

Assessing level of awareness on Universal Design concept amongst Landscape Architects in Seremban's urban parks

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Abstract:

Malaysia's increasing numbers of people with disabilities causing alert among park provider to implement usable facilities for them in the urban parks. However, current condition of park facilities for people with disabilities especially in most of Malaysian urban parks are almost non-compliance status. Hence, this study aims to investigate landscape architects' level of awareness and understanding on Universal Design in Seremban Urban Parks. 34 numbers of respondents were gathered through online survey questionnaires on the Universal Design (UD) concept awareness level among landscape architects and observations in each urban park for the UD application. Statistics revealed that landscape architects are aware on the UD concept. However, the park provider and local authorities do not impose the Malaysia Local UD guidelines as mandatory during design submission. Cost and non-mandatory UD guidelines implementation were identified as the leading cause of the non-compliance in most Seremban's Urban Parks.

Keywords: Universal design, Urban parks, People with disabilities

1.0 Introduction

'Accessibility for all' of urban parks in Seremban area has been an ongoing issue. According to Priya, (2017), the population trends in Asia-Pacific by 2050 will be 25% of people aged over 80 years old. For example, to create access for less able users are not well applied and implemented by the local authorities and park developer. Universal Design (UD) is a design and composition of an environment, products and communication that full fill the need of all people so that it can be accessed, understood and used to the great extent. In landscape architecture fields design with UD concept is seen as one of the important factors in determining the success of a garden or park design. Park in the city which also known as Urban Park required a very comprehensive park plan. A successful park should provide social, health, environmental and economic benefits. As a result, the park with all those benefits will give an impact to the city which enhancing the liveability and improve the quality of life for its residents.

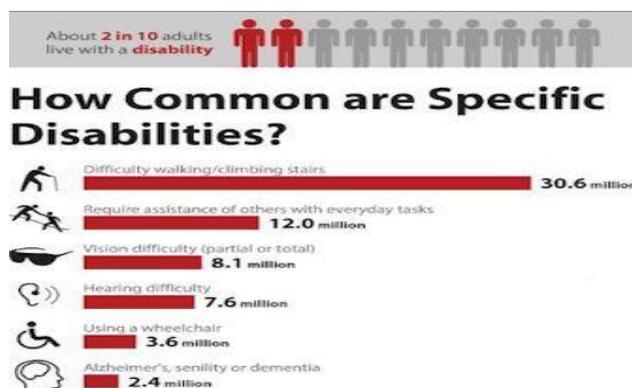
People with disabilities needs' to use a park are often ignored. Implementation and enforcement of local acts and policies related to creating access in urban parks for users with physically challenged are not well applied and implemented by the local authorities and park developer. Generally, the urban park design is provided for an average user without

thinking the needs of people with disabilities, children, and elderly persons. Hence, landscape architects play important roles in producing a successful design-for-all park. This study aims to investigate landscape architects' level of awareness and understanding on Universal Design in Seremban Urban Parks. The objectives of this research are i) to evaluate the landscape architect's awareness on the universal design implementation and application in urban parks of Seremban; and ii) to analyse the local guidelines (*Garis Panduan Perancangan Rekabentuk Sejangat (Universal Design) Jabatan Perancangan Bandar Dan Desa Semenanjung Malaysia (JPBD) 2011*) compliance on the provided amenities and facilities in the urban parks. This research will answer this main question which is 'Does awareness, understanding and knowledge of Universal Design and its applications affects the design and implementation measures focusing on accessibility and connectivity in the landscaped area by professionals and authorities in the landscape construction industry?' This research is focusing on the experts' views and application level of Malaysia Local UD guidelines (*Garis Panduan dan Piawaian Perancangan: Kemudahan Golongan Kurang Upaya, Jabatan Perancangan Bandar dan Desa, 2001*) related to accessibility of people with disabilities (PWD) users within the urban parks.

