

KERANGKA KECEMERLANGAN BAKAT BEKERJA DALAM KALANGAN
PELAJAR TEKNIKAL

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Laporan projek ini dikemukakan sebagai memenuhi sebahagian daripada syarat
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DEDIKASI

Cebisan ilmu ini dedikasi teristimewa buat :

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ABSTRAK

Ke arah mencapai Revolusi Industri 4.0 kriteria pelajar teknikal diberi penekanan terhadap bakat. Ini boleh dilihat melalui pihak industri yang menyatakan pelajar kurang diperkasakan dalam aspek bakat bagi memenuhi kehendak industri. Tujuan kajian ini mengenal pasti dan membangunkan Kerangka Konsep Kecemerlangan Bakat Bekerja bagi pelajar teknikal di *Malaysian Technical University Network* (MTUN). Kajian ini menggunakan reka bentuk Kaedah Bercampur Penerokaan Berjujukan yang mengandungi dua fasa. Pada fasa pertama kaedah kajian (kualitatif) protokol temubual dan fasa kedua kajian tinjauan (kuantitatif). Pada fasa pertama melalui analisis dokumen kekerapan dan temu bual melibatkan 5 pakar iaitu jurutera berpengalaman dari industri bagi meneroka domain dan komponen bakat bekerja. Hasil dapatan menerusi temu bual memperolehi 6 domain dan 46 komponen berkaitan dengan bakat bekerja, walau bagaimanapun hanya 6 domain dan 42 komponen yang telah disepakati oleh pakar dan memenuhi jumlah akhir persetujuan pekali kappa ($\kappa > 0.77$). Bagi fasa kedua, kajian tinjauan soal selidik dilakukan terhadap 741 pelajar teknikal tahun akhir dalam bidang Kejuruteraan Elektrik dan Elektronik, Mekanikal dan Awam di MTUN. Dapatan hasil kajian dianalisis menggunakan Model pengukuran *Rasch* menggunakan perisian *Winsteps* bagi kesahan, kebolehpercayaan dan kesesuaian bagi 6 domain dan 42 komponen. Hasil dapatan menunjukkan 6 domain iaitu bakat menjalinkan hubungan, bakat motivasi diri, bakat berfikir, bakat mempengaruhi, bakat teknologi dan bakat pekerjaan yang terdiri daripada 42 komponen yang sesuai digunakan. Berdasarkan 6 domain dan 42 komponen tersebut telah diuji dan disahkan melalui Analisis Komponen Utama (PCA). Tiga syarat wajib bagi menentukan domain dan komponen Kerangka Konsep Kecemerlangan Bakat Bekerja yang dihasilkan bersifat unidimensi (tidak bersandar) telah berjaya dipatuhi (*RV Explained* antara 41.8-47.7%, *V_Unexplained1stContrast* antara 5.0-9.9% dan *Eigenvalue* antara 1.7-2.6). Kerangka Konsep Kecemerlangan Bakat Bekerja ini dapat dijadikan rujukan MTUN dan Institusi TVET lain bagi meningkatkan kualiti diri pelajar teknikal dalam berdaya saing di industri.

ABSTRACT

Towards achieving the Industrial Revolution 4.0, the talent possessed by technical students have been given emphasis. This is observed from the industry stating that students are less empowered in terms of talent to meet the needs of the industry. The aims of this study are to identify and develop a Conceptual Framework for Working Talent Excellence for technical students in the Malaysian Technical University Network (MTUN). This study was executed by deploying the Exploratory Sequential Mixed Method design that comprised of two phases. In the first phase, the interview protocol research method (qualitative) was performed and in the second phase, a survey research (quantitative) was conducted. In the first phase, frequency document analysis and interviews that involved 5 experts, namely experienced engineers from the industry, were carried out to explore the domain and components of working talent. The interview outcomes generated 6 domains and 46 components related to working talent, in which only 6 domains and 42 components were agreed upon by the experts and met the final total agreement of the kappa coefficient ($\kappa > 0.77$). As for the second phase, a set of survey questionnaires was distributed to 741 final year technical students in the fields of Electrical and Electronic, Mechanical, and Civil Engineering at MTUN. The study findings were analysed using Rasch measurement model via Winsteps software to determine the validity, reliability, and suitability for the 6 domains and 42 components. The results revealed that the 6 domains, which are related to talent, striving talent, thinking talent, impacting talent, technological talent, and practical working talent, which consisted of 42 components, are suitable for use. The 6 domains and 42 components were tested and validated using Principal Component Analysis (PCA). Three mandatory conditions for determining the domains and components of the Unidimensional (independent) Work Talent Excellence Concept Framework have successfully complied with RV Explained (41.8-47.7%), V_Unexplained1stContrast (5.0-9.9%), and Eigenvalue (1.7-2.6). The Conceptual Framework of Working Talent Excellence may serve as a reference to MTUN and other TVET institutions to improve the technical students' self-quality of competitive in industries.

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5.1 Kerangka Konsep Kecemerlangan Bakat
Bekerja Graduan Teknikal

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SENARAI SIMBOL DAN SINGKATAN

ADTEC	-	Advanced Technology Training Centre
ART	-	Alumni Research Team
ASTD	-	American Society for Training and Development
AUN	-	ASEAN University Network
BEM	-	Board Of Engineering Malaysia
BPTV	-	Bahagian Pendidikan Teknik dan Vokasional
d	-	Ralat margin yang diterima untuk tujuan penganggaran
DHE	-	Department of Higher Education
DKM	-	Diploma Kemahiran Malaysia
DOS	-	Department of Statistic Malaysia
EAC	-	Engineering Accreditation Council
Eigenvalue	-	First Contrast Eigenvalue
ETAC	-	The Engineering Technology Accreditation Council
GTTR	-	Global Talent Trends Report
ICT	-	Information and Communication Technologies
ICTC	-	Information and Communications Technology Council
IEA	-	International Engineering Alliance
IKBN	-	Institut Kemahiran Belia Negara
ILO	-	International Labour Organization
IPPTN	-	Institut Penyelidikan Pendidikan Tinggi Negara
IPT	-	Institusi Pengajian Tinggi
IPTA	-	Institut Pengajian Tinggi Awam
IPTS	-	Institut Pengajian Tinggi Swasta

IRD	-	Institute for Research and Development of Policy
JPK	-	Jabatan Pembangunan Kemahiran
k	-	Jumlah sampel berdasarkan Cochran
KPTM	-	Kementerian Pendidikan Tinggi Malaysia
LJM	-	Lembaga Jurutera Malaysia
m	-	Jumlah pelajar MTUN
MBOT	-	Malaysia Board of Technologist (Lembaga Teknologis Malaysia)
MNSQ	-	Outfit Mean-Square
MOHE	-	Ministry of Higher Education
MQA	-	Malaysian Quality Assurance
MTUN	-	Malaysian Technical University Network
N	-	Populasi kajian
N	-	Populasi responden
n	-	Sampel pelajar MTUN
NYC TTP	-	New York City Tech Talent Pipeline
η	-	Saiz sampel
OECD	-	Organization for Economic Co-operation and Development
P	-	Jangkaan <i>varian</i> pada populasi
PCA	-	Principal Component Analysis
PKM	-	Persijilan Kemahiran Malaysia
PPPM (PT)	-	Pelan Pembangunan Pendidikan Malaysia (Pendidikan Tinggi)
PTMEA CORR	-	Point Measure Correlation
RMK	-	Rancangan Malaysia Ke
RV Explained	-	Raw Variance Explained by Measure
SDT	-	Self Determination Theory
SHRM	-	Society of Human Resource Management
SKM	-	Sijil Kemahiran Malaysia
SKPG	-	Sistem Kajian Pengesanan Graduan
t_2	-	Risiko menggunakan ralat margin bagi mencapai ralat margin sesuai.
TVET	-	Pendidikan dan Latihan Teknik dan Vokasional

UMP	-	Universiti Malaysia Pahang
UNESCO	-	United Nations Educational, Scientific and Cultural Organization
UniMaP	-	Universiti Malaysia Perlis
UPE	-	Unit Perancang Ekonomi
UTeM	-	Universiti Teknikal Malaysia Melaka
UTHM	-	Universiti Tun Hussein Onn Malaysia
V ₁		
Unexplained1stContrast	-	First Contrast Unexplained Variance
WHO	-	World Health Organization
ZSTD	-	Standardized Z values
α	-	Cronbach's Alpha



PTTA UTHM
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BAB 1

PENDAHULUAN

1.1 Pengenalan

Pembangunan kemajuan ke arah Revolusi Industri 4.0 menjadi fokus dalam kalangan negara di dunia. Maka, Revolusi Industri 4.0 telah membuka lembaran baru dalam dunia digital melalui perkembangan teknologi dan pengautomasian (Razali, Ani & Tohar, 2020). Seiring dengan perubahan revolusi, maka corak modal insan turut berubah serentak dengan keperluan dan kehendak pekerjaan di industri (Azman, *et al.*, 2016; Mohamad, 2020). Ini kerana modal insan adalah merupakan individu berbakat dan menyumbang daya saing dalam menggerakkan ekonomi sesebuah negara (Ayob, Daud & Ismail, 2016; Yusof, 2017). Tambahan pula, dengan adanya modal insan berbakat yang berkualiti amatlah penting bagi menyumbang kepada peningkatan ekonomi dan produktiviti negara berkenaan (Mohamad, 2020). Berdasarkan Sessen (2018), Korea Selatan, Jepun dan Switzerland di antara negara perindustrian negara yang berjaya dengan perubahan ekonomi yang meningkat hasil daripada modal insan berbakat yang berkualiti. Meskipun negara tersebut tidak mempunyai banyak sumber ekonomi.

Lantaran itu, masa depan negara Malaysia juga amatlah bergantung kepada pembangunan modal insan berbakat dan berkemahiran tinggi (Azman *et al.*, 2016; KPTM, 2018). Justeru itu, bagi membentuk modal insan berbakat dan berkemahiran tinggi harus bermula daripada pendidikan yang diberikan oleh sesebuah negara (Ibrahim, Esa & Kamal, 2019). Menurut Esa dan Rahman (2014) dan Kipli dan Khairani (2020), Pendidikan Teknik dan Vokasional serta Latihan (TVET) merupakan sistem pendidikan yang berasaskan kemahiran, pengetahuan, dan berteknologi dalam meningkatkan daya saing dan membentuk kualiti kebolehpasaran kerja untuk menuju ke arah negara berpendapatan tinggi. Seiring dengan itu, TVET berperanan besar bagi membuka laluan untuk menghasilkan bakat-bakat baru berkemahiran tinggi bagi menyumbang kepada peningkatan ekonomi sesebuah negara maju (Yusof, 2017).

Tambahan pula, melalui penguasaan pelajar terhadap bakat kemahiran tinggi dapat menjadikan pelajar berbakat dalam bekerja serta menjadikan pelajar TVET lebih berdaya saing menuju ke arah negara berpendapatan tinggi (Esa & Rahman, 2014; Langa, 2015; Ismail, Hassan, Bakar, Hussin, Hanafiah & Asary, 2018). Selain itu, bakat bekerja merupakan bakat yang diperoleh daripada potensi diri dan kemampuan seseorang individu bagi menghasilkan kemahuan diri dan minat dalam sesuatu bidang (Moon, 2002; Wang, 2018; King, 2019). Menurut kajian (Kismanto, Marlitha & Kusriani, 2011; Peters & Engerrand, 2016; Dai, 2017) bakat bekerja ini juga dapat dikembangkan melalui proses latihan serta pendidikan secara intensif, malah ia juga dapat dikembangkan apabila pelajar mempunyai peluang untuk belajar di bidang yang dipilih bersesuaian dengan minat serta kemampuan diri pelajar.

Bakat bekerja diwujudkan bagi mencapai matlamat TVET untuk melahirkan pelajar produktif dan bertanggungjawab dengan menerapkan ilmu pengetahuan, kemahiran dan mempunyai kompetensi yang tinggi, penerapan ilmu *soft skill*, kemahiran generik dan latihan semula turut diberikan supaya pelajar komited dan bermotivasi melaksanakan pekerjaan (Minghat, Yasin, Subari & Nordin, 2013; Deloitte, 2016; Siddique, Lodhi, Anwer & Zubair, 2020). Pelajar yang bakal menamatkan pengajian seharusnya bersedia dengan bakat dan kemahiran baharu yang diperlukan pasaran supaya mudah diterima bekerja (*Organisation for Economic Co-operation and Development* (OECD), 2013; Ithnin *et al.*, 2018; KPTM, 2018). Di samping itu juga penerapan pengetahuan, kemahiran dan bakat yang selari dengan teknologi terkini perlu diberi keutamaan, bagi menghasilkan pelajar teknikal yang betul-betul dikehendaki oleh pihak industri (Xing & Marwala, 2017; Asmawi & Jaladin, 2018; KPTM, 2018).

