

MODEL KELESTARIAN PROGRAM TVET BERASASKAN  
KOMPETENSI PENSYARAH DAN AMALAN LESTARI  
KOLEJ VOKASIONAL

AHMAD BIN ZAINAL

Tesis yang dikemukakan sebagai  
memenuhi syarat penganugerahan  
Ijazah Doktor Falsafah (Pendidikan Teknikal & Vokasional)



Fakulti Pendidikan Teknikal & Vokasional  
Universiti Tun Hussein Onn Malaysia

Mei 2016

## DEDIKASI

Untuk Ayahanda & Bonda.  
Almarhum Hj. Zainal bin Hj. Umar dan Hjh. Sainah Bte Hj. Sayuti  
Kejayaan ini adalah berkat doa restu ayahanda dan bonda berdua.

Istimewa untuk isteri tercinta,  
Ayu Zainora Bte Onn  
Sokongan, dorongan dan doa adinda sentiasa mengiringi kejayaan ini.

Anak-anak tersayang,  
Azmira Bte Ahmad  
Azreen Sofea Bte Ahmad  
Azzahra Natasha Bte Ahmad  
Azzahrina Batrisyia Bte Ahmad  
Doa serta pengorbanan anakanda semua mengiringi kejayaan ayahanda.



PTTA UTHM  
PERPUSTAKAAN TUNKU TUN AMINAH

## PENGHARGAAN

Segala puji dan syukur ke hadrat Allah SWT kerana dengan limpah kurnia Nya kajian ini dapat disiapkan sebagai satu syarat kepada penganugerahan Ijazah Doktor Falsafah Pendidikan Teknikal dan Vokasional.

Ucapan terima kasih yang tidak terhingga ditujukan kepada Yang Berbahagia Profesor Dr. Noraini Kaprawi selaku penyelia utama kepada kajian ini yang telah banyak memberikan bimbingan serta tunjuk ajar sehingga penulisan ini dapat dihasilkan dengan sempurna dalam masa yang ditetapkan. Tidak lupa juga ucapan terima kasih kepada Yang Berusaha Dr. Azman Hassan, selaku penyelia bersama yang banyak membantu, memberi sokongan serta dorongan.

Sekalung penghargaan kepada pensyarah di UTHM, UTM dan UPM yang terlibat secara tidak langsung dalam kajian ini iaitu; Profesor Madya Dr. Asri Selamat, Profesor Dr. Datin Maryati Mohamed, Dr. Jamil Baser, Profesor Dr. Datin Ramlah Hamzah dan Prof. Madya Dr. Yahya Buntat. Jutaan terima kasih kepada pegawai dan pembuat dasar di Kementerian Pelajaran Malaysia (KPM) dan pensyarah di Institut Pendidikan Guru (IPG) yang telah memberi input dan maklumat berguna iaitu; Dr. Hj. Abd. Rahman Ayub, Dr. Roslee Ibrahim, Dr. Hj. Abd. Aziz Sahat @Ashari, Dr. Hj. Mohd Nordin A. Bakar dan Dr. Hjh. Maskiah Masrom.

Terima kasih kepada Pengarah-Pengarah, Timbalan Pengarah dan Pensyarah Kolej Vokasional yang terlibat iaitu; KV Kluang, KV Batu Pahat, KV ERT Azizah, KV Tg. Puteri, KV Shah Alam, KV Temerloh, KV Balik Pulau, KV Tawau dan KV Kucing. Setinggi penghargaan kepada sahabat seperjuangan iaitu; Dr. Hjh. Fatimah Mustafa, Dr. Mohd. Zairi Husain, Dr. Johar Bunimin, Dr. Azhari Mariani dan Dr. Bahiyah Abd. Wahab atas dorongan motivasi serta sokongan. Akhir sekali, terima kasih tidak terhingga kepada Bahagian Tajaan KPM kerana menganugerahkan biasiswa HLP dan pihak yang terlibat secara langsung dan tidak langsung dalam menjayakan kajian ini.



## ABSTRAK

Malaysia beriltizam untuk mengamalkan konsep kelestarian selaras dengan saranan UNESCO bagi memastikan masa depan yang lestari. Justeru, peranan dan sumbangan institusi TVET terhadap kelestarian adalah sangat proaktif dan praktikal untuk menangani isu pemeliharaan alam sekitar di samping meningkatkan ekonomi, sosial dan budaya tanpa menjejaskan generasi akan datang. Sehubungan itu, kajian ini dilaksanakan untuk menghasilkan Model Kelestarian Program TVET berasaskan Kompetensi Pensyarah dan Amalan Lestari di Kolej Vokasional. Kajian ini menggunakan kaedah gabungan *Sequential Exploratory Design* dengan mengaplikasikan pendekatan tinjauan deskriptif dan inferensi. Pengumpulan data dilakukan dalam dua fasa iaitu; Fasa 1: memperoleh dan menganalisis data kualitatif berdasarkan analisis dokumen dan temu bual pakar. Analisis kebolehpercayaan *Fleiss Kappa* digunakan untuk menentukan indeks persetujuan pakar terhadap setiap item yang dibangunkan. Secara keseluruhannya, nilai pekali 0.85 pada elemen kompetensi dan indikator kelestarian program TVET manakala nilai pekali 0.73 pada elemen amalan kelestarian adalah berada pada skala baik. Seterusnya, pada peringkat Fasa 2: penyelidik memperoleh dan menganalisis data kuantitatif melalui soal selidik yang dibangunkan serta membentuk dan mengesahkan Model. Sampel kajian terdiri daripada 351 orang pensyarah Kolej Vokasional seluruh Malaysia mengikut zon terpilih. Dapatan kajian kuantitatif dianalisis dengan menggunakan perisian *Winstep V3.69.1.11* dan *SPSS version 20.0* dengan pendekatan Model *Rasch*. Dapatan analisis elemen kompetensi pensyarah menunjukkan bahawa tahap sedia ada adalah sederhana (min=3.46) berbanding tahap yang diperlukan (min=4.40) adalah lebih tinggi. Bagi amalan lestari, tahap sedia ada (min=3.41) juga sederhana dan tahap yang diperlukan (min=4.41) adalah tinggi. Manakala kelestarian program TVET tahap sedia ada (min=3.10) adalah sederhana dan tahap yang diperlukan (min=4.42) adalah tinggi. Ianya menunjukkan bahawa secara umumnya tahap diperlukan adalah lebih tinggi berbanding tahap sedia ada. Hasil dapatan analisis ujian *Wilcoxon-T* berserta rajah *boxplot* terhadap elemen Kompetensi ( $z = -16.102$ ;  $p < 0.05$ ), elemen Amalan Kelestarian ( $z = -15.805$ ;  $p < 0.05$ ) dan indikator Kelestarian Program TVET ( $z = -15.901$ ;  $p < 0.05$ ) menunjukkan bahawa terdapat jurang perbezaan yang sangat tinggi antara tahap sedia ada dan tahap yang diperlukan pensyarah KV. Bagi ujian Analisis Regresi Pelbagai menggunakan kaedah *Stepwise Estimation* mendapati kesemua elemen pemboleh ubah bebas Kompetensi Pensyarah dengan nilai  $R^2=0.374$  menyumbang 37.4% varian lebih tinggi berbanding pemboleh ubah moderator iaitu Amalan Lestari dengan nilai  $R^2=0.310$  yang hanya menyumbang 31.0% varian terhadap Kelestarian Program TVET. Akhirnya, daripada dapatan analisis Model Kelestarian Program TVET telah dapat dibangunkan berasaskan Kompetensi Pensyarah yang terdiri daripada elemen; (Pengetahuan Vokasional, Kemahiran Kefungsian, Nilai dan Profesionalisme) dan elemen Amalan Lestari di Kolej Vokasional.



## ABSTRACT

Malaysia is committed to adopt the concept of sustainability with the recommendations of UNESCO to ensure a sustainable future. Hence, the role and contribution of TVET institutions to sustainability is very proactive and practical way to address the issue of environmental preservation while enhancing the economic, social and cultural rights without compromising future generations. Therefore, this research is carried out in order to produce A Sustainable Program of TVET Model based on Lecturers' Competency and Sustainable Practice in Vocational College. This study uses a combination of methods Exploratory Sequential-Mix Design Method by applying a descriptive and inferens survey approach. The reliability of Fleiss Kappa analysis is used to determine the index of each item approvals experts developed. Overall, the researchers obtained a coefficient of 0.85 in competency and sustainable TVET program elements and the coefficient of 0.73 based on the elements of sustainable practices that are at scale of well. Next, at the stage of Phase 2: Researchers obtained and analyses quantitative data through a questionnaire developed as well as developing and model validation. The sample consisted of 351 lectures throughout Malaysian Vocational College in selected zones. The findings were analyses quantitatively using SPSS version Winstep V3.69.1.11 and 20.0 with the Rasch model approach. The result of element analysis showed that the level of competency of lecturers available are moderate (mean=3.46) compared to the required level (mean=4.40) were higher. For sustainable practices, the existing level (mean=3.41) is also simple and the required level (mean = 4.41) is high. While the preservation of the existing TVET program level (mean=3.10) are simple and the required level (mean=4.42) is high. It shows that in general the level required is higher than current levels. The results of analysis Wilcoxon -T test along boxplot diagram of the elements of Competency ( $z = -16.102; p < 0.05$ ), elements of Sustainability Practices ( $z = -15.805; p < 0.05$ ) and indicators f Sustainability TVET Program ( $z = -15.901; p < 0.05$ ) shows that there is a very high gap between the existing level and the required level VC lecturer. Analysis using Stepwise Multiple Regression Estimation found that all the independent variables Vocational Competencies Lecturer of Knowledge, Skills functionality, value and professionalism with  $R^2 = 0.374$ , contributing 37.4% of the variance was higher than the variable moderator of Sustainable Practices with  $R^2 = 0.310$  which only accounts for 31.0% of the variance to the preservation of TVET programs. Finally, from the results of the analysis of TVET Program Sustainability Model was developed based Lecturers' Competency consisting of elements; (Vocational Knowledge, Functional Skills, Values and Professional) and Sustainable Practices elements in Vocational College.



## KANDUNGAN

<b>PENGESAHAN STATUS TESIS</b>	<i>i</i>
<b>PERAKUAN PEMERIKSA</b>	<i>ii</i>
<b>JUDUL</b>	<i>iii</i>
<b>PERAKUAN</b>	<i>iv</i>
<b>DEDIKASI</b>	<i>v</i>
<b>PENGHARGAAN</b>	<i>vi</i>
<b>ABSTRAK</b>	<i>vii</i>
<b>ABSTRACT</b>	<i>viii</i>
<b>KANDUNGAN</b>	<i>ix</i>
<b>SENARAI LAMPIRAN</b>	<i>xiv</i>
<b>SENARAI JADUAL</b>	<i>xv</i>
<b>SENARAI RAJAH</b>	<i>xviii</i>
<b>SENARAI SINGKATAN</b>	<i>xx</i>
<b>BAB 1 PENGENALAN</b>	<b>1</b>
1.1    Pendahuluan	1
1.2    Latar Belakang Masalah	7
1.3    Pernyataan Masalah	19
1.4    Tujuan Kajian	21
1.5    Objektif Kajian	22
1.6    Persoalan Kajian	22
1.7    Hipotesis Kajian	23
1.8    Kepentingan kajian	23
1.9    Skop Kajian	24
1.10   Batasan Kajian	25
1.11   Kerangka Konseptual Kajian	25
1.12   Definisi Operasional	27
1.13   Rumusan	31



PERPUSTAKAAN TUNKU TUN AMINAH  
 UNIVERSITI TUNKU ABDUL RAHMAN

<b>BAB 2</b>	<b>KAJIAN LITERATUR</b>	<b>32</b>
2.1	Pendahuluan	32
2.2	Pembangunan Lestari	32
2.2.1	Sejarah Pembangunan Lestari Peringkat Global	34
2.2.2	Strategi Pembangunan Lestari	37
2.2.3	Konsep Pembangunan Lestari	37
2.2.4	Idea Pembangunan Lestari	49
2.3	Pendidikan Pembangunan Lestari	41
2.3.1	Dekad Pendidikan Pembangunan Lestari	43
2.3.2	Matlamat UNDESD	44
2.3.3	Peranan UNESCO dalam DESD	46
2.3.4	Kepentingan Pendidikan Pembangunan Lestari	47
2.4	Halangan Mengorientasikan Kelestarian	48
2.5	Cabaran Mengorientasikan Kelestarian	51
2.6	Kelestarian Program TVET Negara SEAMEO-VOCTECH	52
2.7	Sejarah Program TVET di Malaysia	57
2.8	Kolej Vokasional (KV)	59
2.9	Kurikulum Kolej Vokasional (KKV)	59
2.10	Transformasi Kolej Vokasional (TKV)	61
2.11	Transformasi Pentafsiran Kolej Vokasional (TPKV)	64
2.12	Kajian-Kajian Dalam dan Luar Negara	65
2.13	Model-model Kelestarian	82
2.14	Kompetensi Pensyarah KV	88
2.14.1	Pengetahuan Vokasional	89
2.14.2	Kemahiran Kefungsian	91
2.14.3	Nilai	92
2.14.4	Profesionalisme	93
2.15	Amalan Lestari	95
2.15.1	Amalan Lestari Alam Sekitar	96
2.15.2	Amalan Lestari Ekonomi	97
2.15.3	Amalan Lestari Sosial	98
2.15.4	Amalan Lestari Budaya	99
2.16	Kelestarian Program TVET	100
2.16.1	Prasarana	102
2.16.2	Reka Bentuk Kurikulum	102
2.16.3	Perhubungan Industri	104
2.16.4	Pembangunan Staf	107
2.16.5	Jaminan Kualiti	108
2.17	Rumusan	110



