

E-MENTORING EXPERIENCES OF ADOLESCENTS WITH SPECIAL NEEDS: A PHENOMENOLOGICAL STUDY

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Abstract: *In the literature of providing support to individuals with special needs, numerous past studies had focused on the benefits of e-mentoring in facilitating the transition process from high school to postsecondary education and employment among adolescents with special needs. Nevertheless, relatively few researchers have explored the problems that could lead to unsuccessful e-mentoring relationship, where mentors and/or adolescents withdraw from an e-mentoring program prior to completion, what more, to identify possible strategies to overcome the barriers. This paper, which highlights only the problems faced by adolescents with special needs during e-mentoring program, is part of a phenomenological research that seeks to better understand the e-mentoring experiences of adolescents with special needs, with the intentions to explore the problems they faced, to identify the strategies they used and to subsequently understand how they benefitted from the e-mentoring program. Using a sample of ten adolescents with special needs, four mentors and six parents, this qualitative-based study used an in-depth interview, observation and document analysis techniques to uncover the phenomenon of study. Findings showed that adolescents with special needs experienced a number of communication difficulties and technological challenges as they participated in the e-mentoring program, which were primarily caused by factors such as disability characteristics, past experiences with abled people and control from parents and school teachers. In general, the findings of the study confirm that adolescents with special needs experience a number of problems as they participate in the e-mentoring program. These results have overthrown the faulty assumption of “every user is tech-friendly”. Indeed, there is a population like adolescents with special needs who need to be accommodated so that they can participate in the e-mentoring program effectively.*

Keywords: Adolescents with special needs, e-mentoring, problems

INTRODUCTION

Adolescence is a typical period where people start to expand personal independence and are expected to be responsible in making successful transition from secondary education to postsecondary education or vocational training for positive employment in adulthood (Schoon & Silbereisen, 2009; Sum, Trubsky, Ross, Mchugh, & Palma, 2014). Nevertheless, it can be a particularly challenging stage for those with special needs (Kramer, 2015; Trainor, Murray, & Kim, 2014). Majority of adolescents with special needs (ASN) are found to be “unprepared” for the demands in both postsecondary education and employment (Abdullah, 2013). They are challenged by a number of barriers; (1) physical, sensory, cognitive and communication

limitations; (2) unfavourable environmental condition; (3) limited resources and accommodations that tailor their needs; and (4) lack of acceptance from others. (Abdullah, 2013; Loh, Abdullah, Yusop, Muhammad, Chong, & Chu, 2012; Othman, 2013).

E-mentoring for Adolescents with Special Needs:

Absence of a structured support system and limited access to positive role models could be associated with the lack of success in transiting to postsecondary education and employment among ASN (Daughtry, Gibson, & Abels, 2009; McDonald, Balcazar, & Keys, 2005). Engaging these adolescents into an e-mentoring program has been identified as a promising approach to enhance their

chances of making successful transition (Mammadov & Topcu, 2014; Stumbo, Blegen, & Lindahl-Lewis, 2008). It was found that the e-support has open a door for ASN to communicate with other people with or without special needs; to share about personal experience, and ways to pursue academic and vocational goals (Shpigelman & Gill, 2012). In particular, researchers revealed that e-mentoring experience helps ASN in many ways, such as easing off transitional anxiety; promoting social competence, disabilities-related skills, academic performance; improving self-worth and self-determination skills; enhancing motivation for successful transition to postsecondary education and/or employment (Botero, 2015; Burgstahler, 2008; Stumbo et al, 2008).

DO-IT program (Disabilities, Opportunities, Internetworking, and Technology) is one of the most comprehensive e-mentoring communities developed to help ASN to overcome barriers that they traditionally faced throughout the transition process (Stumbo, Martin, Nordstrom, Rolfe, Burgstahler, Whitney & Misque, 2010). In this program, both mentors and ASN engage in electronic communication to offer and receive support and assistance. It is found to be effective in promoting successful transition from high school to postsecondary education and employment, especially in the field of STEM (Science, Technology, Engineering and Mathematic) (DO-IT, 2014; Burgstahler, Moore, & Crawford, 2011). In 2012, Malaysia replicated the DO-IT project from the United State of America (USA) and formed DO-IT Malaysia. Similar to DO-IT USA, it is hope that DO-IT Malaysia can facilitate local ASN to make better transition to any postsecondary and/or job settings (Loh et al., 2012).