Pembangunan ekonomi sesebuah negara juga memerlukan penguasaan kecemerlangan bakat dalam kalangan generasi baharu. Negara perlu bersaing di peringkat ekonomi dunia dalam bidang kepakaran dan penghasilan teknologi. Berdasarkan status Malaysia menghadapi covid 19 pada Mac 2020 hingga sekarang, ini menunjukkan bahawa kadar ekonomi negara mungkin mengambil masa untuk pulih pada tahun 2022 menurut pernyataan Pengarah Serantau Pertubuhan Kesihatan Sedunia, *World Health Organization* (WHO) (Bernama, 2021), ini mengundang kepada keperluan mahasiswa/graduan untuk meningkatkan kecemerlangan bakat supaya mereka dapat bersaing di pasaran pekerjaan akan datang (Omar, 2020).

RUJUKAN

- Abd Hair Awang, Ishak Yusof, Arawati Agus & Zafir Mohd Makhbul, (2012). Kebolehpasaran Graduan IPT Tempatan: Penilaian Perspektif Majikan, Institut Penyelidikan Pembangunan Belia Malaysia.
- Abd Hamid, M. Z. (2020). Belanjawan 2021 perkasa TVET. <https://www.bharian.com.my/rencana/komentar/2020/11/752023/belanjawan-2021-perkasa-tvet>. Dicapai pada 11 November 2020.
- Abdul Aziz, S. N. & Zulkifli, N.(2014). Faktor Kelemahan Pelajar Dalam Mata Pelajaran Ekonomi Asas Di Peringkat SPM Di Sekolah-Sekolah Terpilih Di Negeri Johor. *e-proceeding of the World Conference on Integration of Knowledge (WCIK 2014)*. 978-967.
- Abdul aziz. A., Masodi, M.S & Zaharim. A.(2017). *Asas Model Pengukuran Rasch: Pembentukan Skala & Struktur Pengukuran*. UKM Press.
- Abdul Baser, (2014). *Pembelajaran Informal dalam Kalangan Guru Mata Pelajaran Teknologi Kejuruteraan*. Tesis Ph.D.Universiti Teknologi Malaysia.
- Abdul Ghafar, M. N., (2003). *Reka Bentuk: Soal Selidik Pendidik*. Skudai: Tesis Ph.D. Universiti Teknologi Malaysia.
- Abdulla. R.K, Alsammarraie M.N, Shaeer K.S, Al-Karawi H.R.A & Baba.A.(2017). *Experiments with MBOT*. Technical Report January 2017.
- Abdullah, S. M. (2019). Social Cognitive Theory: A Bandura Thought Review Published in 1982-2012. *Psikodimensia*.18(1). 85-100.
- Abdullah, Z., Ramlan, M.F., & Sabran, M.S., (2014). *Developing A Student Development Index: A Conceptual Paper*. WBI Conference. Dicapai pada September 25, 2018 from <http://www.wbiworldconpro.com/uploads/bangkok-conference-2013-october/econo-mics/1382555191211-Zulhamri-NJ>.
- Abdulwahed, M., Hasna, M. O., & Froyd, J. E. (2016). *An Insight into the Future of Engineering Education, Recommendations for Implementations, and*

- Conclusions*. In *Advances in Engineering Education in the Middle East and North Africa*: Springer, Cham. 441-446.
- Ahmad, H. (2015). Leadership in TVET for the 21st Century: Challenges, Roles and Characteristics. *Social and Behavioral Sciences*. 195. 1471–1476.
- Ahmad, M. J., Jalani, N. H., & Hasmori, A. A. (2015). TVET di Malaysia: Cabaran dan Harapan. *Seminar Majlis Dekan-Dekan Pendidikan Awam 2015*. 340.
- Al Tamimi, A., & Shuib, M. (2016). Public Speaking Skills Needs of English Majors at Universiti Sains Malaysia. *LSP International Journal*. 3(1), 31-42.
- Ali, R., Haron, H. N., Salim, K. R., Abdullah, M., & Mohamed, Z. (2015). Challenges in Implementing Engineering Technology Education in Malaysia. *The Asian Journal of Technology Management*. 8(1).
- Alias, S. Z., Selamat, M. N., Alavi, K., & Arifin, K. (2018). Industry 4.0: A Systematic Review in Technical and Vocational Education and Training. *Jurnal Psikologi Malaysia*. 32(4).
- American Society for Training and Development (ASTD). (2012). *Bridging the skills gap: help wanted, skills lacking: why the mismatch in today's economy?*. United States. Alexandria, Virginia: American Society for Training and Development, 2012.
- Amin, M. (2015). *Upaya Guru Bimbingan Dan Konseling Dalam Pembinaan Minat Dan Bakat Siswa Kelas X SMA N 1 Banguntapan Bantul Yogyakarta*. Universitas Islam Negeri Sunan Kalija Yogyakarta. S1 Tesis.
- Amin, N. F. M. & Ripin, A. (2009). *Kesediaan Kerjaya Dikalangan Pelajar Fakulti Kejuruteraan Elektrik Universiti Teknologi Malaysia*. Universiti Teknologi Malaysia. Tesis Sarjana Muda.
- Amran, N. N., & Ibrahim, M. & Hassan, R., & Ismail, K. (2016). Pendekatan Service- Learning Dalam Kursus Kemahiran Insaniah : Transformasi Positif Dalam Kalangan Perubatan UKM- UNPAD (Service- Learning Approach In Soft Skill Course: Positive Transformation among UKM-UNPAD Medical Students). *Jurnal Personalia Pelajar*. 19(1). 11-21.
- Andrich, D. (2007). A two-way approach: Rasch method of measurement. *RUMM-2020 Workshop, 3rd Pacific Rim Objective Measurement Symposium, TaoYuan, Taipei*.

- Anwar, A.A & Richards, D (2015).The Wingshiton Accord and U.S. Licensing Boards. *Journal of profesional Issues in Engineering and Practice*. DOI:10.1061/(asce)ei.1943-5541.0000246.
- Ariffin, S. R., Noriah, M. I. & Zuria, M. & Ramli, M. & Ruhizan, M. Y. & Norzaini, A. & Ruslin, A. (2004). *IRPA Executive Report MOSTI*.
- ART, Alumni Research Team (2011). *Kajian Kebolehkerjaan Graduan (Graduate Employability)*. Universiti Tun Hussein Onn Malaysia. Thesis Ph.D.
- Ashraf, R.U., Hou, F., Kirmani, S. A. A., Ilyas, M., Zaidi, S. A. H., & Ashraf, M. S. (2018). Student Employability via University-University Linkages. *Human System Management*, 31(2), 209-232.
- Asmawi, A., & Jaladin, R. A. M. (2018). Higher Education System In Malaysia: Exploring Strategic Trends and Challenges In Policy Implementation For New Malaysia. *MOJEM: Malaysian Online Journal of Educational Management*, 6(4), 56-77.
- Asplund, J., Agrawal, S., Hodges, T., Harter, J., & Lopez, S. J. (2014). *The Clifton StrengthsFinder 2.0 Technical Report: Development and validation*. Washington, D.C.: Gallup.
- Asplund, J., Lopez, S. J., Hodges, T., Asplund, J., Lopez, S. J. Hodges, T., & Harter, J., (2007). *The Clifton StrengthsFinder® 2.0 Technical Report: Development and Validation*. February 2007. Washington, D.C.: Gallup.
- AUN (2017), ASEAN University Network (AUN). History and Background. Dicapai pada Ogos 30, 2017 from <http://www.aunsec.org/ourhistory.php>
- Awang, A., Ismail, R. and Noor, Z. M., (2010). Training Impact on Employees Job Performance: A Self Evaluation. *Ekonomika Istrazivanja*, 23(4), 78-90.
- Ayob, N. A., Daud, S., Ismail, M. T., (2016). Modal Insan, daya saing dan prestasi usahawan di Malaysia: Analisis Kualitatif usahawan wanita bumiputera Melaka. *Geografia Online Malaysia Journal of Society and Space*. 12(10).56-67.
- Aziz, A. A. (2010). Rasch model Fundamentals: Scale Construct And Measurement Structure. *Kuala Lumpur: Perpustakaan Negara Malaysia*.
- Azizi, H. A. S., (2009). *Hubungan antara Faktor Motivasi Intrinsik dan Ekstrinsik dengan Prestasi Kerja: Kajian di Kalangan Pegawai Tentera Laut Di Raja Malaysia*. Universiti Utara Malaysia. Tesis Sarjana.

- Azman (2012). *Instrumen Penilaian Pembimbing Dalam Pelaksanaan Pembelajaran Berasaskan Kerja Pelajar Di Industri*. Universiti Teknologi Malaysia: Tesis Ph.D.
- Azman, A. H. (2010). *Penerapan Kemahiran Generik Dalam Pengajaran Program Pendidikan Kejuruteraan Di Politeknik Kementerian Pendidikan Tinggi Malaysia (KPTM)*. Universiti Tun Hussein Onn Malaysia. Tesis Sarjana.
- Azmi, N. I., & Mohd. Hashim, M. H., (2013). Penerapan Kemahiran Insaniah dalam Pelaksanaan Pendidikan Asas Vokasional: Transformasi Sistem Pendidikan di Malaysia. *Persidangan Pendidikan (Penyelidikan dan Inovasi) Dalam Pendidikan dan Latihan Teknikal dan Vokasional (Cie-TVET 2013)*. 126(1). 1857-1868.
- Bakar, A.R., Mohamed, S., & Hamzah, R. (2013). *An Assessment Of Workplace Skills Acquired By Students Of Vocational And Technical Education Institutions*. International Education Studies. 6(11). Published by Canadian Center of Science and Education.
- Bandura, A. (1986). *Social Foundations Of Thought And Action: A Social Cognitive Theory*. New York. Penerbit: Prentice Hall.
- Bandura, A. (1989). *Social Cognitive Theory*. In R.Vasta (Ed.), *Annals of child development*. Vol.6. Six theories of child development (pp. 1-60). Greenwich, CT: JAI Press.
- Bandura, A. (2019). *Applying Theory for Human Betterment*. *Perspectives on Psychological Science*, 14(1), 12-15.
- Barlett, J. E., Kotrlik, J. W., & Higgins, C. C. (2001). Organizational Research: Determining Appropriate Sample Size In Survey Research. *Information Technology, Learning, and Performance Journal*, 19(1). 43.
- Bartz, D. E. (2018). Components for talent development of staff members. *International Journal of Organizational Theory and Development*, 6(1), 1-10.
- Bayra, E., & Kaya, Z. (2020). Gifted Students' Self-Efficacy of Educational Technology for Technology and Design. *Online Submission*, 10(1), 1-17.
- Bello, H. & Shu'aibu, B. & Saud, M. S. & Buntat, Y. (2013). ICT Skills for Technical and Vocational Education Graduates' Employability. *World Applied Sciences Journal*, 23(2). 204-207.

- Benade, G., Mentz, E., & Reitsma, G. (2016). In-Practice Perspectives for the Training of Further Education and Training (FET) Technology Teachers. *A Kaleidoscope of Advances in Modern Day Education*, 19.
- Benesova, A., & Tupa, J. (2017). Requirements for Education and Qualification of People in Industry 4.0. *Procedia Manufacturing*, 11, 2195-2202.
- Berawi, F. M. (2017). *Metodologi Penyelidikan: Panduan Menulis Tesis*. UUM Press.
- Boland, B., & Smet, A. D., & Palter, R., & Sanghvi, A., (2020). *Organization and Real Estate Practices: Reimagining the Office and Work Life After COVID-19*. Designed by Global Editorial Services. McKinsey & Company.
- Berita Harian, (2021). Malaysia berupaya jadi negara berpendapatan tinggi seawal 2024.
<https://www.bharian.com.my/berita/nasional/2021/03/796678/malaysia-berupaya-jadi-negara-berpendapatan-tinggi-seawal-2024>. Dicapai pada 11 November 2021.
- Berita Harian, (2021). Ekosistem Pembangunan bakat masa depan perlu menyeluruh.
<https://www.bharian.com.my/rencana/lain-lain/2021/10/878395/ekosistem-pembangunan-bakat-masa-depan-perlu-menyeluruh>. Dicapai pada 16 November 2021.
- Berita Harian, (2021). Pembentangan RMK-12: Teks Ucapan Perdana Menteri.
<https://www.bharian.com.my/berita/nasional/2021/09/869324/pembentangan-rmke-12-teks-ucapan-perdana-menteri>. Dicapai pada 16 November 2021.
- Berita Harian, (2018). Bidang Kejuruteraan, ICT dan perniagaan antara paling dikehendaki.
<https://www.bharian.com.my/bisnes/lain-lain/2018/12/508332/bidang-kejuruteraan-ict-dan-perniagaan-antara-paling-dikehendaki>. Dicapai pada 16 November 2021.
- Berita Harian, (2021). Majikan pilih pekerja ada kemahiran teknikal, sahsiah.
<https://www.bharian.com.my/bisnes/lain-lain/2021/11/884591/majikan-pilih-pekerja-ada-kemahiran-teknikal-sahsiah>. Dicapai pada 16 November 2021.
- Berita Harian, (2019). Gaji jurutera statik.
<https://www.bharian.com.my/berita/nasional/2019/10/620855/gaji-jurutera-statik>. Dicapai pada 16 November 2021.

