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Provision of Students with Disabilities Facility at Public Universities: A Case Study

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Abstract
In line with a developing and developed nation, Malaysia offers educational opportunities to all walks of life regardless of age, status, and gender. In this regard, people with disabilities are not marginalized for higher education. Opportunities for the disabled to pursue higher education can be achieved with the same rights as other normal students. As such, the provision of disability-friendly accessibility is an essential element of a public university for the convenience of students with disabilities to university life. Emphasis on the provision of disabled-friendly facilities is important as this facility is the right they should have. In addition, the government also provides for the disabled to further their education at public and private higher education. Therefore, the provision of facilities at the institute level should not be an issue that prevents the disabled from gaining an education. The objective of this study was to study the barriers to facilities faced by disabled students in public universities. This study was conducted at a public university located in the state of Selangor. The method used was qualitative and in-depth interviews were conducted with selected informants. The findings of this study indicate that there is a need for improvements to facilities at public universities for the use of students with disabilities.
Keywords: Disabled Persons, Public Universities, Facility Provision, Facilities, Social Support

Introduction
It is conceivable to call inclusion as having all-encompassing access to courses and physical locations that include programs, enrollment, and activities. Disability activism has continued to grow, helping provide a foundation for social policy and facilitating the inclusion of persons with disabilities (PwDs). In Malaysia, the trend was started in the 1960s, when the Ministry of Health recommended community-based rehabilitation programs as an alternative to custodial care (*Ministry of Women, Family and Community Malaysia*, 2016). According Law of Malaysia (2018), persons with disabilities were considered to be making decisions, establishing policies, allocating

resources, and providing services instead of just being users. The Malaysian government implemented the Individuals with Disabilities Act in 2008 under the Incheon Strategies to Make Rights Meaningful for People with Disabilities. It's stated that the disabilities are individuals who have a deficiency or defect in the long term. The defects are those by physical, mental, intellectual, or sensory limbs that impede these people from living like other normal people. According to the World Health Organization (WHO), disabled people are individuals who meet all the criteria in the defined definition of having long-term physical and mental disabilities that make it difficult for individuals to carry on with their daily lives and limit them to engaging in work (*United Nations*, 2006). This showed how serious Malaysia is about the rights of persons with impairments, as well as how well they can live. Disability person is viewed as a minority group in this society. Although their existence is considered as a minority, they are part of a society that can have the same rights as other individuals. All individuals regardless of their abilities and disabilities, gender, social, economic, cultural, ethnic, or religious background have an equal right to lead an even better quality of life (Kaur et al., 2015).

An important component of the nation's growth nowadays is the importance of education. According to National Philosophy, intellectual, emotional, and social development go hand in hand with the advancement of the country. Thus, individuals from diverse socioeconomic strata now have more access to education. These realities, however, are different for students with impairments at public colleges. Notwithstanding, though, handicapped people's educational accomplishment is unarguable. Disability students are enrolling in public institutions at an increasing rate. This illustrates that student with impairments can compete with regular students for higher education. Students with disabilities need facilities that support them in their everyday lives on campus. A laid-back campus setting will allow students to function on their own. Therefore, the institution should follow the criteria given by SIRIM and the Ministry of Housing and Local Government while preparing to provide facilities for handicapped individuals (Samsuri, 2012). Student welfare management at a higher school has driven the necessity to offer handicapped amenities both inside and outside. Due to an increase in handicapped persons in government institutions, they can live like regular people (Kadir et al., 2018).

The obstacles faced by disabled students in public universities will affect their academic achievement. Despite the government's efforts, students with disabilities face several difficulties and obstacles in higher education. Students with physical and sensory disabilities facing great challenges and obstacles in higher education institutions and thus, impair their ability to learn. Eligibility for duty is one of the obstacles that students with impairments confront. Students with visual or hearing impairments have certain problems when it comes to enrolling in health classes. Even after completing their education and beginning employment, students with impairments confront issues with their employers due to their capacity to work, participation rates, and incomes (Yusof et al., 2019). Additionally, they said that companies often had no issues with those with a physical handicap or mild disability, or showed little interest in more complicated disability. Notably, some academics have also shown that the negative effects of medicine, a lack of personal desire, and physical health problems limit the mobility of students with disabilities after they finish secondary school. As education issues increase and the number of students with

disabilities increases, inclusivity is a must (Nasir & Afendi, 2019). The experience of students with disabilities in higher education institutions shows that they often face obstacles and challenges during their studies and achieve low results at the end of their studies despite having similar qualifications with other students upon enrolling in university (Riddel et al., 2002). Thus, to make sure these sectors are not left behind, the objective of educational inclusiveness is a success (Santos et al., 2019).

