

Communal space design as student interaction in polnep campus

N Hasriyanti¹, A Zulestari², J Judhi² and P Ikeyanti²

¹ Urban Design Department, Faculty of Architecture, Politeknik Negeri Pontianak, Pontianak, Jalan Jenderal Ahmad Yani Pontianak 78124, Province Kalimantan Barat, Indonesia

² Architecture Department, Faculty of Architecture, Politeknik Negeri Pontianak, Pontianak, Jalan Jenderal Ahmad Yani Pontianak 78124, Province Kalimantan Barat, Indonesia

E-mail: niexnoe@gmail.com

Abstract. Communal space is a means to do for social interaction, from private to the public. The purpose of this study was conducted to explore the phenomenon of communal space setting of Pontianak State Polytechnic students from 8 departments of study both indoor and outdoor spaces. The research method used is a rationalistic study. The planned activities to be undertaken include the determination of communal places (indoor and outdoor), sample determination, data collection with surveys and interviews, presenting data and analysis and drawing conclusions as a basis for designing communal space for Polnep students. The research were analyzed of building and space character, analysis of space organization and circulation, space requirement analysis, material and color analysis, site analysis, and analysis of inner space elements and outer space elements. From the results of this study, it can be concluded that Polnep campus environment requires the addition of public space for students in conducting formal activities outside lectures. Some activity which to do some student such as activity to waiting lecturer, do some coursework, discussion, relaxation, extracurricular activities, and other informal activities still require adequate space infrastructure and are equipped with street furnitures such as garden lights, benches, outer space markers and shade vegetation.

1. Introduction

Viewed from the function of communal space is very diverse in its use. The communal space itself is a means of social interaction, from private to public activities. Campus life is a unique place experience which is very important on their journey to adulthood [1]. Some of the phenomenon seen in Polnep campus environment is the tendency of utilization of public space as traffic lane such as hall, terrace announcement and hallway to carry out activities in social interaction. Students use the sidewalk space as a discussion room and get together. Communal space not only functions for student gatherings or as a place of social interaction, but with the arrangement and centralization of secondary facilities of students then students can perform their various secondary activities in one space. Secondary activities are doing tasks, discussing, gathering, searching information, library, exercise, food fulfillment, show music or exhibition and others.



The limited space and facilities encourage students to take advantage of existing road spaces and spaces that are considered to accommodate the informal activities what they do in the communal space. Some students also use the floor and trap rungs as a place for discussion and sitting. Communal space for Pontianak State Polytechnic students has a variety of diversity of settings regarding physical conditions of space and spatial conditions around the communal space. This interaction process will lead to attributing comfort, visibility, accessibility, privacy into important considerations to provide an ideal communal space for students. There are allegations that students need a means that can accommodate the total activities in its formation as a student, such as a plaza, hall, gazebo as an informal gathering place. These places are used to sit together especially when waiting for college, waiting for lecturers for assistance, group discussions, doing lecture assignments.

Research problems that can be formulated from the above background are how the setting of communal space as a means of social interaction appropriate for Polnep students consisting of 8 departments that have characteristics of different student activities, both in indoor space and in outdoor spaces in the campus environment Polnep. The objective of the research is to find the pattern of communal space as a means of student interaction and to design an ideal communal space for Polnep students as the interaction space between students.

The factors that influence students to utilize space to conduct social interaction activities, are as follows: a. Near (approximately 25m) with the intended room. B. The shade, located within a building, was blocked by sunlight and rain both directly and indirectly, and blocked from a violent wind. C. Open space with walls on 1 or 2 sides. D. Empty place. E. A place to sit comfortably. F. Free, unobstructed looking towards the parking lot. G. Free, unobstructed looking towards the presence of lecturers. H. Ease of getting information [2].

Communal space for students refers to public spaces on campus that are more often used by students to interact socially. For a compact campus, high-dense surroundings may limit the size of an open space and may handicap circulation and accessibility; on the other side, a small open space may provide its users more intimate contact with natural restorative elements and also a more controllable microclimate for physical comfort [3]. In addition to communal spaces for formal activities such as lecture halls, there is also a communal space for informal activities such as parking spaces, hallways, halls, terraces, stairs. According to C.M. Deasy [4], the characteristics of communal space campus students have the following general characteristics:

1. Being adjacent to the main campus circulation route, moving social space to distant places will not work, unless forced by additional attractions to attract students away from their normal route.
2. Mostly more successful at crossroads, at major destinations or along with food service.
3. Provide some seating facilities.
4. Provide some facilities for shelter.

