.</td>
<td>Leisure gathering activities mainly: playing cards, chatting, childcare</td>
<td>Strong crowd gathering, extended stay, mostly static recreational activities</td>
</tr>
<tr>
<td>12:00~2:00pm</td>
<td>Fewer older people and more off-duty people gather for breaks</td>
<td>Crowds are more aggregated, stay longer, mostly static recreational activities</td>
</tr>
<tr>
<td>2:00pm~4:00pm</td>
<td>In the afternoon, the sun shone brighter, and some elderly were playing cards. By 4:00 or so, the elderly began to come out to relax and gather mainly for activities</td>
<td>Short stays and demands on facilities</td>
</tr>
<tr>
<td>4:00-7:00 p.m.</td>
<td>Crowds of people of all kinds are beginning to grow, especially the elderly, women, and children gathering to play together.</td>
<td>Strong crowd gathering, extended stay, mostly static recreational activities</td>
</tr>
</tbody>
</table>

A few design elements of concern to middle-aged and older users

The interaction with residents resulted in feedback collated as shown in Table 3 and the following design elements were derived.

Table 3: Table of interviews

<table>
<thead>
<tr>
<th>interviewee</th>
<th>Views on transport</th>
<th>Views on landscaping</th>
<th>Views on recreational facilities</th>
<th>Opinions about the neighborhood facilities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Macbeth</td>
<td>There are no traffic lights, and it is easy to get congested</td>
<td>The environment is good, but the surrounding mosquitoes are more</td>
<td>Want to have gym equipment and move around a bit</td>
<td>It is very convenient.</td>
</tr>
<tr>
<td>Sister Cai</td>
<td>The metro and buses are very convenient.</td>
<td>The landscaping and greenery have been good for a few years now.</td>
<td>There needs to be more places to sit</td>
<td>Shopping malls, hospitals are all conveniently</td>
</tr>
<tr>
<td>Auntie Pan</td>
<td>you must be very careful when riding your motorcycle.</td>
<td>Satisfied with the current environment</td>
<td>There is nothing to do, and waiting for the grandchildren to finish school is boring.</td>
<td>There are too many tourists, it affects the rest.</td>
</tr>
<tr>
<td>Uncle Lee</td>
<td>There are many cars. We need a traffic light.</td>
<td>The greenery is excellent.</td>
<td>There are no facilities.</td>
<td>Want a boardroom to play cards?</td>
</tr>
<tr>
<td>Uncle Chan</td>
<td>Lots of cars, no traffic lights.</td>
<td>The streets are a lot cleaner than they used to be.</td>
<td>I do not know much about it because I rarely go there.</td>
<td>very convenient</td>
</tr>
</tbody>
</table>

Traffic and safety factors

Da Dong community is a typical residential area built in the late 1980s and early 1990s. Nowadays, it is an old neighborhood with serious aging, more rental housing, convenient traffic, and complete living facilities, located in the inner street and narrow roads. Parking is allowed on both sides of the main traffic roads, and shared bicycle placement could be more stable. There is high pedestrian flow and a lack of barrier-free facilities.

Seating & Landscaping

Early construction of residential community planning is dense and lacks public facilities; we also found that
most of the elderly sit on the roadside flower base and steps to pass the time; outdoor traffic stop nodes have become a place to avoid the summer heat and relaxation, while the number of community pocket park sitting seats itself is relatively small, and there is the weather and rain erosion and other damage caused by prolonged use of the interviewee's feedback on the rest of the facilities are simple and have potential safety hazards—landscape vignettes. Commonly promote community civilization guide vignettes, party building theme vignettes, etc., observation of the elderly user groups does not quite know how to appreciate the complexity of the statement text lack of identity.

Landscape greening

The greenery in the new community of Yanxiu in Dadong Community is quite Lingnan in character and forms enclosing spaces with different functions, such as planting a large number of small-leaved banyan, olive trees, eucalyptus, etc., to form shade trees and arranging benches under the trees to stay on the walkway to form spaces for conversation, gathering, and activities; plants such as plantain, spring plume, and anemones form barriers and enclosures to beautify the environment and make the space richer at the same time. Various kinds of colorful herbaceous plants have a pleasing decorative effect.

Pavement detailing

Interviewees on the pavement detail design concerns were also repeatedly mentioned, observed that the community traffic road by the side of the pavement cracking seriously, the lack of drainage facilities, and vehicles driving through easy to-splash water. Community park pavement lacks maintenance, and tree roots make stone slabs crack easy to trip, on rainy days, easy to accumulate water. As shown in Table 4.

