

SPATIAL ADAPTATION OF INTELLECTUAL DISABILITY CHILDREN IN SPECIAL NEEDS SCHOOL'S DORMITORY IN YOGYAKARTA

ADAPTASI SPASIAL ANAK TUNAGRAHITA DI ASRAMA SEKOLAH LUAR BIASA DI YOGYAKARTA

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ABSTRACT

Various studies have shown the important roles of spatial environment in shaping behavior and cognitive processes. However educational buildings are often not well designed for this specific purpose. This is especially the case with school dormitory for special need schools. The unavailability of school dormitory planning standards has an impact on variations in the building's diverse physical settings. The daily activities carried out in the dormitory still found the use of one space for several types of activities. This has an impact on the density level, which further requires spatial adaptation that will be implemented by the residents. This study aims to find out spatial adaptation in three different physical settings of special needs school dormitories with the focus of observation being children with intellectual disabilities. The research method is based on a behavior mapping - place centered mapping approach. As the result, this research shows that there are variations in different spatial adaptations in responding to each of the physical setting conditions of the dormitory. The form of spatial adaptation involves changes in the physical setting and behavior, namely adjustment, reaction, and withdrawal. Furthermore, this type of spatial adaptation has different ways in achieving the ideal conditions of activities carried out in the physical setting of the dormitory.

Keywords: *Adaptation; Intellectual disability; Special needs school; Physical setting; Dormitory.*

ABSTRAK

Berbagai kajian telah menunjukkan pentingnya peran lingkungan spasial dalam membentuk perilaku dan proses kognitif. Namun, lembaga pendidikan seringkali tidak dirancang dengan baik untuk tujuan khusus ini. Hal ini terjadi pada asrama sekolah untuk peserta didik yang berkebutuhan khusus. Tidak tersedianya standar perencanaan asrama sekolah berdampak pada tatanan fisik bangunan yang beragam. Salah satu contohnya kegiatan sehari-hari yang dilakukan di asrama masih menggunakan pemanfaatan satu ruangan untuk beberapa jenis aktivitas. Hal ini berdampak pada tingkat kepadatan ruang yang selanjutnya berimplikasi pada adaptasi spasial yang akan dilakukan oleh penghuni asrama. Penelitian ini

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bertujuan untuk mengetahui adaptasi spasial pada tiga asrama Sekolah Berkebutuhan Khusus dengan latar belakang fisik yang berbeda secara khusus memfokuskan anak tunagrahita. Metode penelitian ini dilakukan menggunakan pendekatan behavior *mapping-place centered mapping*. Hasil penelitian ini menunjukkan bahwa terdapat variasi adaptasi spasial yang berbeda dalam merespon masing-masing kondisi tatanan fisik asrama. Bentuk adaptasi spasial, melibatkan perubahan tatanan fisik dan tingkah laku, yaitu penyesuaian, reaksi, dan penarikan diri. Selanjutnya bentuk adaptasi spasial ini memiliki cara yang berbeda-beda dalam mencapai kondisi ideal kegiatan yang dilakukan pada tatanan fisik asrama.

Kata Kunci: *Adaptasi; Tunagrahita; Sekolah luar biasa; Tatanan fisik; Asrama.*

INTRODUCTION

At present, boarding school is one alternative education for parents who want to send their children to school (Syarifuddin, 2013). This condition is in line with the Government's policy which has included the development of dormitories as part of the Ministry of Education and Culture's Strategic Plan. This is a form of state presence towards equal access to education, especially for children who are in outermost, underdeveloped, left behind area (in Indonesia known as 3T), and disabled children (ABK) in special needs school (SLB).

Referring to PSMA (2018) SLB's dormitory is a type of Day Boarding, where only a small number of students live in it. In addition, SLB's boarding is included in the Special Needs Boarding Schools category which is present to provide ease of service and to build socialization among children with special needs. One of the problems there are no standards for student housing planning, even though there is a Regulation of Minister of Education and Culture, Number 33/2008 about Special Needs School Educational Facilities, but in it does not regulate the matter above. In fact, according to Kocaman et al., (2017) accommodation is one of the most important needs to provide and maintain a feeling of security. Dormitory buildings must be carefully evaluated from the viewpoint of needs, layout and comfort conditions.

Nowadays there are still many conditions found in SLB's dormitory that have multifunction in the particular space, this is because the mind set on boarding planning is only limited to students' sleep and rest facilities. Though other facilities are still needed in the boarding besides the room, according to Chiara & Callender (1983) activities in the dormitory are not only sleeping, but also studying, socializing, eating, drinking, domestic activities (washing-cooking), as well as personal hygiene activities. The high density in the limited space resulted in students tending to carry out their activities in several places inside or outside the dormitory area (Yusuf, Hayati, & Faqih, 2018a), so the need for dormitory space must be based on the activity needs.

If it is reviewed, there is a link between the environmental settings and the behavior patterns (both individual and social) of the dwellers as a form of individual and group response to the shape of the environment (Wulandari, 2016). In research conducted by Be'Be, Edgü, & Yumu'Taci (2016) confirm the importance of space transformation (changing space) in the dormitory as a form of personalization of residents, in addition to providing ease of adjustment to the occupants of the dormitory in accordance with cultural settings and preferences.

Some of the student dormitory studies that have been conducted to mostly study Islamic boarding schools (pesantren) and college student dormitories. The aspects of the discussion also focused more on education, psychology, and social affairs. In general, discussions related to dormitory design or dormitory architecture usually do not stand alone, but are closely related to psychology, issues of social relations, culture and religion, to space density.

As an example of research on a boarding case study conducted by Yusuf et al. (2018b) about the pesantren design parameters through preferences and adaptation, and Nisa (2017) about the adaptation of occupants in Gadjah Mada University student dormitories. In the special needs school case study, there has not been much research related to the dormitory and its adaptation.