The usefulness of the spaces provided is directly dependent on the match between these spaces and the learning styles of students [5].

2. Method

The research used is a rationalistic method. The planned activities to be undertaken include the determination of communal spaces (indoor and outdoor), sample determination, data collection with surveys and interviews, presenting data and analysis and drawing conclusions as a basis for designing communal space for Polnep students. The analyzes were analyzed of building and space character, analysis of space organization and circulation, space requirement analysis, material and color analysis, site analysis, and analysis of inner space elements and outer space elements.

The sample of the study included the sample of communal space and the sample of space users are Polnep students, selected by purposive sampling based on the criteria that are student from 8 departments in Polnep and respondents understand the topic of the research problem and have attention to the researcher's inquiry. While the sample of communal space taken based on the criteria a space that is often used with periods of time the use of a relatively regular [6]. Based on these provisions, the spaces taken as samples are academic hall space, parking spaces, walkways, sidewalks, the Polnep mosque's

patio hall, the hall of the theory building, the hall of each department, the hall of p-net, Polnep canteen dining room, terrace and hallway in each department, lecturers room hall in 8 departments, stair room in theory building, staircase in Civil Department, Staircase in Architecture Department, Civil Workshop Room, Civil Laboratory Room, Workshop Room Machine, Accountancy staircase, Staircase majoring Business Administration, shown in figure 1.

In this study, the variables are the independent variables of student social interaction and dependent variables of space and attribute settings that arise from student activities in communal space [7][8].



Figure 1. Map of sampling of research location

3. Result and Discuss

The independent variable that becomes the indicator is the type of activity, and the time of the activity. While the dependent variable that becomes the indicator is the physical element of the public space, the location of the public space, and the comfort aspects of the public space.

The object of research is the respondents selected in the study who are conducting activities in the public space as many as 250 students. With the classification of public spaces include academic hall space, parking spaces, walkways, sidewalks, polnep mosque's patio hall, hall of theory building, hall, p-net , polnep canteen dining room, terrace and hallway in each department, lecturers room hall in 8 departments, staircase in the theoretical building, staircase in the Department of Civil, Staircase in Architecture Department, Civil Workshop Room, Civil Laboratory Room, Machine Shop Room, Accounting Room, Staircase majoring in Business Administration. Below in table 1 and table 2 show the physical data seating area on comunal space of Polnep Campus.

Table 1. Physical Data Seating on Communal Space of Polnep Campus

No	Place	Component of space		Places for sitting	Vegetation	Location
		Wall	Floor			
1	Architectural lounge	No wall	Concrete	wooden chairs	Trees and building	Entrance Architecture Department
2	Seating area in theory building	walled	Cast concrete and ceramics	wooden chairs	Trees and building	Entrance theory building
3	Hall Academic area	walled	Cast concrete and ceramics	Kursi besi	Building	Hall Rectorate building
4	Hall Accountancy Department	walled	Cast concrete	wooden chairs	Trees and building	Hall Accountancy Department

			and ceramics			
5	Canteen outdoor	Not walled	Cast concrete	plastic chair	Trees	Polnep canteen

Table 2. Physical data condition of the hallway

No	Place	Space components		Places used to sitting area	Vegetation/sha de	Location
		Wall	Floor			
1	Hallway Civil Department	Bounded by the walls of the campus	Ceramic	Wooden chairs and wooden tables	Roof	This area is located on the 1st floor of Civil majors and adjacent to IT space and Polnep cafe
2	Hallway Architecture Department	Bounded by the walls of the campus	Ceramic	Wooden chairs and wooden tables	Roof and open on 1 side	This area is located on the 1st floor of the Department of Architectural Engineering located in the main area of the majors and the area adjacent to the classroom
3	Hallway Electro Department	Bounded by the walls of the campus	Ceramic	Wooden chairs and wooden tables	Roof and open on 1 side	This area is located on the 2nd floor of the Department of Electrical Engineering who joined the Department of Civil Engineering
4	Hallway Machine Department	Bounded by the walls of the campus	Ceramic	Wooden chairs and wooden tables	Roof and open on 1 side	This area is located on the 1st floor of Mechanical Engineering Department adjacent to the Machine Shop
5	Hallway Accountancy Department	Bounded by the walls of the campus	Ceramic	Wooden chairs and wooden tables	Roof and open on 1 side	This area is located on the 1st, 2nd and 3rd floor of Accounting Department building
6	Hallway Business Administration Department	Bounded by the walls of the campus	Ceramic	Wooden chairs and wooden tables	Roof and bounded by walls	This area is located on the 1st, 2nd and 3rd floors of the Department of Business Administration Building