2.0 Literature Review

2.1 Physically Disabled People

A physical disability is a limitation on a person's physical functioning, mobility, dexterity or stamina, refer figure 2.1 (Disabled World Towards Tomorrow, 2018). Disability is a lack of ability relative to a personal or group standard or norm. Other physical disabilities include impairments which limit other facets of daily living, such as respiratory disorders, blindness, epilepsy and sleep disorders. All people have equal chance to involve in accidents to get a one-moment impact to become less able from their current fit situation. For example, of one-moment impacts are temporary injuries (swollen ligaments, muscles, and open wound) and permanent injuries (cut body parts due to accidents or infectious disease).



(Source: Disabled World Towards Tomorrow, 2018).

Figure 2.1: Global statistic on the People with Disabilities (PWD).

According to Jabatan Kebajikan Masyarakat, (2016), a total of 17,282 registered people with some kind of disabilities in Malaysia. Thus, their numbers are increasing yearly (refer table 2.1). PWDs also behave similar with the fit people. They liked to experience nature through their best senses regardless their loss eye sight, deaf, wheel chaired, mentally disabled, learning disabled and etc. Current state of public urban parks had robbed the PWDs chances to be in the natural environment just like normal people.

State	Physical				
	Malay	Chinese	Indian	Others	Total
Johor	1203	389	266	7	1871
Kedah	1119	107	198	5	1429
Kelantan	964	34	2	16	1016
Melaka	590	150	81	5	826
Negeri Sembilan	442	165	258	9	874
Pahang	621	93	62	32	808
Perak	704	260	232	30	1226
Perlis	187	17	3	8	215
Pulau Pinang	532	475	228	10	1245
Sabah	40	97	4	639	780
Sarawak	240	231	5	517	993
Selangor	1674	732	931	41	3378
Terengganu	731	21	4	1	757
W.P. Kuala Lumpur	880	578	361	21	1840
W.P. Labuan	12	1	0	11	24
Total	9939	3350	2635	1358	17282

Table 2.1: Malaysian people with disabilities registration statistics as of 2017

Table 2.2 shows the type of disabilities registered in Malaysia. Disability can be classified into several different types of disabilities which involve impairment of hearing, visual, communication, physical, learning disabled, mental, combination of these and some are unknown (Jabatan Kebajikan Masyarakat, 2016). A disability may be present from birth or occur during a person's lifetime. Disabilities are an umbrella term, covering impairments, activity limitations, and participation restrictions. Impairments may include physical, sensory, and cognitive or developmental disabilities. Mental disorders (also known as psychiatric or psychosocial disability) and various types of chronic disease may also qualify as disabilities.

No.	Description	Passed
1	Category not confirmed	0
2	Hearing	3446
3	Sight	5001
4	Communication	291
5	Physical	20173
6	Learning Disabilities	17086
7	Mental	5250
8	Various	2520
	Total	53767

Number of New Registration of PWD's by Category of Disabilities Physical, Ethnic Group and State, 2016
(Source: Jabatan Kebajikan Masyarakat, 2016)

Table 2.2: Type of disabilities registered in Malaysia

Physical disabilities may reduce the individual's quality of life and causes clear disadvantages to the individual. Ways to mitigate their depressing emotional state were through their independent mobility to their desired place, for instance, an urban park.

2.2 Universal Design

Universal Design (UD) is the design and composition of an environment so that it can be accessed, understood and used by people regardless of their

age, size, ability or disability (Kadir & Jamaludin, 2012). An environment (or any building, product, or service in the particular environment) should be designed to meet the needs of all people who used it. UD make the design environment usable for all especially the physically challenged group. It is a fundamental condition for good design if an environment is accessible, usable, convenient and pleasurable for everyone to use. By considering the diverse needs and abilities of all throughout the design process, universal design creates products, services and environments that meet peoples' needs.