Table 4. Survey of pavement materials

<table>
<thead>
<tr>
<th>Surface Material</th>
<th>Live Photos</th>
<th>Selectio n rate%</th>
<th>rationale</th>
</tr>
</thead>
<tbody>
<tr>
<td>bluestone slab</td>
<td><img src="image1" alt="bluestone slab" /></td>
<td>16%</td>
<td>The trails are exciting and walkable, with drops and unevenness;</td>
</tr>
<tr>
<td>white marble</td>
<td><img src="image2" alt="white marble" /></td>
<td>28%</td>
<td>Tree roots form a drop-off on the less dusty, flat road for walking.</td>
</tr>
<tr>
<td>cultured stone</td>
<td><img src="image3" alt="cultured stone" /></td>
<td>14%</td>
<td>Less dusty, with the function of massaging the soles of the feet, makes it easy to accumulate water in the rain.</td>
</tr>
<tr>
<td>concrete floor</td>
<td><img src="image4" alt="concrete floor" /></td>
<td>42%</td>
<td>It is a less dusty, flat road, easy to walk, jog, and cycle, but the road surface is prone to damage.</td>
</tr>
</tbody>
</table>

3.3 Demonstration of planning and design strategies and programs for ageing-friendly environmental spaces

Ensure that the ground surface of the main communication routes for residents is leveled and that drainage facilities are increased. Add ramps, railings, and other barrier-free facilities at locations where the height difference is noticeable. At the convergence of pedestrian passages and public space nodes, a gentle slope can be set up to avoid a height difference that is too big.

About the provision of sitting-out facilities, seats of suitable size, structure, and appearance are added in situ; drainage and non-slip permeable paving are provided given the rainy and wet nature of the region; and shade is added to the roof in order to avoid prolonged sun exposure during the long summer season.

The layout and appearance of facilities in public activity spaces should pay attention to the social attributes of elderly groups and can set up areas for individual action activities, such as fitness and recreation areas; green spaces with sitting and shade are suitable for groups of three or two friends to gather for activities; spaces suitable for social interaction of groups of old, young and women should have barrier-free gently sloped paths, open footing points, and landscape vignettes of colors and interests, to create a community atmosphere of local culture.

Ground paving in old communities can consider concepts and cases such as sponge cities, rain gardens, rainwater, and sewage diversion, etc., with materials such as permeable bricks, colored permeable concrete, slit-type permeable bricks, and other new sponge city materials reassessed and redesigned.

After the research, the solution designed by the students is displayed as shown in Figure 3 below.

Fig. 3. Community park renovation program designed by the students after their research
The seats are set up in two sizes to provide convenience while considering ergonomics. The irregular seat can accommodate two people sitting back-to-back, while the round seat allows one to sit and interact with others.

The curved table design can enhance the interaction of the elderly and meet their needs for entertainment and socializing.

With the bare leakage of reinforced steel structures like the branches of a tree, there is a sense of air permeability, which not only can not affect the growth of large trees but also makes the environment more enjoyable.

Several rubbish bins have been placed around the site to alleviate the lack of rubbish bins and contribute to the cleanliness of the environment.

The design of the site adopts the blue color for the cutting of the functional area; the shape is a link based on the circle, like the blue pigment haloed on the screen, embellished with the yellow color, and like a bubble sticking to each other and fusing.

3.4 Course summary

In summary, the course practice to explore urban renewal, aging, and other future trends as the theme of the research object, through specific empirical research to explore the relationship between residents and community space, analysis to explore the significance of the PSPL research method for the transformation of community outdoor space, summed up the characteristics of the activities of a particular group of people in a certain period, the city's old and dense community public space, the greening and landscaping of the site conditions, the data obtained and the analysis of the Provides a basis for the micro-remodeling and updating of outdoor space in old communities in China. In the teaching content framework to expand the environmental space practice course, and within the environmental design professional understanding of the aspects of a deep understanding, to achieve the applied undergraduate design practice course from the theory applied to practice, for the community to serve the specific objectives.

4. Conclusion

The environmental design program of the School of Art and Design of Guangzhou Polytechnic Institute has been exploring and practicing teaching reform, with the program objectives rooted in the characteristics of the development of the Guangdong, Hong Kong, and Macao Greater Bay Area, promoting the application of multidisciplinary fusion in the teaching system, setting up an open experimental platform, constructing the modular curriculum system of the environmental specialty with brand characteristics, and gradually perfecting the new teaching mode of multidisciplinary fusion of research and practice side-by-side.

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