- Berita Semasa, (2015). *Isu Kadar Pengangguran di Malaysia. Terkini 200,000 Menganggur. Faktor dan Punca Masalah-pengangguran-malaysia-faktor-punca*. Dicapai pada 28 Jun 2016.
- Berita Semasa, (2015). *Jawatan Kosong 2015 Malaysia : 400,000 Tiada Kerja (Jumlah Pengangguran), 161,000 Adalah Graduan*. <http://www.beritasemas.com.my/jawatan-kosong-2015-malaysia-graduan>. Dicapai pada 28 Jun 2016.
- Best, J. W., & Kahn, J. (1998). V.(1998). *Research in Education*.
- Bloom, B.S. (Ed.). Engelhart, M.D., Furst, E.J., Hill, W.H., Krathwohl, D.R. (1956). *Taxonomy of Educational Objectives, Handbook I: The Cognitive Domain*. New York: David McKay Co Inc. Bloom, B. (ed.) (1956) Taxonomy of Educational Objectives, the classification of educational goals – Handbook I: Cognitive Domain New York: McKay.
- Boland, A., Cherry, G., & Dickson, R. (Eds.). (2014). *Doing a systematic review: a student's guide*. Sage.
- Boland.B, Smet A.D, Palter. R, & Sanghvi.A (2020). *Organization and Real Estate Practices: Reimagining the Office and Work Life After COVID-19*. Designed by Global Editorial Services, McKinsey & Company. All rights reserved.
- Bond, T. G. & Fox, C. M. (2007). *Applying the Rasch Model: Fundamental Measurement in the Human Sciences*. Lawrence Erlbaum Associates, Publishers 2007 Mahwah, New Jersey London
- Bormanaki, H. B., & Khoshhal, Y. (2017). The Role of Equilibration in Piaget's Theory of Cognitive Development and Its Implication for Receptive Skills: A Theoretical Study. *Journal of Language Teaching and Research*, 8(5), 996-1005.
- Braun, V. & Clarke, V. (2006). Using Thematic Analysis in Psychology. *Qualitative Research In Psychology* 3(2): 77-101.
- Briendbach, C. F., & Maglio, P. P. (2016). Technology-Enabled Value Co-Creation: An Empirical Analysis of Actors, Resources, and Practices. *Industrial Marketing Management*, 56, 73-85.
- Brown, M. G. (2017). *Education And The Fourth Industrial Revolution*. Dicapai pada September 2018 from Learning imagined:<https://medium.com/learning-re-imagined/education-and-the-fourth-industrial-revolution-cd6bcd7256a3>.

- Bryman, A. (2016). *Social research methods*. Oxford university press.
- Buckingham, M., & Clifton, D. O. (2001). *Now, discover your strengths*. Simon and Schuster.
- Bunimin, J. (2016). *Model Konsep Pembangunan Profesionalisme Tenaga Pengajar Kolej Vokasional Malaysia*. Universiti Tun Hussien Onn Malaysia. Tesis Ph. D.
- Buntat, Y., & Mat Nasir, N. S., (2011). Faktor-Faktor yang Mendorong Kreativiti di Kalangn Pelajar, Universiti Teknologi Malaysia. *Journal of Education Psychology and Counseling*. 2(1). 175-208.
- Cameron, R., (2009). A Sequential Mixed Model Research Design: Design, Analytical and Display Issues. *International Journal of Multiple Research Approaches*, 3(21), 140-152.
- Chang, P. K. & Ahmad, F. & Ibrahim, F., (2011). Hubungkait antara Kemahiran Insaniah Prasiswazah dengan Dimensi Hubungan Organisasi-publik (The Relationship between Under Graduate Soft Skills and Dimension of Organization–public Relation). *Jurnal Personalia Pelajar*. 14(1). 23-36.
- Chang, R., Stern, L., Sondergaard, H., & Hadgraft, R., (2009). *Places For Learning Engineering: A Preliminary Report Of Informal Learning Spaces*. Dicapai pada Jun 10, 2016 from [http:// rees2009.pbworks.com/f/rees2009_submission _ 86.pdf](http://rees2009.pbworks.com/f/rees2009_submission_86.pdf).
- Chen, U. R. & Masek, A. & Amiruddin, M. H. (2014). Kajian Gaya Pembelajaran Dan Motivasi Terhadap Pencapaian Pelajar Diploma Kejuruteraan Di Politeknik. *CiE-TVET 2014. Prosiding 008*. 1(1).117-136.
- Cheong, K. C., & Lee, K. H. (2016). *Malaysia's Education Crisis–Can TVET Help?*. *Malaysian Journal of Economic Studies*, 53(1), 115-134.
- Chhinzer, N., & Russo, A. M. (2018). *An Exploration Of Employer Perceptions Of Graduate Student Employability*. Education+ Training.
- Chin, Y. W., Lim, K. T., Khoh, S. B., & Kamaruddin, S. (2018). Knowledge and Talent Development in the Electronics and Electrical (EE) Industry of Malaysia: State-Industry-University Collaboration. *Asian Journal of Social Science*, 46(6), 668-705.
- Chua, Y. P. (2006). *Kaedah dan Statistik Penyelidikan (Buku 1). Kaedah Penyelidikan*. Kuala Lumpur, Malaysia: Mcgraw Hill.

- Chua, Y. P., (2013). *Research Statistics: Data Analysis For Survey Research*. Book 3 (2nd Edition) 2013.
- Chua, Y.P., (2014). *Multiple Regression, Factor Analysis and Structural Equation Modeling Analysis* 2014.
- Chua, Y.P., (2015). *Book 1 - Research Methods* 2015.
- CII, PeopleStrong, Wheebox. (2017). *India Skills Report 2017*. Gurgaon: Wheebox India. Retrieved from www.wheelbox.com.
- Clark, V. L. P. & Creswell, J. W. (2011). *Designing and Conducting Mixed Methods Research*. 2nd Edition. Singapore: SAGE Publication: Handbook of Qualitative Research.
- Clifton, D. O. & Harter, J. K. (2001). *Investing In Strengths. Positive Organizational Scholarship: Foundations Of A New Discipline*. 1(1). 111-121.
- Clifton, D. O. (2002). *StrengthsQuest: Discover and develop your strengths in academics, career, and beyond*. Gallup Pr.
- Cochran, W. G. (1977). *Sampling Techniques* (3rd Ed.). New York: John Wiley & Sons.
- Cohen, J. (1960). A Coefficient of Agreement for Nominal Scales, *Educational and Psychological Measurement*, 20, 37-46.
- Cohen, L., Manion, L. & Morrison, K. (2011). *Research Methods in Education*. 7th Edition. London & New York: Routhledge Taylor & Francis Group.
- Cohen, L., Manion, L., & Morrison K. (2000). *Research Methods in Education (5th Edition)*. London: Routledge Falmer.
- Cohen, R.J., & Swedlik, M.E., (2002). *Psychological Testing and Measurement: An Introduction to Test and Measurement (5thEd.)*, New York: Megraw Hill.
- Cooper, D. R., Schindler, P. S., & Sun, J. (2011). *Business Research Methods*, Vol. 9. New York: McGraw-Hill Irwin.
- Corbin, J. & Strauss, A. (2008). *Basics of Qualitative Research: Techniques and Procedures for Developing Grounded Theory*. Sage.
- Couch, M. A., & Citrin, R. S., (2019). *Strategy-Driven Leadership: The Playbook for Developing Your Next Generation of Leaders*. Business & Economics. ISBN 1000727637, 9781000727630. CRC Press, 14 Oct 2019. 184 pages.
- Creswell, J. W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

- Creswell, J. W. (2014). *A Concise Introduction to Mixed Methods Research*. Sage Publications.
- Creswell, J. W., & Clark, V. L. P. (2017). *Designing and conducting Mixed Methods Research*. Sage publications.
- Creswell, J. W., & Creswell, J. D. (2017). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. Sage publications.
- Creswell, J. W., & Poth, C. N. (2016). *Qualitative Inquiry and Research Design: Choosing among Five Approaches*. Sage publications.
- Creswell, J. W., Fetters, M. D. & N. V., I. (2004). *Designing a Mixed Methods Study in Primary Care*. *Annals of Family Medicine* 2(7): 7-12.
- Creswell, J.W. (2012). *Educational research: planning, conducting, and evaluating quantitative and qualitative research*. Pearson Education. Fourth Edition.
- Creswell, J.W., (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 3rd Edition. Los Angeles: Sage Publications, Inc., 2009.
- Creswell, J.W., (2013). *Research Design: Qualitative, Quantitative, And Mixed Methods Approaches*. Sage publications.
- Creswell, J.W., (2014). *A Concise Introduction to Mixed Methods Research*. Sage Publications.
- Creswell, John W. (2009). *Research Design: Qualitative, Quantitative, and Mixed Methods Approaches*. 3rd Edition. Los Angeles: Sage Publications, Inc., 2009.
- Cummings, L. (1985). Qualitative Research in the Infant Classrooms: A Personal Account. Dlm. Burgess, R. (pnyt.). *Issues In Educational Research: Qualitatives Methods*, 216-250. Lewes: Falmer.
- Dace, E., Stibe, A., & Timma, L. (2020). A Holistic Approach to Manage Environmental Quality by Using the Kano Model and Social Cognitive Theory. *Corporate Social Responsibility and Environmental Management*, 27(2), 430-443.
- Dai, D. Y. (2017). *Envisioning a new foundation for gifted education: Evolving complexity theory (ECT) of talent development*. *Gifted Child Quarterly*, 61(3), 172-182.
- Danladi, J., Adamu, A. A., Usman, N. J., & Doma, S. Y. (2020). Challenges And Opportunities In Technical And Vocational Education (TVET) In Nigeria. *Capital Journal of Educational Studies (CAJES)*, 6(1), 71-82.

- Darusalam.G & Hussin.S. (2016). *Metodologi Penyelidikan Dalam Pendidikan*. Kuala Lumpur: Penerbit Universiti Malaya.
- Deloitte, (2016). *High Tech Competence. Strategic Talent Management in High Tech. Eindhoven, the Netherlands*. 2016 Deloitte The Netherlands.1-22.
- Deloitte, (2016). *Talent for Survival Essential skills for humans working in the machine age*. 1-28. United Kingdom. London.
- Deloitte. (2020). *Impact of COVID 19 on Consumer Business in India*: Deloitte Touche Tohmatsu India LLP.
- Department of Higher Education (2014). *Technology Talent Initiative Workforce Plan*. Boston. United State. Massachusetts Department of Higher Education.
- DHE, *Department of Higher Education-Technology Workforce Analysis (2014).Technology Talent Initiative Workforce Plan**. *Accepted by the Board of Higher Education under the title, "Technology Workforce Analysis." 1 Massachusetts Technology Collaborative, John Adams Innovation Institute. 2013. Index of the Massachusetts Innovation Economy.
- Diekhoff, G.(1992). *Statistics For Social and Behaviour Research*. Dubuque:Wm.C. Brown Publisher.
- Djamarah., (2002). *Teori Motivasi, Edisi 2 (Ed-2)*, Jakarta. Penerbitan: PT. Bumi Aksara.
- Driscoll, D.L. (2011). *Introduction To Primary Research: Observations, Surveys, and Interview*. Library of Congress Cataloging-in-Publication Data.
- Driscoll, D.L., (2011). Introduction to Primary Research: Observations, Surveys, and Interviews.*Writing Spaces: Readings on Writing*, 2.ISBN978-1-60235-184-4.
- EAC Manual 2017, Board Of Engineers Malaysia. *Engineering Accreditation Council (BEM)*. 1-134.
- Eberhard, B., Podio, M., Alonso, A. P., Radovica, E., Avotina, L., Peiseniece, Caamaño Sendon, M., Gonzales Lozano, A. and Solé-Pla, J. (2017). Smart work: The Transformation Of The Labour Market Due To The Fourth Industrial Revolution (I4. 0). *International Journal of Business & Economic Sciences Applied Research*, 10(3).
- Erciyas, E. (2019). *A New Theoretical Framework For Multicultural Workforce Motivation in the Context of International Organizations*. SAGE Open, 9(3), 2158244019864199.