Providing facilities that are required for students with impairments is a first step that should be supplied by the institution. This provision is for impaired students to spend their lives at public universities (Hove, et al., 2018). Johnson (2006), has mentioned that the faculty or institutions that have a lack of awareness of students with disabilities also add to the difficulties of accommodating or adjusting to students with special needs since they are still not accustomed to the campus environment. The level of awareness of the disabled is also low for society to understand the existence of equality for the rights of these groups. A study by Konur (2006), stated that the civil rights for disabled students in the United Kingdom found that these students have faced discrimination in each of their studies, including recruitment, student enrollment, service channels, placement, and graduation. Given this, the importance of disabled students to access facilities is very important in helping them to overcome the obstacles which they are facing in public universities. In addition, disabled people can successfully graduate and complete their undergraduate. Therefore, this study aims to elucidate the barriers to facilities faced by disabled students in public universities. It is significant to apply the bottom-up concept where the voice of PwDs should be heard to enhance their well-being in university.

Type for Facilities for PwDs

Subjected to different of disability need a variety of different facilities and demands, which might sometimes clash. According to Sorenson (1979), mobility disabilities are the most widespread, when mobility is facilitated primarily via the use of mechanical aids and, to an extreme, is capable of erecting a complete barrier to building access. Disabilities associated with blindness and deafness are distinct from physical impairments since both are caused by sensory inadequacies and may be accommodated by the provision of extra or substitute information systems or sources (Gravel & Wilkerson, 2017). While facilities are available, they are not always capable of performing their intended tasks, posing issues for Persons with Disabilities (PwDs). The following are some of the impediments to PwDs:

Table 1: Type of barriers for PwDs

The physical barrier for wheelchair handicaps	Physical barriers for deaf and hard of hearing
Staircases: No handrails and high risers	Hard to get a disaster warning/alerting system
Lift: High button panel	Hard to communicate when traveling especially in airports and on the highway
Toilets: Narrow entrance; No Grab bar; No space for maneuver; High mirror.	Constrains in lift service (Flashlight and emergency buttons)
Parking: Far from the entrance; insufficient space for unloading wheelchair; No disable parking permit.	Difficulties in building entrance and information counters.
Public transportation: Lack of regular bus service to cater to wheelchair users.	
Indoor problems: High switches; High service counter; No lift for building higher than 4 stories.	
Outdoor: No curb cuts on walkway; poor signage	

Source: Osman et al., 2015

Infrastructures and Facilities Provided by Universities
A pleasant and accessible pedestrian network surrounding the school should be provided. The setting should include certain activity hubs to make studying and working on campus more enjoyable (Hazreena, 2006). Collaborative development among diverse experts and organizations is critical for achieving a barrier-free built environment. It will exchange experiences in educating students about inclusive design in preparation for careers as professionals responsible for enforcing the law on the built environment's safety, accessibility, and usefulness. Prior planning policies and implementations did not aim to create a barrier-free built environment, which made it more difficult for people with disabilities to use campus amenities in Malaysia (Muhamad & Kamarulzaman, 1998). For instance, there were no accommodations for ramps with slopes equal to or less than 1:12 for wheelchair users, and elevators were supplied without Braille buttons or audio signals for visually impaired individuals. Additionally, concurred that building amenities and design have an effect on students' learning efficiency at a post-secondary school. However, including disabilities and collaborators in planning is critical for encouraging and achieving a barrier-free built environment (Natasha et al., 2012). The primary rationale for deferring disability awareness training to a single significant activity in which it would be incorporated as the culture of a caring campus community is a lack of understanding about handicapped facilities. The example shown that legislation alone is insufficient to meet the requirements of handicapped people unless all parties participate in awareness initiatives. When more handicapped people and their issues are appropriately recognized, this will lead to a more comprehensive agenda that will be integrated into the campus's mainstream growth.

