Issues and Trends in Fashion Education for Sustainability

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Abstract: United Nations (UN) has declared Sustainable Development Education (ESD) as an effort to achieve sustainable development goals (SDGs). Hence, it is encouraged that all parties globally, the government, the industry and education to implement a holistic and creative ESD approach to realize the goals of SDGs. ESD issues are also discussed in fashion education because the fashion industry is a contributor to environmental pollution. Thus, the values of sustainability in fashion education should be applied to students at an early stage so that students can understand different perspectives when faced with sustainability issues. In addition, students' attitudes and behaviour towards environmental issues are also at a moderate level. Students have been influenced by various influences such as mass media, ideologies and other social aspects. Thus, the objective of this study was to provide more information on issues in sustainable fashion education. The researcher also tried to channel some initiatives and the mechanism that can be used for the ESD practice approach in fashion education. The methodology used in this article was through the information review of previous studies. The information collected consists of articles of study and existing reports. The general and specific keywords were also used in the information search. Besides, the researcher also modified previous research results and combined various previous research findings to identify issues and trends of ESD in fashion education. From the findings, several parties play important roles in practising ESD in fashion education. The parties involved are educators, educational institutions, the government and the industry. In addition, various approaches can be done to promote ESD practices to students such as the application of mixed technology, the use of conceptual models in the fashion curriculum, the development of sustainable fashion courses, innovation in curriculum and pedagogy as well as collaborative activities between institutions and the industry. The findings also showed that several theories and models of previous studies discussed the significant relationship of factors influencing ESD practices. Those theories are Theory of Planned Behavior-TPB, Norm Activation Theory - NAT, Predictors of Environmental Behavior: PEB model and KAP Model.

Keywords: Fashion education, sustainability, sustainable development education, technical and vocational education and fashion design

1.   Introduction

The World Commission on Environment and Development (WCED), established in 1983, has published a report known as the Brundtland Report (United Nations, 1987). Following this, the United Nations (UN) declared Education for Sustainable Development (ESD) intending to empower students of all ages to become more aware and responsible concerning the environment and society. In addition, it also seeks people to change towards a green community and be motivated to adopt a sustainable lifestyle (UNESCO, 2017; Pauw et al., 2015). According to the Brundtland report, Sustainability Development (SD) is allotted to three main domains, namely environmental, social and economic. Meanwhile, the SD domain has added its needs to five domains, namely environmental, social, economic, cultural and governance (UNESCO, 2005). Therefore, in an effort to realize the SDG's goal to achieve its peak of success by 2030 (UNESCO, 2017), all countries are encouraged to implement a holistic and creative approach. (United Nations, 2015).

Eventually, ESD has become an acceptance, influence, and momentum in institutions of higher learning (Araneo, 2019).

Furthermore, ESD is the process of equipping students with the knowledge and competencies to surpass the various environmental, social and economic challenges (Schopp, Bornemann, & Potthast, 2020; Bell, 2016). In addition, it can provide students with the understanding, skills and traits needed to work and live by protecting the environment, social and economic (Kopnina, 2015). ESD Also assigned as a basic solution to address global climate changes (Ponzelar, 2020). Meanwhile, the future trend in sustainable development is the thinking of initiatives and the involvement of students and related stakeholders as driving agents (Araneo, 2019). It is not only refer to the educational process aimed at achieving sustainable development but also introduces the concept of the environment, with practical tools and theories that can be used to implement it (El-Deir, 2019). Therefore, all fields and disciplines can contribute to ESD. This is considering that ESD is not a specific or exclusive domain for any field or discipline but acted as a general education process that relies on the use of various pedagogical techniques with high intellectual skills (UNESCO, 2005).

2. Methodology

The methodology used in this article is taken from the information review of previous studies. The information collected consists of articles of study and existing reports. Databases such as Scopus, Emerald, and Google Scholar are used to acquire articles of study that are used as references. Apart from that, information is also obtained from industry report surveys and government reports. Other sources for information are through Research Gate, proceeding articles, reference books and websites. Information search uses general keywords in the context of education sustainable development (ESD). Meanwhile, the specific keywords used are fashion education sustainability, sustainable practice in fashion education, sustainability and fashion education.

At the initial stage, the review of selected articles focuses on environmental sustainability in fashion education. The surveys of articles obtained are collected using the keywords mentioned above. After that, the abstract section and the findings will be determined whether they are relevant to the objectives of the article planned. All relevant information from surveys is recorded in a particular table using the Microsoft Excel software before writing. The literature surveys consist of academic and research writing. The period of the literature surveys collected mostly range from seven years backwards from 2014 to 2020. Nevertheless, there are older studies of literature on some issues as well, since they are relevant to the objectives of this study. From the findings, the researcher has found various issues on education sustainable development which will be discussed in the next chapter.