Based on the observation in the field of communal space Polnep campus is that the public space located in Polnep campus environment is broadly divided into two, namely the active and passive public spaces. Active public spaces include gazebos, sitting facilities, and open areas. While the passive public spaces are greening gardens. Public open space on the campus Polnep can be said to meet the criteria of public space, which can give meaning to its users (meaningful), responsive to all the wishes of users and accommodate existing activities (responsive), and can accept the presence of various layers of users

freely without any Discrimination (democratic). But there are some who are still lacking in accommodating the activities in it, such as supporting facilities to support the activities of Polnep campus students. In addition, the lack of public space in the Polnep environment such as gazebos and means of sitting. The activities that occur in various campus Polnep environment, namely discussion, rest, waiting for college or wait for lecturers, browsing, chatting, sports, music training, new student admissions activities, SME activities, MOKA activities, and graduation ceremonies. Needs of public space required by students are gazebos, sitting facilities, gathering places, parks and open areas with supporting facilities such as seating, wi-fi signals, shade, tables and bins that can be used to support activities outside Formal learning activities.

3.1. Percentage of space visited

The percentage of space most visited by Polnep students is hall room in each department that is on Polnep campus, there are 8 majors with 10% percentage value. While the most rarely visited space is civilian workshop space, staircase in the Department of Civil Affairs room tanga Accounting Department with a percentage of 2% of the results of the distribution of questionnaires. This is because these spaces are just a shelter space and is a circular space interconnecting spaces. While the results of the questionnaire space communal space visited by students described that most of the student respondents make visits to spaces that provide comfort for them to beraktifitas. (10%), terrace and hallway departments (10%), hall of each department (8%), hallway interconnecting space (8%), academic hall hall (7%), shown in figure 2 below.

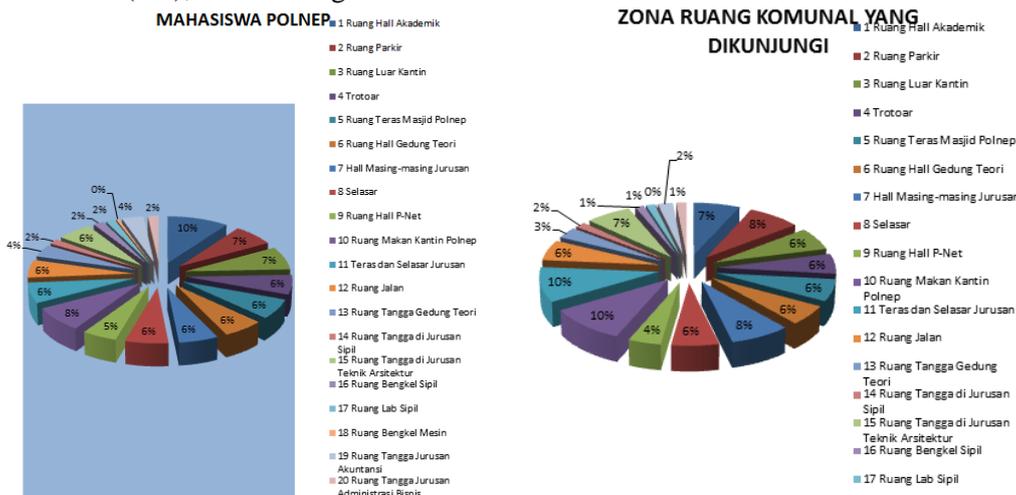


Figure 2. Percentage of communal space visited by students

3.2. Percentage of purpose of presence in communal spaces visited

Most of the students' purpose of visiting visiting public spaces is to relax and chat (36%). This activity while chatting they do while eating and drinking (26%) as well as doing 922% lecture) which is the time to collect them while waiting for lectures. While 16% of the students are in the public space they visit aims to wait for the lecturer. From the reason why students visit the communal space in the Polnep campus, most of them are 40% grounded because there are sitting room facilities for them just waiting for lectures and waiting for lecturers. While 30% reasoned because the communal space that they visit the shade with the vegetation with a wide and thick canopy. A total of 16% and 14% of students in communal space reasoned because the communal space they visited is close to the classroom and the room is not dark due to the natural lighting of the sun. From the questionnaire results aspects of the existence of existence in the communal space can be concluded that students who are located and visiting public space within the campus Polnep has the main consideration of the completeness of facilities as a means of furniture where they rest while waiting for lectures and discuss with other students. From the aspect of the length of time visits can be seen from the questionnaires of most respondents of students

with a percentage of 64% in the public space time of 15-30 minutes. This is because the rest of the lecture time is 20 minutes to 45 minutes. So they take a break really take time to go to the canteen.