Hidden Barriers in the E-context:

In the past, majority of the researchers conducting e-mentoring studies for ASN have been stressing on its positive characteristics and benefits rather than the potential challenges or negative experiences (Shpigelman & Gill, 2012). However, the effectiveness of the mentoring program could be still far from ideal (Chadwick & Wesson, 2016). To date, researchers who are on the other hand focus on the limitations, have found that e-mentoring too, consist of limitations that can lead to the premature termination of the relationship and bring negative experiences to the mentors and ASN, such as feeling of rejection, disappointment and regret (Newman, Browne-Yung, Raghavendra, Wood & Grace, 2016; Shpigelman & Gill, 2012).

Shpigelman and her colleagues have studied about the negative experiences of e-mentoring for ASN (Shpigelman & Gill, 2012; Shpigelman Weiss, & Reiter, 2009a, b). The researchers found that although e-mentoring can served as an important source of support for the ASN, however, they also

aware that some mentors were dissatisfied with the quality of the e-mentoring relationship. Lack of reciprocal commitment, communication and/or self-disclosure from adolescents with special needs were identified as factors that caused premature termination of the mentoring relationship (Shpigelman Weiss, & Reiter, 2009b). Although the findings were the contributions from the mentors' points of view, however it has brought up the insight for researchers to further identify the reason behind the adolescents' behaviours (Shpigelman & Gill, 2012; Shpigelman Weiss, & Reiter, 2009b).

Adolescents with special needs are prone to experience difficulties in learning new skills and establishing relationship with others (Hallahan, Kauffman, & Pullen, 2012). They may find it even challenging to communicate with mentors through the technological products (Wehmeyer, Smith, Palmer & Davies, 2004). However, the need to provide supports for this group of adolescents is often being neglected by the program coordinators and mentors, and it could be related with the premature termination or low commitment from ASN (Daughtry, Gibson, & Abels, 2009). These negative experiences can cause adolescents to experience social rejection, which in turn worsen their self-concept development (Karcher, Davis, & Powell, 2005).

To date, researchers have yet to explore what are the unique characteristics of ASN that may affect the e-mentoring relationship. Studies on youth mentoring, whether targeting on populations with or without special needs, have demonstrated potential benefits in promoting the positive development of the young people (Mammadov & Topcu, 2014; Shpigelman & Gill, 2012). Nevertheless, relatively few studies are conducted to explore the potential problems that may be faced by the participants as they engage in the e-communication and accommodation needed, especially on the participants with special needs (Daughtry et al., 2009; Shpigelman & Gill, 2012). The objective of this study is to fill this gap through qualitative research, thereby allowing future researchers to generate a complete picture towards the e-mentoring experiences of ASN. This paper, which highlights only the problems faced by adolescents with special needs during e-mentoring program, is part of a phenomenological research that seeks to better understand the e-mentoring experiences of adolescents with special needs, with the intentions to explore the problems they faced, to identify the strategies they used and to subsequently understand how they benefitted from the e-mentoring program.

METHODOLOGY

Research Design:

This research was studied through qualitative methodology because it seek to obtain in-depth information that related to *how* the difficulties that the ASN experience affected their ability to participate in the e-mentoring program (Denzin & Lincoln, 2006). Three qualitative data collection methods were incorporated to collect the data of the study, including: in-depth interview, observation and document analysis on the participants' chat logs. Furthermore, phenomenology was applied to construct the study and interpret the data as it aim is to understand the "lived experiences" of adolescents with special needs towards their experiences in the e-mentoring program (Creswell, 2013).