<b>BAB 3</b>	<b>METODOLOGI</b>	<b>111</b>
3.1	Pendahuluan	111
3.2	Reka Bentuk Penyelidikan	112
3.3	Operasional Kajian	114
3.4	Prosedur Kajian	116
3.5	Populasi Dan Sampel Kajian	117
3.6	Instrumen Kajian	120
3.7	Model Pengukuran Rasch	122
3.8	Analisis Data Berdasarkan Model Pengukuran Rasch	124
3.9	Kajian Keperluan (Pembentukan Konstruk & Item)	125
3.9.1	Tujuan Kajian dan Menentukan Kumpulan Sasaran	125
3.9.2	Mengenal Pasti dan Mentakrif Konstruk	125
3.9.3	Mengenal Pasti Dimensi Konstruk	126
3.9.4	Temu Bual	127
3.9.5	Memilih Format Penilaian	128
3.9.6	Penulisan Item	129
3.9.7	Samakan Melalui Indeks Persetujuan <i>Fleiss Kappa</i>	129
3.9.8	Kesahan Kandungan dan Muka	130
3.9.9	Membaiki & Menyediakan Item: Kajian Rintis	131
3.10	Kajian Rintis	131
3.10.1	Penyediaan Instrumen Kajian Rintis	132
3.10.2	Kebolehpercayaan Item dan Responden	133
3.10.3	Indeks Pengasingan Responden	133
3.10.4	Polarity Item	133
3.10.5	Kesesuaian (fit) Item	134
3.10.6	Korelasi Residual Terpiawai Item	134
3.10.7	Peta Item-Individu	135
3.11	Kajian Sebenar	136
3.11.1	Penyediaan Instrumen Kajian Sebenar	136
3.11.2	Analisis Data (Aplikasi Model Pengukuran Rasch)	136
3.11.3	Analisis Komponen Utama (PCA)	138
3.11.4	Kriteria yang diperlukan dalam PCA	140
3.12	Rumusan	141





<b>BAB 4</b>	<b>ANALISIS DATA</b>	<b>142</b>
4.1	Pendahuluan	142
4.2	Analisis Data Kualitatif	143
4.2.1	Elemen Kompetensi Pensyarah dan Amalan Lestari serta Indikator Kelestarian Program TVET	143
4.3	Analisis Data Kuantitatif	160
4.3.1	Analisis Kajian Rintis	160
4.3.2	Tahap Kompetensi Pensyarah KV	165
4.3.3	Tahap Amalan Lestari	169
4.3.4	Tahap Kelestarian Program TVET	175
4.3.5	Perbezaan Tahap Antara Kompetensi, Amalan Lestari dan Kelestarian Program TVET	180
4.3.6	Sumbangan Kompetensi Pensyarah dan Amalan Lestari Terhadap Kelestarian Program TVET	188
4.3.7	Model Kelestarian Program TVET	203
4.3.8	Analisis Soalan Terbuka	215
4.4	Rumusan	216
<b>BAB 5</b>	<b>PERBINCANGAN, KESIMPULAN DAN CADANGAN</b>	<b>217</b>
5.1	Pendahuluan	217
5.2	Perbincangan Dapatan Kajian	218
5.2.1	Kesesuaian Elemen Kompetensi Pensyarah dan Amalan Lestari serta Indikator Kelestarian Program TVET	219
5.2.2	Tahap Kompetensi Pensyarah yang Sedia Ada dan Diperlukan	240
5.2.3	Tahap Amalan Lestari yang Sedia Ada dan Diperlukan	244
5.2.4	Tahap Kelestarian Program TVET yang Sedia Ada dan Diperlukan	247
5.2.5	Perbezaan Jurang ( <i>Gap</i> ) antara Tahap Sedia Ada dan Tahap yang Diperlukan bagi Kompetensi Pensyarah, Amalan Lestari dan Kelestarian Program TVET di Kolej Vokasional	251
5.2.6	Sumbangan Kompetensi Pensyarah dan Amalan Lestari Terhadap Kelestarian Program TVET	254
5.2.7	Model Kelestarian Program TVET berasaskan Kompetensi dan Amalan Pensyarah di Kolej Vokasional Memenuhi Kriteria Analisis Komponen Utama	259



5.2.8	Perbincangan Dapatan Analisis Soalan Terbuka	263
5.3	Kesimpulan	264
5.3.1	Implikasi Kajian	268
5.4	Cadangan Kajian	269
5.4.1	Cadangan Kepada Pembuat Dasar dalam Program TVET	269
5.4.2	Cadangan Kepada Pembangunan Elemen Kompetensi dan Amalan Lestari serta Indikator Kelestarian Program TVET di Kolej Vokasional	269
5.4.3	Cadangan Kepada Pembangunan Teoretikal dan Model Kelestarian Program TVET	270
5.4.4	Cadangan Kepada Pembangunan Instrumen	271
5.4.5	Cadangan Kepada Kajian Lanjutan	271
5.5	Penutup	273

**RUJUKAN** 274

**LAMPIRAN** 295

**VITA** 379



**PTTA UTHM**  
 PERPUSTAKAAN TUNKU TUN AMINAH

## SENARAI LAMPIRAN

A	Borang Soal Selidik	295
B	Analisis Data Kajian Rintis	300
C	Analisis Data Fleiss Kappa	304
D	Analisis Data Kajian Sebenar	307
E	Analisis Temu Bual Awalan	334
F	Analisis Dokumen	339
G	Analisis Temu Bual Pakar	342
H	Analisis Persetujuan Pakar	347
I	Borang Soalan Temu Bual awalan	351
J	Borang Soalan Temu Bual Pakar	353
K	Borang Pengesahan & Perakuan Pakar	354
L	Borang Pengesahan Responden	366
M	Bilangan Pensyarah Kolej Vokasional	371
N	Senarai Nama & Jawatan Temu Bual Pakar	372
P	Senarai Nama Peserta & Jawatan Temu Bual Awalan	373
Q	Surat Kebenaran Menjalankan Kajian	374
R	Konstruk & Dimensi Kajian Rintis	376
S	Pengesahan Muka & Kandungan	377
T	Analisis Demografi	378
U	Vita Penyelidik	379



PUSAT PERPUSTAKAAN TUN HUSSEIN ONN

UNIVERSITI TUN HUSSEIN ONN

MALAYSIA

## SENARAI JADUAL

3.1	Prosedur Kajian	116
3.2	Pendekatan statistik kajian	117
3.3	Populasi Kajian	118
3.4	Saiz Sampel Untuk Pelbagai Populasi	118
3.5	Cadangan Pemilihan Saiz Sampel	120
3.6	Pemarkahan Skala Likert	121
3.7	Konstruk dan Dimensi Kajian	126
3.8	Skala Persetujuan Kappa	130
4.1	Analisis Dokumen Elemen Kompetensi	145
4.2	Analisis Dokumen Elemen Pengetahuan Vokasional	145
4.3	Analisis Dokumen Elemen Kemahiran Kefungsian	146
4.4	Analisis Dokumen Elemen Nilai	147
4.5	Analisis Dokumen Dimensi Elemen Profesionalisme	148
4.6	Analisis Dokumen Elemen Amalan Lestari	149
4.7	Analisis Dokumen Elemen Kelestarian Program TVET	150
4.8	Ringkasan Temu bual Pakar berkaitan dengan Elemen Kompetensi	151
4.9	Analisis Perbandingan Elemen Kompetensi Berdasarkan Temu Bual Pakar	153
4.10	Ringkasan Temu Bual Pakar Berkaitan Dengan Elemen Amalan	153
4.11	Analisis Perbandingan Elemen Amalan Kelestarian Berdasarkan Pakar	155
4.12	Ringkasan Temu bual Pakar berkaitan dengan Indikator Kelestarian Program TVET	155
4.13	Analisis Perbandingan Indikator Kelestarian Program TVET Berdasarkan Temu Bual Pakar	157
4.14	Analisis Nilai pekali persetujuan <i>Fleiss Kappa</i> bagi item Kompetensi Pensyarah KV	158
4.15	Analisis Nilai pekali <i>Fleiss Kappa</i> setiap elemen item Amalan Lestari Pensyarah	159
4.16	Analisis Nilai pekali <i>Fleiss Kappa</i> setiap elemen item Kelestarian Program TVET	159

4.17	Analisis Nilai pekali persetujuan <i>Fleiss Kappa</i> bagi Keseluruhan item Soal Selidik	160
4.18	Nilai Kebolehpercayaan Responden	161
4.19	Nilai Kebolehpercayaan Item	161
4.20	Nilai Point Measure Correlation	162
4.21	Nilai MNSQ <i>oufit</i> dan <i>in fit</i> , nilai Zstd	163
4.22	Korelasi Residual Terpiawai Terbesar pada Item	163
4.23	Ringkasan Pemeriksaan Kefungsian Item Soal Selidik	164
4.24	Analisis Tahap bagi Elemen Kompetensi	166
4.25	Analisis Tahap Elemen Pengetahuan Vokasional	167
4.26	Analisis Tahap Elemen Kemahiran Kefungsian	167
4.27	Analisis Tahap Elemen Nilai	168
4.28	Analisis Tahap Elemen Profesionalisme	169
4.29	Analisis Tahap Amalan Kelestarian	170
4.30	Analisis Tahap berdasarkan Item Elemen Alam Sekitar	171
4.31	Analisis Tahap berdasarkan Item Elemen Ekonomi	173
4.32	Analisis Tahap berdasarkan Item Elemen Sosial Analisis Tahap berdasarkan Item Elemen Sosial	173
4.33	Analisis Tahap berdasarkan Item Elemen Budaya	174
4.34	Analisis Tahap bagi Elemen Kelestarian Program TVET	175
4.35	Analisis Tahap berdasarkan item Indikator Prasarana	176
4.36	Analisis Tahap berdasarkan item Indikator Reka Bentuk Kurikulum	177
4.37	Analisis Tahap berdasarkan item Indikator Perhubungan Industri	178
4.38	Analisis Tahap berdasarkan item Indikator Pembangunan Staf	179
4.39	Analisis Tahap berdasarkan item Indikator Jaminan Kualiti	180
4.40	Analisis Perbezaan/jurang ( <i>gap</i> ) Elemen Pengetahuan Vokasional	181
4.41	Analisis Perbezaan/jurang ( <i>gap</i> ) Elemen Kemahiran Kefungsian	182
4.42	Analisis Perbezaan/Jurang ( <i>gap</i> ) Elemen Nilai	183
4.43	Analisis Perbezaan/Jurang ( <i>gap</i> ) Elemen Profesionalisme	184
4.44	Analisis Perbezaan/Jurang ( <i>gap</i> ) Elemen Kompetensi	185
4.45	Analisis Perbezaan/Jurang ( <i>gap</i> ) Elemen Amalan Kelestarian	186
4.46	Analisis Perbezaan/Jurang ( <i>gap</i> ) Indikator Kelestarian Program TVET	187
4.47	Analisis Ringkasan Model Regresi Pelbagai Sumbangan Elemen Kompetensi	188
4.48	Analisis Model Regresi Pelbagai Sumbangan Elemen Kompetensi	189
4.49	Analisis ANOVA Regresi Pelbagai Sumbangan Elemen Kompetensi	189
4.50	Analisis Koefisien Regresi Pelbagai Sumbangan Elemen Kompetensi	190

4.51	Analisis Model Regresi Pelbagai Sumbangan Kemahiran Kefungsian	191
4.52	Analisis ANOVA Regresi Pelbagai Sumbangan Kemahiran Kefungsian	192
4.53	Analisis Koefisien Regresi Pelbagai Sumbangan Kemahiran Kefungsian	192
4.54	Analisis Model Regresi Pelbagai Sumbangan Elemen Profesionalisme	194
4.55	Analisis ANOVA Regresi Pelbagai Sumbangan Elemen Profesionalisme	194
4.56	Analisis Koefisien Regresi Pelbagai Sumbangan Elemen Profesionalisme	195
4.57	Analisis Model Regresi Pelbagai Sumbangan Pengetahuan Vokasional	196
4.58	Analisis ANOVA Regresi Pelbagai Sumbangan Pengetahuan Vokasional	197
4.59	Analisis Koefisien Regresi Pelbagai Sumbangan Pengetahuan Vokasional	197
4.60	Analisis Model Regresi Pelbagai Sumbangan Elemen Nilai	199
4.61	Analisis ANOVA Regresi Pelbagai Sumbangan Elemen Nilai	199
4.62	Analisis Koefisien Regresi Pelbagai Sumbangan Elemen Nilai	199
4.63	Analisis Model Regresi Pelbagai Sumbangan Amalan Lestari	201
4.64	Analisis ANOVA Regresi Pelbagai Sumbangan Amalan Lestari	201
4.65	Analisis Koefisien Regresi Pelbagai Sumbangan Amalan Lestari	202
4.66	Nilai MNSQ maksimum setiap elemen	204
4.67	Analisis Komponen Utama (PCA) bagi elemen Pengetahuan Vokasional	206
4.68	Analisis Komponen Utama bagi Kemahiran Kefungsian	206
4.69	Analisis Komponen Utama bagi elemen Nilai	206
4.70	Analisis Komponen Utama bagi elemen Profesionalisme	207
4.71	Analisis Komponen Utama bagi elemen Alam Sekitar	208
4.72	Analisis Komponen Utama bagi elemen Ekonomi	209
4.73	Analisis Komponen Utama bagi elemen Sosial	209
4.74	Analisis Komponen Utama bagi elemen Budaya	210
4.75	Analisis Komponen Utama bagi elemen Prasarana	211
4.76	Analisis Komponen Utama bagi elemen Reka Bentuk Kurikulum	211
4.77	Analisis Komponen Utama bagi elemen Perhubungan Industri	212
4.78	Analisis Komponen Utama bagi elemen Pembangunan Staf	212
4.79	Analisis Komponen Utama bagi elemen Jaminan Kualiti	213
4.80	Ringkasan Dapatan Hasil Analisis Komponen Utama Kesemua Elemen	214
4.81	Analisis Soalan Terbuka	215