Lacking Provisions by Universities
intrinsic and extrinsic constraints both originate from persons with disabilities and are imposed on them by society (which refers to the negative attitude toward them) (Bullock and Mahon, 1997). There are various reasons for the absence of services for individuals with disabilities, including limited funding, unsuitable facilities, lack of requisite skill and expertise, and the fact that other community organizations have established programs. Aside from that, a hurdle arose due to the community's unfavorable attitude (Kennedy et al., 1991). The attitudinal barrier, argued by Datillo (1994), will be the most difficult to overcome. People's fear, ignorance, and/or communication issues produce this barrier. noted that community encouragement and support for PWDs improves their self-esteem and social and economic capabilities (Dryer et al., 2016).

The Importance of the Provision of Disabled Facilities in Public University
The inclusion of higher education must be understood as a platform for welfare, educational justice, and the capacity to practice inclusion. The vow to "leaving no one behind" is a focus in the Sustainable Development Goals (SDGs) for advancing inclusive development for everyone. Societies will never be able to fulfill the SDGs unless everyone is involved, including those with disabilities (Terzi & Altin, 2014). UN Secretary-General Antonio Guterres said that 1.5 billion people can't be neglected or alienated. Other nations are not currently meeting the basic needs of people with disabilities, particularly those from impoverished backgrounds. Additionally, individuals with disabilities must be visible in policymaking regarding education. The need to recognize and celebrate individuals with disabilities to empower present efforts and ensure inclusion at all levels is critical (Zainal & Hashim, 2019). Currently, there are still many individuals with impairments who are not recorded in Malaysia. They noted that because of outdated data, several issues arose, including the disruption of service providers and customers alike (Page & Islam, 2015). The figures from the Ministry of Education (MoE) demonstrate that despite a decline in enrollment at public universities, the number of students with disabilities is steadily rising at these institutions (Table 2).

Table 2: Higher education enrolment for PwDs from 2014 to 2018

Year	Total enrolment (Bachelor)	Students with disabilities Enrolment
2014	340,538	1742
2015	324,894	1930
2016	322,507	2444
2017	332,023	2139
2018	338,563	1874

Source: MOE, 2018

Without a doubt, education plays a crucial role in individual and national prosperity. Education is essential for academic and personal improvement as well as possible work opportunities. The person with disabilities requires education in addition to reading and writing, to have functional employment (Singal et al., 2015). In addition, he also noted that education gives persons with disabilities more life opportunities, respect, and social skills. Academic world philosophy has shifted from "disciplinary research" to "pedagogical research" (Vulliamy & Webb,

1993). The importance of inclusive education by saying that inclusive education will enable equality in education, justice, and well-being for children with disabilities (Al-Obaidi & Budosan, 2011). Moreover, the integration of children with disabilities into society must be supported through community-based intervention programs, efforts for teacher development, inclusive schools, and education facilitation programs (Heiman et al., 2017). Developing nations such as Malaysia still confront challenges in providing comprehensive and equitable education for children with disabilities. This results from the mistranslation of the philosophy of education for children with disabilities, disparate definitions of disability across diverse organizations, and discriminatory practices. Therefore, every instrument and strategy—regional or global—must be used and implemented appropriately at the local level to avoid these instruments functioning as an attractive book on a bookshelf (Pacheco et al., 2018).

Nevertheless, when a student with a handicap decides to attend a public institution, this decision presents a barrier. In addition, the university administration must be prepared to welcome students with impairments. In a student's opinion, the most significant access is the physical access to the building where they will study. Additionally, public colleges, need to know more locations. Students with impairments have unlimited access to the content. This public university's package is already installed. In public universities, the provision of suitable access or facilities is necessary even for students with impairments (Morina, 2017). The amenities offered to a regular student are not the same as the amenities handicapped students require. A study conducted by Hall and Tinklin (1998), stated that there are four sources of barriers faced by disabled students while in public universities, namely 1) the physical environment; 2) the process of entry to higher education centers; 3) access to information during the study and 4) low levels of awareness among academic staffs and support.