3.3. Percentage activities on communal space visited

The number of students who do activities in the public sphere in Polnep Campus environment, as many as 47% amounted to 1 - 5 people, as many as 38% amounted to 6-10 people and as many as 15% amounted to more than 10 people. As for the number of students who come to the public spaces within Polnep campus, refreshing (49%) is the most widely performed activity in the public spaces they visit. While the academic informal activities (36%) and the activities of the association (15%) into other activities undertaken by students in the public spaces they visit. This indicates that the students really need a public space that functions as a relaxed room and provide comfort for students to unwind after their activities in the classroom. The duration of activities conducted on the public spaces visited by the students at most is 1 - 3 hours in a day that is 60% of the respondents answered like that, because only to break the hours of college to enter in the next lecture. While 24% of respondents give the duration of time for the activity in the public space that they visit is 3-6 hours, this is usually because there is time remaining when waiting for the lecturer who arrived late or even the awaited lecturer did not come. And as many as 16% of respondents answered the duration of their time is more than 6 hours for activity in the public space.

3.4. Percentage of activities performed if the atmosphere is comfortable

As many as 18% of respondents prefer to wait lecturers, discuss and wait for the lecture if the public space provided by the campus is more comfortable and enjoyable. Meanwhile, chatting activities (17%), activities (15%), and internet access (14%) do so when the atmosphere is comfortable in the existing public space. The most dominant activity if the atmosphere yan given comfortable is an activity that is waiting for their formal lecture activities are waiting for lecturers, waiting for lectures and discussing about lectures. From the variable of the reason the students do group activity in the communal room they visited as much as 65% of respondents gave the reason to prefer to gather elsewhere than in the public space already provided by the campus, because they feel uncomfortable with the condition of the campus public space provided for students, With conditions not feasible / damaged. And as many as 35% stated because there is no place to gather for them small group activities such as discussion and waiting for lectures. Following illustration in figure 3 of the atmosphere of communal space in the campus polnep environment.

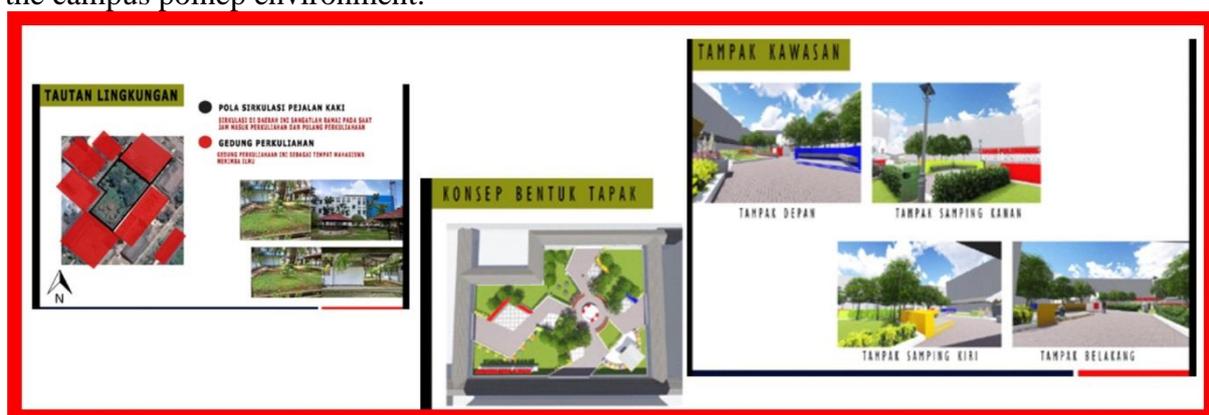


Figure 3. Illustration of the atmosphere of communal space within the campus environment

3.5. Percentage of communal space comfort to the completeness of street furniture elements

As many as 60% of the student respondents stated that the public sphere they visited did not feel comfortable due to lack of furniture facilities and ugly campus drainage. In addition also there are some public spaces, especially those within the theoretical building environment that go gazebo, already

damaged in the roof of holes, benches on the gazebo that has been damaged not worth wearing, and the road to the gazebo even if the rainy season floods.