One example of research on the scope of special needs children has been done by Akbar (2012) about the influence of classroom settings and the environment on adaptation behavior of students with physical disabilities in SLB Negeri 1 Bantul. The study results show that fixed, semifixed, and nonfixed (informal space) elements influence the adaptation behavior of physical disability children, in addition to the physiological aspects of the environment. While a similar study with the same observation and location was also carried out by Hayuningsasi (2015), the focus of the study was the relationship between the physical setting of the outdoor space and social interaction. The results of the study showed that physical conditions and the degree of disability of children with disabilities affect social interactions and activities, besides the physical setting conditions of the outside space determine the types of activities performed by children with disabilities.

Based on some of the examples above, research related to dormitories is still found in the case of pesantren and college dormitories, although there are studies related to adaptation of special needs children who are still found in cases of children with physical disabilities within the scope of learning space (classroom) and outside space. Seeing this gap, research related to the special needs school dormitory is important to do. Refer to the background described previously this research aims to find out spatial adaptation in three different physical settings of a special needs school dormitory.

The topic of discussion is the spatial adaptation of special needs children in carrying out their living activities in the dormitory, in terms of the physical setting of the dormitory and the pattern of activities. In addition, the focus of observation is on the mentally retarded children who has different specialties and needs from the physically disabled and other types of disabilities.

Through the results of the study, it can provide an overview and recommendations regarding dormitory planning based on the behavior and needs of the occupants in carrying out their daily activities. Thus, the ideal

SLB's dormitory conditions for children with intellectual disabilities can be achieved.

Basically, between settings and behavior have a reciprocal relationship (Haryadi & Setiawan, 2014) to improve the quality of life (Sudiarta, 2016 on Yusuf et al., 2018). Where excitement and life in certain places is very dependent on the design of each sub setting (Laurens, 2004). Laurens further explained that spatial behavior or how people use order in the environment is something that can be observed directly, so at a descriptive level this is not controversial.

According to Rapoport (2005) the environment can facilitate or inhibit certain behaviors, cognitive processes, moods and so on. Behavior in relation to physical setting is regulated dynamically, besides according to Leboyer (1982) on Rahim & Hashim (2018) behavior to adapt to environmental conditions is to create the necessary balance between the individual and their environment. Amole (2009) it examined whether the morphological configurations of the halls of residence would predict residential satisfaction. Data were obtained from questionnaires distributed to a sample of 1124 respondents from all the halls of residences in four residential universities in Southwestern Nigeria. The data comprised objective and subjective measures of the physical, social and management attributes of the halls of residence. These were analyzed using frequencies, factor analysis and categorical regression models. More than half (53% said, if the environment cannot meet human preferences, then the efforts made to meet human needs are through adaptation.

Bell et al., (2001) explained that adaptation is a human action that changes its behavior so that it can adjust to the surrounding environment. In culturally adapting, humans can make adjustments through behavior and technology. Which, according to Bell et al., is called coping. Coping or self-mechanism is an effort to adapt to humans in interacting with the human environmental system, both social systems and ecosystems. In addition, Berry (1980) also said that adaptation is a relationship between changes in behavior that

usually leads to reducing non-conformities for a person to enhance a harmonious relationship in the environment.

“one general usage of the term ‘adaptation’ refers to the reduction of dissonance within a system-the increase of harmony among a set of interacting variables”.

Referring to the theory of adaptation conveyed by Berry (1976) can be divided into three, namely:

- a. Adaptation by adjustment, behavioral changes are in a direction which reduces the conflict between the environment and the behavior by bringing the behavior into harmony with the environment.
- b. Adaptation by reaction, behavioral changes are in a direction which retaliates against the environment, these may lead to environmental changes.
- c. Adaptation by withdrawal, behavioral changes are in a direction which reduces the pressure from the environment, in sense, it is a removal from the adaptive arena.

Wohlwill (1974) on Bell et al., (2001) argues that everyone has a degree of adaptation to certain environmental stimulation or conditions. The further the difference between environmental conditions and the degree of adaptation, the stronger the reaction of people to adapt. Environmental conditions that are close to or equal to the level of adaptation are optimal conditions that are always sought to be maintained.

Adaptation strategies can be interpreted as a way of doing an adaptation. A person's response to his environment depends on how the individual concerned perceives his environment. Humans have different personalities to adapt to space, besides that social life also cannot be separated from the way humans adapt to space. Laurens (2004) also discusses human interpersonal behavior, including: personal space, territory, crowding and density, privacy.

Adaptation is generally done when individuals feel out of line with environmental conditions and do not have control over their behavior. The ability of adaptation between

individuals certainly has differences. In addition, differences in adaptation are based on different factors. Holahan (1982) conveys three things that affect human adaptation, including: environmental perception, cognition, and attitudes.

The term spatial adaptation based on the previous explanation can be interpreted as a process of adaptation to the conditions of a new space or place. The adjustment process is the relationship between human behavior and physical arrangements in new spaces that include human activities. Various kinds of activities create diverse spatial functions. The use of space can be changed flexibly according to the number of needs that must be met.

The process of human spatial adaptation is also related to the flexibility in which humans are. The process can run depending on the adaptive nature of the user to the new physical environment or the setting of a new physical environment that is adjusted to the wishes of the user.

This research was conducted on January to March 2020 in three differences SLB dormitory which is located in Yogyakarta region, namely SLB PGRI Minggir (SLB MG), SLB Negeri 1 Kulon Progo (SLB KP), and SLB C Wiyata Dharma 2 (SLB WD). The focus of this study is on children with intellectual disabilities (hereinafter referred to as ATG). In general, the definition of intellectual disability is a child with special needs who has intellectual, physical, emotional, and social retardation (Desiningrum, 2016). Another definition formulated by Grossman (1983) on Wardani et al., (2007) and has become the main reference, and officially used by AAMD (American Association on Mental Deficiency), as follows:

“Mental retardation refers to significantly subaverage general intellectual functioning resulting in or adaptive behavior and manifested during the developmental period”.