2.3 Malaysia Universal Design Guidelines

In Malaysia there are several Universal Design Guidelines that had been implemented such as Guidelines and Planning Standards: Facilities for People with Disabilities. Department of Town and Country Planning Malaysia (JPBD), 2011, the Malaysian Standards MS 1184: Universal design and accessibility in the built environment. Department of Standards Malaysia, 2014 and Universal Design Guidelines for Public Recreation Facilities in Public Parks, (JLN) National Landscape Department, 2010 related to accessibility of PWD users within their immediate environment.

Guidelines and Planning Standards: Facilities for People with Disabilities.: provide to be as guidelines which can be applied to the planning, design & management in providing usability criteria of community facilities and be able to benefit all and achieve the goals of sustainable development (*Department of Town and Country Planning Malaysia, 2011*).

MS 1184: Universal design and accessibility in the built environment : specifies the basic requirements for the provision and design of outdoor facilities so that they are accessible and usable by PWDs (*Department of Standards Malaysia, 2014*).

Universal Design Guidelines for Public Recreation Facilities in Public Parks: The Universal Design Guidelines for Public Recreation Facilities in Public Parks are provided as a guideline for Local Authorities in providing convenience recreating disabled people in public parks. These guidelines are inputs from Federal and Local Government Agencies as well as representatives from associations patients and individuals with special needs (*National Landscape Department, Malaysia 2010*).

3.0 Method

This research employed two methods of data collection which are using online survey questionnaire and fieldwork observation using UD checklist audit form. The questionnaires were distributed to experts among the landscape architects with various working background such as landscape consultancy firms, contractors, educators, property developers, and municipality's representatives. The questionnaires were used to gained insights on the level of awareness among the practitioners during their design

specification stages. Later, on site observation were performed to audit each park’s universal design application and compliance. This observation was to determine the parks’ friendliness level towards the PWD users.

3.1 Study Sites

Three urban parks located at Seremban, Negeri Sembilan were chosen as study sites. The selection criteria are based on its similar settings. The park chosen are a) Taman Tasik Seremban; b) Sendayan Green Park; and c) Seremban 2 City Park.

Table 3.1 shows the justification on the selection criteria.

Location Selection factors	Taman Tasik Seremban	Sendayan Green Park	Seremban 2 City Park
Location	Urban (700m from MPS)	Urban (13.5km from MPS) – surrounded by residential	Urban (7km from MPS) surrounded by residential
Opened	Since 1980’s, Re-develop year 2000	Since 2013	Since 2005
Owned by	Seremban Municipal Council (MPS)	Seremban Municipal Council (MPS) – Built by Matrix concept	Seremban Municipal Council (MPS) – built by IJM Land
Size	59 acres	26 acres	8 acres
Visitation frequency	Moderate	Moderate	High
Function Complexity	Playground Jogging track Floating Stage	Playground Jogging track	Playground Jogging track

	Natural Lake	Manmade lake Amphitheatre	Manmade lake Amphitheatre
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3.2 Survey Questionnaire

The questionnaires were divided into three sections which are a) Section 1: Demographic; b) Section 2: Knowledge on Universal Design; and c) Section 3: Expert opinion on Universal Design. The survey was conducted online. A link of the survey questionnaire (<https://goo.gl/forms/rdoHJp3Xy6fygCuC2>) was distributed among landscape architects. A total of 34 respondents gave their feedback. Respondents were given one-week timeframe to respond. The responds are passive because it is anticipated that the respondents are busy with their works.

3.3 Fieldwork Observation

Fieldwork observation were carried out to identify UD compliance of each park in the form of checklists. The checklists were used to verify the existing park facilities (refer table 3.2) on its UD compliance.

Table 3.2: Urban Parks Universal Design Inventory Checklists

Urban Park Facilities	UD Compliance	
	Yes	No
Entrance area		
Pedestrian circulation (walkway, ramps & curbs)		
Boardwalk		
Amphitheatre		
Gazebo/ Shelter		
Toilet		
Parking area		
Playground		
Steps		
Signage		
Street furniture(lighting, benches, trash bins, drainage covers/ grating)		

4.0 RESULTS AND DISCUSSION

Based on the 34 feedback, the following statistic charts were generated.