Participants:

Participants of the study were selected through purposive sampling. The mentees were ten ASN. They were seven females, and three males, with a mean age of 17.7 years. Of the participants, four were Chinese, four were Malay and two were Indian. Regarding to their disabilities, six had hearing impairments, two experienced cognitive disabilities (i.e.: one with Autism and one with William syndrome), and two had visual impairments, which had documented in their medical and school records. They were referred to the e-mentoring program by the special education school teachers based on their needs for transitional support. The adolescents were then screened based on five inclusion criteria: (1) demonstrate moderate transition ability; (2) have a basic ability to understand communicate with others through verbal and nonverbal language; (3) proficient at using computer and internet; (4) have a communication device (e.g.: computer, mobile phone or Ipad) and internet connection; (5) showed interest to participate in the e-mentoring program. Two potential mentee participants were excluded from the study because of not fulfilling one or more of the inclusion criteria.

The mentors were four Malaysian, Chinese, working adults with a mean age of 25.5 years. Three of the mentors were females and one was male. All mentors had a Bachelor's Degree in Psychology and Counseling, and were working as helping professions (i.e.: special needs therapists and educators). Besides, the mentors too, had experience in organizing and/or participating in community activities that are particularly for children and adolescents with special needs. They were interviewed and selected based on four inclusion criteria: (1) proficient at using a communication device and internet; (2) own a communication devices and internet connection; (3) demonstrate "disability friendly" behavior; as well as (4) have positive experience in assisting individuals with special needs.

After selection, the researcher of the study matched each mentor separately with two to three ASN, with great care through observation, conduct of significant discussion with the participants, and take into consideration factors such as gender, shared interest and hobbies. The final ten mentor-adolescents pairs consisted of seven female pairs, two male pairs, and one mixed pair (a female mentor with a male adolescent).

Instruments:

Each data collection methods were conducted using different instruments:

Interview protocols: Three sets of interview protocols were developed for to conduct semi-structure interviews with the different groups of participant, included ASN, mentors and parents of the ASN. The research objective of the study served as a framework to develop the protocols. All interview protocols were verified by experts as well as pilot tested to collect related data.

Observation protocol: An observation protocol was created to collect observable data. It consisted a field with pre-defined codes as guidelines on the important elements to observe during the face-to-face meetings, and an empty field to write down the observed details. The observation protocol was verified by experts to ensure it trustworthiness in collecting

Online Apps: The final instrument was the online apps that mentors and ASN applied to communicate with each others throughout the e-mentoring, which included Whatsapp, Line, Facebook messenger and Viber. All the conversation messages, shared pictures, audio records and video clips were saved automatically as chat logs and were analyzed.

Research Procedures

Prior to and during the e-mentoring program, a trainer who had experience in conducting e-mentoring program for individuals with special needs was invited to conduct two, three hours training workshop for the mentors. The trainings basically focused on mentoring functions, mentoring skills, suggestions for effective communication; relationship do's and don'ts, possible mentoring related problems, problem solving strategies, confidentiality and reporting of abuse.

As the e-mentoring began, both mentors and ASN were requested to communicate at least twice a week via online apps over a six months period. All participants were free to communicate with other mentors and ASN, other than their paired mentors. At the end of the e-mentoring program, the generated chat logs were collected and analyzed. In addition, all mentors and adolescents were requested to meet face-to-face once in a month. The aim of having face-to-face meeting were to enhance the sense of connection among the participants; serve as opportunity for participants to clarify any miscommunication and increase the participants'

willingness to self-disclose during the online communication. Between the face-to-face meetings, all participants continue to communicate via internet.

Besides, through the co-facilitation from a counsellor and mentors; two parental meeting sessions were conducted in three months once for parents. The purposes of gathering the parents periodically were to allow them to share confidentially about their concerns towards their children's transition to postsecondary education and careers; and receive related information and supports to guide their child throughout the transition process. Also, the meetings had served as an opportunity for mentors to review the adolescents' progress to the parents; and solicit the parents' ideas regarding strategies to support adolescents.

At the end of the e-mentoring program, prospective participants who submitted signed informed consent letter were contacted to schedule interview sessions. Seven ASN, four mentors and six parents were interviewed. All interview sessions with mentors and parents were conducted via face-to-face, verbal interviews. The interview sessions were audio recorded for further analysis after obtained permission from the participants. While due to majority of the ASN in this study were with hearing and verbal difficulties, therefore, the interview sessions were conducted on written form.