## SENARAI RAJAH

1.1	Kerangka Konseptual Kajian	26
2.1	Tiga Tunggak Pembangunan Lestari (UNESCO, 2002)	40
2.2	Bulatan Sepusat (UNESCO, 2005)	40
2.3	Bulatan Saling Bertindan (UNESCO, 2008)	41
2.4	Kerangka Konseptual SDCP (Chnien, 2005)	69
2.5	Dimensi ESD dan masyarakat (Zhilei & Yin, 2010)	74
2.6	Kluster Pembangunan Lestari (Morgenstern & Mayer, 2005)	76
2.7	Model Kompetensi (Breiting, Mayer & Morgenstern, 2005)	76
2.8	Model Dinamik Kompetensi Lestari dalam Pendidikan Guru (Sleurs & Willy, 2008)	77
2.9	Kerangka Konsep CTE (Kaprawi & Azroai, 2009)	80
2.10	Kerangka Konsep ESD dalam program TVET (Minghat & Yassin, 2010)	81
2.11	Model Dimensi Tiga Asas Lestari (UNDESD, 1992)	83
2.12	Model <i>The Egg of Sustainability</i> (Guijt & Moiseev, 2001)	83
2.13	Model Piramid Lestari (Atkinson, 2001)	84
2.14	Model Prism Kelestarian (Kain, 2000)	85
2.15	Model Empat Tunggak Kelestarian (Herman & John, 1994)	85
2.16	Model Kelestarian Budaya (Hawkes, 2001)	86
3.1	Reka Bentuk Kajian <i>Mix Method Exploratory Sequential Design</i> (Creswell & Clark, 2011; Creswell, 2012; 2003)	113
3.2	Kerangka Operasional Kajian	115
3.3	Sistem Kod Temu Bual Pakar (Selamat, A., 2009)	128
3.4	Formula <i>Fleiss Kappa</i>	130
4.1	Boxplot bagi ujian Perbezaan/Jurang ( <i>gap</i> ) Elemen Kompetensi	181
4.2	Boxplot bagi ujian Perbezaan Jurang ( <i>gap</i> ) Elemen Pengetahuan Vokasional	182
4.3	Boxplot bagi ujian Perbezaan/Jurang ( <i>gap</i> ) Elemen Kemahiran Kefungsian	183
4.4	Boxplot bagi ujian Perbezaan /Jurang ( <i>gap</i> ) Elemen Nilai	184
4.5	Boxplot bagi ujian Perbezaan/Jurang ( <i>gap</i> ) Elemen Profesionalisme	185
4.6	Boxplot bagi ujian Perbezaan/Jurang ( <i>gap</i> ) Elemen Amalan Lestari	186

4.7	Boxplot bagi Perbezaan/Jurang ( <i>gap</i> ) Indikator Kelestarian Program TVET	187
4.8	Elemen membentuk Model Kompetensi Pensyarah KV	208
4.9	Elemen membentuk Model Amalan Kelestarian Pensyarah KV	210
4.10	Elemen membentuk Model Kelestarian Program TVET	213
4.11	Elemen membentuk keseluruhan elemen Model Kelestarian Program TVET	215
5.1	Sumbangan Elemen Kompetensi Terhadap Kelestarian Program TVET	256
5.2	Sumbangan Elemen Amalan Terhadap Kelestarian Program TVET	257
5.3	Model Kelestarian Program Pendidikan Teknikal & Latihan Vokasional (TVET) berdasarkan Kompetensi dan Amalan Pensyarah Kolej Vokasional	258
5.4	Model Kelestarian Program TVET Berasaskan Kompetensi Pensyarah dan Amalan Lestari di Kolej Vokasional	262





## SENARAI SINGKATAN

BPK	Bahagian Perancangan Kurikulum
BPTV	Bahagian Pendidikan Teknik & Vokasional
CE	<i>Continuing Education</i>
COTVET	<i>Council for Technical and Vocational Education and Training</i>
CPSC	<i>Colombo Plan Staff College</i>
CSCT	<i>Competencies Sustainable Curriculum of Teacher</i>
DESD	<i>Decade of Education for Sustainable Development</i>
DV	<i>Dependent Variable</i>
DVM	Diploma Vokasional Malaysia
DIF	<i>Differential Item Functioning</i>
EFA	<i>Education for All</i>
EfS	<i>Education for Sustainability</i>
ENSI	<i>Environment and School Initiative</i>
ESD	<i>Education for Sustainable Development</i>
FSSD	<i>Framework for Strategic Sustainable Development</i>
FPN	Falsafah Pendidikan Malaysia Kebangsaan
GDIF	<i>Gender Differential Item Functioning</i>
HE	<i>Higher education</i>
HKCAA	<i>Hong Kong Council for Academic Accreditation</i>
HIG	<i>University of Gävle</i>
IV	<i>Independent Variable</i>
IPT	Institut Pengajian Tinggi
IPTA	Institut Pengajian Tinggi Awam
IPG	Institut Pendidikan Guru
ITE	<i>Institute of Technical Education</i>
IUCN	<i>International Union for Sustainability of Nature</i>



PTTAUTHM  
PERPUSTAKAAN TUNJUKU AMINAH

IACET	<i>International Association for Continuing Education and Training</i>
JIP	<i>Johannesburg Implementation Planning</i>
JPTek	Jabatan Pendidikan Teknikal
KPM	Kementerian Pendidikan Malaysia
KSA <sub>s</sub>	<i>Knowledge, Skill &amp; Attitude Sosial</i>
KV	Kolej Vokasional
KKV	Kurikulum Kolej Vokasional
MV	<i>Moderating Variable</i>
MDGs	<i>Millennium Development Goals</i>
MEEG	<i>Monitoring and Evaluation Expert Group</i>
MERIC	<i>Missouri Economic Research and Information Center</i>
MEB	Model Ekonomi Baharu
MLVK	Majlis Latihan Vokasional Kebangsaan
MNSQ	<i>Mean Square</i>
MOSTE	<i>Ministry of Science, Technology and Innovation</i>
NAPESD	<i>National Action Plan for Education for Sustainability</i>
NGO	<i>Non-Governmental Organization</i>
NKPI	<i>National Key Performance Indicators</i>
NOSS	Piawain Kemahiran Guna Tenaga Kebangsaan
OJT	<i>On Job Training</i>
OVEC	<i>Office Of The Vocational Education Commission</i>
OPP3	<i>Third Outline Perspective Plan</i>
PAV	Pendidikan Asas Vokasional
PdP	Pengajaran dan Pembelajaran
PBB	Pertubuhan Bangsa-Bangsa Bersatu
PCA	<i>Principle Component Analysis</i>
PCE	<i>Parliamentary Commission for the Environment</i>
PIPP	Pelan Induk Pembangunan Pendidikan
PPPM	Pelan Pembangunan Pendidikan Malaysia
PPV	Mengarusperdanakan Pendidikan Vokasional
PRIAS	Projek Riadah Alam Sekitar



PTTAUTHM  
 PERPUSTAKAAN TUNKU TUN AMINAH

PTMEA CORR	<i>Point Measure Correlation</i>
RMK-7	Rancangan Malaysia Ke-7
RMK-8	Rancangan Malaysia Ke-8
RMK-9	Rancangan Malaysia Ke-9
RMK-10	Rancangan Malaysia Ke-10
SD	<i>Sustainable Development</i>
SDC	<i>Concept Sustainable Development</i>
SDCP	<i>Sustainable Development Competency Profile</i>
SEAVERN	<i>Southeast Asian Vocational Education Research Network</i>
SEAMEO	<i>Southeast Asian Ministers of Education Organization</i>
SKK	Standard Kemahiran Kebangsaan
SLR	<i>Systematic Literature Review</i>
SMV	Sekolah Menengah Vokasional
SSD	<i>Strategic Sustainable Development</i>
TPV	Transformasi Pendidikan Vokasional
TVET	<i>Technical and Vocational Education and Training</i>
TVSD	<i>Technical and Vocational Skills Development</i>
UN	<i>United Nations</i>
UA	Universiti Awam
VC	<i>Vocational College</i>
UK	<i>United Kingdom</i>
US	<i>United State (of America)</i>
UNEP	<i>United Nations Environment Program</i>
UNCED	<i>United Nations Conference on Environment and Development</i>
UNCSD	<i>United Nations Commission for Sustainable Development</i>
UNDESA	<i>United Nations Department of Economic and Social Affairs</i>
UNECE	<i>United Nations Economic Commission for Europe</i>
UNESCO	<i>United Nations Educational Scientific and Cultural Organization</i>
UNEVOC	<i>United Nations Education for Vocational</i>
UNGA	<i>United Nations General Assembly</i>
UPSR	Ujian Penilaian Sekolah Rendah



VET	<i>Vocational Education and Training</i>
VTI	<i>Vocational Training Institute</i>
WCED	<i>World Commission on Environment and Development</i>
WCS	<i>World Conservation Strategy</i>
WSSD	<i>World Summit on Sustainable Development</i>
WTO	<i>World Trade Organization</i>
WWF	<i>World Wildlife Fund</i>
6R	<i>Reduce, Reuse, Renew, Recycle, Repair and Rethink</i>



PTTA UTHM  
PERPUSTAKAAN TUNKU TUN AMINAH

## BAB 1

### PENGENALAN

#### 1.1 Pendahuluan

Konsep kelestarian merupakan gagasan dan inisiatif PBB yang paling proaktif dan praktikal untuk menangani isu bagi mengimbangi antara tuntutan pembangunan dan pemeliharaan alam sekitar di samping meningkatkan ekonomi, sosial dan budaya tanpa menjejaskan generasi akan datang (Salleh, 2000; dan Egan, 2004). Kenyataan ini turut disokong oleh (Kevany, 2007; Kaprawi et al., 2009; Azroai, 2010; dan Minghat, 2012) yang menyatakan bahawa, matlamat utama kelestarian adalah menekankan pembangunan masyarakat terutama graduan dan pendidik yang mempunyai pengetahuan, kemahiran dan nilai-nilai yang menyokong tingkah laku yang lestari, berdaya maju dan mempunyai kualiti hidup yang lebih baik. Sehubungan itu, program TVET merupakan kunci utama dalam pembangunan lestari berdasarkan kenyataan berikut:

*“Since education is considered the key to effective development strategies, Technical and Vocational Education and Training (TVET) must be the master key that can alleviate poverty, promote peace, conserve the environment, improve the quality of life for all and help achieve sustainable development”.*  
(UNESCO, 2004a, ms.18)

Kenyataan ini bersesuaian dengan kajian Pavlova & Chunlin (2009) bahawa, program TVET adalah kunci utama kepada kelestarian. Sehubungan itu, pendidik di institusi pembekal TVET perlu mempunyai kompetensi dan amalan lestari sebagai tindak balas kepada kebimbangan yang semakin meningkat tentang kesan masyarakat terhadap alam sekitar, ekonomi, sosial dan budaya dalam menempuhi abad ke-21.

Perhimpunan Agung Pertubuhan Bangsa Bersatu ke-57 yang diadakan di Johannesburg, Afrika Selatan pada Disember 2002 telah diisytiharkan sebagai Dekad Pendidikan untuk Pembangunan Lestari atau *Decade for Education for Sustainable Development* sebagai platform global yang bertujuan untuk menerapkan konsep kelestarian dalam semua bidang pembelajaran (UNESCO, 2004). Menurut Combes (2005) dan Gadotti (2008), institusi TVET perlu membangunkan inisiatif yang boleh mempamerkan peranan bagi menyesuaikan kelestarian dalam pendidikan untuk pembangunan lestari. Elias (2006) turut menyatakan bahawa, semua peringkat pendidikan di seluruh dunia akan berusaha ke arah membuat perubahan dalam kurikulum untuk mencerminkan konsep kelestarian dalam program TVET (UNESCO-UNEVOC, 2004).

Sehubungan itu, DESD 2005-2014 telah dilancarkan oleh UNESCO pada bulan Mac 2005 telah membawa kepada satu pendekatan baru bagi mengatasi permasalahan kemusnahan alam sekitar dan pembangunan global yang pantas (UNESCO, 2005a). Pendekatan ini adalah berasaskan kepada Pendidikan untuk Pembangunan Lestari atau dikenali sebagai *Education for Sustainable Development*. Inisiatif ini bertujuan untuk mengorientasikan elemen-elemen dan nilai-nilai yang wujud dalam prinsip atau tunggak kelestarian untuk diterapkan ke semua aspek pembelajaran bagi menggalakkan perubahan dalam tingkah laku masyarakat ke arah lebih lestari dan adil (Paden, 2007; Tilbury, 2005a; UNESCO, 2004; 2004a; 2004b; 2004c; 2005a; 2005b; dan UNGA, 2002).

Setiausaha Agung PBB Ban Ki Moon (2012) berhujah dalam persidangan Rio +20 bahawa, cabaran utama dalam dekad ini adalah untuk menyediakan asas kukuh kepada pembangunan alam sekitar, ekonomi, sosial dan budaya yang lebih lestari. Tanpa sumbangan pendidikan khususnya dalam pendidikan untuk pembangunan lestari, adalah mustahil untuk mencapai kesejahteraan hidup. Pendidikan memberi kuasa kepada orang ramai yang mempunyai pengetahuan, kemahiran dan keyakinan mereka bagi membentuk masa depan yang lebih stabil dan aman. Lundholm (2005) pula berpendapat, program TVET yang lestari akan dapat membantu membangunkan pekerja mahir yang mempunyai pengetahuan dan komitmen kepada pembangunan lestari serta pengetahuan Teknikal dan Vokasional yang diperlukan.

Pendidikan pembangunan lestari juga telah mengubah corak penggunaan teknik teknologi dan pengeluaran baru yang diubahsuai mengikut keperluan yang lebih ke arah kelestarian (Majumdar, 2009). Sehubungan itu, pembekal TVET berhadapan dengan amalan untuk membekalkan tenaga kerja berdasarkan latihan tidak formal dan formal untuk meningkatkan prestasi kemahiran vokasional dan kemahiran kelestarian. Berdasarkan Laporan Akhir PIPP (2006-2010), KPM telah mengenal pasti isu-isu yang memerlukan perhatian dan tindakan lanjut dalam perancangan pendidikan dan cabaran pada masa hadapan. Selain daripada itu, ia selaras dengan sistem TVET di Malaysia sebagai sebuah negara industri yang pesat membangun yang mana pembangunan sumber manusia di negara ini adalah berdasarkan pertumbuhan ekonomi dan industri yang berasaskan sumber manusia yang berilmu atau juga lebih dikenali sebagai *k-economy* (Ab. Hadi, 2009).

Buntat (2004) berpendapat, sumber tenaga yang berkemahiran tinggi boleh menjamin sistem pengeluaran industri negara menjadi lebih produktif dan lebih efisien serta dapat membantu eksport negara di pasaran antarabangsa. Kazilan (2008) juga turut berpendapat, bagi terus memastikan semua pelajar mendapat akses kepada pendidikan dan terus melonjakkan kecemerlangan sistem pendidikan negara, KPM mencadangkan tindakan susulan dalam Melestarikan Pendidikan Vokasional sejajar dengan Transformasi Pendidikan Vokasional melalui hubungan kolaboratif dengan industri.