Students with impairments remain a crucial role in their overall academic challenges and hurdles. The unavailability of these amenities will impede their sustained movement at public universities completely. Simplicity includes ramps for the visually impaired, elevators, wheelchairs, public restrooms, parking spaces, and public transportation for students with disabilities. If there aren't hoops for wheelchair usage and a technical barrier, it will be tough for the handicapped (Zahari et al., 2016). These groups critically require this infrastructure for ecologically focused goals, such as Braille sidewalk paths, elevator facilities, bathrooms, and more. Kids with impairments can compete with other students on a level playing field when it comes to educational attainment. Persons with disabilities should be provided with the same chances as other individuals so that they do not stray from the national learning stream, since they possess the cognitive capacity to compete with and even surpass average student accomplishment (Islam, 2015). Adequate attention should be paid to the opportunities available to students with impairments. They have the same emotions and ambitions for social interaction as other pupils. As a consequence of their faults, these groups were better equipped to pursue an education in their chosen sector. According to Nurul Hariza (2012), education is a basic human right, and all individuals on this planet have the right to study and learn something new.

Research Methodology

This is exploratory research carried out at three (3) well-established public universities in Klang Valley which are also known as a research university (RU) namely Unversity of Malaya, Kuala Lumpur (UM), National University of Malaysia (UKM) and University Putra Malaysia (UKM). This study applied a qualitative research approach by in-depth interviews and fieldwork observations. Informants consist of the student with a disability (SwDs). Throughout this method, 8 informants were semi-structured interviewed (Table 3).

Table 3: Research informant

Call Code	Gender	Disability	Level of Education	University
Disabled 1	Male	Vision	Bachelor	UM
Disabled 2	Male	Vision	Bachelor	UM
Disabled 3	Male	Vision	Bachelor	UM
Disabled 4	Male	Physical	Bachelor	UKM
Disabled 5	Male	Physical	Bachelor	UKM
Disabled 6	Female	Vision	Bachelor	UKM
Disabled 7	Female	Vision	Bachelor	UPM
Disabled 8	Female	Physical	Bachelor	UPM

This study is a fully qualitative study using a case study design. Qualitative research is an approach that emphasizes descriptive, inductive, grounded theory and at the same time studies on humans that will give meaning to their way of life (Rozmi, 2015). Rule and John (2011), states that a case study is a research study done on a unified system, a form of program or event tied to a particular place, time, or bond. The interviews began with a brief introduction of the researcher. The purpose was to gain trust and build a good relationship between the researcher and SwDs. Informant consented to participate in this interview session is voluntary. Thus, they give the information freely and openly as outlined without any barrier. The Focus group discussion (FGD) approach was used to gain brief information about their campus life and identified key informants. Then, the informant was selected as required by the purposive sampling technique and interview procedure. Besides that, the snowball approach has also been used during the preliminary study to gather more information from the informants. The sampling technique requires, one informant, suggested the others to become the informant whom he or she believed the next person could give the information regarding social supports of SwDs. Furthermore, to assure and reliability of data the informants have to be a student with a disability who registered in public universities as stated in Table 3. They were questioned individually by a set of a semi-structured interviews. To obtain the study data, the researcher has used an in-depth semi-interview method for informants. This method also encourages researchers to explore their experiences and at the same time understand the issues and challenges of students with disabilities in public universities.

The interviews were recorded using digital devices and transcribed into text forms. Then, the transcribed data were uploaded into Nvivo software. The data were analyzed constructed on

open coding, categorizing, and thematic techniques. Finally, the finding compiled into each theme and described by the descriptive method.

Results and Discussion

In this study, the researcher did not specify the level of education and the field that the informant had taken. However, the researcher has stated the academic level of informants for future reference purposes. Based on the analysis made, three things are important for students with disabilities while in public universities. Among the important facilities for disabled, the student is a residential college, transportation, and lecture room. These three things are shown in Figure 1:
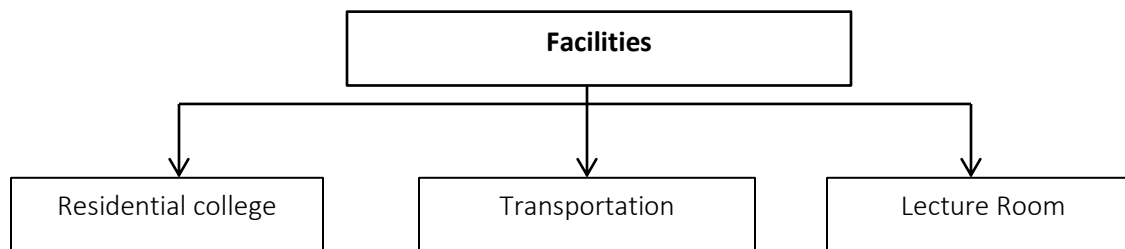