As for the cause of this discomfort some respondents give the percentage as much as 64% due to climate and hot weather, which cannot be accommodated by campus public space. As many as 25% with noisy and noisy excuses and 11% of respondents stated that the public spaces they visited were uncomfortable due to the smell from the non-flowing campus drainage. While the existing vegetation function within the Polnep campus environment according to the questionnaire that as many as 96% of the student's respondents stated the need for additional vegetation in the public space they visit. The most needed crop function according to 70% of respondents is shade vegetation and 30% stated need to do the addition of vegetation that gives beauty to the public space they visit. While directing vegetation is less attention because the existence of public space inside Polnep campus is more need comfort in the aspect of shade and beauty, so that student as the main user in communal space of Polnep campus, must be given comfort and safety in activity in public space they visit. The preferred vegetation type of 61% of the respondents stated that the type of vegetation needed for the public space they visited was a leafy plant species and had a wide canopy. This is because its function is more comfortable to provide shade on the public space they visit the location of Pontianak City which has a longer summer than the rainy season. While as many as 28% suggested to providing flowering plants to provide beauty and as much as 11% suggesting public space should be given a fruitful plant that can be utilized for garden tourism. Here is in figure 4 an illustration of the completeness of street furniture in communal space located within the Department of Agricultural Engineering.



Figure 4. Illustration of the completeness of street furniture in communal space within the Department of Agricultural Engineering

4. Conclusions

The availability of public space in Polnep does not have to be fancy, most importantly it is convenient to gather and communicate with fellow human beings. Expansion of the parking area, especially for the convenience of the driver to drive the vehicle and the direction of circulation in the parking area. Adding plants and places to relax for tasks and refreshing. Created outdoor for natural and shady winds. Added trees for shade, plus parking lot to be close to the majors. Existing public spaces adapted to climatic conditions in the city of Pontianak, multiplying reforestation, and provided with supporting facilities such as fountains, ponds and gardens.

Improved the sitting area, expand shade vegetation, need additional utility which once used as supporting of lecturing activity, needed addition of bench in lobby area and corridor, so it can be a place to relax at rest, add garbage bins, and improvement of drainage in campus environment which clog . The sitting room for students should be made comfortable and safe for discussion activities, increasing the gathering space for students to interact, adding vegetation to campus public spaces (shade), games

of form and color in the public space of the students in order to generate student creativity and make students feel at home to sit in the room public.

In addition, the public space is given an interesting decoration so that students feel at home to discuss and interact, adding park benches, shade vegetation to be comfortable and produce fresh air, add water elements in the public sphere as atmosphere, student communal space placed in strategic position and easy to reach students, Create a relaxed and elegant gazebo with complementary street furniture, and additional seating areas in open areas.

Acknowledgements

The authors gratefully acknowledge that the present research is supported by Research Unit and Community Service of Pontianak State Polytechnic (UPPM Polnep) who have provided funding aid of PNPB DIPA Polnep for Budget Year 2016.

References

- [1] Qingjiu Sun, Maliki and Zarifah Nur 2013 Place Attachment and Place Identity: Undergraduate Students' Place Bonding on Campus *Procedia -Social and Behavioral Sciences*
- [2] Wijayanti Susi 2000 Pola Setting Ruang komunal Interaksi Sosial Mahasiswa (Kasus Jurusan Arsitektur Fakultas Teknik UNDIP) *Thesis* (Semarang: Architecture, Diponegoro University)
- [3] Yu Lau, Stephen Siu, Gou Zhonghua and Liu Yajing 2014 Healthy Campus by open space design: Approaches and guidelines. *Frontier of Architectural Research Science Direct Elsevier* **3** (4)
- [4] Deasy C 1985 *Designing Places for People* (USA: Paidon Press)
- [5] Oliveira Silas M 2016 Space Preference at James White Library: What Students Really Want *The Journal of Academic Librarianship* **42** (4)
- [6] Ching Francis 2008 *Arsitektur Bentuk, Ruang dan Sususannya* (Jakarta: Erlangga) **3**
- [7] Purwanto Edi 2012 Pola Ruang Komunal di Rumah Susun Bandarharjo Semarang *Tata Loka* **39** pp 27-28
- [8] Wirawan Sarlito 1992 *Psikologi Lingkungan* (Jakarta: Rasindo Gramedia)
- [9] Firmandhani 2013 Faktor Pembentuk Persepsi Ruang Komunal di Permukiman Nelayan. *Journal of Architecture and Built Environment* **34** pp 95-97
- [10] Winarni Sri 2013 Terbentuknya Ruang Komunal dalam Aktifitas Accidental di Dukuh Krajan, Kromengan Kab. Malang *Essay* (Malang: Brawijaya University, Architecture)