Tujuannya adalah bagi mewujudkan pengajaran dan pembelajaran pendidik yang berupaya menghasilkan tenaga kerja mahir selaras dengan matlamat pendidikan pembangunan lestari di peringkat antarabangsa. Kementerian Pelajaran Malaysia (KPM) mengiktiraf kepentingan program dan kurikulum TVET dalam mencapai matlamat dan aspirasi negara untuk menjadi sebuah negara maju menjelang tahun 2020. Justeru itu, program TVET yang merangkumi pelbagai subjek telah dibangunkan secara meluas di sekolah-sekolah menengah. Dalam perkembangan selanjutnya, mata pelajaran dalam kurikulum TVET terdiri daripada 22 mata pelajaran elektif yang mana salah satu daripada mata pelajaran dalam TVET telah diberi penekanan dalam Pelan Induk Pembangunan Pendidikan (PIPP) 2006-2010 oleh Kementerian Pelajaran Malaysia (PIPP, 2006; dan Minghat, 2012).

Kementerian Pendidikan Malaysia juga turut mencontohi Pertubuhan Bangsa-Bangsa Bersatu (PBB) serta mengikuti cadangan-cadangan yang disyorkan oleh Persidangan Bumi dengan menerapkan pendidikan alam sekitar dalam kurikulum dan kokurikulumnya supaya pelajar memperoleh ilmu, kemahiran dan nilai serta pada masa yang sama mesra alam dan lestari. Malah bagi meningkatkan lagi keberkesanan sekolah sebagai pusat kecemerlangan alam sekitar Sekolah Lestari Anugerah Alam Sekitar telah diperkenalkan bagi tujuan untuk membentuk satu persekitaran sekolah yang menitikberatkan pemeliharaan dan pemuliharaan alam sekitar dari aspek pengurusan, kurikulum, kokurikulum dan penghijauan di sekolah.

Antara program-program yang telah dirancang dalam merealisasikan Sekolah Lestari ini ialah Projek Riadah Alam Sekitar, Projek Wira Alam, Program *Eco-Youth*, Keceriaan Taman, Program Kits dan Kem Kesedaran Alam Sekitar dengan Kerjasama Kementerian Pelajaran Malaysia dan Jabatan Alam Sekitar, Kementerian Sumber Asli dan Alam Sekitar (PRIAS, 2004). Untuk mencapai status negara maju menjelang tahun 2020, Malaysia perlu memesatkan pembangunan modal insan berkualiti dan bertaraf dunia. Hal ini penting kerana banyak negara maju telah mengamalkan dasar yang komprehensif dan progresif dalam membangunkan modal insan yang berkemahiran serta berdaya saing untuk menjana ekonomi berpendapatan tinggi. Maka, peningkatan kemahiran secara radikal perlu dilaksanakan bagi meningkatkan kebolehpasaran dengan fokus utama untuk mengarusperdanakan dan memperluas akses kepada program TVET yang berkualiti (Pelan Strategik Interim, 2011-2020).

Malaysia menerusi RMKe-7 hingga RMKe-10, telah menunjukkan iltizam yang tinggi untuk mentransformasikan program TVET dan menjayakan konsep pembangunan lestari dan mentakrifkannya sebagai pembangunan yang memastikan kesejahteraan generasi masa kini tidak akan mengorbankan kepentingan generasi akan datang. Dalam Rancangan Malaysia Ke-11 (RMKe-11), kerajaan terus memberi tumpuan terhadap agenda pelaburan untuk kepentingan rakyat selaras dengan matlamat Model Ekonomi Baharu (MEB) untuk mencapai status negara berpendapatan tinggi.



## RUJUKAN

- Ab Hadi, M.Y. (2009). Kesediaan Institut latihan Perindustrian Malaysia menjadi *K-Workers* untuk memenuhi Keperluan Industri. Tesis Ph.D. UTHM.
- Ab Rahman, M.N. (2010). American Journal of Applied Sciences. Implementation of Practices in the Manufacturing Companies: A Case Study. 2010. 7 (8).
- Abd. Baser, J. (2014). Pembelajaran Informal dalam Kalangan Guru Mata Pelajaran Teknologi Kejuruteraan. Tesis Ph.D. UTM.
- Abd. Razak, M.N. (2015). 6 April – Perdana Menteri, Datuk Seri Najib Tun Razak melancarkan Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Utusan Malaysia, 6 April 2015).
- Abbott, C. (1997). Images of Teaching. Canberra: Department of Employment, Adams (1980). The Ministry for the Environment advises the New Zealand Government on Environmental Laws, Policies, Standards, and Guidelines. It was established in 1986 as part of the Environment Act 1986.
- Abdul Halim, N.A., Mohd. Nor Ikhazan, M.N., Suhaime, N.S., Omar, N.H., Wan Arifin, W.A. (2013). Faktor-Faktor Yang Mempengaruhi Kelestarian 5S di Kolej Vokasional Persidangan Pendidikan (Penyelidikan dan Inovasi) Dalam Pendidikan Dan Latihan Teknikal dan Vokasional (CiE-TVET 2013).
- Abdul Rahman, A. & Md. Nor, S. (1993). Pendidikan Vokasional dalam Reformasi Pendidikan di Malaysia: satu analisis. Jurnal Pendidikan Kementerian Pendidikan Malaysia. 37 (78): 56-65.
- Abu Bakar, M.N. (2011). Penilaian Program Mata Pelajaran Vokasional (MPV) Bagi Bidang Pertanian di sekolah Menengah Harian di Semenanjung Malaysia. Tesis Ph.D. UKM.
- Adams, (2008). Integrating sustainability reporting into management practices. Volume 32, Issue 4, December 2008, Pages 288–302.
- Ahmed, H. A. E. (2011). Building Capacity of Teachers and Trainers in Technical and Vocational Education and Training (TVET) in Sudan. Dissertation For fulfilment of the requirements for the degree of Doctor of Philosophy at the Technical University of Dresden-Germany Faculty of Education.
- Ajit, R. Thete (2014), Sustainable Consumption and Production: An Overarching Objective of Sustainable Development. Leadership Summit for Sustainable Development 2014.
- Anderson, L.W. (1994). Mentorship in Nursing: A Literature Review. Jurnal of Advance nursing, 29(1), p.201-209.
- Andy, H., & Dean F. (2005). Sustainable Leadership, Journal of Educational Change, June 2006: ISBN: 978-0-7879-6838-0

- Apple, T.A. (2011). The Big Five Personality Traits and Foreign Language Speaking Confidence among Japanese EFL Students. Ph.D Thesis. Temple University.
- Arnim Wiek (2011). Key competencies in sustainability: a reference framework for academic program development. *Sustainability Science* July 2011, Volume 6, Issue 2, pp. 203-218
- Arshad, F. (2009). The Agriculture Development Path in Malaysia: Experiences and Challenges for the Future. *Malaysia at 50 & Beyond (2009)*: 39-100.
- Astrid Hollander (2010). Promoting Disaster Preparedness in Schools, Mobilizing the ASP net in Latin America and The Caribbean. UNESCO, Paris.
- Atchoarena, D. & Delluc, A. (2001). Revisiting Technical and Vocational Education in Sub - Saharan Africa: an update on trends innovations and challenges. Paris
- Atkinson, A., and R. Lee Hatcher (2001). The Compass Index of Sustainability: Prototype for a Comprehensive Sustainability Information System. *Journal of Environmental Assessment Policy and Management*, Vol. 3, No. 4 (December 2001).
- Australian Government. (2009). Living Sustainably: the Australian Government's National Action Plan for Education for Sustainability. Canberra: Commonwealth of Australia.
- Ayob, A.M. (2002). Kaedah penyelidikan Sosioekonomi. Kuala Lumpur: Dewan Bahasa & Pustaka.
- Azroai, A.M. (2010). Kerangka Program Pendidikan Berterusan bagi Bidang Teknik & Vokasional Berorientasikan Pembangunan Lestari. Tesis sarjana: UTHM.
- Bagnall, R.G. (2007). Mapping And Enhancing The Contribution of TVET Teacher Education To Education For Sustainable Development. Paper Presented At International Consultation On Education For Sustainable Development: TVET Teacher Education towards Sustainability, Chiang Mai, Thailand, and 19-24 August 2007.
- Baghaei, P. (2008). The Rasch Model as a Construct Validation Tool, *Rasch Measurement Transactions*, 2008, 22:1 p. 1145. <http://www.rasch.org/rmt/rmt221a.htm>
- Ban Ki-Moon (2012). Promoting skills for Sustainable Development, The UNESCO International Centre for Technical and Vocational Education and Training (UNESCO-UNEVOC). General, UN Secretary.
- Barth (2009). Academic staff development as a catalyst for curriculum change towards education for sustainable development: an output perspective. *Journal of Cleaner Production*. Volume 26, May 2012, Pages 28–36
- Beare, H. (2001). *Creating the future*. London: Rutledge/Flamer.
- Bennell, P. (1999) *Learning to Change: Skills Development among the vulnerable and socially Excluded in Developing Countries, Employment and Training*. Geneva
- Berita Harian (24 Jun 2013). Jerebu: Semua sekolah di Kuala Lumpur dan Selangor ditutup esok: <http://www.bharian.com.my/articles/> (Akses 25 Jun 2013).
- Bond, T.G. & Fox, C.M. (2007). *Applying The Rasch Model: Fundamental Measurement in the Human Sciences*. 2nd Edition” Lawrence Erlbaum Associates, Publisher. Mahwah, New Jersey, London.
- Bossellmann, K. (2001). University and sustainability: Compatible agendas? *Educational Philosophy and Theory*, 33(2), 167-186.
- Breiting, S., Mayer, M. & Morgenstern, F., (2005). *Quality Criteria for ESD-Schools: Guidelines to enhance the quality of Education for Sustainable Development*. Austrian Federal Ministry of Education, Science, and Culture. ISBN 3-85031-0620.



- Brewer, J. & Hunter, A. (1998). *Multi method Research: A Synthesis of Style*. Newbury Park, CA: Sage Publication.
- Brundtland (1987). *Report of the World Commission on Environment and Development Our Common Future*. United Nations.
- Buckland, H. (2002). *Learning for Sustainable Development: A curriculum toolkit*. The Forum of the Future. London, UK.
- Buntat, Y. (2004). *Integrasi Kemahiran Employability Dalam Program Pendidikan Vokasional Pertanian dan Industri di Malaysia*. Tesis Doktor Falsafah. Fakulti Pendidikan, Universiti Teknologi Malaysia.
- CADI (2011). *Seven Dimensions of Sustainable Development*, [http://www.cadi.ph/sustainable\\_development.htm](http://www.cadi.ph/sustainable_development.htm) (Access: 2 Sept 2011).
- Chan, Kin, S., & Jacqueline (2003). *Integrating the Curriculum: How do Secondary School Teacher Belief Influence the Integration?* University of Hong Kong: Tesis PHD
- Chen Gu, Telma Gomes, Victor Samuel Brizuela (2011). *Technical and Vocational Education and Training in Support of Strategic Sustainable Development*, School of Engineering Blekinge Institute of Technology Karlskrona, Sweden.
- Chnien, C. (2003). *Canada Sustainable Development Skills Profile (SDSP). Skills to Last: Broadly Transferable Sustainable Development Skills for the Canadian Workforce. A Technical Research Report for Human Resources Development Canada Human Resources Partnerships*. National Centre for Workforce Development, November 16.
- Chnien, C. (2005). *Core Sustainable Development Competencies for the Workforce: Paper Presented at the International Workshop on Workforce Development For Knowledge Economy 7-13 September 2005, Seoul, Korea*.
- Choomnoon, S. (2007). *Innovative Learning for Sustainable Development: New roles of TVET teachers. Paper Presented at International Consultation on Education for Sustainable Development: TVET Teacher Education towards Sustainability, Chiang Mai, Thailand, and 19-24 August 2007*.
- Chua, Y. P. (2006). *Asas Statistik Penyelidikan*. Shah Alam: McGraw-Hill Education. 3-70
- Clayton, S., & Myers, G. (2009). *Conservation Psychology: Understanding and Promoting Human Care for Nature*. Chichester: Wiley-Blackwell.
- Cohen, E., Raudenbush, L. dan Ball, K. (2003). *The Education of Teachers for a New Social Order. The Nigeria Teachers, Vol. 1. No 1, NCCE: 4-12*.
- Cohen, J. (1960). *A Coefficient for Agreement for nominal Scales. Educational & Psychological Measurement, p.37-46*.
- Cole, L. (2003). *Assessing Sustainability on Canadian University Campuses: Development of a Campus Sustainability Assessment Framework (Tesis MA)*. Royal Roads University.
- Coll, R.K., Taylor, N., and Nathan, S. (2003). *Using Work-based Learning to Develop Education for Sustainability: a proposal. Journal of Vocational education and Training, Volume 55, Number 2*.
- Combes (2005). *Transport Costs: Measures, Determinants, and Regional Policy Implications for France*, forthcoming in the *Journal of Economic Geography*.
- Cooper, D.R., & Schindler, P.S. (1998). *Business Research Method*. Edisi ke-6. Singapura: Irwin McGraw Hill.