Data Analysis

In order to analyze the data that were collected from multiple data collection methods, first, the interviews' records were transcribed and translated. The interview data was then analyzed together with the data obtained from observations and chat logs. Through applying constant comparative methods, meaningful segment of statements, sentences, or quotes were identified and were grouped under different categories to form emerging themes. Subsequently, the e-mentoring experiences of the participants were described with thick and rich description.

Results:

Almost all participants reported that the ASN faced wide range of problems in the e-mentoring program. The problems and its related reasons were further classified into four themes.

Not ready to Communicate:

Participation in an e-mentoring program requires participants to commit in constant e-communication with each others. However, it was found that majority of the ASN, especially adolescents with hearing impairment (AHI) were not ready for the communication in the beginning of the program. As such, many participants revealed that AHI were feeling nervous, especially when they were required to communicate with mentors without disability. An adolescent said:

Takut mendepani mentor kerana mereka normal tidak sama dengan kita pekak. Contoh: Normal cakap pantas, tapi saya takut kerana tidak pandai bercakap pantas dalam bahasa inggeris dan susah dengar jelas.

(I am afraid to face mentor because they are normal, they are different with us who are with hearing impairment. For example: Normal people used to speak very fast, but I'm afraid because I am not good at speaking fast in English and have difficulty to listen clearly.)

A mentor agreed and provided detailed explanations during the interview. She explained that the typical upbringing among AHI had affected their readiness to communicate with others.

...他们因为从小就有这个听觉障碍的关系...然后他们的家人都会把他们保护在一个圈子里面,所以他们很少机会和外面的人一起沟通,除了他们自己 group 里面的人,他们很少有机会去接触我们这样的人(正常的人)...

(Because they have this hearing difficulty since they were young...And their family members try to protect them by keeping them in a safe group, so they have less opportunity to communicate with outside people, except with the group of people with similar abilities, they have less chance to get along with normal people like us....)

Language Barrier:

Both AHI and adolescents with visual impairment (AVI) commented that although they wanted to develop a closer relationship with mentors and were more willing to initiate a conversation, however, they faced another communication obstacle where technically they experience difficulties to communicate with the mentors effectively due to language barrier. An AHI attributed the language barrier due to their disabilities characteristic:

Saya susah bercakap baik dengan mentor...Saya cuba tulis Whatsapp dengan mentor [tapi] ada susah tulis, kerana saya pekak. Saya tak pasti tahu ayat betul atau salah, mentor mungkin ada susah faham. Saya risau kerana mungkin mentor tak layan saya...

(I have difficulty to communicate properly with mentors...I tried to Whatsapp mentors but I have problem in writing, because I am deaf. I am not sure the sentences that I write are right or wrong, mentor may have difficulties to understand. I am worry that mentors may not want to chat with me anymore...)

While an AVI commented that the multilingual culture had affected her ability to communicate with mentor. She felt stressful to engage in the online

communication whenever she had to use an unfamiliar language. She described:

Masa tengok mentor mesej dalam English saya rasa takut...Saya tak fasih dengan English...dan bila tersalah mula la rasa malu...

(I was afraid to read the English messages from mentors...I am not good in English...I feel embarrassed whenever I speak wrongly...)

The negative effects of language barriers among ASN were found in the chat histories. The following example shows how miscommunication happened:

Mentor: Hi, are you joining us in the coming outing? Sorry, I know I am very troublesome, keep asking you about it, hahaha!

Mentee: Hi, I am not joining, I am busy...I'm not troublesome...

Mentor: No...not saying you troublesome...I mean I am troublesome, keep asking if you can join or not...

Excessive Control on the Use of Internet:

Besides, the excessive control on the use of internet and communication devices too, had affected the mentoring relationship with mentors. Even though there were times where the ASN wanted to communicate with mentors, however, they were not permitted to use the internet or communication devices, either by their parents at home, or school teachers at hostel.

...Kami susah nak berhubung dengan mentor, kerana kami sibuk dengan form 6... Cikgu yang mengajar dalam kelas tak galak kami online atau main handphone...

(...It is difficult for us to contact mentors, because we were busy with our study... Teachers who taught us in class do not encourage us to online and play handphone often...)