Figure 1: Importance of Facility

Residential College

Residential college obtains a very important element for students with disabilities. The college administration should provide all the necessities and facilities like cafes, reading rooms, internet facilities, transportation, and more. This will encourage students to pursue and live their routine lives more comfortably (Buyung et al., 2018). For students with disabilities, the provision of facilities appropriate to their circumstances is extremely significant. The administration's weaknesses in providing all these facilities make it difficult for them to become independent.

> "*I satisfied with of the residential college provided by the university. The college have provided a room for the disabled student downstairs to facilitate our movement. in addition, the toilet provided is located near the living room*" (Disabled 1)

> "*The room provided was quite large and it made me easy to move. My invisible condition requires a large area to allow me to perform in-room activities. Besides that, a college dormitory is provided for two occupants.*" (Disabled 2)

> "*The facilities that provided by the residential college is providing the accommodation on the ground floor. This facility helps me to do daily activities and facilitates my movement to class or cafes.*" (Disabled 5)

> "*The accommodation provided by the college is satisfactory as the basic facilities for the disabled are provided. Other than that, amenities such as washing machines and*

clothes drying are not a hindrance. Maybe the college can improve basic facilities to make sure students with disabilities can use it more easily." (Disabled 7)

"The condition of the room accessibility has made me easy to move because it has provided a special route for visually impaired and wheelchair-bound students. The location of the downstairs living room makes it easy for me to go to the room without the help from others." (Disabled 8)

A residential college is one of the most substantial components of a university. Residential colleges are part of the university which provides accommodation and food facilities and facilities for students to undertake student development activities for students (Buyung et al., 2018).

Transportation
On-campus transportation is an important part of making it easy for students to move from one place to another. The bus facilities provided by the university make it easy for students to go to college or their desired places. However, for students with disabilities, there is no information they can access to know where the bus is headed, and they have to wait a long time to get them to use the service (Toran et al., 2009). Feedback from the students with disabilities states that there are still need improvements for the transport facilities especially bus services.

"I rarely use the university bus service because it is quite difficult for me to use the service. Due to my limited vision problems, I usually use college van services when I want to go somewhere far away. To go to college or library I usually just walk." (Disabled 3)

"In my first year of university, I used to use the university bus service. Before boarding a university bus, I need to specify the location that I want to reach to the bus driver to make sure the driver knows where I want to go. This is because the university bus service facility has not yet provided a bus stop notification system. I have been late for college due to I missed my stop. Now I walk to college a lot." (Disabled 4)

"My situation with wheelchair makes it a bit difficult for me to use the university bus services. The university bus service facility has not provided wheelchair access yet. So, I'm going to use the college van service provided by the university." (Disabled 6)

Data obtained by students with disabilities at the university about the college transportation services suggests that there is a need for more improvements to the university's bus transportation facilities. However, the college van service provided by the college helps them to move to their desired location within the university.

"The college van that was provided helped me to move in case if there is an emergency. But I need to fill out the form that has been provided and follow the procedure for booking the van." (Disabled 1)

"The college van facilities provided are very helpful. I hope this facility will be expanded within the university to make it easier for students with disabilities to use the transportation services other than the university bus." (Disabled 8)

University transportation services are one of the most important things to make it easy for students to move to their desired location. For students with disabilities, transportation helps them to facilitate their movement within the university. University bus facilities still do not meet the needs of students with disabilities. Improvements in bus transport facilities should be made to ensure that all students can use these facilities.

Lecture Room
The process of teaching and learning takes place in the lecture halls provided by the university. For students with disabilities, they need a lecture room that makes it easy for them to attend. The disadvantages they experience will make it difficult for them to move like other students. However, the attentive attitude of the instructor supports them to take classes according to the schedule.