2.1 Issues in Fashion Education Sustainability

Malaysia Education Development Plan (PPPM) 2013-2025 (Ministry of Education Malaysia (MoE), 2015), has outlined the National Education Philosophy (FPK) which is to produce Malaysians who are knowledgeable, skilled, virtuous, responsible and able to achieve personal well-being and can contribute to the harmony and prosperity of the country, community and family. Thus, by 2030, all students must acquire the knowledge and skills needed to promote SD through education for sustainable development (United Nations, 2015). Apart from KPM, other organizations are also fighting for sustainability as their strategy such as GreenTech Malaysia (GTM) through the annual report Green Tech Malaysia (2018), in the mission and vision to fight for the green economy. GTM aspires to be a leading organization in leading green technology for growth and sustainability. Not only that, the annual report of the Malaysian Investment Development Authority (MIDA), MIDA (2019), plays an important role in driving the Technical and Vocational Education and Training (TVET) agenda which expects the demand for TVET workers to reach 1.3 million workers by 2020.

Next, Malaysia External Trade Development Corporation (MATRADE) through Press Releases (Malaysia External Trade Development Corporation, 2019), also focuses more on promoting Malaysian companies to be involved in the sustainability realm. Moreover, the clothing industry also fights for and applies the value of sustainability in the company, which conjoint with the objective carried out by government organization. Jerasia Capital Berhad (JCB) in JCB's annual report also diversified the sustainability approach and is committed to reducing negative environmental impacts in an efficient, orderly manner and practising best practices. Similarly, the clothing company Prolexus Berhad in the annual report (Prolexus Berhad, 2018), also took the initiative to sustainably integrate to achieve the long-term vision and strategy to improve the company's operations and take into account the economic, environmental, social impact towards beneficial growth.

4th Asia Pacific Meeting on Education 2030 (APMED 2030) (12-14 July 2018, Bangkok, Thailand) (UNESCO, 2018) discussed the goals of ESD 2030 in the higher education sectors including Universities. Accordingly, to ensure that the goals of ESD can be achieved, quality education should be altered towards sustainable development. For instance, taking an approach through the quality of TVET teaching and learning in Malaysia, especially in Vocational college in Fashion design (FD) program with the application of sustainability values in the teaching and learning process (Williams, 2019; Abner & Baytar, 2019). Policies, curricula and practices as well as social and environmental governance at the tertiary level are important factors that need to be implemented to achieve goals in sustainable

development (Franco et al., 2019).

Therefore, it is necessary for TVET to play a role in providing green knowledge and skills that are in line with green technology, as industrial workers are involved in economic development that encompasses various sectors such as tourism, energy resources and product recycling (Alwi et al., 2018; Faizal et al., 2017). In addition, current fashion education reflects the mismatch between the needs of the industry and the educational knowledge received by students in their respective institutions (Palomo-Lovinski et al., 2019). Institutions should play a proactive role in identifying the effects of increasing technological changes and unsustainable usage patterns in various industries which consequently leading to environmental damage (Rao et al., 2020).

Therefore, applying ESD approaches in teaching and learning such as case studies, lectures, seminars and assignments of students and educators would influence students towards ESD through digital applications (Radclyffe-Thomas et al., 2018; Varley et al., 2018; Abner et al., 2019). Past studies have also suggested that ESD can be done in other disciplines by determining students' learning improvement when incorporating sustainable curriculum-based content (Rolling, 2018). Hence, students need to apply ESD knowledge in assignments and projects more widely. Educators are also required to incorporate ESD values and apply ESD into their curriculum (Johnson, 2014). Not only that but the ESD approach is also being practised through cooperation or collaboration between the institution and the industry (Lee et al., 2017). In addition, there are several studies examining the relationship and effects of ESD-related motivational factors by Abner & Baytar (2019). Dai & Hwang (2019) and Grund & Brock (2019) on the relationship and impact of SD learning on students and different ways to promote ESD. Besides, there are several similar studies on different media interventions in experimental studies to increase awareness of ESD in the field of fashion design including fieldwork studies and the use of media such as instructional videos and the application of mixed technologies. This study uses media to influence knowledge and attitudes towards ESD in the field of clothing and textiles (Rolling, 2018; Lee et al., 2017; Henry & Michell, 2019; Griswold, 2017; Baytar & Ashdown, 2014). Thus, there is a relationship of driving factors to a sustainable approach among students.

Meanwhile, an increase in the level of ESD knowledge has a positive effect on attitudes and behaviours related to fashion ecological practices, and an increase in positive attitudes also has a similar effect on behaviour (Ceylan, 2019). Individual attitudes and practices are still at an unsatisfactory level (Shafie & Kamis, 2019). In addition, students need to have a sustainable attitude to execute the transformation of suste3ainable education. Factors that influence the effectiveness of students in implementing ESD are in terms of students' awareness and attitude towards the environment as well as the level of teaching leadership practices (Abner et al., 2019). In addition, students' knowledge, attitudes, behaviour and awareness of ESD should be present in theoretical and practical learning so that the learning and teaching process becomes more efficient and affects students in producing sustainable fashion products (Abner & Baytar, 2019).