Sometimes, I don't have handphone to talk with mentors whenever I want. Because I share phone with my mummy. Mummy worry that I will addict to the phone if I have my own phone.

One of the mentors also realized of the restriction from the teacher and she putted in:

...其实他们是很乐意找你聊天的，可是因为他们住在宿舍里，很多时候他们有宿舍的规矩要跟，然后他们又要考 STPM 了，所以他们的老师就有限制他们用手机的时间，这样一来就很影响他们跟我们联系的机会了...

(...Actually they were willing to communicate with you, but because they are staying in hostel, so they need to follow the rules, and they have to sit for STPM too, hence the teachers restricted their time on the use of handphone, so it actually affected their opportunity to stay contact with us...)

When asked the parents about the reason on the control use of internet and communication devices,

they explained their concern on the development of internet addiction in their children.

...因为怕他们会很沉迷...其实她是有很多时间，可是我们不要她一直 manage 那个 phone 咯 [一直找人聊天]...不是这样子的 purpose 咯...那个 phone 会变成一个 burden 咯...

(...Because they will addicted to it...Actually she has a lot of time, but I don't hope that she spends most of her time to chit chat with others by using the handphone...It is not meant for this purpose...the phone will become a burden...)

Limited Cognitive Ability

Majority of the participants stated that the limited cognitive ability among the adolescents with learning disabilities (ALD) had affected the overall quality of e-communication with mentors. Without having sufficient cognitive capacity, it was challenging for the adolescents to commit in the e-mentoring program. The ALD revealed that they experienced a number of obstacles; having difficulty to communicate with mentors via online apps, unable to initiate a conversation with mentors, being forgetful and/or lack of confident to reply mentors.

I don't know how to use e-mail, because I am very forgetful. Sometimes I forget where to write a new email. I don't have many topics to talk with them...I worry that I write something wrong and get scolded because I don't know something is right or wrong to talk about...I can forget to reply email because I always listen to songs on Youtube.

Mentors and parents also found that ALD experienced difficulties to adjust into the e-mentoring program due to their limited cognitive ability. They shared:

...他有很多想法，但是不懂要怎样去表达...第一，可能他也不习惯这样的沟通方式。他又看不到你，你不能用表情去 prompt 他，帮助他和你沟通...其实整个过程都是很抽象的。第二，写句子跟说话又不一样所以就...写句子也需要你有一定的 ability，好像你要知道人家讲了什么，然后你要回复什么，要用什么字，要怎样 construct 一个 sentence...

(...He may have many ideas, but he doesn't know how to express it...Firstly, maybe he doesn't used to communicate through this way. He cannot see you, you cannot use facial expression to prompt him, help him to communicate with you...Actually the whole communication process is very abstract. Secondly, writing sentence and speaking is different so...writing sentence require you to have certain abilities, such as you have to know

what are people saying, then know what to reply, what words to use, how to construct a sentence...) ...she was unable to maintain the communication when she is attracted by other interest, like watch TV...She will forget to contact you all...

Discussion

The findings of the study reveal that ASN experience a wide range of problems as they participate in the e-mentoring program. Interestingly, the data show that the problems differ in each group based on their disability characteristics. For example, AHI commented that due to their hearing loss, it affects their language ability, communication and social skills with normal people, and, in this case, with their mentors. Therefore, at the beginning of the program, they are not ready for the e-communication. Their language deficiency limited their effectiveness in communication with their mentors, particularly in written communication. While for ALD, they attributed the problem of communicating effectively with mentors to their limited cognitive ability. The mentors and parents explained that this group of adolescents has poor working memory and are attention deficit. These limitations further affect their ability to utilize technological devices effectively. They are also unable to give appropriate feedbacks while communicating with mentors.

The fact that disability characteristics of ASN affect their ability to participate in the e-mentoring program is partially supported by past studies done by Chadwick and Wesson (2016); Shrestha, May, Edirisingha, Burke, and Linsey (2009); Wehmeyer et al., (2004), who focused on researching technology use among ASN. They shared similar views where disability characteristics such as: impairments in language and communication ability, deficits in reasoning, idea production and cognitive skills, limitations in memory and learning skills, can impair the ability of ASN in using technology effectively. In particular, deficit in the stated areas distorted their ability to decode online information accurately, produce written questions and feedbacks, and operate a technology device efficiently, resulting in the adolescents failing to receive the benefits of technological use.