- Esa, A. & Rahman, J. A. (2014). TVET and Strategies Student Providers into Market. *Journal of Education and Human Development*. 3(2). 743-751.
- Esa, A., & Mustafa, M. Z., (2010). *Kemahiran Insaniah: Kajian di Institusi-Institusi Pengajian*. Johor: Penerbit Universiti Tun Hussein Onn Malaysia.
- Esa, A., Arshad, N. H., & Mohamad, B., (2010). The Mastery of Generic Skills Amongst Students With The Aim to Increase The Employability: IPTA and IPTS. *Journal of Applied Research in Education*. 14(1). 28-38.
- Fadli, R. P., Alizamar, A., Afdal, A., & Ifdil, I. (2019). Psychological Well-Being of Youth Inventory on Domestic Violence Victims: Rasch Model Analysis. *The International Journal of Counseling and Education*, 4(2), 69-77.
- Farrelly, C. M. (2018). *Topology and Geometry for Small Sample Sizes: An Application to Research on the Profoundly Gifted*. Januari 2018. doi: 10.17605/OSF.IO/4V5RM
- Fau, S., & Moreau, Y. (2018). *Managing Tomorrow's Digital Skills-What Conclusion can we draw from International Comparative Indicators?* .Working Papers on Education Policy. United Nations Educational, Scientific and Cultural Organization.
- Fitzgerald, M., & McClelland, T. (2017). What Makes A Mobile App Successful In Supporting Health Behaviour Change?. *Health Education Journal*, 76(3), 373-381.
- Flade, P., Harter, J. & Asplund, J. (2014). Seven things great employers do (that others don't). *Harvard Business Review*.
- Fleiss, J.L. (1981). *Statistical methods for rates and proportions (2nd ed.)*. New York: Wiley.
- Forsyth, K., & Keithofner, (2006). *The Model of Human Occupation: Integrating theory into practice*. Foundation for practice in occupational Therapy. 4th Edition. Elsevier Limited. London.
- Florida, R. (1999). The Role of The University: Leveraging Talent, Not Technology. *Issues in Science and Technology*, 15(4), 67-73.
- Foley, T. (2020). *Talent Retention Strategies for Service Industry Managers Within Rust Belts*. Walden University: Doctor of Business Administration.
- Fraenkel, J. R., & Wallen, N. E. (2003). Observation and Interviewing. *How To Design and Evaluate Research In Education*, 5, 455-463.

- Gallup Organization. (2001). *Summary of Selection Research Item Bank. Internal Company Database.* (2002). Workplace poll. Internal Research Document, July.
- Gallup. (2017). *Higher education employee engagement.* Retrieved from <http://www.gallup.com/services/194321/higher-education-employee-engagement.aspx>.
- Garland,R.(1990). A Comparison of Three Forms of Sematic Differential. *Marketing Bulletin*,1,19-24.
- Gilbert *et al.* (2001). Elements of Talent Development Across Domains. *Journal Of Excellence.* 5(1). 63-77.
- Gilbert, S. N., & Evers, F. T. (2013). *Accessibility and Quality in Higher Education. Services in Canada,* 44.
- Gitonga, A. G. (2019). Influence of Human Resource Capability in Relating Talent Management Strategy and Competitive Advantage. *Journal of Human Resource Management,* 7(4), 120.
- Global Talent 2021, (2012). *How The New Geography Of Talent Will Transform Human Resource Strategies. Executive Summary.* Oxford Economics. Corporate Headquarters. US (New York, Philadelphia, Chicago, San Francisco), Europe (London,Paris, Italy, Belfast), Asia (Singapore). 1-21.
- Global Talent Trends Report. (2019). *The 4 Trends Transforming your Workplace. Survey Of Thousands Of Hiring Professionals Highlights How Four New Trends Are Impacting Hiring Today.* Linked in. Talent Solution. Business Solutions. Research
- Gonzalez-Cutre, D., Sicilia, A., Sierra, A. C., Ferriz, R., & Hagger, M. S. (2016). Understanding the Need for Novelty From The Perspective Of Self-Determination Theory. *Personality and Individual Differences,* 102, 159-169.
- Gremeaux, V., Iskandar, M., Kervio, G., Deley, G., Perennou, D., & Casillas, J. M. (2008). *Comparative Analysis Of Oxygen Uptake In Elderly Subjects Performing Two Walk Tests:The Six-Minute Walk Test And The 200-M Fast Walk Test.*Clinical Rehabilitation, 22(2).162-168.
- GTTR, Global Talent Trends Report. (2019). *The 4 Trends transforming your workplace. Survey of thousands of hiring professionals highlights how four*

new trends are impacting hiring today. Linked in. Talent Solution. Business Solutions. Research.

- Hair, J., Black, w., Babin, B., & Anderson, R. (2014). *Multivariate data analysis (Seventh ed.)*. London: Pearson Education Limited.
- Hairi, A. F., & Ahmad Toe, M. N., & Razally, W., (2011). Employers' Perception On Soft Skills Of Graduates: A Study Of Intel Elite Soft Skill Training. *International Conference on Teaching & Learning in Higher Education (ICTLHE 2011)*. 1-8.
- Hal Ehwal Pelajar dan Alumni, (2011). *Operasi Perkhidmatan Sokongan*. Universiti Putra Malaysia. OPR/HEPA/BR25/SPP. 1-9.
- Half, R., (2012). *The War for Talent : A Research Report. The IT Service & Technical Support Community*. 1-25.
- Haglund, L. (2020). Utility of Model Human Occupation Screening Tool in Sweden. *Occupation Therapy in Mental Health*. 36(3). 244-257.
- Hammer, Harper, D. A. T., & Ryan, P. D. (2009). *PAST-Palaeontological Statistics Ver. 1.89*. University of Oslo. 1-31.
- Hamzah, M. I. M., & Shamsudin, S. (2017). Talent Management and Teacher Leadership Talent Development in High Performing School in Malaysia. *International Journal of Educational Best Practices*, 1(1), 19-35.
- Hamzah. S. H (2017), *IEA/ Washington Accord (WA) Graduate Attribute*. Workshop on preparation for outcome based accreditation.
- Hanapi, Z. & Kamis, A. & Tee, T. K. & Hanapi, M. H. (2016). Jurang Integrasi Kemahiran Employability Di Malaysia: Satu Kajian Empirical Graduan Kejuruteraan Kolej Komuniti. *GEOGRAFIA Online TM Malaysian Journal of Society and Space*. 12(3). 145-153.
- Harris, L. R., & Brown, G. T. L. (2010). *Mixing Interview and Questionnaire Methods: Practical Problems in Aligning Data. Practical Assessment, Research & Evaluation*. 15(1). January 2010.
- Harun, A., Yusoff, R. M., & Zakaria, A. M. (2020). TVET in Malaysia: Capabilities and Challenges as Viable Pathway and Educational Attainment. *Journal on Technical and Vocational Education*, 5(1), 52-58.

- Hasan, M. F. & Abdul Kadir, S. & Asmiran, S. (2013). Hubungan Persekitaran Sekolah dengan Penglibatan Pelajar dalam Aktiviti Kokurikulum di Sekolah Menengah. *Jurnal Pendidikan Malaysia*, 38(2), 1-9.
- Hassan (2020). *Kerangka Konsep Pembelajaran Aktif Berasaskan Teknologi (PABT) bagi Pelajar Tvet Jurusan Kejuruteraan Di Universiti Teknikal*. Universiti Tun Hussein Onn Malaysia. Tesis Ph.D.
- Hassan, J. & Safar, S. A. (2010). *Institut Penyelidikan Pendidikan Tinggi Negara Pembinaan Kecemerlangan Diri Pimpinan Pelajar Menerusi Penglibatan Dalam Aktiviti Kokurikulum Di Universiti Teknologi Malaysia, Skudai*. Universiti Teknologi Malaysia.
- Hassan, N. F. B., Puteh, S. B., & Sanusi, A. B. M. (2019). Fleiss's Kappa: Assessing the Concept of Technology Enabled Active Learning (TEAL). *Journal of Technical Education and Training*, 11(1).
- Hassan, N. F., Puteh, S., & Buhari, R. (2015). Student Understanding Through The Application of Technology Enabled Active Learning in Practical Training. *Procedia-Social and Behavioral Sciences*, 204, 318-325.
- Hassan, N. F., Puteh, S., Sanusi, A. M., & Salleh, N. N. H. M. (2018). *TEAL Application in Training TVET Graduates to Solve the Unemployment Problem*. *Advanced Science Letters*, 24(11), 8034-8038.
- Hassan, R. & Awang, H. & Ibrahim, B. & Zakariah, S. H. (2013) Memacu Pelan Transformasi Pendidikan : Peranan IPTA Dalam Membantu Meningkatkan Kuantiti Dan Kualiti Pendidikan Aliran Sains Dan Teknikal Di Malaysia. *In: Seminar Kebangsaan Kali ke-4 Majlis Dekan Pendidikan IPTA 2013* , 23-25 September 2013, Universiti Islam Antarabangsa Malaysia. 1-17.
- Hebert, T. P. (2019). *A Longitudinal Case Study of Exceptional Leadership Talent*. *Gifted Child Quarterly*, 63(1), 22-35.
- Henry, P. G., Collin, J. J. & Sinclair, W. D. (1989). Implication of Learning for the Conceptual Development and Practice of Distance Education. *Journal of Distance Education*, 23(2), 93-104.
- Hermann, M., Pentek, T., & Otto, B. (2016). Design Principles For Industrie 4.0 Scenarios. In *System Sciences (HICSS), 2016. 49th Hawaii International Conference*, 3928-3937. IEEE.

- Heuser, B. L., Wang, K., & Shahid, S. (2017). *Global Dimensions of Gifted and Talented Education: The Influence of National Perceptions on Policies and Practices*. *Global Education Review*, 4(1), 4-21.
- Hodges, M. S. D. T. & Clifton, O. D. (2012). *Strengths-Based Development In Practice*. Positive Psychology in Practice. John Wiley & Sons.
- Hooijen, I., Meng, C., Reinold, J., & Siegel, M. (2017). Competition for talent: retaining graduates in the Euregio Meuse-Rhine. *European Planning Studies*, 25(12), 2212-2231.
- Howard, J., Gagne, M., Morin, A. J., & Van den Broeck, A. (2016). Motivation Profiles at Work: A Self-Determination Theory Approach. *Journal of Vocational Behavior*, 95, 74-89.
- Howe, M. J. A., Davidson, J. W., Sloboda, J. A., (1998). Innate talents: Reality or myth?. *Behavioral and Brain Sciences*. 21(3). 399-442.
- Howell, D. C., (1999). *Fundamental Statistics for Behavioral Sciences (4th. ed.)*. California:Brooks/Cole PublishingCo. <https://www.researchgate.net/publication/312044269>.DOI:10.13140/RG.2.2.28569.21607
- Humburg, M., & Velden, R. V. D., & Verhagen, A., (2013). *The Employability of Higher Education Graduates: The Employers' Perspective*. Final Report. Research Centre for Education and the Labour Market. Netherlands. European Union. ISBN 978-92-79-31236-6. DOI: 10.2766/54258.
- Hunn, N. (2015) *The Role Of Online College Courses in Rehabilitating Offenders*. Walden University. Thesis Doctor of Philosophy Educational Technology.
- Husain, M. Y. & Rasul, M. S. & Mustapha, R. & Malik, S. A. & Abd Rauf, R. A. (2013). Tahap Kemahiran Employability Pelajar Kejuruteraan dari Perspektif Majikan. *Jurnal Teknologi*. 62(1). 31-39.
- Husain, M. Y., & Mokhtar, S. B., & Alias, A. H., (2015). Persepsi Pelajar Kejuruteraan Politeknik Terhadap Kemahiran Employability: Satu Kajian Kes (Polytechnic Engineering Students Perceptions of the Employability Skills: A Case Study). *Advanced Journal of Technical and Vocational Education*. 1(2). 25-32.
- Hussin, S. dan Zakuan, N. (2009). *Modal Insan. 60:40 Aliran Sains & Teknologi*. Kuala Lumpur: Tinta Publishers.