ESD issues in fashion education have been a topic of discussion by the government, the industry, and of course education sectors. The sustainability values should be applied in education to transform and enhance students' knowledge and awareness about environmental issues. What are the mechanisms used in the trend and initiative of sustainable fashion education? In the next chapter, the researcher discussed the trends or initiatives of stakeholders in sustainable fashion education.

2.2   Trend in Fashion Education Sustainability

Trends in SD is an initiative of thinking and involvement of students and related stakeholders as driving agents in ESD (Araneo, 2019). SD not only refers to the thinking of initiatives aimed at achieving sustainable development but also introduces the concept of the environment, with practical and theoretical tools that can be used to implement it (El-Deir, 2019). A study by Lam et al. (2020), explained the initiative that experimental projects can equip students with higher ability and creativity, as well as cultural appreciation. In addition, student-centred learning can encourage students to continue learning after the learning session and live a more sustainable life in their own lives (Kamis et al., 2019). In addition, educators also found that the ESD approach helps them in the classroom to teach a variety of topics that have never been taught before (Spahiu & Lindemann-Matthies, 2015).

Another initiative of ESD practice is through the use of conceptual models for the development of future fashion curriculum that emphasizes sustainability achievement by combining skills. The skills in question are during the stage of idea generation, creativity, critical thinking, teamwork skills required; during the negotiation stage, active listening, interpersonal skills, emotional control skills are very important, the level of implementation requires administrative skills and creative viewing skills (Rana & Ha-Brookshire, 2019).

Next, initiatives from the aspect of innovation in clothing education are necessary to transform from traditional teaching to appropriate teaching methods. In addition, building a perfect professional curriculum system requires the introduction of modern teaching methods through comprehensive collaboration between schools and enterprises to cultivate professional talent on the quality of clothing. This aims to equip students with a job base and promotes the sustainable development of the garment industry (Lan et al., 2019). The benefit is that a more systematic approach will be used by an educator to increase students' knowledge of environmental issues. Thus, higher action-based learning leads to an increase in pro-environmental behaviour (Pauw et al., 2015). For example, educators are given ESD kits to include various environmental topics with more student-centred activities to address local environmental problems

(Spahiu & Lindemann-Matthies, 2015).

In addition, initiatives from different aspects of media intervention can increase awareness of ESD in the field of FD including the use of media such as instructional videos and the application of mixed technologies. The media has been identified to influence knowledge and attitudes towards ESD in the field of clothing and textiles (Henry & Michell, 2019; Rolling, 2018; Lee et al., 2017; Griswold, 2017; Sadachar & Rolling, 2016; Baytar & Ashdown, 2014). The ESD approach is also developed through collaborative or collaborative studies between institutions and industry (Lee et al., 2017). Future fashion design project assignments based on sustainable best practices and current fashion trends in practice (Agarwal, 2020). Other initiatives such as integrating sustainable concepts and practices in educator teaching, peer exchange in stimulating and maintaining teacher interest in ESD and institutions need to provide funding to help students start and run creative ESD projects (Huang & Asghar, 2019). ESD also can reduce the environmental risks and excessive development.

In conclusion, the knowledge and awareness of students about environmental issues can be increased if the above initiatives are applied continuously with the help of various parties. This is due to the diversity of behaviour and tendencies among students towards a particular matter. In the next chapter, the researcher will discuss the relationship of factors that influenced ESD practices among students based on previous theories and models.

3.   Theory and Model

Past studies have proven that there is a relationship of motivating factors influencing ESD practice among fashion students. The theories selected are Theory of Planned Behaviour (TPB) by Ajzen and Fishbein (1980) and Norm Activation Theory (NAT) by Park & Ha (2014). Meanwhile, the significant models are the Model of Predictors of Environmental Behaviour (PEB) by Hines et al. (1987) and the KAP Model by Ramsey & Rickson (1976).

3.1   Theory of Planned Behaviour (TPB)

Theory of Planned Behaviour (TPB) was founded by Azjen and Fishbein in 1975 (McNeill & Moore, 2015). This theory was developed by Azjen and Fishbein from TRA Theory with the addition of controlled behaviour components in predicting intentions and behaviours. Moreover, based on this theory, an important factor that influences a person's behaviour is intention. An individual's intentions are formed from the individual's attitude towards subjective behaviour and norms. Attitudes include behavioural beliefs, behavioural outcome assessments, subjective norms, normative beliefs, and motivation.