"The lecturer understands my condition. The lecturer will choose the lecture hall downstairs to make it easier for me to attend his class. If the building has already provided the elevator service, then there is no obstacle for me to attend the classes held on the second or third floor. My college friends also helped me get to the class." (Disabled 2)

"The faculty building has provided elevator facilities. This facility helped me to attend the classes even though the class was on level three. Besides that, my classmates also helped me get to class." (Disabled 4)

"For me, the facilities provided by the faculty are satisfactory because my building is equipped with elevator service facilities. However, some of my friends complained that their faculty did not provide elevator facilities because their lectures were located in the old building." (Disabled 5)

"Attending college did not cause me any problems. This is because my faculty building situation has provided me with facilities that help me attend lecture-based classes. The elevator and Ramp facilities in the faculty building helped me get to college." (Disabled 8)

The friendly disabled facilities in the faculty building need to give attention to ensure alignment with all the buildings within the university. The study informants expressed satisfaction

as the building provided facilities for the disabled such as elevators, ramps, and special pathways in the building but those facilities were not provided in all the lecture halls. Therefore, improvements to buildings that do not have disabled facilities should be considered by the university. During the study, all the informants stated that there did still have several things that needed attention and improvement to ensure that they could live as a student and finish their studies.

Conclusion

From the data, it can be seen that barrier-free design facilities are not commonly used at public universities in Malaysia. Only some portions of the institution have excellent accessibility and mobility, while other parts still the need for development. Even if the guideline has been followed, the route design is not fully in compliance. Let's use this route as an example. Therefore, persons who are impaired cannot tell the difference between a bumpy road and a track in Braille. Despite that, the biggest problem at University Malaya is poor signage. Most of the responders with vision impairment complained about the signs. Therefore, they choose appropriate signpost design and a campus-area sign system to aid them. Disability Equality Training (DET) is an established curriculum at most research universities. However, to provide better service, the program should be held more regularly. Other than that, the PwD awareness campaign should be promoted in the community to able-bodied persons alone. Disabled individuals must be made aware of their fundamental requirements, and the best way to do this is to educate both University Malaya's personnel and students. In addition, it enabled handicapped individuals to arrange activities that would encourage non-handicapping environments. to build barrier-free campuses, the supply of amenities should be complete various kinds of assistance will be required. Thus, providing barrier-free amenities in the campus environment should be inclusive to all impaired students. Hopefully, careful planning and attentive methods will lead to a more accessible, welcoming, and safe campus for all users.

Creating an education that focuses on talents rather than impairments is only the beginning. It is essential to properly define such demands to organize provisions appropriately and not on common sense and popular culture. In responding to a disability, each definition that we choose results in very diverse reactions, for better or for worse. The lives of handicapped Malaysians have certainly improved during the previous decade. Although we do not fully disagree, research has revealed that the space for development in Malaysia is huge. Even the mere touch with handicapped individuals is almost non-existent in Malaysia. Schools, public transit, and public spaces may all be touched by handicapped individuals, and this has the effect of coloring how we view handicapped people. Although views are improving, the process must be sped up so that handicapped individuals are more widely visible in daily life. If efforts are made on all levels and reinforced via education, the quality of life of handicapped individuals may improve. To allow a part of the people that had been lost to rejoin society, Malaysia must undertake these adjustments. When in mainstream education and based on inclusion, an education system that supports all learners may become a reality. This will benefit all Malaysians, creating a more democratic and fair society, and a more secure country.

References

Kadir, S., Jamaludin, M., & Abdul Rahim, A. (2018). Building managers' View on Accessibility and Ud Implementation in Public Buildings: Putrajaya. Journal of Asian Behavioral studies, 3(6), 47-56.

Al-obaidi, A., & Budosan, B. (2011). Mainstreaming educational opportunities for physically and mentally disabled children and adolescents in iraq. Advances in school mental health promotion, 4(1), 35-43.

Bullock, G., & Mohan, S. (1997). Leisure education, community development and populations with special needs. New York, United States of America: Ataran Silvan Publisher.

Buyung, M. R., Shafii, H., & Yusoff, N. A. (2018). Transformation to the sustainable living college concept at public university Malaysia. Journal of Advanced Research in Social and Behavioral Sciences, 11(1), 34-49.