- Ibrahim, F. S. B., Esa, M. B., & Kamal, E. B. M. (2019) *Towards Construction 4.0: Empowering BIM Skilled Talents in Malaysia*.
- Idris, M. S., & Sikor, H. A., & Mohd Ariff, S. Z., & Mustafa, M. Z., & Madar, A. R., & Md Ariffin, L., (2008). Komunikasi Interpersonal Dalam Pengajaran Di Kalangan Guru-Guru Teknikal Sekolah Menengah Teknik Di Negeri Melaka. *Persidangan Pembangunan Pelajar Peringkat Kebangsaan 2008*. 1(1). 1-12.
- Idris, N., (Edsi). (2010). *Penyelidikan Dalam Pendidikan Malaysia*. Mc Graw. Hill Education. I575. ISBN:9789675771033.
- IEA, International Engineering Alliance Secretariat (2014), *25 years Washington Accord 1989–2014 Celebrating International Engineering Education Standards and Recognition*, www.ieagrements.org.ref 10175
- IEA, International Engineering Alliance: Educational Accords (2016). *Accord Rules and Procedures (3rd June 2016 version)*
- Information and Communications Technology Council (ICTC) (2016). *Road to 2020 and Beyond: A National Strategy to Develop Canada's Talent in a Global Digital Economy*. Canada.
- Idris, M., & Wan Zakaria, W. F. A., & Long, A. S., & Salleh, N., (2018). Kualiti Kerja Menurut Perspektif Islam. *3rd International Seminar on Islamic Thought*. ISBN 978-967-0913-95-7. 269-279.
- Idris, M., & Wan Zakaria, W. F. A., & Long, A. S., & Salleh, N., (2019). Kualiti Kerja dalam Organisasi: Tinjauan dari Perspektif Pengurusan Islam. *International Journal of Islamic Thought*. 15(1). 60-70.
- IPPTN (2003). *Laporan Akhir Kajian Masalah Pengangguran Di Kalangan Siswazah*. Institut Penyelidikan Pendidikan Tinggi Negara, USM, Penang: Universiti Sains Malaysia.
- Isa. M. F. M. & Jaafar, M. A. (2015). Kematangan Kerjaya Pelajar - Pelajar Tahun Akhir Di Pusat Latihan Teknologi Tinggi (ADTEC). *Skill Malaysia Journal*. 1(1). 22-46.
- Islam, T. (2018). *Skills Gap Assessment between Tvet Institutes and Industries of Bangladesh: Electronics Industries perceptions* (Doctoral dissertation, Department of Technical and Vocational Education, Islamic University of Technology, Board Bazar, Gazipur, Bangladesh).

- Ismail, A., Hassan, R., Bakar, A. A., Hussin, H., Hanafiah, M. A. M., & Asary, L. H. (2018). The Development of TVET Educator Competencies for Quality Educator. *Journal of Technical Education and Training*, 10(2).
- Ismail, M. H. (2012). Kajian Mengenai Kebolehpasaran Siswazah di Malaysia: Tinjauan dari Perspektif Majikan. *Prosiding Perkem VII*, Jilid 2. 906-913.
- Ismail, R. & Wan Chek, S. M. & Yussof, I. (2015). *Pengaruh Latar Belakang Keluarga Terhadap Upah dan Kadar Pulangan Persekolahan Anak. Kajian Malaysia*. 22(2). 43-60.
- Ithnin, F., Sahib, S., Eng, C. K., Sidek, S., & Harun, R. N. S. R. (2018). Mapping the Futures of Malaysian Higher Education: A Meta-Analysis of Futures Studies in the Malaysian Higher Education Scenario. *Journal of Futures Studies*, 22(3), 1-18.
- Ivanov, I. T. (2020). *Three Theories of Cognitive Development*.
- Jabatan Perangkaan Malaysia. (2016). *Perangkaan Utama Tenaga Buruh, Malaysia, Januari 2016*. <https://www.statistics.gov.my>. Dicapai pada 25 Mac 2017.
- Jabatan Perdana Menteri (2010). *Rancangan Malaysia Kesepuluh 2011-2015*. Unit Perancang Ekonomi: Jabatan perdana Menteri, Malaysia.
- Jabatan Statistik Malaysia (2016). *Malaysia Unemployment Rate*. <https://www.statistics.gov.my>. Dicapai pada 19 Jun 2017.
- Jaslan, F. M., Hassan, M. A. A., Adnan, N. I., & Sarmin, N. H. (2020). Fostering Global Talent among Students in Universiti Teknologi Malaysia via Study Abroad Programme (Memupuk Bakat Global dalam kalangan Pelajar Universiti Teknologi Malaysia melalui Program ke Luar Negara). *Akademika*, 90(2).
- Jawale, K.V. (2012). Methods of sampling design in the legal research: advantages and disadvantages. *Online International Interdisciplinary Research Journal*.2(6).
- Jobstreet, (2020). *What Drives Malaysian Job Candidates Discover what Malaysian Talent Looks For When Seeking Jobs*. Jobstreet.com Malaysia-Laws of Attraction, 2020.
- Johanson, G.A., & Brooks, G.P. (2010). Initial scale development: sample size for pilot studies. *Educational and Psychological Measurement*, 70(3), 394-400.

- Johari, F. M. & Othman, W. & Ismail, H. N. & Isa, Z. (2014). Isu dan Cabaran pelaksanaan Pendidikan Asas Vokasional (PAV) di Sekolah Menengah Harian, Malaysia. *Professional Development in Education. Teaching and Learning in The 21ST Century : Challenges for Lecturer and Teachers*. 98-106.
- Kasa, Z. (2009). Memperkasa Sistem Pendidikan Dan Latihan Vokasional Di Malaysia. *Seminar Kebangsaan Pendidikan Teknikal dan Voksional*. 1(1). 2.
- Kechik, A. A. (2011). Reformasi Dalam TVET : Perubahan Masa Depan. *Journal of Edupres*. 1(1). 336-341.
- Kelly, E., & McGuinness, S., & O'Connell, P., & Haugh, D., & Pandiella, A. G., (2013). "Transitions in and out of Unemployment among Young People in the Irish Recession", OECD Economic Department Working Papers No. 1084, OECD Publishing.
- Kementerian Pendidikan Tinggi Malaysia, (2015). *Executive Summary Malaysia Education Blueprint 2015-2025 (Higher Education) Hilite*.
- Kementerian Pendidikan Tinggi Malaysia. (2013). *Indikator Pengajian Tinggi Malaysia*. 1-102.
- Kementerian Pendidikan Tinggi Malaysia. (2015). *Ringkasan Eksekutif Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Pendidikan Tinggi)*. Kementerian Pendidikan Tinggi Malaysia. www.moe.gov.my
- Kerlinger, F. N. (1986). *Foundations of Behavioral Research: Educational and Psychological Inquiry*. New York: NY:Holt, Rinehart & Winston.
- Kerr, S. P., Kerr, W., Ozden, Ç., & Parsons, C. (2016). Global Talent Flows. *Journal of Economic Perspectives*, 30(4), 83-106.
- King, G. (2019). *An exploratory study of the role of Professional Apprenticeships in the developing of a sustainable pipeline of talent for the Recruitment Industry in Ireland* (Doctoral dissertation, Dublin, National College of Ireland).
- Kipli, M., & Khairani, A. Z. (2020). Assessing TVET Programmes in Fulfilling Industry Requirements. *Asian Journal of Research in Education and Social Sciences*, 2(3), 135-146.
- Kirchner, M. D. (2017). *Teaching the Industrial Internet of Things Preparing Students and Learners for Industry 4.0*, (September), 0–17.
- Kismanto, I. A., Marthalita, P. & Kusrini, D. E., (2011). *Pengukuran Bakat Berdasarkan Faktor-Faktor yang Membentuk Bakat Pada Pekerja Dengan*

Menggunakan Structural Equation Modeling. Undergraduate Thesis, Statistics.
Institut Teknologi Sepuluh November Surabaya

- Kota, S. (2016). *Advanced Technologies for Growth and Talent*. Retrieved February 18, 2018, from <http://advancedmanufacturing.org/advanced-technologies-growth-talent/>
- KPTM, (2018). *Statistik Pendidikan Tinggi 2018: Kementerian Pendidikan Tinggi Malaysia*. 8-45.
- KPTM, Kementerian Pendidikan Tinggi (Ministry of Higher Education Malaysia), (2018). *TVET 4.0 Framework Ministry of Education Malaysia*. ISBN 978-967-2243-52-6.
- KPTM, Kementerian Pendidikan Tinggi Malaysia (Ministry of Academic Education), (2017). *Enhancing Academic Productivity and Cost Efficiency*. ISBN 978-967-0888-16-3.
- KPTM, Kementerian Pendidikan Tinggi Malaysia. (2015). *Ringkasan Eksekutif Pelan Pembangunan Pendidikan Malaysia 2015-2025 (Pendidikan Tinggi)*. Kementerian Pendidikan Tinggi Malaysia. www.moe.gov.my
- Krathwohl, D. R. (1998). *Methods of Education and Social Science Research: An Integrated Approach (2nd Ed)*. White Plains, NY; Addison Wesley Longman. Inc/Addison Wesley Logman.
- Krejcie, R. V., & Morgan, D.W., (1970). *Determining Sample Size For Research*.
- Krueger RA (1994). *Focus Groups: A Practical Guide for Applied Research* Thousand Oaks. CA Sage Publications.
- Kumar, R. S., & Peter, H. (2020). *A Study On Talent Stalk With The Support Of Employee Poaching In Automobile Sector With Particular Reference To Krishnagiri District, Tamilnadu, India*. Editorial Board, 9(4), 29.
- Kunasegaran, M., Ismail, M., Rasdi, R. M., Ismail, I. A., & Ramayah, T. (2016). Talent Development Environment and Workplace Adaptation: The Mediating Effects of Organisational Support. *European Journal of Training and Development*. 40(6). 370-389.
- Landis, J. R., & Koch, G. G. (1977). The Measurement Of Observer Agreement For Categorical Data. *Biometrics*, 159-174.
- Langa, C., (2015). The Contribution of Transversal Competences to The Training of The Educational Sciences Specialist. The 6th International Conference Edu

- World 2014 “Education Facing Contemporary World Issues”, 7th - 9th November 2014. *Social and Behavioral Sciences*. 1(1). 7-12.
- Layder, D. (1994). *Understanding Social Theory*. London: SAGE Publication.
- Lebar, O. (2006). *Penyelidikan kualitatif. Pengenalan kepada Teori dan Metod*. Tanjong Malim: UPSI.
- Lee, G. M. & Nordin, M. S. & Mahazir, M. F., (2012). Kemahiran Visualisasi dan Gaya Pembelajaran Pelajar Program Kejuruteraan Di Universiti Sains Malaysia. *Journal of Education Psychology & Counseling*. 7 (1). September 2012. 66-75.
- Lee, L. E., Rinn, A. N., Crutchfield, K., Ottwein, J. K., Hodges, J., & Mun, R. U. (2020). *Perfectionism and the Imposter Phenomenon in Academically Talented Undergraduates*. *Gifted Child Quarterly*, 0016986220969396.
- Legault, L. (2017). *Self-determination Theory*. *Encyclopedia of Personality and Individual Differences*, 1-9.
- Levin, R. I., & Rubin, D. S. (2000). *Statistik untuk Pengurusan*. Diterjemahkan oleh Susila Munisamy dan Halimah Awang. Edisi Ketujuh. Petaling Jaya: Pearson Education Asia, Pte. Ltd.
- Lewis, K. D., & Boswell, C. (2020). Reflections on Rural Gifted Education in Texas: Then and Now. *Theory & Practice in Rural Education*, 10(2), 119-139.
- Lewthwaite, S., & Nind, M. (2016). Teaching Research Methods in The Social Sciences: Expert Perspectives on Pedagogy and Practice: *British Journal of Education Studies*. 64(4). 413-430.
- Li, J., Dai, Y., Gao, H., & Bu, Y. (2020). *Exploration on Talent Cultivation Pattern of Industrial Design through perspective of Cross-border Thinking*. In E3S Web of Conferences (Vol. 179, p. 02005). E3S Web of Conferences.
- Lim, T. C. (2007). *Hubungan antara Pendekatan Pengajaran Guru Dengan Pendekatan Pembelajaran Pelajar Mata Pelajaran Kimia Tingkatan Empat*. Thesis Sarjana. Universiti Teknologi Malaysia.
- Linacre, J. M. (2005). *Test Validity, and Rasch Measurement: Construct, Content, Etc*. Rasch Measurement Transactions.
- Linacre, J. M. (2010). *A User's Guide to Winsteps Rasch-Model Computer Programs*. Chicago, Illinois: MESA Press.
- Lincoln, Y. S. dan Guba, EG (1985). *Naturalistic Inquiry*.