In addition, TPB Theory is very popular among researchers who want to study a person's behaviour and inclination towards something while explaining that behaviour is not necessarily influenced by attitude but can influence the intention to do something (Isa, 2016). In addition, TPB Theory is also applied to measure an individual's awareness of the environment and sustainable development. In TPB Theory, an attitude refers to the extent to which an individual has positive or negative feelings about the behaviour to be performed while subjective norms refer to the perceptions or beliefs of the surrounding community towards the individual in practising certain behaviour. Personal norms and attitudes influence controlled behaviour and intentions (Park & Ha, 2014). Yzer (2017) also agrees with Kollmuss & Agyeman (2002) that individual behaviour is influenced by intention and not influenced by attitudes, normative beliefs, and the influence of others. The following is a Theory of Planned Behaviour (TPB) developed by Ajzen (2002).
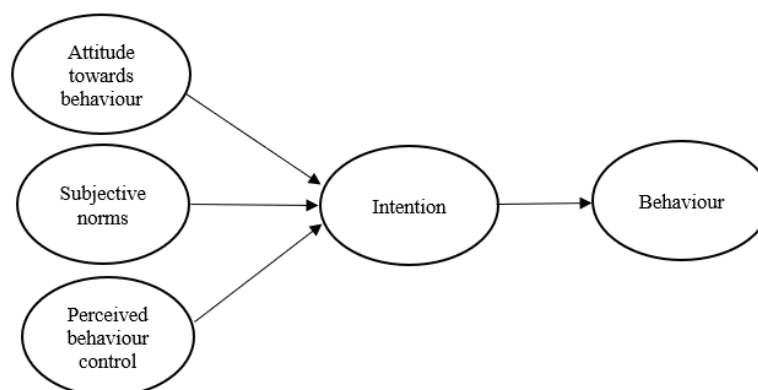

Fig. 1: Theory of planned behavior (TPB). Source: Ajzen (2002)

3.2   Norm Activation Theory (NAT)

Norm Activation Theory was founded by Schwartz (1977). This theory describes the function of dignity and guilt in responsible behaviour towards the environment. There are three main components in NAT, namely, awareness of consequences, responsibilities, and personal norms. In this theory, the activation of norms begins with self-awareness which involves the responsibility of the individual to care about the environment. Such awareness enlivens personal norms which causes them to feel dignified and guilty if they are not responsible towards the environment and vice versa (Han, 2014).

According to Taljaard (2015), without awareness, consumers will not have a strong sense of responsibility to buy environmentally friendly clothing. Hence, consumers are recommended to have knowledge of environmental issues so that they are motivated to adopt an environmentally conscious lifestyle. Value-Belief-Norm Theory (VBN) is the earliest theory to support NAT theory where VBN theory supports that personal norms are the impetus for an individual to take responsibility for the environment (McDonlad, 2014). Based on NAT theory, behaviour is a function of personal norms activated by two factors namely awareness of consequences and responsibilities. Awareness of consequences is an individual's tendency to do good to others while responsibility involves a person's feeling of taking responsibility for something or otherwise (Hines et al., 1987). Here is the Theory of Activation Norm (NAT) developed by Park & Ha (2014).
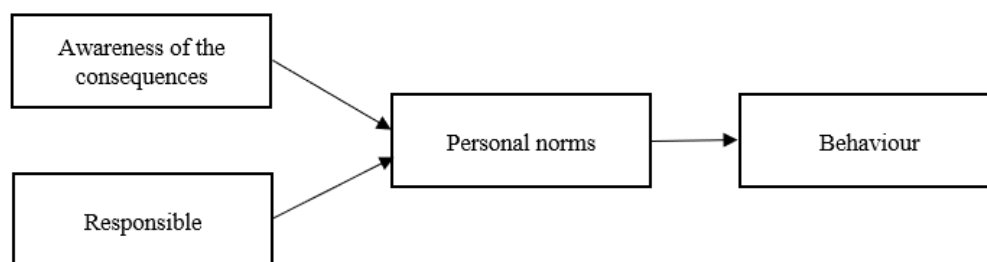

Fig. 2: Norm activation theory (NAT). Source: Park and Ha (2014)

3.3   Model of Predictors of Environmental Behaviour (PEB)

The Model of Predictors of Environmental Behaviour (PEB) was founded by Hines et al. (1987) based on the Theory of Planned Behaviour that has been developed by Ajzen and Fishbein (Kollmuss & Agyeman, 2002). This model is based on a meta-analysis of 128 research related to environmentally responsible behaviour. This model is a leader in predicting the factors that drive an individual's behaviour to be more responsible towards the environment. The findings of the study found that knowledge of issues, knowledge of action strategies, locus control, attitudes, verbal commitment, and personal responsibility were factors that could be associated with environmental responsibility.

According to Hines et al. (1987), knowledge in the context of his study is not only involves issues regarding the environment but also on how an individual acts in dealing with environmental pollution problems. The findings of this study are also supported by Bradley et al. (1999) that knowledgeable students are more likely to engage in environmental behaviour than less knowledgeable students. Locus control, on the other hand, is the ability of an individual to make changes to the behaviour practised. The findings of the study found that individuals with internal locus control are more likely to be responsible for the environment. Internal locus control means that the individual is confident that every activity performed will affect the environment and indirectly the individual will make changes for a better result.