Some considerations related to the selection of study sites, including:

- a. Differences in physical settings as a comparison of findings of spatial adaptation and its relation to the quality of space in each dormitory.

- b. Differences in the buildings order of the three dormitories, namely united and separate.
- c. Division of private to the public spaces in the three dormitory buildings.
- d. Differences in spatial planning, namely the type of space available and the availability of supporting facilities in the dormitory.

data will be used to identify the spatial adaptations made by ATG to the physical settings in each dormitory. Furthermore, the results of these observations will be classified according to the type of spatial adaptation and the methods used to achieve the suitability of the activity with the physical setting conditions.

The research method was carried out using behavior mapping - place centered mapping (Sommer & Sommer, 1980) to observe the utilization and the types of activities carried out by ATG in SLB's dormitories. The

Behavioral observations are carried out on weekdays and weekends in each location. The time span used is 6.00 a.m. to 21.00 p.m. WIB. The following are the existing conditions of each SLB dormitory:

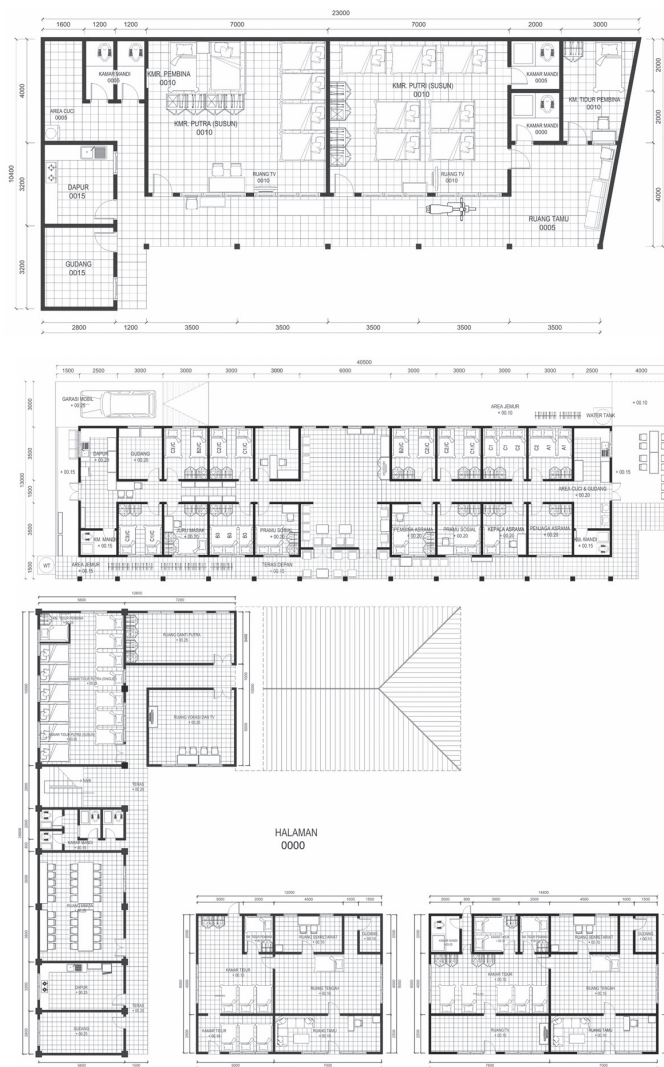


Figure 1.
Floor Plan of SLB's Dormitories
(up-down): SLB PGRI Minggir, SLB Negeri 1 Kulon Progo, SLB C Wiyata Dharma 2
Source: Author, 2020

DISCUSSION

Spatial Adaptation on Space Utilization in SLB's Dormitory

Refer back to the definition of adaptation, which means a condition of adaptation to the physical environment to achieve the expected ideal needs. This also applies to ATG as SLB's boarding residents in the utilization of space and activities they carry out. The factors underlying the occurrence of ATG spatial adaptation can be viewed from the incompatibility of physical settings with the characters and behavior, limitations of physical settings, as well as the cultural background of each ATG. In the study conducted, these factors are more directed to different physical setting conditions, so that it can be found how the forms of ATG spatial adaptation in carrying out their daily activities in the SLB's dormitory.

Spatial adaptation certainly will not be separated from the use of space and activities that have been discussed previously. Through space utilization, there are obstacles that ATG feels to meet the ideal needs to be achieved. Each SLB's dormitory has constraints related to the physical settings, both in quantity and quality, which sometimes require ATG to make adaptation to these conditions. In a study conducted by Be'Be, Edgü, & Yumu'Taci (2016) confirm the importance of space transformation (changing space) in the dormitory as a form of personalization of residents, in addition to providing ease of adjustment to the occupants of the dormitory in accordance with cultural settings and preferences.