- Cullingford, C. (2004). Sustainability and Higher Education. IN Blewit, J., Cullingford, C. (eds.), *The Sustainability Curriculum: The Challenge for Higher Education*, Earth Scan.
- Cummings, S. I., and Nicole, J. (2004). Skills Development and Productivity through Sosial Dialogue. Bangkok: International Labour Office, Sub regional Office for East Asia.
- Curricula in Economic Development. *Procedia- Sosial and Behavioural Sciences*, Vol. 2. Pages. 3914-3920.
- Dahle, M. & Neumayer, E. (2001). Overcoming Barriers to Campus Greening. A survey Among Higher Educational Institutions in London, UK. *International Journal of Sustainability in Higher Education* 2 (2), 139-160.
- Davis, G., O'Callaghan, F., Knox, K. (2009). Sustainable Attitudes and Behaviours amongst a Sample of Non-Academic Staff: A Case Study from an Information Services Department, Griffith University, Brisbane. *International Journal of Sustainability in Higher Education* 10, 136-151.
- Dawe, S. (2004). Developing generic skills in training packages. In Gibb, J. (Ed) *Generic Skills in Vocational Education and Training: Research readings*, National Centre for Vocational Education Research (NCVER).
- Derahim, N, Hashim, H.S. & Ali, N. (2011). Tahap Kelestarian Pelajar Universiti Kebangsaan Malaysia ke Arah Kampus Lestari. *Jurnal Personalia Pelajar*, Bil 14: 1 - 10@201111 ISSN 0128-273.
- Djamas, N. (2005). Strategi Peningkatan Mutu Dosen PTAI. Jakarta: Puslitbang Pendidikan Agama dan Keagamaan.
- Doyle, J.P., Hula, W.D., McNeil, M.R., Miskolc, J.M. & Matthews, C. (2005). An Application of Rasch Analysis in the Measurement of Communicative Functioning. *Journal of Speech, Language, and Hearing Research*. 48(6):p.1412-1428.
- Dubois, R. & Balgobin, K. (2010). "Case Study of Practices for Integrating Education for Sustainable Development in TVET for the Tourism Industry in Mauritius"
- Dubois, R., Balgobin, K., Gomani, M. S., Kelemba, J. K., Kona Yuma, G.S., Phiri. M.L., & Simiyu, J. S. (2010). Integrating Sustainable Development in Technical and Vocational Education and Training: Six Case Studies from Southern and Eastern Africa. UNESCO-UNEVOC.
- Dyball, M. (2010) Sustainability in an Australian University: Staff Perceptions. *Proceedings of the Sixth Asia Pacific Interdisciplinary Research in Accounting (APIRA) Conference*. University of Sydney, Australia. 12-13 Julai.
- EAC (2007). "Self-Study Report" Maryland: reference for Engineering Accreditation Commission (2007).
- Egan, J. (2004). *Skills for Sustainable Development*. London: Office of the Deputy Prime Minister.
- Elias, D. (2006). 'UNESCO's Approach to Implementing the Decade of Education for Sustainable Development (DESD) in Asia and the Pacific', *Australian Journal of Environmental Education*, 22 (1): 273-75.
- Emanuel, R, Adams, J.N. (2011). College students' perceptions of campus sustainability. *International Journal of Sustainability in Higher Education* 12 (1), 79 - 92
- Energy & Environmental Education Resources, Inc. (2006) the sustainable campus [cited 21 August 2012]. Available from: [www.sustainablecampus.org](http://www.sustainablecampus.org).
- Environment, Development and Sustainability*, 4(4) p. 333-345.



- Esa, A. (2006). Penerapan Kemahiran Generik Menerusi Ko-Kurikulum di Politeknik bagi Memenuhi Keperluan Industri Malaysia. Tesis Ph.D. UTHM.
- Everett, J. (2008). Sustainability in higher education: Implications for disciplines. *Theory and Research in Education*, 6(2), 237-251.
- Ferrer, B. D, et al. (2004), "Advances in Education Transformation towards Sustainable Development at the Technical University of Catalonia, Barcelona," *International Journal of Sustainability in Higher Education*, Vol.5, N.1, 48-62.
- Fien, J. & Tilbury, D. (2002). The Global Challenge of Sustainability in Tilbury, D., Stevenson, R.B., Fien, J. and Schreuder, D. (Eds) *Education and Sustainability: Responding to the Global Challenge*, IUCN Commission on Education and Communication (CEC).
- Fien, J. (2001). Education for Sustainability: Reorienting Australian Schools for a Sustainable Future. *TELA: Environment, Economy, and Society Issue no. 8*, Australian Conservation Foundation, Australian Association for Environmental Education and Trust for Young Australians.
- Fien, J., and Wilson, D. (2004). Reorienting TVET for Sustainable Development. Discussion Paper, UNESCOUNEVOC International Centre, Bonn.
- Fien, J. (1993). Education for the environment: critical curriculum theorizing and environmental education. Victoria, Australia: Deakin University.
- Fien, J., Kumar, P., & Ravindranath, J. (2001). An Action Research Network as a Strategy for Educational Change: The Learning for a Sustainable Environment Project. *Journal of Educational Change*, 2(3), 207-221.
- Fien, J., Maclean, R. & Park, Mon-Goon (2008). *Work, Learning, and Sustainable Development: Opportunities and Challenges*, Springer, Dordrecht.
- Fien, John, & Rupert Maclean (2000). Teacher Education for Sustainability: Two Teacher Education Projects from Asia and the Pacific, in *Education for A Sustainable Future: A Paradigm of Home for the 21<sup>st</sup> Century*. Eds. Keith A. Wheeler and Anne Perraca Bijur. New York: Kluwer Academic / Plenum Publishers.
- Fien, John, Rupert Maclean, & Man-Gon Park. (2009). *Work, Learning, and Sustainable Development: Opportunities and Challenges*. Dordrecht: Springer.
- Filho, W.L., Manolas, E., dan Pace, P. (2009). Education for sustainable development: Current discourses and practices and their relevance to technology education. *International Journal of Technology Design Education*, 19, 149-165.
- Finch, C. (1989). Curriculum development in vocational and technical education: Planning, content, and implementation. Book (ISBN 0205116892).
- Fleiss, J.L. (1971). Measuring Nominal Scale Agreement among Many Ratters. *Psychological Bulletin*, 76(5): 378-382.
- Fleiss, J. L. (1981). *Statistical Method for Rates and Proportions*. 2nd Edition. New York: John Wiley.
- Flint, R.W. (2004). the Sustainable Development of Water Resources. *Water Resources Update*, Issue 127, February 2004: 41-51.
- Forum for the Future (2004). *Learning and skills for sustainable development*. London: Higher Education Partnership for Sustainability.
- Frank, B. (2005). TVET teacher education in Germany and potentials to integrate ESD. (University of Magdeburg): *International Consultation on Education for Sustainable Development: TVET Teacher Education towards Sustainability*.



- Fuller, A. (2001). A blueprint for building social competencies in children and adolescents- Australian Journal of Middle Schooling,
- Gadotti (2008). *Image decomposition of barred galaxies and AGN hosts*, Monthly Notices of the Royal Astronomical Society, Volume 384, Issue 1, pp. 420-439.
- Gallagher, J.D. (1998). Classroom Assessment for Teacher. Upper Saddle River, NJ: Merrill/Prentice Hall.
- Gamerdinger, G. 2010. Innovation– a process TVET systems need to develop. The Inter-American Centre for Knowledge Development in Vocational Training. Available from: <http://www.oitcenterfor.org/public/english/region>
- Gardiner, R. (2002). Earth Summit Briefing Paper. Stakeholders Forum for Our Common Post Johannesburg. The Future of the UN Commission on Sustainable Development.
- George S. M. (2010). The Role of Vocational Education and Training. Assessment of Professional Development for Teachers in the Vocational Education and Training Sector: An Examination of the Concerns Based Adoption Model Impact Factor: 0.216 | ranking: Education & Educational Research 209 out of 224.
- Glasby, G. (2002), 'Sustainable Development: the Need for a New Paradigm'. Environment, Development and Sustainability 4: 333–345, 2002. © 2003 Kluwer Academic Publishers. Printed in the Netherlands.
- González, G. E. (2005). Education for Sustainable Development: configuration Canadian Journal of Environmental Education, 10, spring 2005.
- Gudmund, H. (2007). Strategy to Revitalize Technical and Vocational Education and Training (TVET) in Africa: Meeting of the Bureau of the Conference of Ministers of Education of the African Union (COMEDAF II+) 29-31 May 2007. Addis Ababa, Ethiopia.
- Guijt, I. & Moiseev, A. (2001). Resource Kit for Sustainability Assessment, IUCN, Gland, Switzerland, and Cambridge, UK. ISBN: 2-8317-0631-9.
- Gutiérrez. P., Pozo, L.T., J. Rodriguez Sabiote, C. (2006). European Perspective and Contributions to Vocational Education and Training and Environmental Awareness, in the Education for Sustainable Development Context: En Relieve v. 12, n. 2. pp. 289-305
- Haigh, M. (2005). Greening the university curriculum: Appraising an international movement. Journal of Geography, 29(1), 31-38.
- Hambleton, R.K. & Cook, L.L. (1977). Latent trait Model sand Their Use in The Analysis of Education Test Data. Journal of education Measurement. 14(2):p.75-96.
- Hambleton, R.K., Swami Nathan, H. & Roger, J.H. (1991). Fundamental of Item Respons Theory. Newbury Park, CA: Sage.
- Hammeersley, M. (1990). Classroom Ethnography: Empirical and Methodological Essays. Milton Keynes: Open University Press.
- Harpe, D.L.B. & Thomas, I. (2009). Curriculum change in universities: Conditions that facilitate education for sustainable development. Journal of Education for Sustainable Development, 3(1), 75-85.
- Harris, Crane A. (2002). The Greening of Organizational Culture: Management Views on the Depths, Degree, and Diffusion of Change. Journal of Organizational Change Management 15(3): 214–234. Subcultures and Sustainability Practices: the Impact on Understanding Corporate Sustainability



PRAKTIKUM

PERPUS WAKAF UNIVERSITAS AMINAH

- Hasan, A. (2012), Instrumen Penilaian Pembimbing Dalam Pelaksanaan Pembelajaran Berasaskan Kerja (PBK) Pelajar di Industri. Ph.D, UTM.
- Hashim A. E. (2011). Building Capacity of Teachers and Trainers in Technical and Vocational Education and Training (TVET) in Sudan: Case of Khartoum State: Doctor of Philosophy at the Technical University of Dresden, Germany, Faculty of Education.
- Hawkes, J. (2001). The fourth pillar of sustainability: Culture's Essential Role In Public Planning. Commissioned by The Cultural Development Network, Victoria. Melbourne: Common Ground Publishing. Interacció '04.
- Hawkes, J. (2006,). Creative Democracy. Keynote address at Interacció 25 October 2006: Community Cultural Policies, Barcelona Provincial Council, Barcelona.
- Helen, K. & Fran's, M. (2014). Education for Sustainable Development (ESD) Exploring Theoretical and Practical Challenges. Impact Factor: 0.82 · DOI: 10.1108/IJSHE-07-2012-0059
- Herman E. D. & John, B. Cobb Jr. (1994). For The Common Good: Redirecting the Economy toward Community, the Environment, and a Sustainable Future. Boston: Beacon Press, p.183.
- Hein, P.M, Truong, B.H., & Han, N.D. (2007). A case study of The Contribution of TVET Education for Sustainable Development With Implications for TVET Teacher Education in Vietnam. Paper Presented at International Consultation on Education for Sustainable Development: TVET Teacher Education Towards Sustainability, Chiang Mai, Thailand, 19-24 August 2007.
- HKCAA (2007). "Guideline on Institutional Review and Programme Validation." Hong Kong Council for Academic Accreditation (2007). Development. Stephen Sterling (Eds.). London: Earth scan Publications Ltd.
- Hopkins, C., and McKeown, R. (2002). "Education for Sustainable Development: An International Perspective" in Environmental Education for Sustainability: Responding to the Global Challenge, Eds. D. Tilbury, RB Stevenson, J. Fein, and D. Schreuder. Gland, Switzerland and Cambridge, UK: IUCN Commission on Education and Communication.
- Howard, J. et al (2000), "Is today shaping tomorrow for tertiary education in Australia? A Comparison of Policy and Practice: A comparison of policy and practice", International Journal of Sustainability in Higher Education, Vol. 1 No. 1, p.83-96.
- Howard, P. (2008). Ecology, Phenomenology, and Culture: Developing a Language for Sustainability. *Diaspora, Indigenous, and Minority Education*, 2(4), p.302-310.
- Huckle, J. (1996). "Teacher Education." *Education for Sustainability*. John Huckle and Stephen Sterling (Eds.). London: Earth scan Publications Ltd.
- Hulse, R. A. (2006). Preparing K-12 students for The New Interdisciplinary World of Science: *Journal of Experimental Biology and Medicine*, 231, 1192-1196.
- Hungerford, H. R. dan Volk T. L. (1990). Changing Learner Behaviour through Environmental Education the *Journal of Environmental Education*, 21(3), p.8-21.
- Ibrahim, F. W. (2005), "The World Summit on Sustainable Development," Netherland: Springer.
- IACET (2005). "Criteria for Learning Program Development." McLean: International Association for Continuing Education and Training (2005).
- IPTA (2005), Kod Amalan Jaminan Kualiti IPTA Malaysia. Bahagian Jaminan Kualiti (2005). Putrajaya



- Ismail, S. N., (2011). Dua Teras, Satu Destinasi: Pelan Transformasi Strategik PTV ke Arah Pembangunan Sejangat: Jurnal Teknologi, UTM Skudai.
- IUCN (1980). International Union for Conservation of Nature: World Conservation Strategy Living Resource Conservation for Sustainable Development. IUCN/UNEP/WWF, Gland, Switzerland.
- IUCN (1991). Caring for the Earth. A Strategy Sustainable Living. IUCN/UNEP/WWF Gland, Switzerland.
- IUCN (2006). The Future of Sustainability Re-thinking Environment and Development in the Twenty-first Century: Report of the IUCN Renowned Thinkers Meeting, 29-31 January 2006.
- Jab, A.T (2009). Managing TVET in the Global Economic Downturn. 6<sup>th</sup> Annual National and Vocational Education and Training Conference 2009. Concorde Hotel, Kuala Lumpur, 12-13 Mei 2009.
- Jab, A.T. (2011). New Strait Time: 78 Schools Get College Status. (12 July 2011).
- Jacobson, S. K., McDuff, M. D., & Monroe, M. C. (2006). Conservation Education and Outreach Techniques. New York: Oxford University Press, Inc.
- Jallah, M (2004). UNESCO-UNEVOC – Learning for Work, Citizenship and Sustainability Development, an International Experts Meeting in Bonn, Germany from 25 to 28 Oct. 2004.
- Jantrakool, R. & Sramoon, B. (2008). Toward Concepts of Sustainable Development in Alternative TVET Programme of Thailand. Paper Presented at Bali Conference on VTET Research and Networking, 7-8 July 2008.
- Jarkasi, A. P. (2012). Semua SMV di naik taraf: (Harian Metro 14 Sept 2012).
- Rojewski, J.W. (2002). Preparing the Workforce of Tomorrow: A Conceptual Framework for Career and Technical Education. Journal of Vocational Education Research, 27(1), p.7- 35.
- Jennifer, H. D. (2015), Sustainable Production Practices Adopted by Greenhouse and Nursery Plant Growers. Hot Science August 2010 vol. 45 no. 8 1232-1237.
- Jerath, N. (2004). Teaching Environmental Issues in Technical and Vocational Schools in Asia. Publication Year: 2004. Author: Jerath, Neelima. Corporate author: India.
- Johnson, D. (2001). The Opportunities, Benefits, and Barriers to the Introduction of Work-Base Learning. Innovation in Education and Teaching international: Pro quest Jurnal. 364.
- Julian, T. (2001). Human Equality and Environmental Quality. Annual Meeting of the North American Association for Environmental Education. Little Rock Arkansas.
- Julian, T. (2004) 'Employability Skills: Balancing the Equation' in Gibb, J. (Ed) Generic Skills in Vocational Education and Training: Research readings. Adelaide: National Centre for Vocational Education Research (NCVER).
- Kain, J.-H. (2000): Urban support systems: Social and Technical, Socio-Technical or Sociotechnical. Gothenburg.
- Kapas, Bailey, Warren & Bissell, (2009). Sustainable Development: Mapping Different Approaches: Sustainable Development 13, 38-52, or Robinson (2004) '*Squaring the circle: some thoughts on the idea of sustainable development*', Ecological Economics p.48, p.369-384.
- Kaprawi, N. & Azroai, A. M. (2009) Towards A Sustainable Continuing Technical and Vocational Education (TVE) Programmes in Higher Education Institution (HEI) in