Attitudes in this model involve an individual's feelings about the environment, the benefits that will be possessed, and the pros or cons that will be derived from nature. Furthermore, Hines et al. (1987) also examined the attitude towards the environment and the attitude towards the environmental action taken and found that these two attitudes are related to environmental behaviour. In addition, Hines et al. (1987) also studied the demographic factor that is, high-income and educated individuals will indirectly engage with environmental behaviour compared to low-income and uneducated individuals. Remarkably, studies have found that a person's gender has nothing to do with environmentally responsible behaviour. The following is an Environmental Responsible Behaviour Model developed by Hines et al. (1987).
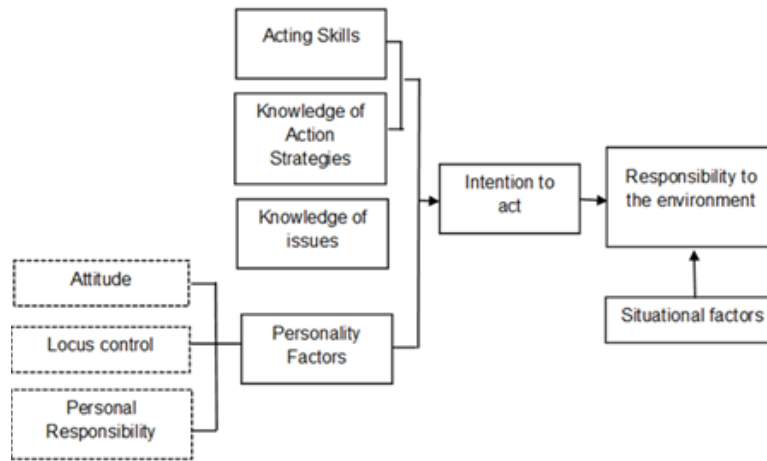
Fig. 3: Model of predictors of environmental behavior (PEB) by Hines et al. (1987)

3.4 Model of Behaviour Change System (KAP)

The Model of Behaviour Change System or KAP Model was founded by Ramsey and Rickson in 1976 (Ramsey & Rickson, 1976). This model is the earliest model that researchers refer to in measuring consumer awareness of the environment. Mahmud & Siarap (2013) stated that KAP stands for Knowledge (K), Attitude (A), and Practice/Behaviour (P). This model explains that individual behaviour is driven by attitude while attitude is driven by the knowledge possessed by the individual. Kaiser et al. (1999) supported this statement, which stated that changes in a person's attitude and behavioural behaviour occurs due to the knowledge factors he possesses. However, this model has been criticized by Lateh & Muniandy (2012) and Kollmus & Agyeman (2002) that a person's behaviour does not necessarily change due to the attitudes and knowledge possessed because behaviour is a difficult aspect to change. Kollmus & Agyeman (2002) stated that only individuals who try to make changes know how difficult it is to change habits that have been practised. As a consequence, Fishbein & Ajzen (1980; 1975) tried to address this issue by using their theories namely Purpose Action Theory (TRA) and Planned Behaviour Theory (TPB). The following is a KAP Model developed by Kollmus and Agyeman (2002).
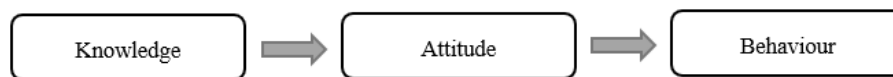

Fig. 4: Model of behaviour change system. Source Kollmus and Agyeman (2002)

Based on the theories and models referred to, it is found that TPB Theory is very well known and widely referred to because it tells about a person's behaviour and tendency towards behaviour that is influenced by attitude but can influence the intention to do something. In addition, TPB Theory is also applied to measure an individual's awareness of the environment and sustainable development. Meanwhile, NAT theory also explains that awareness can liven up personal norms which causes them to feel guilty if they are not responsible towards the environment. In addition, knowledge based on the PEB model does not only involve issues towards the environment, but also the knowledge of an individual acting in dealing with environmental pollution problems. In addition, the KAP Model also states that the knowledge factors possessed can change a person's attitude and behaviour. Nevertheless, it is not necessarily that a person's behaviour changes due to the attitude and knowledge possessed because behaviour is a difficult aspect to be reconstructed. Thus, these four theories and models are very relevant and significant in stating the relationship between knowledge, attitudes, behaviours, subjective norma and individual awareness of sustainability practices.