Datillo, K. (1994). Information services for people with development disabilities. New York, USA: Greenwood Library.

Dryer, R., Henning, M. A., Tyson, G. A., & Shaw, R. (2016). Academic achievement performance of university students with disability: Exploring the influence of non-academic factors. International Journal of Disability, Development and Education, 63(4), 419-430.

Gravel B. E., Wilkerson M. H. (2017) Integrating Computational Artifacts into the Multi-representational Toolkit of Physics Education. In Treagust D., Duit R., Fischer H. (Eds.), Multiple Representations in Physics Education. Models and Modeling in Science Education, (pp. 47-70). Springer, Cham.

Hall, J., & Tinklin, T. (1998). Students first: the experi- ences of disabled students in higher education. Ed- inburgh: Scottish Council for Research in Education.

Hazreena, H. (2006). Encouraging a 'barrier-free built environment' in a Malaysian university. Kuala Lumpur.

Heiman, T., Fichten, C. S., Olenik-Shemesh, D., Keshet, N. S., & Jorgensen, M. (2017). Access and perceived ICT usability among students with disabilities attending higher education institutions. Education and Information Technologies, 22(6), 2727-2740.

Hove, G. V., Schippers, A., & Bakker, M. (2018). Students with disabilities in higher education. Social Inclusion, 6(4), 103-106.

Islam, M. R. (2015). Rights of the people with disabilities and social exclusion in Malaysia. International Journal of Social Science and Humanity, 5(3), 171-177.

Johnson, A. L. (2006). Students with disabilities in postsecondary education: Barriers to Success and implication to professionals. American Counseling Associations.

Kaur, G., Leong, T. P., Yusof, J. M., & Singh, D. (2015). Perception of people with disability in creating sustainable public policy. Procedia-Social and behavioral sciences, 168, 145-155.

Kennedy, A., Smith, M., & Austin, F. (1991). Department of interior, United States of America.

Konur, O. (2006). Teaching disabled students in higher education. Teaching in Higher Education, 11(3), 351-363.

Law of Malaysia. (2018). Person with disabilities Act 2008. In the commissioner of law revision, Malaysia under the authority of the revision of laws act 1968. Putrajaya: Prime Minister's Department of Malaysia Press. https://doi.org/10.4324/9780203795422.

Los Santos, D., Bain, S., Kupczynski, L., &Mundy, M. A. (2019). Determining academic success in students with disabilities in Higher Education. International Journal of Higher Education, 8(2), 16-38.

Ministry of Women, Family and Community. (2016). Action plan for persons with disabilities 2016-2022. Putrajaya: Ministry of Women, Family and Community. Retrieved from: https://www.kpwkm.gov.my/kpwkm/uploads/files/Dokumen/Dasar/PelanTindakan_OKU. pdf.

MOE. (2018). Quick facts 2018: Malaysia educational statistics. Putrajaya: Ministry of education Malaysia Press. Retrieved from: https://www.moe.gov.my/penerbitan/1587-quick-facts-2018-malaysia-educational-statistics-1/file.

Morina, A. (2017). Inclusive education in higher education: challenges and opportunities. European Journal of Special Needs Education, 32(1), 3-17.

Muhamad, A., & Kamarulzaman, K. (1998). Penglibatan ibu bapa dalam pendidikan khas. Jurnal Akademik Maktab Perguruan Kota Bharu, 3,16 – 21.

Nasir, M. N. A., & Efendi, A. N. A. E. (2019). Thematic analysis on the rights of disabled people to higher education. Journal of Education and Social Sciences, 12(1), 8-17.

Natasha, K., Husrul Nizam, H., & Abdul Hadi, N. (2012). Evaluation and concept of building performance towards sustainability in malaysia higher institution. Asian Journal of Environment-Behaviour Studies, 3(8). Retrieved from http://fspu.uitm.edu.my/cebs/images/stories/cebs/ajebsv3n8c3.pdf

Embong, A. H., Khairuldin, W. M. K. F. W., Yasin, M. F. M., Hassan, A., & Ibrahim, M. S. (2021, March). Between Reformist and Interpretation: Notes on Hamka's Methodological Strategies as Reformist Mufassir. In First International Conference on Science, Technology, Engineering and Industrial Revolution (ICSTEIR 2020) (pp. 415-422). Atlantis Press.