- Linstone, H. A. & Turoff, M. (1975). *The Delphi method: Techniques and applications*. Massachusetts: Addison-Wesley Publishing Company.
- Low, S.F., Zainuddin, A., & Ruhani, R. (2014). *Standard Guru Malaysia: Tahap Pengetahuan Guru Pelatih PISMP IPG Kampus Ilmu Khas*. IPG Kampus Ilmu Khas.
- Lutz, S., & Huitt, W. (2004). Connecting Cognitive Development and Constructivism: Implications From Theory for Instruction And Assessment. *Constructivism in the Human Sciences*, 9 (1), 67-90.
- M. S. Hodges, D. T. & Clifton, O. D. (2012). *Strengths-Based Development In Practice. Positive Psychology in Practice*. John Wiley & Sons.
- Madar. A. R., & Abd Aziz, M. A., & Abd. Razzaq, A. R., & Mustafa, M. Z., & Buntat, D. Y., (2008). Kemahiran Employability Bagi Memenuhi Keperluan Industri. *Prosiding SKIKS 08*. 385-392.
- Madlan, L. W. & Chua, B. S. & Halik, M. H. & Bahari, F. H. & Mutang, J. A. (2015). Peningkatan Kualiti Diri Melalui Intervensi Interpersonal. *Jurnal Psikologi Malaysia*. 29 (2). 123-134.
- Malik, F., & Marwaha, R. (2020). *Cognitive Development*. StatPearls [<https://www.ncbi.nlm.nih.gov/books/NBK537095/>].
- Malik. M (2019). *Amanat Menteri Pendidikan Tahun 2019. Tajuk: Pendidikan untuk semua, Tanggungjawab semua*. Dicapai pada 9 Februari, 2019 dari <http://km.ptar.uitm.edu.mydocuments/10180/1368036/Teks+Amanat+KPM+2019/2c11f060-30eb-4ff4-8ddb-a416046e5df4>.
- Mangkau, I. D., (2012). Penguasaan kemahiran komunikasi dalam kalangan pelajar Universiti Tun Hussien Onn Malaysia. *Prosiding Seminar Pendidikan Pasca Ijazah dalam PTV kali ke-2*. 1(1). 40-59.
- Manitoba Education, (2013). *Technical Vocational Education Overview*. ISBN: 978-0-7711-5391-4. Gonverment of Manitoba. Minister of Education.
- ManpowerGroup (2012). *Talent Shortage Survey*. Manpower group 100 Manpower Place, Milwaukee, Wi 53212, Usa, www.manpowergroup.com. 1-36.
- Mansor, M. & Rashid, M.A., (2013). Kesiediaan Kerjaya Pelajar Institute Kemahiran Belia Negara. *Seminar Pasca Siswazah Dalam Pendidikan (GREDEC 2013)*.123-130.

- Mariani, A. (2016). *Model Pengajaran Kreatif Berteraskan Kompetensi, Personaliti dan Rangsangan Kreativiti Guru Matematik Berpandukan Pemodelan Persamaan Struktur*. Tesis Ph.D.
- Marope, P. T. M., Wells, P. J., & Hazelkorn, E. (Eds.). (2013). *Rankings and Accountability In Higher Education: Uses and Misuses*. UNESCO.
- MBOT, (2017). *Malaysia Board of technologies (MBOT)*. MBOT - TTAS 2017- Le Meridien 14122017 v 1.3. <http://www.mbot.org.my>
- McClelland, D.C. (1978) Human Motivation. *Journal of Educational Psychology*, 70, 8-16
- McNabb, D. E. (2015). *Research Methods For Political Science: Quantitative And Qualitative Methods*. Routledge.
- Md Khairudin, M. K. A. (2019). Kursus ijazah di MTUN bukti kemampuan graduan KV. <https://www.bharian.com.my/rencana/komentar/2019/10/620242/kursus-ijazah-di-mtun-bukti-kemampuan-graduan-kv>.
- Mohammad, D. S., & Ismail, S. (2019). Comparative Analysis Between Nigeria And Malaysia Education Policies And Employability Skills In Tvet Curriculum. *Open Journal of Science and Technology*, 2(2), 1-5.
- Mohamed, A. K., & Salaeh, A., & Halim, A. A., & Syed Omar, S. A. T., (2020). Kesan Covid-19 terhadap kebolehpasaran graduan IPT: Pelan Tindakan kepada pelajar Fakulti Pengajian Quran & Sunnah, USIM. 788-798.
- Md Taha. D.S.I.D.R., (2018). *Dato' Sri Ir. Dr. Roslan Md Taha, President Board of Engineers Malaysia. Malaysia Gains International Recognition For Engineering TVET*. International Engineering Alliance Meeting (IEAM) 2018, 24-29 Jun 2018 di Millennium Gloucester Hotel, London. Dicapai pada April 2019 dari http://www.bem.org.my/bem-news/-/asset_publisher/WCMOndstvsZ7/content/sa-da-2018?inheritRedirect=false
- Mendari, A. S. (2010). *Aplikasi Teori Hierarki Kebutuhan Maslow Dalam Meningkatkan Motivasi Belajar Mahasiswa*. Widya Warta No. 01 Tahun XXXIV/ Januari 2010. 83-91.
- Mengistu, M. (2017). Graduate Employability as a Function of Career Decision In The Amhara State TVET System. *Ethiopian Journal of Education and Sciences*, 13(1), 1-21.

- Mercer, (2019). *Global Talent Trends 2019*. Delivering Talent-Led Change. Marsh & McLennan Companies.
- Merican, S. (2006). *Penyelidikan Sains Social. Pendekatan Paragmatik*. Kedah: Hexa.
- Merriam, S. (2001). *Qualitative Research And Case Study Applications In Education*. San Francisco: Josey-Bass.
- Minghat, A. D., & Yasin, R. M., & Subari, K. & Nordin, M. K. (2013). Strategi Kelasterian Pembangunan Pendidikan Teknikal Dan Vokasional (PTV). *2nd International Seminar On Quality And Affordable Education (ISQAE 2013)*. 493-504.
- Mirkouei, A., Bhinge, R., McCoy, C., Haapala, K. R., & Dornfeld, D. A. (2016). A Pedagogical Module Framework To Improve Scaffolded Active Learning In Manufacturing Engineering Education. *Procedia Manufacturing*, 5, 1128-1142.
- Mohammad, D. S., & Ismail, S. (2019). Comparative Analysis Between Nigeria And Malaysia Education Policies And Employability Skills In Tvet Curriculum. *Open Journal of Science and Technology*, 2(2), 1-5.
- Mohd Hassan @ Abdul Ghani, M. S. & Hasan, A. & Awang @ Faudzi, R. (2015). Model Kompetensi Hijau Politeknik (MKHP) Kearah Kebolehpasaran Graduan Politeknik Malaysia. *Journal Of Global Business and Social Entrepreneurship (GBSE)*. 1(2). 17- 27.
- Mohd Makhbul, Z., Yussof, I., & Awang, A. H., (2012). Kriteria Pengambilan dan Pemilihan Graduan dari Perspektif Pengurusan Sumber Manusia (The Criteria of Graduate Recruitment and Selection from The Perspective of Human Resource Management). *Jurnal Personalia Pelajar* 15 (2012). 1(1). 1-11.
- Mohd Yassin, S. F., & Mohd Ishak, N., & Mohd Yunus, M., & Abd Majid, R. (2012). The Identification of Gifted and Talented Students. *Procedia Social and Behavioral Science*. 55. 585-593.
- Mohd, A. (2005). *Panduan Menggunakan Teori Motivasi Di Tempat Kerja*. (Cetakan Ketiga). Bentong. Penerbitan: PTS Professional Publishing Sdn. Bhd
- Moon, S. M. (2002). *Personal Talent: What is it And How Can We Study it? Paper Presented at The The Fifth Biennial Wallace National Research Symposium on Talent Development*, Iowa City, IA.

- Morgan, J. (2017). *The employee experience advantage: How to win the war for talent by giving employees the workspaces they want, the tools they need, and a culture they can celebrate*. John Wiley & Sons.
- Mouzakitis, G. (2010). The Role Of Vocational Education And Training Curricula In Economic Development. *Procedia Social and Behavioral Sciences*, 2(4). 3914-3920.
- Muhamad (2016). Professor Datuk Dr. Mohd Razali bin Muhamad. Re-aligning TVET within MTUN. Dicapai pada Oktober 30, 2018 di <http://fptv.uthm.edu.my/mtu-tvet/download/PRESENTATION%20SYMPOSIUM%20TVET>.
- Muniarti, E. (2020). *Pengertian Bakat, Ciri-ciri Anak Berbakat, dan Implikasi Pendidikan*. Modul 9. Fakultas Keguruan dan Ilmu Pendidikan. Indonesia. Universiti Kristen Indonesia.
- Musa, M., & Esa, A., (2009). Tahap Penguasaan Kemahiran Generik Dalam Kalangan Pelajar Tahun Akhir Diploma Kejuruteraan Elektrik Serta Pendidikan, UTHM. *Journal of Techno Social*. 77-94.
- Mustaffa.C.S. (2019). *Kaedah Penyelidikan Komunikasi*. Dewan Bahasa Dan Pustaka Kuala Lumpur 2019. ISBN:978-983-49-1994-8.
- Mustapha, R. & Abdul Rahim, Z. L. (2008). Pembelajaran Berasaskan Masalah Bagi Mata Pelajaran Elektronik : Satu kajian Tindakan Di Sekolah Menengah Teknik. *Jurnal Teknologi*. 49(E). 109-127.
- Mustapha, R., & Ismail, A. (2018). The Effectiveness of TVET and the Malaysian Skills Qualification Framework (MSQF) in Producing K-Workers: Practitioners Perspective. *Vocational Education & Training–The World of Work and Teacher Education*, 116.
- Mustapha, R., & Rahmat, R., (2013). Integration of Social Skills and Social Values in The National Dual Training System (NDTS) in the Malaysian Automotive Sector; Employers' Perspective. *TVET @ Asia; The Online Journal for Technical and Vocational and Training in Asia* 1(1), 1-15.
- Nangia, M., & Mohsin, F. (2020). Revisiting Talent Management Practices In A Pandemic Driven Vuca Environment–A Qualitative Investigation In The Indian It Industry. *Journal Of Critical Reviews*, 7(7), 937-942.

- Natarajathinam, M., & Han, M. S. J. (2017). Work in Progress: Micro-skills and Mini-habits in Engineering Student Teams: Facilitating a Confluence of Perspectives and Talent. *2017 ASEE Annual Conference & Exposition*. 6-135. doi:10.18260/1-2--29172
- Neuman, W. L. (2011). *Social Research Methods: Qualitative and Quantitative Approaches*. USA : Allyn and Bacon
- Nillstrom, S. & Ellstrom, P. E. (2011). Employability And Talent Management: Challenges For HRD Practices. *European Journal of Training and Development*. 36(1). 26-45.
- Nordin, A. B. (2013). Kurikulum Kearah Penghasilan Kemahiran Berfikir Kritis, Kreatif dan Inovatif. *Jurnal Kurikulum & Pengajaran Asia Pasifik*. 1(1). 10-18.
- Norman, H. , Zainon, R., Jenil, S. Z. M., Yahya, R, (2017). Personaliti Graduan yang menjadi tarikan organisasi. *Journal of Business Innovation*. 2(1). 53-61.
- NYC Tech Talent Pipeline, (2016). *NYC Industry Insights: Key Skills and Competencies Needed for In-Demand, Entry-Level Tech Jobs in New York City*.
- O’Heir, J, (2017). Filling the Talent Gap. Industry Needs Engineers with the Skills to Build the Internet of Things. ASME. 139(1). 28-33.
- Obryan, C., & Casey, A. M. (2017). *Talent management: Hiring and developing engaged employees*. Library Leadership & Management, 32(1), 1.
- OECD (2015). “How is the global talent pool changing (2013, 2030)?, Education Indicators in Focus, No. 31, OECD Publishing, Paris.
- OECD. (2013). *Organisation for Economic Co-operation and Development Skills Outlook 2013: First Results from the Survey of Adult Skills*, OECD Publishing. <http://dx.doi.org/10.1787/9789264204256-en> (Accessed 21 December 2017)
- Oentaryo, R. J., Lim, E. P., Ashok X. J. S., Prasetyo, P. K., Ong, K. H., dan Lau, Z. Q., (2018). *Talent Flow Analytics in Online Professional Network*. *Data Science and Engineering*. [https://doi.org/10.1007/s41019-018-0070-8\(01234567](https://doi.org/10.1007/s41019-018-0070-8(01234567) (SsSpring er).
- Ojose, B. (2008). *Applying Piaget’s Theory Of Cognitive Development To Mathematics Instruction*. *The Mathematics Educator*. 18(1). 26-30.