4. Conclusion

Issues related to ESD practice are being taken seriously in various fields and disciplines. Governments, industry and educational institutions use the principle of sustainability as a catalyst in their respective fields to achieve the goals of ESD. Educational institutions also take this approach through policy, curriculum, pedagogy, governance and ESD practices. Meanwhile, TVET is a responsible institution and plays an important role in providing knowledge and activities related to green skills to students. Various approaches can be done to promote ESD practices to students, namely the application of mixed technology, the use of conceptual models in the fashion curriculum, the development of sustainable fashion courses, innovation in the curriculum and pedagogy as well as collaborative activities between

institutions and industry. Sustainable development does not only involve thought initiatives and the involvement of students and stakeholders but also introduces the concept of the environment with practical tools and theories that can be used to implement it. Reasonable, logical, consistent explanations of the variables in previous theories and models have been used as a method for researchers in the selection of theories and models. In addition, researchers also modify previous research results and combine various previous research findings to identify significant variables in order to form a cohesive and interconnected set of variables systematically and can be empirically tested.

Acknowledgement

References

Abner, M. & Baytar, F. (2019). Apps to increase student engagement: a case of textiles and apparel sustainability education. *International Journal of Fashion Design, Technology and Education,* 12(1), 56-64.

Abner, M., Baytar, F. & Kreiner, D. (2019). Applying the ESD approach in textile and apparel education. *International Journal of Sustainability in Higher Education.*

Agarwal, S. (2020). Experimental Sustainable Practices in Fashion Education. *In Sustainable Development and Social Responsibility*, 1, 95-102. Springer, Cham.

Ajzen, I. (2002). Perceived behavioural control, self-efficacy, locus of control, and the theory of planned behaviour. *Journal of Applied Social Psychology*, vol. 32(4), 665-683.

Ajzen, I. & Fishbein, M. (1980). *Understanding attitudes and predicting social behaviour*. Englewood Cliffs, NJ: Prentice-Hall.

Alwi, A., Kamis, A. & Ismail, B.L.H. (2018). Effects of Green Skills Module in Design and Technology Subjects on The Student's Knowledge in Primary School. *International Journal of Academic Research in Business and Social Sciences*, 8(11), 1701-1712.

Araneo, P.M. (2019). Future Trends in Sustainable Development. *Encyclopedia of Sustainability in Higher Education*, 695-713.

Baytar, F. & Ashdown, S.P. (2014). Using video as a storytelling medium to influence textile and clothing students' environmental knowledge and attitudes. *International Journal of Fashion Design, Technology and Education*, 7(1), 31-41.

Bell, D.V. (2016). Twenty-first-century education: Transformative education for sustainability and responsible citizenship. *Journal of Teacher Education for Sustainability*, 18(1), 48-56.

Bradley, J.C., Waliczek, T.M. & Zajicek, J.M. (1999). Relationship between environmental knowledge and environmental attitude of high school students. *The Journal of Environmental Education*,30(3), 17-21.

Ceylan, O. (2019). Knowledge, attitudes and behaviour of consumers towards sustainability and ecological fashion.

Dai, Y. & Hwang, S.H. (2019). Technique, creativity, and sustainability of bamboo craft courses: Teaching educational practices for sustainable development. *Sustainability*, 11(9), 2487.

El-Deir, S.G. (2019). *Environmental Education and Sustainable Development*. Encyclopedia of Sustainability in Higher Education, 565-575.

Faizal, A.N.Y., Saiful, H.M., Bekri, R., Jamil, A.B., Amiruddin, M.H., Ruhizan, M.Y. & Arasinah, K. (2017). Impact of work environment on learning transfer of skills. *Pertanika-Soc Sci Humanit*, *254*(8), 33-40.

Fishbein, M. & Ajzen, L. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*, 181-202.

Franco, I., Saito, O., Vaughter, P., Whereat, J., Kanie, N. & Takemoto, K. (2019). Higher education for sustainable development: actioning the global goals in policy, curriculum and practice. *Sustainability Science,* 14(6), 1621-1642.

Green Tech Malaysia. (2018). *Green Tech Malaysia Annual report 2018: Championing Green Economy, Mitigating Climate Change*. https://www.greentechmalaysia.my/wp-content/uploads/2020/05/GreenTech-Annual-Report-2018.pdf

Griswold, W. (2017). *Creating sustainable societies: developing emerging professionals through transforming current*

mindsets. Studies in Continuing Education, 39(3), 286-302.

Grund, J. & Brock, A. (2019). Why we should empty Pandora's box to create a sustainable future: Hope, sustainability and its implications for education. *Sustainability*, 11(3), 893.

Han, H. (2014). The norm activation model and theory-broadening: individuals' decision-making on environmentally-responsible convention attendance. *Journal of Environmental Psychology,* 40, 462-471. DOI: http://dx.doi.org/10.1016/j.jenvp.2014.10.006.

Henry, P.M. & Michell, M. (2019). Challenging Excessive Fashion Consumption by Fostering Skill-Based Fashion Education. *Journal of International Education and Practice*, 2(1), 28-36.