Although the above studies focused primarily on barriers to technology use among ASN, however the findings is somewhat related to the e-mentoring experience. As e-mentoring is technology based, the studies help to depict how the difficulties experienced by ASN might affect their commitment in an e-mentoring program, as well as the development of the relationship with mentors.

External factors like excessive control from third parties are reported as another problem faced by ASN in e-mentoring program. Adolescents with visual impairment who stay in school hostels and

ALD who stay with their family reveal that they are restricted to communicate with mentors. They explain that teachers and parents concern that they might get addicted to the use of communication devices and the internet.

The above finding show that to develop a successful e-mentoring relationship, it is not just between mentors and mentees. Adolescents with special needs in this study are high school students where they are still under the authority of parents and school teachers (Floyd, 2012; Patrick & Wessel, 2013). Therefore, it can be presumed that parents and teachers play a critical role in defining the success of these adolescents in the e-mentoring program. The understanding and support from these two parties can enhance the quality of the mentoring relationship.

For the two AVI in this study, the use of unfamiliar language has affected their willingness to communicate with mentors. These Malay AVI prefer to communicate in Malay. They commented that they were nervous and lacked confidence when they had to communicate with mentors in English. In order to avoid miscommunication, they chose to remain silent at the beginning of the e-mentoring program.

Malaysia is a multilingual nation where the locals: Malay, Chinese and Indians communicate through more than one language. As the Malay language is the national language and the medium of instruction in government schools (Darmi & Albion, 2013; Onwubiko, 2012), it can be anticipated that the Malay adolescents who are still in high school will be more familiar and comfortable with the Malay language, both in the verbal and written form. Therefore, the use of other languages by mentors has affected their communication.

Limitation of the Study

Although phenomenological research is a perfect approach to gather rich, thick, and in-depth information, it has of weakness too. In particular, the purposeful criterion sampling and researcher bias may have affected the transferability and generalizability of this study to other similar context. Therefore, for future researchers who have similar interest in exploring the e-mentoring experiences of ASN, it is recommended to use mixed methods to collect relating data. By combining methods such as in-depth interview and distribute survey to a larger, randomly selected sample, the collected data would be more representative. This would allow the researchers to learn about the majority of the problems from a bigger group of ASN, which in-turn, allowed them to have better ideas to accommodate the adolescents effectively.

Implication and Contribution of the Study

Understanding the characteristics that lead to positive e-mentoring experience helps to enhance

the enrolment and retention of ASN in an e-mentoring program (Powers, Schmidt, Sowers, McCracken, 2014; Shpigelman & Gill, 2012). In this regards, the findings of the study show that ASN experience a wide range of problems as they try to engage themselves in the e-mentoring program. Participants in the study strongly highlighted that there is a need to accommodate the group of adolescents throughout the program. It implies that in real-life practice, efforts are still needed to improve their comfort using technology and online communication. It is particularly helpful for persons in charge of the e-mentoring program to take this supporting information into consideration. They can then modify the existing e-mentoring processes and materials to suit the needs of the ASN; for orientation, training, oversight and supports.

Also, the present study demonstrates that phenomenological research study contributes to the understanding towards the e-mentoring experiences of ASN. As the focus of phenomenological study is to understand the “lived experiences” of a group of participants towards a specific phenomenon (Creswell, 2003; Ereno, 2014), the qualitative findings that collected in this study helps to depict a clear picture on the problems that faced by ASN in the e-mentoring program. In addition, the result of the study gives insight to researchers who have similar interest that, more studies should be done, either through quantitative or qualitative measures, in order to obtain a better understanding towards the e-mentoring experience of ASN.