- Okafor, J. C., & Adepoju, A. B. (2019). *Evaluation Of Female Enrollment In Technical And Vocational Education And Training (TVET) In Technical Colleges In Ogun State Nigeria*.
- Omar, A. (2016). *SIMPOSIUM MTUN-TVET 2016. Human Capital Development Section. Economic Planning Unit, Prime Minister's Department*.
- Omar, M. K. (2020). Majikan “pilih bulu” sekat potensi graduan TVET. rencana/komentar/2020/07/714529/majikan-pilih-bulu-sekat-potensi-graduan-tvet
- Onputtha, S., & Chienwattanasook, K. (2019). Application of Motivation Theory to Build Team Dynamics: The Selection of the Need-to-Achieve Theory. *HRD journal*, 10(1), 60-69.
- Oosthuizen, R. M., Coetzee, M., & Munro, Z. (2016). Work-life balance, job satisfaction and turnover intention amongst information technology employees. *Southern African Business Review*, 20(1), 446-467.
- Pallant, J.F. (2011). *SPSS Survival Manual: A Step By Step Guide To Data Analysis Using SPSS (4th Ed.)*. Crows Nest, NSW: Allen & Unwin.
- Parmjit, S., Chan, Y.F., Gurnam, K. S. & Ranjit, K. (2010). *Panduan Komprehensif Penulisan Cadangan Penyelidikan*. Shah Alam: Pusat Penerbitan Universiti (UPENA) UiTM.
- Patton, M. Q. (2001). *Qualitative Research & Evaluation Methods*. Sage Publications, Incorporated.
- Pavlova, M. (2019). Emerging environmental industries: impact on required skills and TVET systems. *International Journal of Training Research*, 17(sup1), 144-158.
- Peters, S. J., & Engerrand, K. G. (2016). *Equity and excellence: Proactive efforts in the identification of underrepresented students for gifted and talented services*. *Gifted Child Quarterly*, 60(3), 159-171.
- Pisal, N. A., & Teh, K. S. M. (2019). Kajian Rintis Strategi Pembelajaran Kemahiran Berbahasa Arab. *e-Bangi*, 16(7).
- Pisarov, J., & Mester, G. (2019). Programming the MBot Robot in School. *In MechEdu Conference & Workshop* (pp. 1-4).
- Pistrui, D., & Kleinke, D. K. (2019, June). The 4th Industrial Revolution and the Coming Talent War. *In 2019 ASEE Annual Conference & Exposition*.

- Popham, W. J. (1990). *Modern Educational Measurement: A Practitioner's Perspective*. IOX Assessment Associates.
- Potts, J. A. (2019). *Profoundly gifted students' perceptions of virtual classrooms*. *Gifted child quarterly*, 63(1), 58-80.
- Prasetyo, A. C., & Sutopo, I. N. (2017). Pengaruh Tim Kerja, Komunikasi Dan Disiplin Kerja Terhadap Kinerja Karyawan Pada Pt. Momen Global Internasional Surabaya. *Jurnal Manajemen Branchmark*. 3(3).
- Quinn, H. (2019). Jean Piaget and Lev Vygotsky. *IU South Bend Undergraduate Research Journal*, 19, 71-91.
- Rachel Yoan., K. P. S. (2020). The Effectiveness of Public Speaking Learning Media Based on Digital Multimodal in Indonesian Language Courses at Politeknik Pariwisata Medan. *Budapest International Research and Critics in Linguistics and Education (BirLE) Journal*. 3(4). November 2020. 2036-2047.
- Ramli, S. & Mohd Amin, N. F. (2009). Persepsi Pihak Sekolah Terhadap Kemahiran Asas Employability Dalam Kalangan Pelajar. *Seminar Kebangsaan Pendidikan Teknikal Dan Vokasional*. 1(1). 13.
- Rasch, W. (1980). *Die psychologisch-psychiatrische Beurteilung von Affektdelikten*. *Njw*, 33, 1390-1415.
- Rasul, M. S., Ashari, Z. H. M., Azman, N., & Abdul Rauf, R. A. (2015). *Transforming TVET in Malaysia: Harmonizing The Governance Structure In A Multiple Stakeholder Setting*. *TVET @ Asia*, 4, 1-12.
- Razali, A. Ani., F. Mohd Tohar., S. N. A., (2020). Cabaran Masyarakat Hari Ini: Malaysia dalam Menghadapi Perubahan Sosial dan Revolusi Industri 4.0. Mendepani Perubahan Sosial dalam Era Revolusi 4.0. *ISBN 978-967-2916-61-1*.
- Rees-Johnstone, E. (2020). *Increasing Non-Academic Employee Engagement*.
- Rehman, S. (2018). Emerging Hiring Strategies to Manage Talent Crisis in newly graduate engineers-A Case of Benefits, Outcomes and Implications. *Journal of Management Research and Analysis*, 5(1), 76-87.
- Reid, E., & Horvathova, B. (2016). Teacher training programs for gifted education with focus on sustainability. *Journal of Teacher Education for Sustainability*, 18(2), 66-74.

- Rezasyah, T., Konety, N., Rifawan, A., & Wardhana, W. (2017). Higher education integration in ASEAN: ASEAN university network case. *Journal of ASEAN Studies*, 5(1), 51-59.
- Ritter, N. L. (2010). Understanding a Widely Misunderstood Statistic: Cronbach's. *Online Submission*.
- Rohanai, R., Daud, K. A. M., Omar, N. H., Ismail, M. E., & Sulaiman, A. (2020). Concept of Correlation between Active Learning and Employability Skills in TVET. *Online Journal for TVET Practitioners*, 5(1), 15-22.
- Rolfe, V. (2015). A Systematic Review Of The Socio-Ethical Aspects Of Massive Online Open Courses. *European Journal of Open, Distance and E-learning*, 18(1), 52-71.
- Ronald, M (2008). A Rasch Primer: The Measurement Theory of Georgh Rasch. Psychometrics Services Research Memorandum 2008-001. *Maplle Grove, MN: Data Recognition Corporation*.
- Rozali, Z. (2018). *Pembangunan Kerangka Konsep Sokongan Peningkatan Pencapaian Akademik Pelajar-Athlet Universiti Awam Malaysia*. Universiti Tun Hussein Onn Malaysia. Tesis Ph.D.
- Ryan, R. M. & Deci, E. L. (2000). Self- Determination Theory And The Facilitation Of Intrinsic Motivation, Social Development, And Well-Being. *American Psychologist*. 55(1). 67-78.
- Ryan, R. M., & Deci, E. L. (2019). *Brick by brick: The Origins, Development, And Future Of Self-Determination Theory*. In *Advances In Motivation Science* (Vol. 6, pp. 111-156). Elsevier.
- Ryan, R. M., & Deci, E. L. (2020). Intrinsic and Extrinsic Motivation from A Self-Determination Theory Perspective: Definitions, Theory, Practices, And Future Directions. *Contemporary Educational Psychology*.
- Saamri, N., Nawawi, S., & Ramli, R. (2021). Tahap Penerimaan Pelajar Terhadap Penggunaan Kemudahan di atas Talian untuk Menyokong Aktiviti Pembelajaran Fleksibel Berdasarkan Elemen Rekabentuk Pendekatan Heutagogi. *International Journal of Modern Education (IJMOE)*. 3(8). 35-48.
- Sadikan, H. & Ahmad, S. & Sarmidi, T. (2012). Kea rah Negara Islam Berpendapatan Tinggi: Peluang dan Cabaran. *Persidangan Kebangsaan*

Ekonomi Malaysia ke VII (PERKEM VII) Transformasi Ekonomi dan Sosial Ke Arah Negara Maju. 547-555.

- Salkind, N. J., (Ed.). (2010). *Encyclopedia Of Research Design.* Sage, 1(1).
- Sanghvi, P. (2020). Piaget's Theory of Cognitive Development: A Review. *Indian Journal of Mental Health*, 7(2).
- Santandreu Calonge, D., & Aman Shah, M. (2016). MOOCs, graduate skills gaps, and employability: A qualitative systematic review of the literature. *International Review of Research in Open and Distributed Learning: IRRODL*, 17(5), 67-90.
- Sanusi, A. M., & Puteh, S. (2017). *An Approach of Excellence Talent in Engineering Education Programme of Enhancing the Quality of Students.* *Advanced Science Letters*, 23(2), 1109-1112.
- Sanusi, A. M., Puteh, S., Hassan, N. F., & Salleh, N. N. H. M. (2018). *Research Needs: Issues and Problems of Talent Working Graduates University Programmes of Engineering and Technology.* *Advanced Science Letters*, 24(11), 8051-8055.
- Sanusi, A. M., Puteh, S., Hassan, N. F., Arifin, Z & Salleh, N. N. H. M. (2019). Acquisition of Talent for Student to Enter the Industry Based on Employer. *International Journal of Engineering and Advanced Technology (IJEAT)* ISSN: 2249 – 8958, Volume-8 Issue-5C, May 2019 India.
- Sarabatin, M. A. (2019). TVET bukan lagi pilihan terakhir. <https://www.bharian.com.my/berita/nasional/2019/10/615588/tvet-bukan-lagi-pilihan-terakhir>
- Sathiyabama, S., & Chua, Y. P. (2020). Model Bakat Kepimpinan Pemimpin Sekolah Di Malaysia. *Jurnal Pengurusan Dan Kepimpinan Pendidikan.* 18-43.
- Saud, M. S., Shu'aibu, B., Yahaya, N., Yasin, M. A. (2011). Effective Integration of Information and Communication Technologies (ICTS) in Technical and Vocational Education and Training (TVE) Toward Knowledge Management in The Changing World of Work. *African Journal of Business Management*, 5(16). 6668-6673.
- Schreiner, L. A. (2006). A technical report on the Clifton StrengthsFinder with college students. *Unpublished manuscript.* New York, NY: Gallup Press.

- Schuster, K., Groß, K., Vossen, R., Richert, A., & Jeschke, S. (2016). *Preparing for Industry 4.0—Collaborative Virtual Learning Environments in Engineering Education*. In *Engineering Education 4.0*, 477-487. Springer, Cham.
- Schwab, K. (2017). *The Fourth Industrial Revolution*. Crown Business. Dicapai pada September 28, 2017.
- Selamat, A., Alias, R. A., Hikmi, S. N., Puteh, M., & Tapsi, S. M. (2017). Higher Education 4.0: Current Status and Readiness In Meeting The Fourth Industrial Revolution Challenges. *Redesigning Higher Education towards Industry*, 4, 23-24.
- Senteni, A. (2017). Using ICTs and Blended Learning in Transforming TVET Edited by Colin Latchem. *Journal of Learning for Development-JL4D*, 4(3).
- Sergis, S., Sampson, D. G., & Pelliccione, L. (2018). Investigating The Impact of Flipped Classroom on Students' Learning Experiences: A Self-Determination Theory approach. *Computers in Human Behavior*, 78, 368-378.
- Shahimi, S. dan Kaharudin, I. H. (2010). Klasifikasi Ekonomi Berpendapatan Tinggi: Implikasi Terhadap Ekonomi Malaysia. *Prosiding PERKEM V. JILID 2*. 194-209.
- Shikweni, S., Schurink, W., & van Wyk, R. (2019). Talent management in the South African construction industry. *SA Journal of human resource management*, 17(1), 1-12.
- Shonfeld, M. & Ronen, I. (2015). Online Learning For Students From Diverse Backgrounds: Learning Disability Students, Excellent Students And Average Students. *The IAFOR Journal For Education*. 3(2).13-29.
- SHRM, Society of Human Resource Management. (2016). *Talent Acquisition: A Guide to Understanding and Managing the Recruitment Process*. SHRM Foundation. United States of America.
- Shumilova, Y., & Cai, Y. (2016). Three approaches to competing for global talent: Role of higher education. *In Global perspectives and local challenges surrounding international student mobility* (pp. 114-135). IGI Global.
- Siddique, G. K., Lodhi, H., Anwer, M., & Zubair, M. K. (2020). Effectiveness of Traditional and Competency Based Curricula: Perspective of Graduates, Trainers and Employers. *Review of Education, Administration & LAW*, 3(2), 307-314.