The following is a general description related to the spatial adaptation made by ATG to the use of space in three different SLB's dormitories:

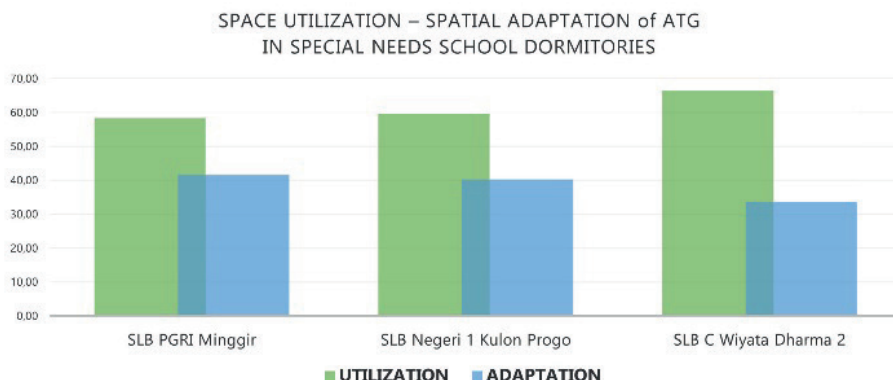


Figure 2.
Percentage Spatial Adaptation to Space Utilization of ATG in SLB's Dormitory
Source: Author, 2020

Figure 2 shows the comparison of the percentage of spatial use with spatial adaptation in three SLB's dormitories. In general, the percentage of space utilization is higher than the number of spatial adaptations carried out by ATG in the dormitory. Referring to the condition of the physical setting, it can be seen that the use of space in SLB MG reached 58.33%, almost directly proportional to its spatial adaptation, which was 41.67%. In SLB KP, the percentage of space utilization

was 59.66%, while the spatial adaptation was 40.34%. A quite large percentage difference between utilization and spatial adaptation was found in SLB WD, namely 66.39% and 33.61%. Based on these data, the comparison of the percentage of spatial use and spatial adaptation in two SLB's dormitories, namely SLB MG and SLB KP are almost directly proportional. Meanwhile, in SLB WD, the two figures show a difference of almost 50%.

This finding indicate that the physical setting conditions affect the spatial adaptations carried out by the inhabitants. The more

complete the facilities and space in the SLB's dormitories, the lower the spatial adaptation efforts made by ATG, and vice versa.

Table 1.
Spatial Adaptation on Space Utilization

SPACE	SLB PGRI		SLBN KP		SLB C WD2	
Room*	80.00%	28	16.67%	8	12.20%	5
Kitchen**	0.00%	-	16.67%	8	0.00%	-
Hallway	0.00%	-	27.08%	13	0.00%	-
Dining room	0.00%	-	0.00%	-	39.02%	16
TV room	0.00%	-	0.00%	-	43.90%	18
Living room	0.00%	-	31.25%	15	2.44%	1
Terrace***	17.14%	6	8.33%	4	0.00%	-
Kitchen patio	0.00%	-	0.00%	-	0.00%	-
Other room	2.86%	1	0.00%	-	2.44%	1
Total	100%	35	100%	48	100%	41

*(Private); **(Semi-public); *** (Public)
Source: (Author, 2020)

Spatial adaptation on space utilization shows that each SLB dormitory has a different level of spatial adaptation to the spaces in it. ATG's spatial adaptation in SLB MG is concentrated in two private and public areas, namely rooms and terraces respectively by 80.00% and 17.14%. The multifunctionality of the private and semi-public areas in the room is one factor in the high ATG spatial adaptation carried out in it. Seeing the high value of spatial adaptation in the room, this condition is in accordance with the results of a study by Yusuf, Hayati, and Faqih (2018a) that adaptation is difficult because the size of the bedroom, the number of occupants, and the bedroom area per person does not meet student preferences.

The highest percentage of ATG spatial adaptation in SLB KP is in the semi-public area, namely the living room by 31.25%. This is directly proportional when referring back to the value of spatial use discussed earlier, that almost all daily activities carried out by ATG in it. These conditions allow the spatial adaptation of ATG as a form of adjustment to each of the various activities carried out by ATG in space at the same time or different. The other three rooms, namely the hallway,

room, and kitchen area have a percentage of spatial adaptation of 27.08% and 16.67% each of the next two rooms. The spatial adaptation carried out by ATG in the alley and kitchen area is a form of adjustment to the limitations of physical settings during eating activities.

As found in the previous location, ATG spatial adaptation in SLB WD is mostly done in the semipublic area, namely the television room with a fairly high percentage, amounting to 43.90%. As is the case in SLB KP, some ATG daily activities are carried out more in the television room, so that the spatial adjustments made by ATG are directly proportional. In addition, spatial adaptations were also found in dining rooms and rooms, respectively 39.02% and 12.20%. Based on these findings, the spatial adjustments made by ATG in the three study locations cannot be separated from the bedroom as the primary means of SLB's dormitory.

Based on the above findings, the spatial adaptation carried out by ATG in the three dormitories is related to the physical setting conditions, both the type of facility and the dimensions of space in the SLB's boarding. The occurrence of high spatial adaptation in the private space as a result of the unavail-

ability of other supporting facilities, so that ATG does not have many options for making spatial adjustments. Meanwhile, the spatial adaptation that occurs in the semi-public space is related to its function as a shared fa-

cility that provides an opportunity for ATG to make more use and adjustments.

Based on the description above, it can be illustrated the distribution of ATG's spatial adaptation to the use of space in the three dormitories, as follows:

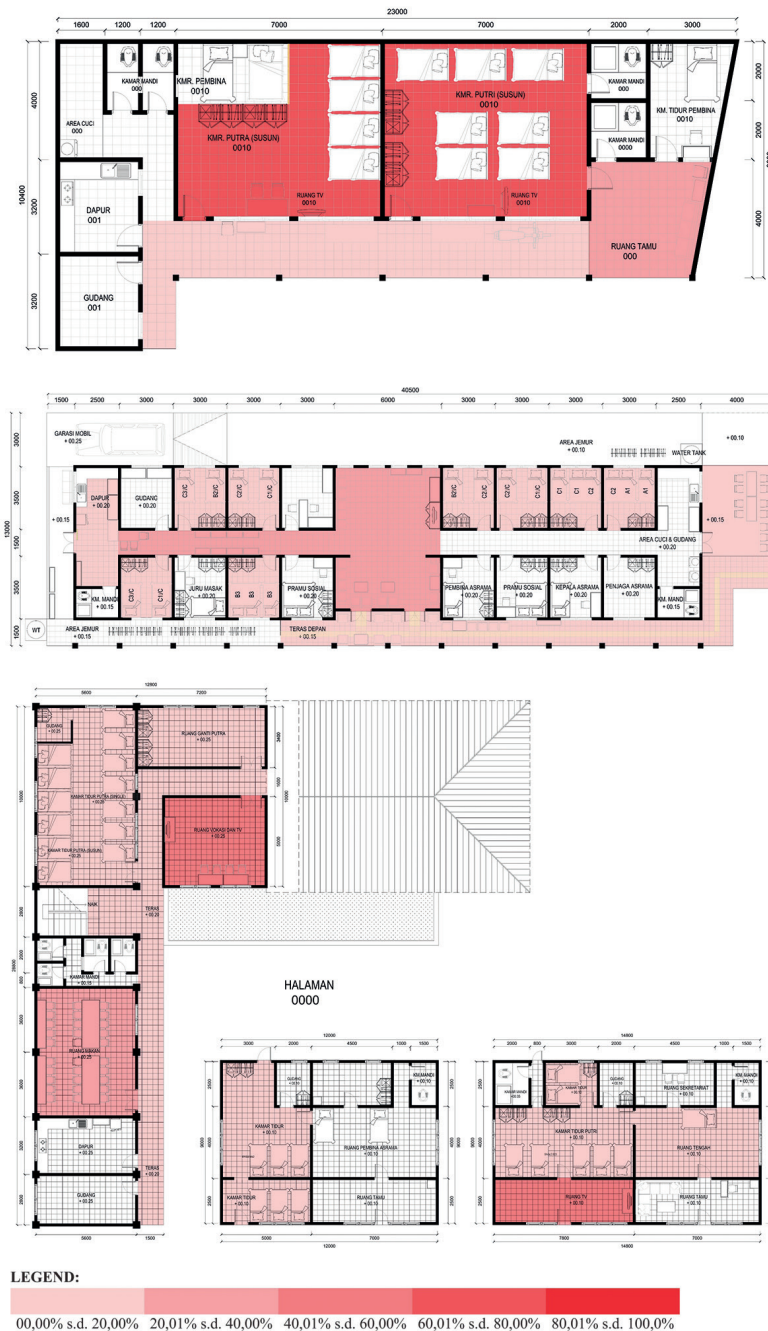


Figure 3.
Distribution of ATG's Spatial Adaptation on Space Utilization
(up-down): SLB PGRI Minggir, SLB Negeri 1 Kulon Progo, SLB C Wiyata Dharma 2
Source: Author, 2020

In addition, spatial adaptation can also be assessed from the types of activities carried out by ATG. The variety of ATG daily activities in three boarding schools show dif-

ferent levels of adaptation, this is in response or adjustment to each of the various physical setting conditions.

Table 2.
Spatial Adaptation on Daily Activities

ACTIVITY	SLB MG		SLB KP		SLB WD	
Breakfast	17.14%	6	14.58%	7	19.51%	8
Lunch	11.43%	4	18.76%	9	7.32%	3
Relaxing at a.m.	5.71%	2	10.42%	5	14.63%	6
Napping	8.57%	3	12.50%	6	9.75%	4
Prayer	8.57%	3	8.33%	4	2.44%	1
Dinner	14,9%	5	18.76%	9	12.20%	5
Relaxing at p.m.	5.71%	2	6.25%	3	14.63%	6
Study	11.43%	4	6.25%	3	4.88%	2
Sleep at night	14.29%	5	8.33%	4	12.20%	5
Incidental	2.86%	1	2.08%	1	2.44%	1
Total	100%	35	100%	48	100%	41

Source: (Author, 2020).

Table 2 shows that ATG spatial adaptation is carried out on almost all types of daily activities that are routine, joint activities, and even activities that require privacy. In general, the spatial adaptations carried out by ATG in the three study sites have the same tendency, namely eating activities (breakfast, lunch, and dinner). The spatial adaptation carried out by ATG for eating activities in SLB MG reached 42.86%, while in SLB KP and SLB WD respectively 45.84% and 39.03%.

In SLB MG and SLB KP, the condition was due to the lack of space and supporting facilities. In contrast to SLB WD, where the spatial adaptation that occurs in eating activities is more due to the ATG response to not using existing facilities, even changing the physical setting.

The spatial adaptation carried out by ATG in the SLB MG moved aside during the night's sleep activity by 14.29%. Meanwhile, the ATG nap activity at SLB KP has a spatial adaptation value of 12.50%. This condition was found as a form of adjustment to the environmental conditions of the boarding during the day (high enough temperature), so ATG chose to sleep outside the room with some form of adjustment. In contrast to the

other two SLB's dormitories, the percentage of ATG spatial adaptation in SLB WD which has a fairly high number is leisure activities and watching television reaching 29.26%. This condition was found as a response to adjustments to each type of leisure activities carried out by ATG, including watching television, playing, gathering, studying, chatting, and lying down.

Based on the description above, the spatial adaptation that is carried out in eating activities is due to the lack of supporting facilities, thus demanding ATG to adjust its activities within the available spaces. Furthermore, the spatial adaptation carried out by ATG on private activities (sleep) is due to two different things, namely the need to obtain personal space and the physiological conditions of the SLB's dormitory. This condition has also been found in research conducted by Yusuf, Hayati, and Faqih (2018a), where students' preferences for boarding schools are influenced by physiological (thermal comfort) and psychological aspects (privacy, personal space, territory, crowds, and density). Meanwhile, spatial adaptation made on joint activities (relaxing and watching television) are more on the variety of each

sub-activity that can be done with different types and ways of adjustment between ATGs based on the ideal needs to be achieved.