- Malaysia. In: International Conference on Teaching and Learning in Higher Education 2009 (ICTLHE09), 23-25 November 2009, Kuala Lumpur.
- Kaprawi, N. & Azroai, A. M. (2010). Towards A Sustainable Continuing Technical and Vocational Education (TVE) Programmes in Higher Education Institution (HEI) in Malaysia.
- Kaprawi, N., Razzaly, W., et al. (2007). Panduan Penjaminan Kualiti dalam Latihan dan Pendidikan Teknikal Berterusan. Johor: UTHM.
- Karmel. T (2009), TVET and Sustainable Development: A Cautionary Note, Work, Learning and Sustainable Development, Chapter 36, p.499-505.
- Karmel. T. (2009). Re-skilling for all? The Changing role of TVET in Ageing Societies of Developing countries. In T.Karmel and R. Maclean (Ed) Technical and Vocational Education and Training in an Ageing Society. Experts meetings proceedings, 3-4 October 2006, Adelaide, Adelaide: National Centre for Vocational Education Research, p.28-41.
- Kasipar, C. (2007). TVET Teacher Education towards Sustainability: The case of Thailand. Paper Presented at International Consultation on Education for Sustainable Development: TVET Teacher Education towards Sustainability, Chiang Mai, Thailand, 19-24 August 2007.
- Kazilan, F. (2008). Kemahiran Employability Dalam Kalangan Pelajar Institut Kemahiran MARA di Malaysia. Tesis Master. UPM.
- Kementerian Pelajaran Malaysia (2001). Kertas Konsep Mata pelajaran Vokasional di Sekolah menengah Akademik Harian. Pusat Perkembangan Kurikulum.
- Kementerian Pelajaran Malaysia (2011). Pelan Strategik transformasi Pendidikan Vokasional.
- Kementerian Pelajaran Malaysia et al. (2004). Asas Pembentukan Sekolah Lestari: Anugerah Alam Sekitar. Perpustakaan Negara Malaysia. ISBN 983-41388-0-6.
- Kevany, K.D. (2007). Building the Requisite Capacity for Stewardship and Sustainable Development. *International Journal of Sustainability in Higher Education*, 8(2), p.107-122.
- Kiang, S. (2004), the path to institutionalizing sustainability (Senior Honours Thesis). University of Waterloo.
- Kline, T. (2005). *Psychological Testing: A Practical Approach To design & Evaluation*. Thousand Oaks. California: Sage Publication.
- Komoo, I. (2004). Geo Heritage Conservation and Its Potential for Geo park Development in Asia- Oceania. In Leman, M.S. & Komoo, I. (Eds.), *Warisan Geologi Malaysia (Geological Heritage of Malaysia)* (p.221-230). Bangi, Malaysia: LESTARI, UKM.
- Konting, M.M. (1990). *Kaedah Penyelidikan Pendidikan*. Kuala Lumpur: Dewan Bahasa dan Pustaka.
- Konting, M.M. (2004). *Kaedah Penyelidikan Pendidikan*. Kuala Lumpur: Dewan Bahasa dan Pustaka.
- Krathwohl, D.R., Bloom, B.S. & Masia, B. B. (1964). *Taxonomy of Educational Objectives, Book II. Affective Domain*. New York, NY: David McKay Company, Inc.
- Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 608.
- Lebar, O. (2006). *Penyelidikan Kualitatif: Pengenalan Kepada Teori dan Method*. Tanjung Malim, Malaysia: Penerbit Universiti Pendidikan Sultan Idris.



- Lembaga Akreditasi Negara (2005). "Laporan Penilaian Kurikulum Kursus IPTS." Putrajaya: reference for LAN (2005).
- Landis, J. & Kosh, G.G. (1977). The Measurement of Observer Agreement for Categorical data. *Biometrik*, 33, p.159-174.
- Landorf, H., Doscher, S., & Rocco, T. (2008). Education for Sustainable Human Development. *Theory and Research Education*, 6(2), p.221-236.
- Lauglo, J. (2006), Research for TVET Policy Development, In Went/UNESCO-UNEVOC, p.11.
- Lebar, O. (2006). *Penyelidikan Kualitatif: Pengenalan kepada teori dan method*. Tanjung Malim, Malaysia. Penerbit: UPSI.
- LeFay, R. (2006). An Ecological Critique of Education. *International Journal of Children's*: DOI: 10.1080/13644360500503290. Raven LeFay: pages 35-45
- Linacre, J.M. (1994). Constructing Measurement with Many-Facet Rasch Model. In, Wilson, M. (Ed). *Objective Measurement: Theory into Practice*.
- Linacre, J.M. (1998). Detecting Multidimensionality: Which Residual Data-Type Works Best? *Jurnal of outcome Measurement*, 2(3), p.266-283.
- Linacre, J.M. (2002). Optimizing Rating Category Effectiveness. MESA Psychometric Laboratory, University of Chicago, *Jurnal of Applied Measurement* 3:1 2002 p.85-106
- Linacre, J.M. (2004). Test Validity and Rasch Measurement: Contrast, Content, etc. *Rasch Measurement Transactions*. 18:1 p.970-971.
- Linacre, J.M. (2005). *A User's Guide and Program Manual to Winsteps: Rasch Model Computer Programme*. Chicago: MESA Press.
- Linacre, J.M. (2007). *A User's guide to WINSTEPS: Rasch Model Computer Program* Chicago: MESA Press.
- Linacre, J.M. (2010). *A User's guide to WINSTEPS: Rasch Model Computer Program*. Beaverton: Oregon.
- Lundholm, C. (2005) Learning about Environmental Issues: Postgraduate and Undergraduate Students' Interpretations of Environmental Contents in Education. *International Journal of Sustainability in Higher Education*, p.6, p.3, p.242-253.
- Majumdar, S. (2006). Orienting Technical and Vocational Education and Training for Sustainable Development, A Discussion Paper, UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, Bonn, Germany, ISSN 18170374.
- Majumdar, S. (2009). Major Challenges in Integrating Sustainable Development in TVET. Special Lecture in International Experts Meeting on Reorienting TVET Policy towards Education for Sustainable Development, Berlin, Germany.
- Majumdar, S. (2011). New Paradigm in Teacher Education in TVET. Proceedings of International Conference on Preparing TVET Educators for the Next Generation. Kuala Lumpur, 12-13 Desember 2011.
- Mamadou, N. & Richard, W. (2012). Promoting Critical Knowledge, Skills, and Qualifications for Africa's Sustainable Development: How to Design and Implement an Effective Response through Education and Training Systems: Triennial on Education and Training in Ouagadougou, Burkina Faso, Africa. 12-17 February
- Marsha Willard, Carole Wiedmeyer, R. Warren Flint, John S. Weedon, Rick Woodward, Ira Feldman, and Mark Edwards (2010). *The Sustainability Professional: 2010*



- Competency Survey Report a research study conducted by the International Society of Sustainability Professionals (ISSP)
- McCormick, John. (1992). *The Global Environmental Movement: Report from the United Nations Conference on the Human Environment held in Stockholm, 1972.*
- McKeown, R. (2006). *Education for sustainable development toolkit.* Paris, France: United Nations Educational, Scientific, and Cultural Organization.
- McKeown, R. (2002). *Education for Sustainable Development Toolkit: Tesis Ph.D.* University of Oregon.
- McMillan, J.H. & Schumacher, S. (1984). *Research in Education.* Boston: Little, Brown & Company Limited.
- McNamara K.H. (2008) *Fostering Sustainability in Higher Education: A mixed-Methods Study of Transformative Leadership and Changes Strategies (PhD dissertation).* Antioch University.
- Merriam, S.B. (2001). *Qualitative Research and Case Study Applications in Education.* San Francisco: Josey-Bass.
- Mesick, S. (1989). *Meaning and Values in Test Validation: The Science and Ethics of Assessment.* *Education Researcher*, 18(2), p.5-11.
- Miles, M.N. & Hubberman, A.M. (1994). *Qualitative Data Analysis.* Beverly Hills. CA. Sage Publication.
- Minghat A. D. & Yassin R. M. (2010). *Sustainable Framework for Technical and Vocational Education in Malaysia.* *Procedia- Sosial and Behavioural Sciences*, Vol. 9. Pages.1233-1237.
- Minghat A. D. (2012). *Pembinaan Indikator dan Model Pengukuran Kelestarian Mata Pelajaran Vokasional (MPV) Sekolah Menengah Harian.* Tesis Ph.D. UKM.
- Mishra, A.K. (1995). *Organizational Alternatives in Vocational Education.* In: Central Institute of Vocational Education of India, ed. *Vocational Education: Organizational and Management Alternatives.* Bhopal, India: Pundit Sandera Sharma Central Institute of Vocational Education.
- Missouri Green Industry Competency Model (2010). Missouri Economic Research and Information Centre (MERIC, 2009).
- Mlipha, M. (2005). *Environmental Management and Training in Industry, Swaziland.* In J. Lupele (Ed.), *Monograph: Cases of Course Development in Environmental and Sustainability Education in Southern Africa* (pp. 53-59). Howick, South Africa: SADC Regional Environmental Education Programme.
- Mogensen & Mayer (2005). *A Comparative Study on Eco-school Development Process.* Pensa Multimedia. ISBN: 9788-88-6760-002-1.
- Mohd Makhbul, Z. & Mohamad Hasun, F. (2003). *Menjadi Usahawan.* PTS Publications & Distributor Sdn. Bhd.
- Mohd. Mahdzir, A. (2007). *Penerokaan Ciri-Ciri Psikometri Instrumen Pentaksiran*
- Monet (2001). *TVET Policy, Strategy, and Plan of Action for Vulnerable/ Underprivileged Groups of Sri Lanka: Prepared together with the members of the Sub-Committee No. 4 by Gregory's Road, Colombo 7, Sri Lanka.*
- Moungkhounsavath, N. (2007). *A Case Study of The Contribution of TVET to Education for Sustainable Development With Implications for TVET Teacher Education in Lao PDR.* Paper Presented at International Consultation on Education for Sustainable Development: TVET Teacher Education towards Sustainability, Chiang Mai, Thailand, 19-24 August 2007.



- Muhamad, M. dan Jab, A. T. (2007). Integrating TVE in the Malaysian Education System. Department of Technical Education, Ministry of Education Malaysia.
- Mulder, K. F. (2010). Don't preach. Practice! Value laden statements in Academic Sustainability Education. *International Journal of Sustainability in Higher Education*, 11(1), p.74–85.
- Muschett, F. D. (1997), an Integrated Approach to Sustainable Development, Principles of Sustainable Development, Chapter 1, pp. 1-45.
- Mustapha, R. (2002). The Role of Vocational and Technical Education in the Industrialization of Malaysia as Perceived by Educators and Employers. Doctoral Dissertation. Purdue University.
- Myint, H. K. (2007). The Case Study in Myanmar on TVET Teacher Education towards Sustainability. Paper Presented at International Consultation on Education for Sustainable Development: TVET Teacher Education towards Sustainability, Chiang Mai, Thailand, 19-24 August 2007.
- Nagel, U., & Affolter, C. (2004). *Umweltbildung und Bildung für eine Nachhaltige Entwicklung: Von der Wissensvermittlung zur Kompetenzförderung. Beiträge zur Lehrerbildung*, 22(1), p.95–105.
- Nath, S.R., & Ahmed, K.S. (2003). Literacy in Bangladesh: Need for a New Vision. Education Watch 2002. Dhaka: CAMPE.
- National Quality Council (2009). Skills for Sustainability Standards Framework. TVET Australia. National VET Sector Sustainability Action Group and Ministerial Council for Vocational and Technical Education: Sustainability Policy and Action Plan (2009- 2012).
- Norgaard, R. B. (2009). "Paper assets, real debts: An ecological-economic exploration of the global economic crisis", *Critical perspectives on international business*, Vol. 5 ISS: 1/2, pp.14 – 25
- O'Leary, Ciaran; Lawless, Deirdre; Gordon, Damian; Li, Haifeng and Bechkoum, Kamal (2006). "Developing a Software Engineering Curriculum for the Emerging Software Industry in China.", In proceedings of the 19th Conference on Software Engineering Education and Training (CSEE&T), Hawaii, USA, April 19-21, 2006.
- Orr, D. (1994). *Earth in Mind: An Education, Environment, and the Human Prospect*. Washington, DC: Island Press.
- Othman, A. (2003). The Role of the National Vocational Training Council in the Management of Vocational Training in Malaysia: A Critical Evaluation. E-book store UTHM. ISBN: 978-983-2963-08-8
- Packer, A. H. (1992). Taking Action on the SCANS Report. *Educational Leadership* 49/6 (1992): p.27-31.
- Paden, M. (2007). Tracking Progress in The UN Decade of Education for Sustainable Development, *Journal of Education for Sustainable Development*, 1 (1): p.115–16. Batu Pahat: Penerbit Kolej Universiti Teknologi Tun Hussein Onn.
- Palmer J., Neal P. (1994). 'The Hand Book of Environmental Education'. (London, Rutledge Publishers).
- Pang, C. L. (2011). Key Reforms in Revitalising Technical and Vocational Education and Training (TVET) in Malaysia. Regional Conference on Human Resource Development through TVET as a Development Strategy in Asia.
- Pang, V. (2005). Curriculum evaluation: An application in a smart school curriculum implementation. Kota Kinabalu: Universiti Malaysia Sabah.