Hines, J.M., Hungerford, H.R. & Tomera, A.N. (1987). Analysis and synthesis of research on responsible environmental behaviour: A meta-analysis. *The Journal of environmental education*, 18(2), 1-8.

Huang, Y.S.E. & Asghar, A. (2019). Preservice Teacher Professional Development in Education for Sustainable Development. In Environmental and Sustainability Education in Teacher Education, 271-287. Springer, Cham.

Isa, N.K.M. (2016). Pengetahuan, sikap dan tingkah laku pelajar UPSI terhadap prinsip-prinsip kampus lestari. Perspektif: *Jurnal Sains Sosial dan Kemanusiaan*, 8(1), 29-41.

Jerasia Capital Berhad Report-JCB. (2019). *Annual Report 2019: Creating value-enhancing quality 2019*. 200001000643 (503248-A). Services: https://disclosure.bursamalaysia.com

Johnson, A.M. (2014). Educating the consumer-citizen in a world of finite resources. *International Journal of Home Economics*, 7(1), 36.

Kaiser, F.G., Wolfing, S. & Fuhrer, U. (1999). Environmental attitude and ecological behaviour. *Journal of Environmental Psychology*, vol. 19, pp. 1-19.

Kamis, A., Marcketti, S., Naam, M., Wahyuningsih, S.I. Sudana, I.M., Apriyani, D. & Jamaluddin, R. (2019). Sustainable Practice of Clothes Disposal: A Review of Critical Literature. *Journal of Advanced Research in Dynamical & Control Systems*, 11(06),1896-1901.

Kamis, A., Amarumi, A., Bushra Limuna, I., Normah, Z. & Faizal Amin, N.Y. (2017). Integration of green skills in sustainable development in Technical and Vocational Education. *International Journal of Engineering Research and Applications (IJERA),*7(12). 08-12.

Kollmuss, A. & Agyeman, J. (2002). Mind the gap: why do people act environmentally and what are the barriers to pro-environmental behaviour? *Environmental education research*, 8(3), 239-260.

Kopnina, H. (2015). Sustainability in environmental education: new strategic thinking. *Environment, development and sustainability*, 17(5), 987-1002.

Lam, M.M.L., Li, E.P.H., Liu, W.S. & Yee-Nee Lam, E. (2020). Introducing participatory action research to vocational fashion education: theories, practices, and implications. *Journal of Vocational Education & Training*, 1-19.

Lan, T., Zhang, G., Lv, J., Feng, L., Cui, Q., Wang, J., ... & Tuo, Q. (2019). *Innovative Research on Teaching Concepts of Clothing Education in the Transition Period of Clothing Industry under Informatization*. 2019 9th International Conference on Education, Management, and Computer (ICEMC 2019).

Lateh, H. & Muniandy, P. (2012). Amalan pengajaran pendidikan alam sekitar di Institut Pendidikan Guru, Kampus Pulau Pinang. Malaysia Journal of Society and Space, 8(2,), 1-6.

Lee, Y., Ghalachyan, A., Hwang, C. & Karpova, E. (2017, January). *One Look Is Worth a Thousand Words: Effectiveness of Video for Learning about Textile and Apparel Social Responsibility*. In International Textile and Apparel Association Annual Conference Proceedings (Vol. 74, No. 1). Iowa State University Digital Press.

Malaysia External Trade Development Corporation. (2019). *Ceiling Amount for Market Development Grant by MATRADE will be Increased to Support Exporters' Market Access*. National Trade Promotion Agency of Malaysia. Services: *http://www.matrade.gov.my*

McDonlad, F.V. (2014). Developing an integrated conceptual framework of pro-environmental behaviour in the workplace through the synthesis of the current literature. *Administrative Sciences*., vol. 4, pp. 276–303. DOI:10.3390/admsci4030276.

McNeill, L. & Moore, R. (2015). Sustainable fashion consumption and the fast-fashion conundrum: fashionable consumers and attitudes to sustainability in clothing choice. *International Journal of Consumer Studies,* vol.39, pp. 212-222.

MIDA. (2019). *Laporan Prestasi Tahunan Malaysia 2018:* Menginspirasikan Transformasi Teknologi. https://www.mida.gov.my.

Ministry of Education Malaysia (MoE). (2015). *Malaysia Education Blueprint 2015-2025 (Higher Education).* https://www.um.edu.my/docs/um-magazine/4-executive-summary-pppm-2015-2025.pdf

Mahmud, M.H. & Siarap, K. (2013). Kempen pencegahan h1n1: kajian tentang pengetahuan, sikap dan amalan penduduk di Timur Laut Pulau Pinang. *Jurnal Komunikasi Malaysian,* 29(1),127-140.

Palomo-Lovinski, N., Copeland, L. & Kim, J. (2019). Perceptions of sustainability curriculum in US fashion academia. *International Journal of Fashion Design, Technology and Education*, 12(3), 364-373.