Referring to the theory of adaptation by Berry (1976) as the basis of this study, that adaptation has three different forms, namely adjustment (behavior changing), reaction (physical settings changing), and withdrawal. These three conditions were also found in the results of observations in three SLB's

boarding locations which were carried out through behavior mapping, that is place centered mapping supported by person centered mapping to confirm the third type of adaptation (withdrawal).

Based on observations, the following is the percentage of spatial adaptation forms carried out by ATG in SLB MG, SLB KP, and SLB WD dormitories:

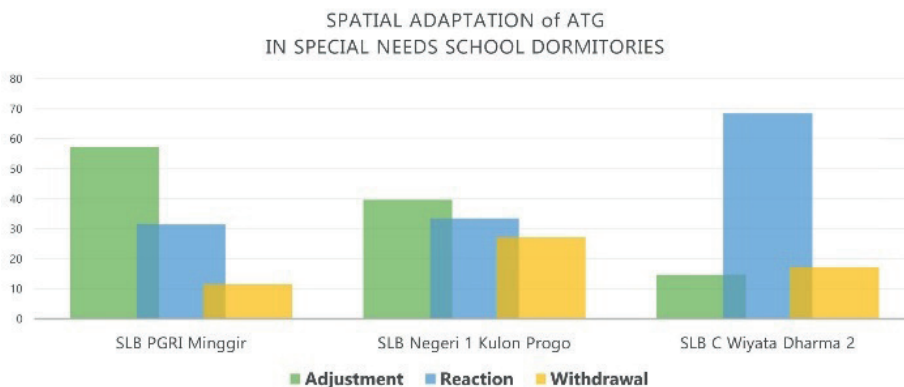
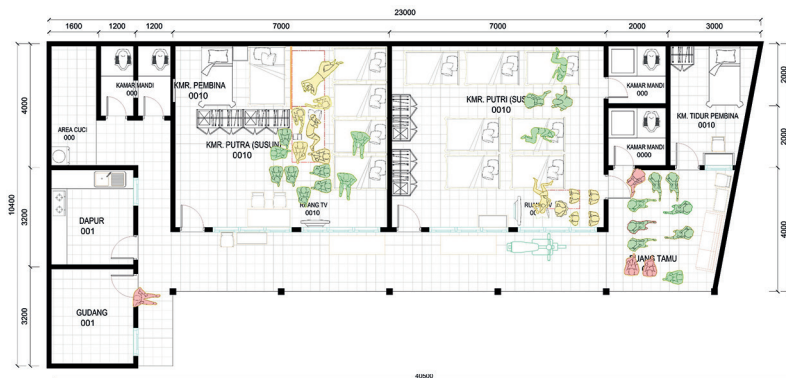


Figure 4.
ATG's Spatial Adaptation in the Dormitory
Source: Author, 2020

According to figure 4, in general, it can be seen that adjustment and reaction are the most common form of spatial adaptation in the SLB's dormitory. 57,14% adjustment was found in SLB MG, while in SLB KP and SLB C WD respectively at 39,59% and 14,64%. Adaptation with reaction, the highest was found in SLB WD 68,29%, while SLB MG and SLB KP are 31,43% and 33,33% respectively. Withdrawal is a type of spatial adap-

tation that is the least performed by ATG in SLB MG and SLB WD, which are 11,43% and 17,07%. In contrast to withdrawals found in SLB KP, which reached 27,08%.

Refer to the results of behavioral mapping, it can be illustrated the distribution and identification of the types of ATG's spatial adaptation in the three dormitories, as follows:





LEGENDA:

- Adjustment
- Reaction
- Withdrawal

Figure 5. Distribution and Identification of the Types of ATG's Spatial Adaptation (up-down): SLB PGRI Minggir, SLB Negeri 1 Kulon Progo, SLB C Wiyata Dharma 2
Source: Author, 2020.

Moreover, each of the spatial adaptations can be further described based on the physical settings and the variety of daily activities carried out by ATG, including the way ATG has done to achieve its ideal needs.

Adjustment

One form of spatial adaptation is adjustment, when referring to Berry's theory (1976), it is an action to reduce conflict by adjusting behavior. Adjustment was also found to be

one of the most spatial adaptation done by ATG in the dormitory.

Adjustments to change behavior was found to be different in each SLB's dormitory. The percentage of adjustment in SLB MG shows a fairly high number, namely in the rooms (40.00%) and terraces (17.14%). The limitation of the physical setting of the SLB's dormitory requires ATG to be able to continue their normal activities, even though one of them is by adjusting their behavior. In SLB KP, more adjustment occurred in the

kitchen (16.67%) and the hallway (10.42%), besides being found also in the living room (4.17%), rooms and terraces were 25% and 2.08%. While for SLB WD, the adjustment only occurred in the dining room by 14.64%.

In the case of SLB's dormitories with limited type of facilities and dimensions, more adjustments are found in the private room. Meanwhile, SLB's dormitories with adequate supporting facilities are mostly found in semi-public spaces in the form of joint activities.

In the three study locations, adjustment tendencies were found in the same type of

activity, namely eating (breakfast, lunch, and dinner). The total percentage of food activity adjustment in SLB MG is quite high, which is 42.86%. In addition, there are learning and sleeping activities with a low percentage, respectively 2.86% and 5.71%. In SLB KP, the percentage of total adjustment for eating activities is 27.09%. There are several other types of activities identified as adjustments, including studying and napping (4.17%), relaxing/watching television and sleeping at night (2.08%). Adjustments in the SLB WD were only found in dining activities, with a total percentage of 14.64%.