- Park (2009). *Work, Learning, and Sustainable Development: Opportunities and Challenges*. Dordrecht: Springer.
- Paryono (2008), *Meta-Analysis of Case Studies on TVET for Sustainable Development in SEAMEO member countries*, SEAMEO VOCTECH Brunei Darussalam.
- Paryono, (2010). *TVET for Sustainable Development in SEAMEO Member Countries: Issues, Challenges, and Selected Best Practices*. TVET in ESD Conference Proceedings.
- Patton, M.Q. (1990). *Qualitative Evaluation and Research Methods*. 2nd.Edition Newbury Park: Sage Publication.
- Pavlova, M. & Chunlin, H. (2009). *Final Report on Project of Developing Innovative Approaches in Education for Sustainable Development in Curriculum Reform TVET China*. Zhejiang Technology Institute of Economy, Hangzhou, China.
- Pavlova, M. (2009), *A Framework for Developing Teaching Approaches and Resources for Education for Sustainable Development, Work, Learning and Sustainable Development*, Chapter 32, p.455-463.
- Pavlova, M. (2009). *Technology and Vocational Education for Sustainable Development. Technical and Vocational Education and Training: Issues, Concerns and Prospects 10*, DOI 10.1007/978-1-4020-5279-8\_1, © Springer Science Business Media B.V
- Pavlova, M. (2009b), *Technology and Vocational Education for Sustainable Development*, Australia, Springer.
- Peet D.J., Mulder K.F. (2002), “Integrating SD into Engineering Courses That Are Not Specifically SD targeted: The DRAIA method” EESD 2002.
- Pelan Strategik Interim Kementerian Pelajaran Malaysia (2011 – 2020). *Bahagian Perancangan dan Penyelidikan Dasar Pendidikan Kementerian Pelajaran Malaysia*. ISBN 978-9839522-26 6.
- Perone, J. & Tucker, L. (2003). *An Exploration of Triangulation of Methodologies: Quantitative and Qualitative Methodology Fusion in an Investigation of Perception of Transit Safety*. Summary of Final report, BC.
- PIPP (2006). *Pelan Induk Pembangunan pendidikan 2006-2010*. Kementerian Pelajaran Malaysia (KPM).
- PIPP (2012). *Pelan Pembangunan Pendidikan Malaysia 2013 – 2025*. Kementerian Pelajaran Malaysia (KPM).
- Polesel, J. (2008). *Democratising the Curriculum or Training the Children of the Poor: School-Based Vocational Training in Australia*. *Journal of Educational policy*, 23(6), 615–632.
- Popham, W.J. (1990). *Modern Education Measurement: A Practitioner’s Perspective*. 2<sup>nd</sup> Edition. Boston: Allyn & Bacon. Preamble of the Marrakesh Agreement Establishing the WTO.
- PRIAS (2004). *Garis Panduan Pelaksanaan dan Penilaian: Sekolah Lestari: Anugerah Alam Sekitar*. Jabatan Alam Sekitar, Kementerian Sumber Asli dan Alam Sekitar dengan kerjasama Kementerian Pelajaran Malaysia dan Institut Alam Sekitar dan Pembangunan (LESTARI) Universiti Kebangsaan Malaysia. ISBN 983-9119-90-7.
- Quisumbing, L.R. & Maria Lourdes Q. Baybay (2002). *Lifelong Learner, Advocate for Values Education, Local Knowledge, Digital Humanities, Sustainable Development* NCR - National Capital Region, Philippines.



- Quisumbing, L.R. (2001) The Importance of Values Education for TVET and its Economic and Human Resource Development Program, Paper presented at the UNESCO Asia Pacific Conference, Adelaide.
- Quisumbing, L.R. (2005). Education for the World of Work and Citizenship: Towards Sustainable Future Societies. *Prospects*, vol. 35, no. 3, p.289-301.
- Rachel, C. (2002) [1st. Pub. Houghton Mifflin, 1962]. Silent Spring. Mariner Books. ISBN 0-618-24906-0. Silent Spring initially appeared serialized in three parts in the June 16, June 23, and June 30, 1962 issues of *The New Yorker Magazine*.
- Rasch, G. (1960). *Probabilistic Models for Some Intelligence and Attainment Test*. Copenhagen: Denmark's Paedagogiske Institute.
- Rauch, F., Streissler, A., & Steiner, R. (2008). *Kompetenzen für Bildung für Nachhaltige Entwicklung (KOM-BiNE). Konzepte und Anregungen für die Praxis*. Wien: BMUKK.
- Reckase, M. (1979). Uni-factor Latent Trait Models Applied to Multifactor Tests: Result and Implications. *Jurnal of Educational Statistics*, p.4, p.207-230.
- Reed, D. (1996). *Structural Adjustment, the Environment, and Sustainable Development*. London: Earth scan.
- Regina Steiner (2010). *Teacher Competencies for Education for Sustainable Development: Seminar for Teachers and Teacher Trainers*. Sept. 19th – 24th, 2010. Innsbruck, Austria
- Reid, A. (2002). Discussing the Possibility of Education for Sustainable Development. *Environmental Education Research*, 8(1), p.73-79.
- Rio (1992). *United Nations Conference on Environment & Development: Rio de Janeiro, Brazil, 3 to 14 June 1992 Agenda 21*.
- RMKe-11 (2016-2020). Kerajaan Malaysia.
- RMKe-10 (2011-2015). Kerajaan Malaysia.
- RMKe-9 (2006-2010). Kerajaan Malaysia.
- RMKe-8 (2001-2005). Kerajaan Malaysia.
- RMKe-7 (1996-2000). Kerajaan Malaysia.
- Robert, K. H., et al. (2002). Strategic Sustainable Development: Selection, Design & Synergies of Applied Tools. *Journal of Cleaner Production* 10: no. 3: p.197-214.
- Rode, H. & Michelsen, G. (2008). Levels of Indicator Development for Education for Sustainable Development. *Environmental Education Research*, 14(1), p.19-33.
- Rowlands, I. (1992). Achieving Sustainable Development: Getting a good thing. [Review of Several Books]. *Third world quarterly*, p.14, p.385-393.
- Ryan, A., Tilbury D, Corcoran, P.B., Abe, O., Nomura, K. (2010) Sustainability in Higher Education in The Asia-Pacific: Developments, challenges, and prospects. *International Journal of Sustainability in Higher Education* 11 (2), 106-119.
- Salleh, K.O. (2000). Peranan Malaysia dalam Konteks Pembangunan Lestari, dalam Abu Bakar Abdul Majeed et al. (peny), *Pengurusan Bijak Alam Sekitar*. Kuala Lumpur: IKIM.
- Samuel, N. & Tang, B. C. (2008). Bridging The Instructional Designers and Lecturers in Technology Education: A Framework for Cultivating a Community of Practice: DOI: 10.4018/978-1-59904-322-7.ch011.
- Schein, (1991), the role of the founder in creating organizational culture. PJ Frost (Ed.), et al., *Reframing Organizational Culture*, Sage.



- Schreuder, D. (2001). *Education and Sustainability: Responding to the Global Challenge*, IUCN.
- Scott, M. L. (Ed.) (2003) *Equity Issues in Career and Technical Education*, Information Series No. 390, Clearinghouse on Adult, Career, and Vocational Education, Columbus.
- Scott, W. (2009). Judging Effectiveness of A Sustainable School: A Brief Exploration of issues. *Journal of Education for Sustainable Development*, 3(1), p.33-39.
- Selamat, A. (2009). The Perception of Students towards the Community Colleges Courses That Offered in Malaysia, *Journal Asian Social Science*, - , Vol: 5, 98-107, ISSN: 12568325.
- SEAMEO-VOCTECH (2007). kertas kerja yang dibentangkan dalam *International Consultation on Education for Sustainable Development: TVET Teacher Education Towards Sustainability*, Chiang Mai, 19-24 August 2007.
- SEAMEO-VOCTECH (2008). Mengintegrasikan ESD dalam TVET bagi negara anggota SEAMEO Laporan daripada penyelidikan SEAVERN di *International Conference on Research and Networking*, Bali, 7-8 July 2008.
- Sekolah Lestari (2004). Asas pembentukan Sekolah Lestari: *School Management and Organisation Malaysia, Education Malaysia Management Malaysia & Jabatan Alam Sekitar* 371.2009595. ISBN 983-41388-0-6.
- Sharma, R. (2009). Education for Sustainability in Certificate and Vocational Education at a New Zealand Polytechnic. Master's Thesis: Master of Education, UNITEC Institute of Technology.
- Shumba, O. (2008). A Global Monitoring and Evaluation Framework and its Relevance to Southern Africa's Communities of Practice and Research Networks, Presented at The 26<sup>th</sup> Environmental Education Association of Southern Africa Conference, Swaziland, 1 August 2008.
- Sideris, L. H., & Moore, K.D. (2008). *Technology and Culture. Rachel Carson: Legacy and Challenge*. Albany: State University of New York Press.
- Simpson, L. C. (1995). *Technology, time, and The Conversations of Modernity*. Great Britain: Rutledge.
- Sisoulath, S. & Leuang, V. (2008). Level of Student Participation in the Building Construction Course in The Lao PDR. Paper presented at Bali Conference on VTET Research and Networking, 7-8 July 2008.
- Sleurs & Willy (2008). *Teachers Competencies for ESD (Education for Sustainable Development). A framework to Integrate ESD in The Curriculum of Teacher Training Institutes*. Brussels, January 2008.
- Snell, D., & Hart, H. (2007). Vocational Training in Australia: Is There A Link Between Attrition and Quality? *Emerald Education + Training*, 49(6), 500–512.
- Soulikhamkone (2008). Corporate HRD and Skills Development for Employment: Scope and Strategies International Conference in Bali/Indonesia, 24-26 November 2008. Bali, Indonesia.
- Stables, A. & Scott, W. (2002). The Quest for Holism in Education for Sustainable Development, *Environmental Education Research*, 8(1), p.53-60.
- Stemler, S. (1998). *Investigating The Practical Applications of Content Analysis*. Dicapai pada 12 Ogos 2013.



- Sterling, S., dan Scott, W. (2008). Higher education and ESD in England: A critical commentary on recent initiatives. *Environmental Education Research*, 14(4), 386-398.
- Stockholm (1972). Declaration of the United Nations Conference on the Human Environment. 21st plenary meeting 16 June 1972: Chapter 11.
- Stone & Baldoni (2006). Progress and Pitfalls in the Provision of tertiary Education for Sustainable Development in New Zealand.
- Stout, W., & Roussos, L. (1996). DIF from The Multidimensional Perspective, *Applied Psychological Measurement*. 0 p.355-371.
- Suriya (2009), Education for Sustainable Development (ESD) under the Mobile Training Team (MTT) Project, UNESCO Bangkok.
- Susan K. T. & Heather, C. (2012). The International Institute for Sustainable Development, Technical Vocational Education for Sustainable Development in Manitoba, Canada.
- Svanström, M., Lozano-Garcia, F.J., Rowe, D. (2008). Learning Outcomes for Sustainable Development in Higher Education. *International Journal of Sustainability in Higher Education*, 9(3), p.339-351.
- Talib, R. (2009). Pembinaan dan Pengesahan Instrumen Ujian Literasi Pentaksiran. Tesis Ph.D. UTM.
- Tennant & Pallant (2007). Assessment of a Complex skill: Improving Teacher Education *Assessment in education*, 1(3), 235-251
- Tien, V.M., Diep, N.T.N & Duong, N.V. (2008). Patterns of Enrolment Distribution in TVET Selected Courses in Vietnam. Paper presented at Bali Conference on VTET Research and Networking, 7-8 July 2008.
- Tilbury D. (2007). Monitoring and Evaluation during the UN Decade of Education for Sustainable Development: *Journal of Education for Sustainable Development* 2007; 1; 239. DOI: 10.1177/097340820700100214.
- Tilbury, D. (2004). Environmental Education for Sustainability: A force for change in higher education' in Corcoran, P.B. & Walls, A.E.J. *Higher Education, and the Challenge of Sustainability: Problematic, promise, and practice*. Kluwer Academic Publishers, London: p.97-112.
- Tilbury, D. (2005a). UN Decade in Education for Sustainable Development: Implications for Curriculum Practice. *The New South Wales Education Magazine*, Term 4, 6–18
- Tilbury, D. (2005b). 'The UN Decade of Education for Sustainable Development. The 10-year Challenge', *Eco's*, 123: p.13–14.
- Tilbury, D., Keogh, A., Leighton, A and Kent, J (2005). A National Review of Environmental Education and its Contribution to Sustainability in Australia: Further and Higher Educations. Canberra: Australian Government Department of the Environment and Heritage and Australian Research Institute in Education for Sustainability (ARIES).
- Tillman, Z. V., Mali Code, C.A., Alfonzo, A.B.M., & Cruz, G. (2008). The Expectation of the Employers of the Small-Medium Enterprises (SMEs) Towards Their Employees as an Input for Improving the Vocational Training Institutions in Timor-Leste. Paper presented at Bali Conference on VTET Research and Networking, 7-8 July 2008.