Gender

34 responses

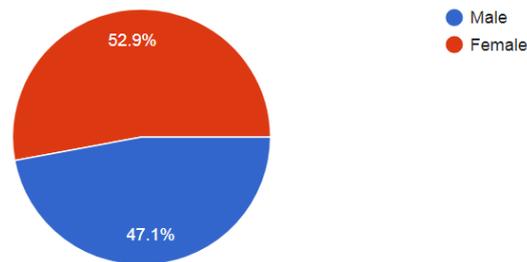


Figure 4.1: Gender distribution

According to figure 4.1, the gender distributions are almost balance with 52.9% female and

47.1% male. This group of respondents will pose no gender biased.

Education Level

34 responses

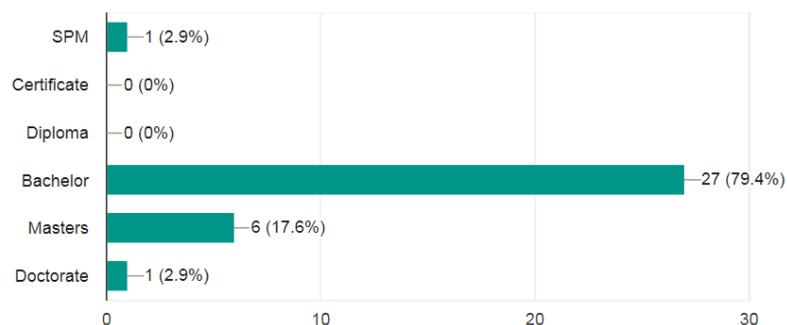


Figure 4.2: Education level

Based on figure 4.2, most of the respondents have bachelor's degrees as their highest education level with 79.4%, following with master's degree (17.6%), SPM level (2.9%) and Doctorate (2.9%). The highest education level were the bachelor's degrees because the target respondents must have bachelor's degree of Landscape Architecture to be a valid respondent.

Working environment

34 responses

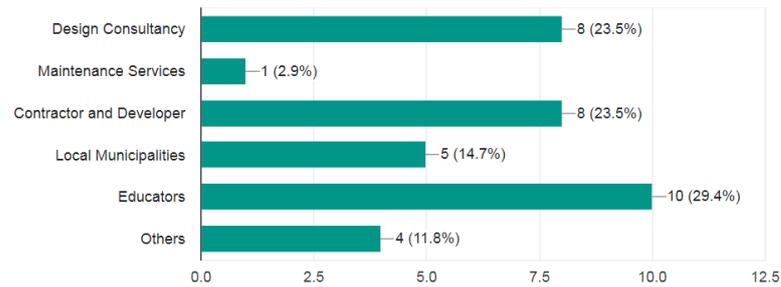


Figure 4.3: Working environment

Based on the figure 4.3, most respondents are from the education background (lecturers) with 29.4%, following the respondents from design consultancy firm (23.5%) and contractors and developers (23.5%). It is anticipated that new knowledge will be accessed by the lecturers first hand before it is handed to the on ground practioners.

Have you ever include UD principles in your design?

34 responses

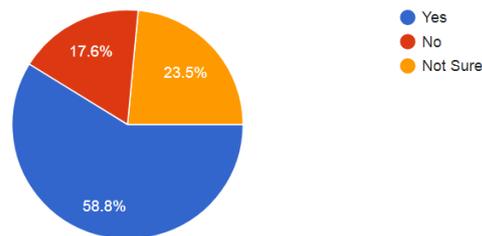


Figure 4.4: Universal Design principles in designs

Based on figure 4.4, 58.8% of respondents said 'Yes' that they had included the Universal Design principles in their designs. It is anticipated that, most of them are educated landscape architects and familiar with the UD concept. Others said 'No' (17.6%) and 'Not sure' (23.5%) perhaps they are not familiar with the UD design concept.

Working years?