Figure 6.
Spatial Adaptation - Adjustment
Source: Author, 2020

The most dominant adjustment made by ATG in three SLB's dormitory locations is by sitting on the floor without a covering. In SLB MG, the method of adjustment was ATG of 31.43%. Several other ways, such as sitting on the bed (11.43%), shifting positions, changing sleep position, and closing their ears by 2.86% respectively were also found as a form of spatial adjustment by changing behavior. In SLB KP, the percentage of the adjustment method by sitting on the floor was 29.18%. Besides that, there are still some other ways that ATG is involved in adjusting the physical settings, including sitting on the floor height difference (4.17%), sitting on the table, shifting the sleeping position, and sleeping on floor each by 2, 08%. In contrast to the other two locations, in SLB WD, spatial adaptation with adjustments were only done in one way, namely sitting on the floor without a covering (14.64%). Of the several methods used by ATG to obtain ideal conditions in the

physical settings of the SLB's boarding, adjustments were made to the eating activities in the two SLB's dorms because of limited facilities. While in SLB WD is more the ATG preference to sit on the floor because they feel more free space. One other finding obtained from the ATG based on interviews, that eating by sitting on the floor is a habit that is done in their homes. This proves the opinion of Rapoport (1969), that cultural factors will determine a person's behavior in making adjustments.

Reaction

The type of spatial adaptation that ATG is also the most widely used is a reaction. Berry (1976) defines reaction as an action to enhance harmony by making physical changes in the environment or space.

In general, adaptation to reaction has a lower percentage than the type of adjustment, except in the SLB WD which has a

much higher percentage than the other two study sites. The reaction at each SLB's dormitory takes place in a different room, this is related to the ATG opportunity to make changes to the physical settings in these rooms. In SLB MG, more reactions occurred in the room by 31.43%. The same spatial adaptation was also found in the living room of SLB KP at 20.83%, apart from in the room (8.33%) and terrace (4.17%). While in SLB WD, 43.90% of reactions occurred in the television room and several other rooms, including rooms (12.20%), dining rooms (7.32%), and living rooms by 2.44%.

As with adjustments, spatial adaptation to reaction in the SLB MG is often found in private spaces, while in the other two locations, boarding schools are found more in semi-public space. Apart from the physical setting conditions of SLB MG, the living room and television room in the other two study locations have a size and flexibility to be utilized by various daily activities, both in the same or different times. So, ATG has the opportunity to make physical changes in an effort to adjust the spatial of each type of daily activity it does.

Behavior mapping results also show that the daily activity of ATG also has a relationship with the spatial adaptation of the reaction. The variety of daily activities carried out by ATG in fact also pay attention to the physical setting conditions of SLB's boarding, so that in some parts it is necessary to be adjusted so that ideal needs can be achieved.

The type of daily activities performed by the reaction at the three study sites showed

different trends. In SLB MG, more reactions were carried out on night sleep activities (11.43%) and prayer (8.57%), besides relaxing nights (5.71%), studying, and relaxing during the day each 2.86 %.

In SLB KP, the reaction was found in prayer and napping activities (8.33%), relaxing and watching television at afternoon (6.25%), sleeping nights (4.17%), studying, vocational, and relaxing night each 2.08%. Whereas, in SLB WD, reactions were found in 90% of the ATG daily activities. The percentage of reaction is mostly done in relaxing/watching television activities (29.26%) and sleeping nights (12.20%). Some other activities, such as napping (9.76%), study and dinner (4.88%), prayer, lunch, and vocational respectively 2.44% also require the reaction to achieve ideal conditions ATG required.

The three SLB's dormitories locations show that spatial adaptation to the reaction undertaken by ATG on the type of private activity is related to ATG's personal space requirements. Some of the limitations of the physical elements that ATG carries out on its activities also have implications for the formation of certain territories. Meanwhile, efforts to change the physical structure in semi-public space are often carried out to meet the needs of space to be used as joint activities.

Generally, the spatial adaptation to the reaction is done by ATG to get personal space requirements so that the activities carried out can run well. Changes in physical order by ATG are still fairly reasonable and not excessive.

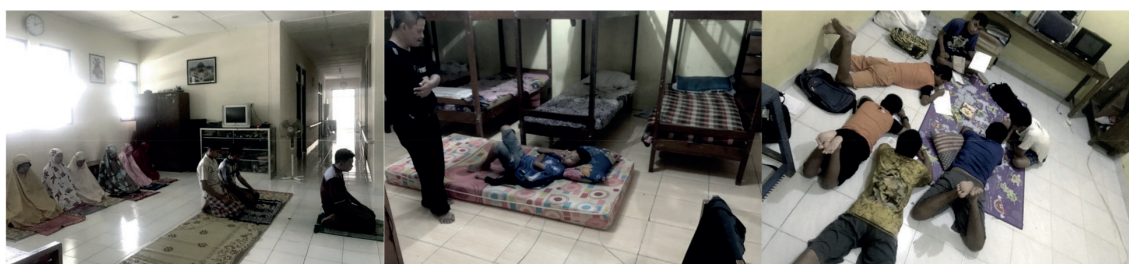


Figure 7.
Spatial Adaptation - Reaction
Source: Author, 2020

The method of reaction by changing the physical structure in the three SLB's dormitories has the same tendency, which is to spread the mat. The percentage of reactions by rolling out a mat in SLB MG is 17.14%, while the method used by ATG is using a mattress (8.57%), as well as a prayer mat (5.71%). In SLB KP, the percentage of reactions carried out by ATG by rolling out a mat was 20.83%. In addition, another form of reaction was done by arranging the table, holding a prayer rug, and using a pillow each 4.17%. The method used by ATG by rolling out mats in SLB WD was slightly higher compared to the other two SLB dorms, which amounted to 43.90%. Other methods of reaction by ATG include pulling a chair and using a pillow (9.76%), holding a prayer rug and using a wooden board each 2.44%.