- Torkar, G. (2009). *Učiteljeve Vrednote in Njihov Odnos Do Okolja in Varstva Narave* [Teacher's Values and Relationship with Environment and Nature Protection]. *Didactica Slovenica – Pedagoška Obzorja*, 24(1), p.97–108.
- Truong Bach Hung & Han Nguyen Dinh (2007). Promotion of TVET in Vietnam; University of Technical Education Hung Yen. UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training UN Campus, Hermann-Ehlers-Str. 10 53113 Bonn, Germany.
- Trzyna, T. (1995). Introduction. In T. Trzyna (Ed.), *a sustainable world: Defining and measuring sustainable development*, (pp. 15-24). Sacramento, CA: International Centre of the Environment and Public Policy.
- Ujang, Z. (2009). Budaya Inovasi Majukan Teknologi Hijau Tempatan. Rencana- Minda Lestari: Berita Harian. 24 Julai.
- Uma Sekaran (1992). *Research Method for Business: A Skill Building Approach*. 2nd Edition, USA: John Wiley & Son. Ltd.
- UN (1987). United Nations: Report of the World Commission on Environment and Development, General Assembly Resolution 42/187, 11 December 1987.
- UN (2005). The 2005 World Summit, 14–16 September 2005. <http://www.un.org/ga/documents> (accessed 8 Jan 2013).
- UNCED (1992b). Report Of The United Nations Conference On Environment And Development: Rio Declaration On Environment And Development.
- UNCED, (1992). Promoting education and public awareness and training. Agenda 21, United Nations conference on environment and development, Conches, Ch.36.
- UNCSD (2012). National Report for United Nations Conference on Sustainable Development 2012 “Rio+20” UNCSD.
- UNDESD (1992). The Leap to Equality. EFA Global Monitoring Report 1992. Paris: UNESCO.
- UNECE (2005). Economic Commission for Europe, Geneva Land Administration in the UNECE Region: Development Trends and Main Principles.
- UNEP, et. al. (2007). Green Jobs: Towards Sustainable Work in A Low-Carbon World. Preliminary Report. United Nations Environment Programme (UNEP), P. O. Box. 30552 Nairobi, Kenya.
- UNESCO (1992). Agenda 21, United Nations Retrieved May 9 2012.
- UNESCO (1999). *Statistical Yearbook*. Paris and Lanham, MD: UNESCO and Bernam Press.
- UNESCO (2002). *Reorienting education for a sustainable future: Teaching and Learning for a Sustainable Future*.
- UNESCO (2002c). *Education, Public Awareness and Training for Sustainability: Input to the Report of the Secretary General to the Second Preparatory Session for the World Summit on Sustainable Development*. UNESCO, Paris.
- UNESCO (2004). *Education for All: The Quality Imperative*. EFA Global Monitoring Report Team c/o UNESCO, 7 place de Fontenoy. 75352 Paris.
- UNESCO (2004a). *Learning for Work, Citizenship, and Sustainability*. International Meeting of Technical and Vocational Education and Training Experts. International Centre for Technical and Vocational Education and Training. Bonn, Germany. 28 Oct 2004.



- UNESCO (2004b). Draft International Implementation Scheme for the United Nations Decade of Education for Sustainable Development. Report to General Assembly, UNESCO, Paris.
- UNESCO (2004c). Education for all: The Quality Imperative. Education for all Global Monitoring Report, UNESCO, Paris.
- UNESCO (2005). Contributing to a more sustainable future: Quality Education, Life Skills, and Education for Sustainable Development. Paris, France: United Nations Educational, Scientific, Cultural Organization
- UNESCO (2005). Regional Centres of Expertise on Education for Sustainable Development. Concept paper”.
- UNESCO (2005a). Contributing to a more sustainable future: Quality Education, Life Skills, and Education for Sustainable Development. Paris, France: United Nations Educational, Scientific, Cultural Organization.
- UNESCO (2006). United Nations Educational, Scientific, and Cultural Organization Framework for the UNDES International Implementation Scheme. Paris: UNESCO. <http://unesdoc.unesco.org/images> (accessed 18 Oct 2011).
- UNESCO (2007). Asia-Pacific Guidelines for the Development of National ESD Indicators. Bangkok. ISBN 92-9223-121-9.
- UNESCO (2007a). Secondary education regional information base: country profile: Viet Nam. Bangkok: UNESCO Bangkok, 2007.
- UNESCO (2009). Learning for a Sustainable World: United Nations Decade of Education for Sustainable Development (DESD, 2005-2014).
- UNESCO (2009a). International Experts Meeting: Reorienting TVET Policy towards Education for Sustainable Development: a Building Block for Education for All Berlin, Germany, 26-28 August 2009.
- UNESCO (2009b). International Seminar: Advancing TVET in Georgia through the Use of ICTs .Tbilisi, Georgia 7-8 September 2009.
- UNESCO (2009c). Conference: Challenges of Technical and Vocational Education and Training (TVET) in Arab Countries: Innovation through E-Learning Amman, Jordan, 12-13 October 2009.
- UNESCO (2010). Education for Sustainable Development (ESD). <http://www.unesco.org/en/esd/> (Accessed 9 January 2011).
- UNESCO (2011). The Hidden Crisis: Armed Conflict and Education. Published in 2011 by the United Nations Educational, Scientific and Cultural Organization 7, Place de Fontenoy, 75352 Paris 07 SP, France.
- UNESCO. (2005). United Nations Decade of Education for Sustainable Development, 2005–2014. International Implementation Scheme. Paris: UNESCO.
- UNESCO. (2005b). Report by the Director-General on the Follow-Up to the EFA Strategic Review and UNESCO’s Strategy for the 2005–2015 Period.
- UNESCO. 2005c. United Nations Decade of Education for Sustainable Development, 2005-2014.
- UNESCO (2005b). Learning for Work, Citizenship, and Sustainability: Final Report. International Experts Meeting, Bonn.
- UNESCO-UNEVOC (2005c). The Bonn Declaration in Sustainable Development and TVET. Meeting on “Learning for Work, Citizenship and Sustainability” (Seoul + 5) hosted by the UNESCO-UNEVOC International Centre for TVET, in Bonn, Germany.



- The World Commission on Environment and Development. (1986). The Concept of Sustainable Development.
- UNESCO-UNEVOC (2004). Orienting TVET for Sustainable Development for the UNESCO International Experts Meeting “Learning for Work, Citizenship and Sustainability,” Bonn, Germany, 25 to 28 October 2004.
- UNESCO-UNEVOC (2005). Learning for Work, Citizenship, and Sustainability Final Report. [www.unevoc.unesco.org/sustainable](http://www.unevoc.unesco.org/sustainable) (Accessed 10 April 2011).
- UNESCO-UNEVOC (2005). The Bonn Declaration in Sustainable Development and TVET. Meeting on “Learning for Work, Citizenship and Sustainability” (Seoul + 5) hosted by The UNESCO-UNEVOC International Centre for TVET, in Bonn, Germany.
- UNESCO-UNEVOC (2006). Orienting Technical and Vocational Education and Training for Sustainable Development (2006), A Discussion Paper, UNESCO-UNEVOC International Centre for Technical and Vocational Education and Training, Bonn, Germany, ISSN 1817-0374.
- UNESCO-UNEVOC (2007). Report on Activities: 2006-2007 International Centre for Technical and Vocational Education and Training UN Campus Hermann-Ehlers-Str. 10 53113 Bonn, Germany.
- UNESCO-UNEVOC (2009). TVET and ESD. <http://www.unevoc.unesco.org> (Accessed 17 February 2012).
- UNESCO-UNEVOC (2010). International Centre for Technical and Vocational Education and Training UN Campus Hermann-Ehlers-Str. 10 53113 Bonn, Germany: ISBN 978-92-95071-09-4.
- UNGA (2002). United Nations General Assembly 57th, Para. 117d, World Summit on Sustainable Development (WSSD) Plan of Implementation, 2002
- United Nations (1992). The United Nations Conference on Environment and Development (UNCED), also known as the Rio Summit, Rio Conference, and Earth Summit; was a major United Nations conference held in Rio de Janeiro from 3 June to 14 June 1992.
- United Nations (2004). The World at Six Billion. UN Publications United Nations. 2004. General Assembly Resolution 58/219. New York.
- United Nations. (2002). World Summit on Sustainable Development. Johannesburg, South Africa, 26 August–4 September.
- Utusan (2013). Darurat Bencana Jerebu jamin keselamatan awam: <http://ww3.utusan.com.my/utusan/> (accessed: 17 Jun 2013)
- Van Maanen, J. (1983). Qualitative Methodology. Beverly Hills: sage.
- Venetoulis, J. (2001). Assessing the ecological impact of a university: The Ecological Footprint for the University of Redlands. International Journal of Sustainability in Higher Education, 2 (2), 180- 196.
- Waldron, David, Karl-Henrik Robert, Michelle McKay, Georges Dyer, Richard Blame, and Roya Khaleeli. (2007). a Guide to the Five Level Planning Framework and Its Applications: Draft. Sweden.
- Wallis A, Laurenson, L. (2004) Environment, Resource Sustainability, and Sustainable Behaviour: Exploring perceptions of students in South West Victoria. Asian Journal of Biology Education 2, 39-49.
- Wals, A.E.J. (2009). A mid-DESD review: Key findings and ways forward. Journal of Education for Sustainable Development, 3(2), 195-204.



- Wals, A.E.J. dan Jickling, B. (2002). —Sustainability in higher education: From Doublethink and Newspeak to Critical Thinking and Meaningful Learning. *International Journal of Sustainability in Higher Education*, 3(3), 221-232.
- Wals, Arjen. (2009). *Review of Contexts and Structures for Education for Sustainable Development 2009*. Paris: UNESCO.
- Warren, K. (2004). Sustainable Development and Sustainable Development Education: An Eco-Feminist Philosophical Perspective on the Importance of Gender. IN Blewit, J., Cullingford, C. (eds.), *The Sustainability Curriculum: The Challenge for Higher Education* Earth scan.
- WCED (1986). *World Commission on Environment and Development of the United Nations. Our Common Future*. Oxford. Oxford University Press:
- Weinert, Franz E. (2001b): Concept of Competence: A Conceptual Clarification. In: Rychen, Dominique Simone/Salganik, Laura Hersh (Hrsg.): *Defining and Selecting Key Competencies*. Seattle u. a.: Hogrefe & Huber, S. 45–65.
- Wilkins, S. (2001). Human Resource development Through Vocational Education in UAE: The case of Dubai Polytechnic. *Journal of Vocational and Technical education and Training* 54(1).
- William, J. S. (2007). Virginia GIS Conference – Coastal Gems Presentation, Centre for Environmental Studies. Virginia Commonwealth University.
- Willis, P., McKenzie, S. & Harris, R. (Eds.) (2009). *Rethinking Work and Learning: Adult and Vocational Education for Social Sustainability*. Dordrecht, Netherlands: Springer. (Series: Technical and Vocational Education and Training: Issues, Concerns, and Prospects, Vol.9).
- Wilson, D. N. (2004). History of TVET, in R. Maclean and D. N. Wilson (Eds). *International Handbook of Technical and Vocational Education and Training*, Springer, Dordrecht.
- Wilson, D. N., (2001a). Technical-Vocational Education and Training, in D. and A. Poonwassie, (Eds.). *Fundamentals of Adult Education*. Thompson, Toronto.
- Winch, C., & Clarke, L. (2003). ‘Front-loaded’ Vocational Education Versus Lifelong Learning. A critique of current UK government policy. *Oxford review of Education*, 29(2), 239–252.
- Wonacott, M. (2001b). Ethics: The Role of Adult and Vocational Education, Trends and Issues Alert No. 24, ERIC Clearing house on Adult, Career and Vocational Education, Columbus.
- World Bank (2000). *World Development Report 2000–2001: Attacking Poverty*. Oxford University Press: New York.
- Wright, B.D. & Linacre, J.M. (1992). Combining and Splitting Categories. *Rasch Measurement Transactions*, p6, p3, p233-235.
- Wright, B.D. & Masters, G.N. (1982). *Rating Scale Analysis*. Chicago: MESA Press.
- Wright, B.D. & Panchapakesn, N.A. (1969). A Procedure for Sample-Free Item Analysis. *Educational & Psychological Measurement*. 29, p.23-48.
- Wright, B.D. & Stone, H. (1979). *Best Test Design*. Rasch Measurement: Chicago: MESA Press.
- Wright, B.D. (1996a). Comparing Rasch Measurement and Factor Analysis. *Structural Equation Modelling*, 3, p.3-24.
- Wright, B.D. (1996b). Local dependency, Correlations and Principal Components. *Rasch Measurement Transactions*, 10, p.509-511.



- Wright, L. (1996). Exploring the in-depth Interview as a Qualitative Research Technique with American & Japanese Firm. *Marketing Intelligence & planning*. 14(6), p.59-64. ISSN 0263-4503.
- WSSD (2002). World Summit on Sustainable Development Plan of Implementation, Johannesburg.
- WTO (2011), Harnessing trade for sustainable development and a green economy, declaration of Sustainable development is an objective of the WTO, as reflected in the
- WTO (2014). World Trade Organization Centre William Rappard Rue de Lausanne 154, CH-1211 Geneva 21, Switzerland: ISBN 978-92-870-3909-5
- Yahaya, A. (2006). The Effectiveness on Teaching and Learning Oamong Technical Teachers on Technical Subject, Humanizing Assessment, KLICA 2006 Organized by Malaysian Examination Syndicate, Sunway Lagoon Resort Hotel Petaling Jaya, May 16-19 2006.
- Yahaya, A. (1999). The Evaluation of Effectiveness of Living Skill Program in Secondary School in Malaysia (Vot 71322 RMC).
- Yahya, A. at al, (2007). *Menguasai Penyelidikan Dalam Pendidikan: Teori, Analisis dan Interpretasi Data*. Kuala Lumpur: PTS Professional Publishing Sdn. Bhd.
- Yamin & Alias (2010). Education for Sustainable Development through Problem Based Learning: A Review of the Monitoring and Assessment Strategy. *ESD in TVET 2010: Conference Proceedings*.
- Yassin (2011). Transformasi Kolej Vokasional. *Utusan Malaysia* (9 September 2011).
- Yassin (2012). Melonjak Kualiti pendidikan Negara. (*Mingguan Malaysia*: 8/9/2012).
- Yin, R.K. (1994). *Case Study Research*. Second Ed. Thousand Oaks, CA: Sage Publication.
- Zhilei Yao, Yin He (2010). Sustainable Development at University: Comparison of Students' Knowledge, Awareness, and Actions: Master's Thesis in Management of Logistics and Innovation. University of Gavle.
- Zainal, A. (2015). Identify Factors Sustainability of TVET Program Based on Lecturer's Competencies and Practice in Malaysian Vocational College. Seminar Penyelidikan Pendidikan Kebangsaan 2015, Anjuran Institut Pendidikan Guru Zon Selatan, Johor Bahru, Johor (24-26hb. Ogos 2015)
- Zulkifli, T.H & Abdul Majid, N. Z. (2000), "Inovasi dalam Pembelajaran, Kurikulum dan Pendidikan Malaysia." *Kertas kerja UNESCO*. (2005). United Nations Decade of Education for Sustainable Development, 2005-2014. International Implementation Scheme. Paris: UNESCO.