34 responses

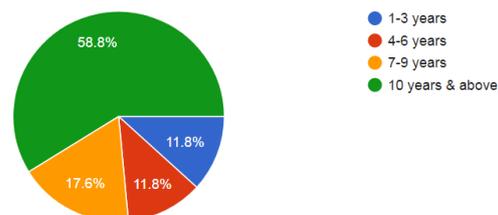


Figure 4.5: Working years

According to figure 4.5, most of the respondents (58.8%) have worked more than 10 years and considered as the expert key player in the landscape industry. Others are considered as managerial post (17.6%), executives (11.8%) and junior landscape architect (11.8%). These experts are the decision maker whether to implement or not the UD guidelines in the public urban parks.

Are you familiar with UD concept?

34 responses

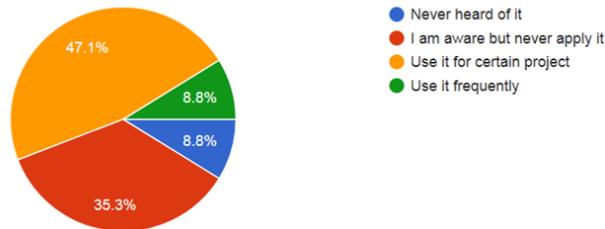


Figure 4.6: Respondents’ familiarity of UD concept

Based on figure 4.6, most respondents (47.1%) have used the UD concept in certain project. 35.3% of them never had applied it in their projects and 8.8% of them have never heard of the Universal Design concept. Only 8.8% of the respondents use the UD concept frequently in the project. This result is tally with the existing project situation where such UD implementation could be costly. For example, instead of providing one steep staircases, the park provider needed to implement long flight on ramps with allowed steepness for the PWD users.

If no, why are you not aware with the UD concept?

13 responses

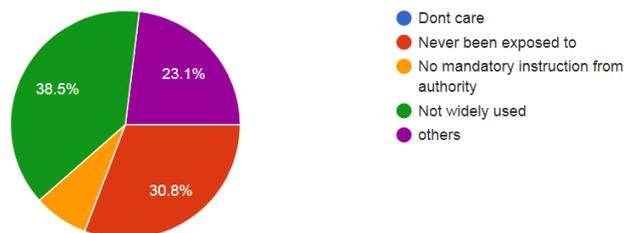


Figure 4.7: The reasons of why the respondents are not aware on the UD concept

Based on figure 4.7, most of the respondents (38.5%) are not aware of UD because the UD itself are not widely implemented in urban parks. 30.8% of them were not been exposed to the UD at all. 7.6% of them do not know the UD due to no enforcement from the local authority upon the UD guideline mandatory application.

How did you first know about UD concept?

34 responses

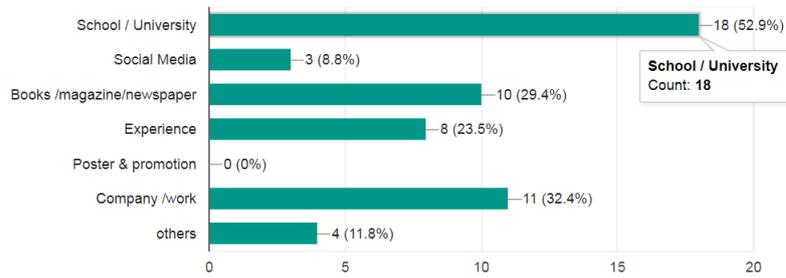


Figure 4.8: Respondents exposure of UD

According to figure 4.8, most of respondents gain knowledge on UD from their universities (52.9%). Others from working experience (32.4%), printed media (29.4%), park strolling experience (23.5%), social media knowledge dissemination (8.8%) and other sources (11.8%).