Park, J. & Ha, S. (2014). Understanding consumer recycling behaviour: Combining the theory of planned behaviour and the norm activation model. *Family and consumer sciences research journal*, 42(3), 278-291.

Pauw, J.B.D., Gericke, N., Olsson, D. & Berglund, T. (2015). The effectiveness of education for sustainable development. *Sustainability*, 7(11), 15693-15717.

Ponzelar, C. (2020). *Teacher's narratives on the implementation of Education for Sustainable Development (ESD): a comparative discourse analysis in Germany and Sweden*. Second cycle, A2E. Uppsala: SLU, Dept. of Urban and Rural Development.

Prolexus Berhad. (2018). *Prolexus Berhad Annual Report 2018. (Report No. 250857-T) Incorporated in Malaysia.* https://disclosure.bursamalaysia.com

Radclyffe-Thomas, N., Varley, R. & Roncha, A. (2018). Balancing the books: Creating a model of responsible fashion business education. *Art, Design & Communication in Higher Education*, 17(1), 89-106.

Ramsey, C.E. & Rickson, R.E. (1976). Environmental Knowledge and Attitudes. *Journal of Environmental Education*, 8(1),10-18.

Rana, M.R.I. & Ha-Brookshire, J. (2019). New conceptual framework for fashion business ideation, negotiation, and implementation undergraduate curricula for sustainable development. *International Journal of Fashion Design, Technology and Education*, 12(2), 140-148.

Rao, V., Kumar, R., Shaima, A. & Venkatachalam, A. (2020). University Intervention in Inculcating Design Practices for Sustainable Fashions. In *Sustainability in the Textile and Apparel Industries* (pp. 289-311). Springer, Cham.

Rolling, V. (2018, January). *Does Integrating Sustainability Content into an Online Introductory Fashion Curriculum Improve Student Learning?* In International Textile and Apparel Association Annual Conference Proceedings (Vol. 75, No. 1). Iowa State University Digital Press.

Sadachar, A. & Rolling, V. (2016, November). *Do Apparel Students Displaying Fashion Innovativeness and Fashion Mavenism Traits Engage in Environmentally Responsible Apparel Consumption Behavior?* In International Textile and Apparel Association Annual Conference Proceedings (Vol. 73, No. 1). Iowa State University Digital Press.

Schopp, K., Bornemann, M. & Potthast, T. (2020). The Whole-Institution Approach at the University of Tübingen: Sustainable Development Set in Practice. *Sustainability,* 12(3), 861.

Schwartz, S.H. (1977). Normative influences on altruism. *Advances in experimental social psychology*, 10(1), 221-279.

Shafie, S. & Kamis, A. (2019). The Sustainability in the Industry of Green Apparel: Are We Ready? *International Journal of Psychosocial Rehabilitation*, 23(4), 973-983. DOI: 10.37200/IJPR/V23I4/PR190425.

Spahiu, M. H. & Lindemann-Matthies, P. (2015). Effect of a Toolkit and a One-Day Teacher Education Workshop on ESD Teaching Content and Methods—A Study from Kosovo. *Sustainability*, 7(7), 8051-8066.

Taljaard, H. (2015). Male Consumers' Pro-Environmental Motivation and Intent to Acquire Eco-Friendly Apparel in South Africa. *Master Consumer Science (Clothing Retail Management).* University of Pretoria. July 2015.

UNESCO. (2018). *4th Asia-Pacific Meeting on Education 2030 (APMED2030) (12-14 July 2018, Bangkok, Thailand):* Regional Recommendations for Action on SDG targets 4.3 and 4.4. http://bangkok.unesco.org

UNESCO. (2017). *Education for Sustainable Development Goals - Learning Objectives* https://www.sdg4education2030.org/education-sustainable-development-goals-learning-objectives-unesco-2017

UNESCO. (2005). *United Nations Decade of Education for Sustainable Development (2005 – 2014).* International Implementation Scheme, Unesco Education Sector, ED/DESD/2005/PI/01, p. 31.

United Nations. (2015). *Transforming our world: The 2030 Agenda for sustainable development. New York: United Nations.* Retrieved 25 February 2019 from https ://sustainabledevelopment.un.org/post2 015/trans formi ngour world.

United Nations. (1987): *Report of the World Commission on Environment and Development Our Common Future (Brundtland Report)*. https://sustainabledevelopment.un.org/content/documents/5987our-common-future.pdf

Varley, R., Roncha, A., Radclyffe-Thomas, N. & Gee, L. (2018). *Fashion management: A strategic approach.* Macmillan International Higher Education.

Williams, D. (2019). Fashion Design for Sustainability: A framework for participatory practice. In: Lens Conference, 3 - 5 April 2019, Milan.

Yzer, M. (2017). Theory of reasoned action and theory of planned behaviour. *The International Encyclopedia of Media Effects*, 1-7.