The complexity of daily activities in certain rooms within the SLB dormitory often requires ATG to reorganize its physical structure, but at the study location the changes were not overdone. This can be seen from the overall method of ATG reaction, namely by rearranging/sliding furniture and placing other physical elements that are portable and temporary (mat, mattress, and prayer rug).

Withdrawal

Withdrawal is the type of adaptation that was least found in the three SLB's dormitories compared to the other two types of spatial adaptation and only occurs in a few spaces. Although, in the SLB KP, withdrawal was found with a fairly high percentage.

Definition of adaptation by withdrawal, according to Berry (1976) is an action to withdraw or move to another place to get the appropriate condition. If related to the context of the study location, this type of spatial adaptation leads to ATG actions to withdraw from certain spaces in the dormitory because of the mismatch of physical settings or the presence of intrusion.

ATG withdrawals in three SLB's dorms took place in different rooms. ATG in SLB MG most did withdrawal from the room by 8.57%. This condition is more due to the in-

trusion of other activities carried out in the room and at the same time, considering the very high level of multifunctional use of the room. In SLB KP, ATG's spatial adaptation of withdrawal was mostly done from the hallway by 16.67% due to the density and crowded space, then moved to the area around the kitchen patio which was more open to continue their activities. Besides ATG withdrawal was also found in the room (2.08%) and the living room (8.33%) as a result of the presence of other activities and physiological aspects of the room (air temperature and noise distraction). Meanwhile, ATG in SLB WD was mostly done withdrawal from the dining room and moved to the terrace area by 17.07%.

Spatial adaptation of withdrawals found in the three SLB's boarding locations generally occurs due to several factors, including density and crowding, intrusion from other activities carried out in the same space and time. inconvenience to environmental quality (high air temperature and noise interference).

ATG withdrawal is more often found in the types of private and joint activities. Spatial adaptation by withdrawal in SLB MG more commonly found in study activities (5.71%), vocational training and afternoon relaxation by 2.86% respectively. ATG learning activities generally get intrusion from other types of activities carried out in the room, for example watching television or chatting. While withdrawal in vocational activities due to the amount of space in the dormitory does not meet the expected ideal needs, and the order of the remaining available space (terrace) does not support the type of activity to be carried out. In SLB KP, withdrawal adaptation was more common than in the other two study locations. ATG mostly withdraws from eating activities (18.75%). This condition is related to the high density in the hallway and kitchen area during dining hours, so ATG prefers to get out to obtain a wider range of motion. In addition, withdrawal was also found in casual activities and watching television at afternoon (4.17%), as well as

sleeping and relaxing/watching television at night (2.08%). The withdrawal in SLB WD was found during breakfast (14.63%) and dinner (2.44%).

The method of spatial adaptation by withdrawal is somewhat more diverse than

the two previous adaptation types but has a lower percentage. This is because the withdrawal is more personal to the physical setting conditions, both in terms of quantity and quality of the environment.



Figure 8.
Spatial Adaptation - Withdrawal
Source: Author, 2020.

The method used by ATG on spatial adaptation by withdrawal is more to move to another room or area that is deemed to have sufficient area, more comfortable room quality, or to avoid intrusion to carry out/continue their activities. ATG in SLB MG dormitory withdrew from the room and moved to the terrace because of intrusion from other activities carried out in the room at the same time (5.71%). In the case of vocational training, ATG moved to a classroom near the dormitory because the physical setting and dimensions of the dormitory room did not support this type of activity (2.86%).

Meanwhile, the majority of ATGs in SLB KP withdrawal during eating activities by opting out to the kitchen patio, if the hallway and kitchen area is felt to be full or crowded. There are several ways by ATG while in the kitchen patio, including sitting on *dingklik* - a wooden bench (4.17%), a long wooden chair (8.34%), a concrete barrier (4.17%), even a conblock in the clothesline area (2.08%). If intrusion occurs when ATG is doing private activities, such as sleeping and studying in the room, they prefer to move to the living room or terrace. In SLB WD, ATG's withdrawal was only found during the dining activity, which was coming out of the dining room to the terrace. Several methods used by ATG in-

clude sitting on a chair (7.32%), on the difference in floor height, and sitting on the floor without a covering of 4.88% each.

In general, the withdrawal area chosen by ATG is not far from the space where the main activity is carried out and more open. Considering the conditions found in the three SLB's dormitories, it can be said that the ATG withdrawal decision is related to personal preferences to obtain better quality space, more flexibility, density, crowding, and physiological factors of the room.

CONCLUSION

Studies conducted at three study sites, namely SLB PGRI Minggir, SLB Negeri 1 Kulon Progo, and SLB C Wiyata Dharma 2 dormitories showed that spatial adaptation of ATG was found in all type daily activities, while spatial adjustments were made depending on each physical setting SLB's dormitory. In general, adjustment and reaction are spatial adaptations that the most widely used by intellectual disability children in the SLB's dormitory. In addition, another spatial adaptation is withdrawal, even with a small percentage.

This study also reveals that the availability of facilities and spaces influences the type and level of spatial adaptation of ATG

in carrying out daily activities in it. The more complete types of facilities and sufficient dimensions in the boarding, the lower the spatial adaptation efforts will be made, and vice versa.

Adjustments were mostly found in the physical setting with limited facilities. Meanwhile, a very dominant reaction was found in the physical setting with more complete facilities. Withdrawal is also related to the completeness of facilities in the dormitory, if no other types of supporting facilities are found as a withdrawal area, then ATG prefers to make adjustments. In addition, the type of spatial adaptation in the three SLB's dormitory was also influenced by several other factors, including: facilities and dimensions, habits or cultural background, personal space requirements and privacy, density and crowding and physiological aspects.

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