		Name of Urban Parks		
No	Universal Design Guidelines	Taman Tasik Seremban	Sendayan Green Park	Seremban S2 City Park
1	Pedestrian Walkway	41.2% Equal proportion of requirements met and not met	47.1% Most requirements are met	55.9% Most requirements are met
2	Pedestrian Crossing	38.2% Most of the requirements are not met	Non-compliance	Non-compliance
3	Guiding Blocks/Tactile Blocks	Non-compliance	Non-compliance	Non-compliance
4	Parking Area	38.2% Equal proportion of requirements met and not met	32.4% Most requirements are not met	41.2% Equal proportion of requirements met and not met
5	Public Transport Stop	32.4% Most requirements are not met	41.2% All requirements are Not provided even though it is necessary	35.3% Most requirements are not met
6	Ramp	44.1% Equal proportion of requirements met and not met	47.1% Most requirements are met	52.9% Most requirements are met
7	Toilet	52.9% Most requirements are met	32.4% Equal proportion of requirements met and not met	41.2% Equal proportion of requirements met and not met

Figure 4.9: UD Guideline or Standards the respondents had used

Based on figure 4.9, most respondents (78.3%) had applied the Universal Design guidelines for public recreation facilities in Public Parks, National Landscape Department (JLN) guideline in their design. Others are using the Malaysian standard of Universal Design and Accessibility in the built environment: MS 1184 (43.5%) and Malaysia Town and Country Planning Guidelines and standards: Facilities for People with Disabilities. (34.8%).

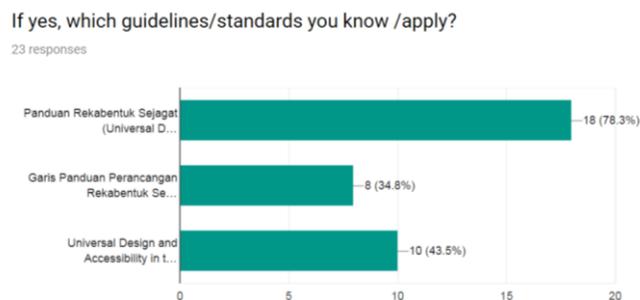


Table 4.1: Urban Parks Universal Design Inventory Checklists for three study sites

Based on table 4.1, three study sites namely Taman Tasik Seremban, Sendayan Green Park and Seremban 2 City Park have been inventoried using the checklists. It can be seen that all three parks have not implemented the UD guideline no.3, braille tile / tactile tile for the blinds. It is obvious that the park provider assumed no blind people would visit their parks. Furthermore, almost all three parks did not provide UD guideline no. 2, suitable pedestrian crossing from adjacent sites. These parks are not PWDs user-friendly. For the UD guideline no.4 and no.5 which are the parking area and public transport stop, the level of compliance are most UD requirements are not met. However, some of other UD guidelines are implemented cautiously. For example, the UD guideline no.1, no.6 and no.7, which are pedestrian walkway, ramp and toilet respectively. All three parks complied with most UD requirements are met. This shows that, they do acknowledge that among of the park visitors will be the PWDs. Unfortunately, the designers do not prescribe the UD design guidelines thoroughly on the park. It is probably, those landscape architects have limited knowledge on Universal Design Concept. Thus, there is in need to educate these landscape architects on this UD concept.

5.0 CONCLUSION AND IMPLICATIONS

Malaysian government recognizes the need to foster the landscape environment and outdoor spaces that is accessible to all. UD design concept is acknowledged by Landscape Architects and will be embedded in the designs of all urban parks to manifest the ideal integration of the parks facilities and PWDs users. Local guideline such as Universal Design

guidelines for public recreation facilities in Public Parks from National Landscape Department, Malaysia (JLN), provide such benchmark for park designers while designing it. Therefore, it is essential that Malaysians learn further from the successes and failures of other countries whilst sharing its own experiences, so as to improve the situation in Malaysia in a shorter time frame. With this in mind, it is urgent to incorporate all UD design guidelines such as Malaysian Standards (MS1184), Facilities for People with Disabilities (JPBD, 2011), and Guidelines for public recreation facilities in Public Parks (JLN, 2010) into designing the Malaysian Urban Parks.

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