Majid, S. F., Khairuldin, W. M. K. F., & Ajmain, M. T. (2019). Fiqh Boycott On LGBT Community: A Review. Perdana: International Journal of Academic Research, 6(2), 35-49.

Anas, W. N. I. W. N., Daud, N., Khairul, W. M., & Khairuldin, F. W. (2017). The Stance of Alimony or Maintenance for Working Wives within Working Period: An Analysis from the Qualified Jurists (Muftis). International Journal of Academic Research in Business and Social Sciences, 7(4), 2222-6990.

Hassan, S. A., & Khairuldin, W. M. K. F. W. (2020). Research Design Based on Fatwa Making Process: An Exploratory Study. International Journal of Higher Education 9 (6), 241-246

Hariza, H. (2012). Aspirasi kerjaya dalam kalangan pelajar bermasalah pendengaran di politeknik. Tesis tidak diterbitkan.Universiti Tun Hussein Onn,Melaka, Malaysia.

Osman, M. M., Radzi, F. H. M., Bakri, N. I. M., & Ibrahim, M. (2015). Barrier-free campus: University Malaya, Kuala Lumpur. Procedia-Social and Behavioral Sciences, 168, 134-144.

Pacheco, E., Lips, M., & Yoong, P. (2018). Transition 2.0: Digital technologies, higher education, and vision impairment. The Internet and Higher Education, 37, 1-10.

Page, S. L., & Islam, M. R. (2015). The role of personality variables in predicting attitudes toward people with intellectual disability: An Australian perspective. Journal of Intellectual Disability Research, 59(8), 741-745.

Riddell, S., Wilson, A., & Tinklin, T. (2002) Disability and the wider access agenda: supporting disabled students in different institutional contexts. Widening Participation and Lifelong Learning, 4(3), 12-26.

Ismail, R. (2015). Metodologi penyelidikan: Teori dan praktis. Bangi: Universiti Kebangsaan Malaysia Press.

Rule, P., & John, V. (2011). Your guide to case study research. Pretoria: van Schaik.

Samsuri, N. A. (2012). Penyediaan fasiliti OKU di sekolah menengah pendidikan khas vokasional [Master's thesis Universiti Tun Hussein Onn, Malaysia]. MAL Repository. http://eprints.uthm.edu.my/id/eprint/4235/1/noorainul_arifah.pdf.

Singal, N., Salifu, M. E., Iddrisu, K., Casely-Hayford, L., & Lundebye, H. (2015). The impact of education in shaping lives: Reflections of young people with disabilities in Ghana. International Journal of Inclusive Education, 19(9), 908-925.

Sorenson, R. J. (1979). Design for accessibility. United States: McGraw-Hill.

Terzi, R., & Altın, F. (2014). Examination of the patient's locomotor system disability evaluated in the board of health for disabled. Turkish Journal of Osteoporosis, 20, 60-4.

Toran, H., Yasin, M. H. M., Tahar, M. M., & Sujak, N. (2009). Sokongan dan halangan yang dihadapi pelajar-pelajar kurang upaya di sebuah institusi pengajian tinggi di Malaysia. Asean Journal of Teaching and Learning in Higher Education, 1(2), 18-29.

United Nations. (2006). Convention on the rights of persons of disabilities. New York: United Nations.

Vulliamy, G., & Webb, R. (1993). Special educational needs: From disciplinary to pedagogic research. Disability, Handicap & Society, 8(2),187-202.

Yusof, Y., Chan, C. C., Hillaluddin, A. H., Ahmad Ramli, F. Z., & Mat Saad, Z. (2020). Improving inclusion of students with disabilities in Malaysian higher education. Disability & Society, 35(7), 1145-1170.

Zahari, N. F., Harun, S. F., Ahmad, N. A., Zawawi, Z. A., & Salim, N. A. A. (2016). Comparative analysis of disabled accessibility needs of heritage building in Perak. In MATEC Web of Conferences, 66. https://doi.org/10.1051/matecconf/20166600110.

Zainal, M. S., & Hashim, H. (2019). The implementation of transition programme for students with learning disabilities in Malaysia. Creative Education, 10(8), 1802-1812.