- Society For Human Resource Management (SHRM). (2016). *The New Talent Landscape. Recruiting Difficulty And Skill Shortages*. USA, Alexandria. 1-79.
- Stapa, Z. & Ismail, A. M. & Yusuf, N. (2012). Faktor Persekitaran Sosial Dan Hubungannya Dengan Pembentukan Jati Diri. *Jurnal Hadhari Special Edition*. 155-172.
- Subramaniam, M., Loganathan, N., & Noordin, M. K. (2020). TVET Education For Students In Malaysia: A Systematic Literature Review. *Journal of Social transformation and Education*, 1(1), 74-85.
- Suffian Ahmad, Z. A. & Abu Bakar, S, & Arshad, M. H. & Khalid, N. (2015). Kepentingan Elemen Agama Dalam Kemahiran Employability Di Kalangan Mahasiswa: Kajian Terhadap Graduan Akademi Islam Kolej Universiti Islam Antarabangsa Selangor. *2nd International Research Management & Innovation Conference (IRMIC 2015)*. LANGKAWI, 26-27 AUGUST 2015. 1-29.
- Talib, N. H. F., Shafie, B. H. M., Saad, A. M. & Tamuri, A. H., (2012). Kecerdasan Emosi dan Sikap Pembelajaran Pelajar Terhadap Pencapaian Kursus Tamadun Islam di Politeknik Port Dickson, Negeri Sembilan. *Journal of Islamic and Arabic Education*. 4(2). 25-34.
- Tang, K. N. & Ali, Z., (2014). Kepemimpinan Kemahiran Insaniah dan Pengurusan Kurikulum Pengetua di Sekolah Berprestasi Tinggi. *Jurnal Pendidikan Malaysia*. 39(1). 77-82.
- Tanius, E. (2018). Employability Skills-A Study on The Perception Of Business Students Graduate And Employers In Malaysia. *Asia Pacific Journal of Research in Business Management*, 9(1).
- Tapsir. S.H (2017). Techies: Industrial Revolution 4.0. *Official Bulletin 4th Edition - KDN: PQ1780/J/187*.
- Tavakol, M., & Dennick, R., (2011). Making sense of Cronbach's alpha. *International Journal of Medical Education*, 2. 53.
- Teng, W., Ma, C., Pahlevansharif, S., & Turner, J. J. (2019). *Graduate readiness for the employment market of the 4th industrial revolution*. Education+ Training.
- Toste, J. R., Didion, L., Peng, P., Filderman, M. J., & McClelland, A. M. (2020). A Meta-Analytic Review of the Relations between Motivation and Reading

- Achievement for K–12 Students. *Review of Educational Research*, 90(3), 420-456.
- Tripney, J.S., & Hombrados, J.G. (2013). Technical and Vocational Education and Training (TVET) for Young People in Low and Middle Income Countries: A Systematic Review and Meta-Analysis. *Empirical Research in Vocational Education & Training 2013*, 5-3.
- Tsai, C. W., Lai, C. F., Chiang, M. C., & Yang, L. T. (2014). Data Mining for Internet of Things: A survey. *IEEE Communications Surveys and Tutorials*, 16(1), 77-97.
- Tuccio, M. (2019). *Measuring and assessing talent attractiveness in OECD countries*.
- Ugwoke, E. O., Ezeji, H. A., Edeh, N. I., & Etonyeaku, E. A. (2016). *Effective Implementation of TVET-Industry Partnership for Employability of Graduates through Work Integrated Learning in Nigerian Universities*. *Rev. Eur. Stud.*, 8, 307.
- Ulger, B. B., & Çepni, S. (2020). Gifted education and STEM: A Thematic Review. *Journal of Turkish Science Education*, 17(3), 443-467.
- UNESCO, United Nations Educational, Scientific and Cultural Organization (2015). *Global Action Programme on Education for Sustainable Development Information Folder*. May, 2018. 1-26.
- UNESCO, United Nations Educational, Scientific and Cultural Organization (2017). *Working Group on Education: Digital skills for life and work September 2017*. Dicapai pada Februari 23, 2019 from http://d-russia.ru/wp-content/uploads/2017/10/Digital-skills-for-life-and-work_259013e.pdf.
- Unit Perancangan Ekonomi (2010). *Rancangan Malaysia Kesepuluh (2011-2015)*. Percetakan Nasional Malaysia Berhad. Kuala Lumpur.
- Unit Perancangan Ekonomi (2015). *Rancangan Malaysia Kesebelas (2016-2020)*. Percetakan Nasional Malaysia Berhad. Kuala Lumpur.
- Vedhathiri, T. C. (2020) Transforming Indian TVET Programs For Industry-4.0.
- Velmurugan, T. A., & Sankar, J. G. (2017). A Comparative Study on Motivation Theory with Maslow's Hierarchy Theory and Two Factor Theory in Organization. *Irish Interdisciplinary Journal of Science & Research (IIJSR)*, 1(1), 204-8.

- Vero, E., & Puka, E. (2017). The Importance of Motivation in an Educational Environment L'importanza della motivazione in un ambiente educativo. *Formazione & insegnamento XV*, 57-66.
- Wu, C., & Lin, K., (1999). Defining Occupation: A Comparative Analysis. *Journal of Occupational Science*. 6(1). 5-12.
- Wilcock, A., (1993). A theory of the human need for occupation. *Journal of Occupation Science*. 1(1). 17-24.
- Yamada, T., & Kawamata, H., & Kobayashi, N., & Kielhofner, G., & Taylor, RR., (2010) A randomised clinical trial of a wellness programme for healthy older people. *British Journal of Occupational Therapy*. 73(11). 540-48.
- Wahab, S. H. Zakaria, M. A. & Jasmi, M. A. (2010). Transformational Of Malaysian's Polytechnic into University College In 2015: Issues and Challenges for Malaysian Technical and Vocational Education. *Proceedings of the 1st UPI International Conference on Technical and Vocational Education and Training Bandung*. 570-578.
- Wan, J., Cai, H., & Zhou, K. (2015). Industrie 4.0: Enabling Technologies. In *Intelligent Computing and Internet of Things (ICIT), 2014 International Conference*, 135-140. IEEE.
- Wang, H. (2018). The Reform of Innovative Talent Training Mode Based on University-Enterprise and Industry-University-Research Platform. In *2018 3rd International Conference on Modern Management, Education Technology, and Social Science (MMETSS 2018)*. 33-36. Atlantis Press.
- Weber, M. (2017). *Methodology of Social Sciences*. Routledge.
- Wheebox, Measure Worlds Talent and Skill Potential. (2017). India Skill Report 2017. Association of Indian Universities, *United Nations Development Program and All India Council for Technical Education*. 1-57.
- Wiersma, W. & Jurs, S. G. (2009). *Research Methods in Education. An Introduction. Ninth Edition*. Boston: Pearson International Edition.
- Wiersma, W. (2000). *Research methods in education: An introduction (7th ed.)*. Boston: Allyn & Bacon.

- Williams, K. C., & Williams, C. C. (2011). *Five Key Ingredients for Improving Student Motivation*. *Research in Higher Education Journal* 12(August). Retrieved from <http://www.aabri.comwww.aabri.com/manuscripts/11834.pdf>
- Williamson, L., & Petrova, M. (2016). *Moving from Labor to Talent*. In *Supporting the Success of Adult and Online Students*. CreateSpace.
- World Travel & Tourism Council (2015). *Travel and Tourism Economic Impact 2015 World*. Harlequin Building. London. United Kingdom.
- Worrell, F. C., Subotnik, R. F., Olszewski-Kubilius, P., & Dixson, D. D. (2019). Gifted students. *Annual review of psychology*, 70, 551-576.
- Wright, B. & Stone, M. H. (1979). *Best Test Design. Rasch Measurement*. Chicago: MESA Press.
- Xiaoling, Z. & Long, Y., (2011). Study on Structure Dimensions of Ability to Work for University Graduates based on the Employability. *IEEE*, 11.62-665.
- Xing, B., & Marwala, T. (2017). *Implications of The Fourth Industrial Age for Higher Education*. 73. 10-15. Science and Technology. The thinker
- Yahaya, A., & Latif, J. S., (2006). *Siri Kaunseling: Membentuk Identiti Remaja*. (Cetakan Kedua). Bentong. Penerbitan: PTS Professional Publishing Sdn. Bhd.
- Yahaya, A., Hamsari, N. A., (2010). *Teori – Teori Motivasi*. Universiti Teknologi Malaysia. Skudai, Johor.
- Yang, H. T. (2017). *Full Utilization of Education-Running Advantages by Large-sized Enterprises to Create the Industrial Talent Cultivation Base*. DES tech Transactions on Social Science, Education and Human Science, (emse).
- Yasin, S. N. T. M. & Talib, A. A. & Hassan, A. (2014). Kajian Keperluan: Isu dan Masalah di Industri bagi Graduan Politeknik Program Mekatronik. *Prosiding 002 CiE-TVET 2014*. 32-39.
- Yasin. S.N.M.T.(2017). *Kerangka Penambahbaikan Pelaksanaan Program Diploma Kejuruteraan Mekatronik Politeknik Di Malaysia*. Universiti Tun Hussein Onn Malaysia. Tesis Ph.D.
- Yazan, B., (2015). *Three approaches to Case Study Methods in Education: Yin, Merriam, and Stake*. The Qualitative Report, 20(2). 134-152.
- Yee, C. L. & Abdullah, N., (2007). *Produktiviti Bagi Sistem Pengajian Tinggi Di Malaysia*. *Kajian Malaysia*. 25(2). (75-119).

- Yin, R. K. (1994). Case study research: Design and methodology. Applied Social Science Research Methods Series, 5. Beverly Hills: Sage Publications.
- Yin, R. K. (2003). *Case Study Research: Design and Method*. Third edition. California, UK, New Delhi: SAGE Publication.
- Yunos, J. M., Salleh, K. M., Sern, L. C., Sulaiman, N. L., Mohamad, M. M., Abidin, N. A. Z., & Sahdan, S. (2017). Transferable Skills of Engineering Students: A study on TVET Pedagogies at Universities in Malaysia. *In Engineering Education (ICEED), 2017 IEEE 9th International Conference*, 128-131.
- Yunus, F. A. N. (2015). *Pembangunan Model Pemindahan Pembelajaran Sistem Latihan Kemahiran Malaysia Berasaskan National Occupational Skill Standard (Noss)*. Universiti Kebangsaan Malaysia. Tesis Ph.D.
- Yunus, F. A. N., Rahim, M. B., Yasin, R. M., & Rus, R. C. (2014). Kesahan dan Kebolehpercayaan Instrumen Pemindahan Pembelajaran berdasarkan Pendekatan Model Rasch: Kajian Rintis. *First Tech. Vocat. Educ. Int. Semin. 2014, 2014 (Tveis)*, 1-9.
- Yusof, N. & Jamaluddin, Z. & Mat Lazim, N. (2013). Persepsi Pelajar Prasiswazah Terhadap Kebolehpasaran Graduan dan Persaingan dalam Pasaran Pekerjaan. *Jurnal Personalia Pelajar*. 16(1) 77-92.
- Yusof, R. (2014). Ciri-Ciri Kepimpinan Pelajar Pintar dan Berbakat: Implikasi Ke atas Kepimpinan Remaja Islam. *International Journal of Islamic Thought*. 6(1). 57-70
- Yusoff, Y. M., Zaharim, A., Omar, M. Z., Mohamed, A., Muhamad, N., Mustapha, R. & Rahmat, R. (2012). Engineering Employability Skills For Malaysian Industry: Framework Development. *In Proceedings of the 8th WSEAS International Conference on Educational Technologies*, 36-47.
- Yusoff, M. (2001). *Penyelidikan Kualitatif: Pengalaman Kerja Lapangan Universiti Malaya Kuala Lumpur: Penerbit Universiti Malaya*.
- Yusoff, I. & Ismail, R. & Sidin, R. (2008). *Graduan dan Alam Pekerjaan: Kes Siswazah UKM*. *Akademika* 72 (Januari) 2008. 3- 24.
- Zamfirov, M. Z. (2019). Application of Jean Piaget's Cognition Development Tasks on Students with Special Educational Needs. *European Journal of Special Education Research*.