CONCLUSION

In general, the findings of the study confirm that ASN experience a number of problems as they participate in the e-mentoring program. These results have overthrown the faulty assumption of “every user is tech-friendly” (Kasprisin et al., 2003). Indeed, there is a population like ASN who need to be accommodated so that they can participate in the e-mentoring program effectively. The study proposed that adolescents with special needs can benefit from the e-mentoring program when the technological and communication barriers are resolved. It further suggests that accommodations are needed to be provided in order to enhance the adolescents’ participation and retention in the program. Nevertheless, the finding from this research is not sufficient to verify the actual condition of the e-mentoring program for ASN. Therefore, more studies should be done on this aspect. Such data can produce better understanding of the ASN e-mentoring experience and also can yield additional information applicable to improve the effectiveness of the program.

REFERENCE

Abdullah, M.N.L.Y. (2013). Embracing diversity by bridging the school-to-work transition of students

with disabilities in Malaysia. *Cultural and Social Diversity and the Transition from Education to work, Technical and Vocational Education and Training: Issues, Concerns and Prospects* 17: 163 – 183.

- Botero, J.M. (2015). E-Mentoring Across National Boundaries. *Review of Disability Studies: An International Journal* 11(3).
- Burgstahler, S. (2008). *Opening doors: Mentoring on the Internet*. Seattle: University of Washington. Retrieved March 20, 2014, from <http://www.washington.edu/doi/opening-doors-mentoring-internet>
- Burgstahler, S., Moore, E. & Crawford, L. (2011). *Report of the Access STEM/Access Computing/DO-IT Longitudinal Transition Study (ALTS)*. Retrieved April 13, 2017, from <http://www.washington.edu/doi/Stem/tracking4.html>
- Chadwick, D. & Wesson, C. (2016). Digital Inclusion and Disability. In *Applied Cyberpsychology* (pp. 1-23). Palgrave Macmillan UK.
- Creswell, J.W. (2013). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.
- Darmi, R. & Albion, P. (2013). English language in the Malaysian education system: its existence and implications. In *Proceedings of the 3rd Malaysian Postgraduate Conference (MPC 2013)* (pp.175-183). Education Malaysia, 2013.
- Daughtry, D., Gibson, J. & Abels, A. (2009). Mentoring students and professionals with disabilities. *Professional Psychology: Research and Practice* 40(2): 201 – 205.
- Denzin, N.K. & Lincoln, Y.S. (2006). Introduction: The discipline and practice of qualitative research. In N.K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of qualitative research* (pp. 1-32). Thousand Oaks, CA: Sage.
- DO-IT. (2014). *DO-IT: Disabilities, opportunities, internetworking, and technology*, 76(2): 292 – 305. Seattle, WA: University of Washington. Retrieved June 28, 2014, from <http://www.washington.edu/doi/about/overview>
- Floyd, K. (2012). Postsecondary students with learning disabilities: Can we do more? *Journal of Special Education Apprenticeship* 1(1).
- Hallahan, D.P., Kauffman, J.M. & Pullen, P.C. (2012). *Exceptional Learners: An Introduction to Special Education (Twelfth Edition)*. United State: US: Pearson Education Inc
- Karcher, M.J. Nakkula, M.J. & Harris, J. (2005). Developmental mentoring match characteristics: Correspondence between mentors’ and mentees’ assessments of relationship quality. *The Journal of Primary Prevention* 26(2): 93 – 110.
- Kasprisin, C.A., Single, P.B., Single, R.M. & Muller, C.B. (2003). Building a better bridge: Testing e-training to improve e-mentoring programmes in

- higher education. *Mentoring and Tutoring* 11(1): 67 – 78.
- Kramer, M.M. (2015). *The Postsecondary Transition Experience for Young Adults with Traumatic Brain Injuries* (Doctoral Dissertation, University of Dayton).
- Loh, S.C., Abdullah, H.S.L., Yusop, F.D., Muhamad, A.S., Chong, S.T. & Chu, S.W. (2012). Challenges among individuals with visual impairment in an institution of higher learning in Malaysia. *European Journal of Special Needs Education* 2, 99-107.
- Mammadov, S. & Topcu, A. (2014). The role of e-mentoring in mathematically gifted students' academic life: A case study. *Journal for the Education of the Gifted* 37(3): 220 – 244.
- McDonald., K.E., Balcazar, F.E. & Keys, C.B. (2005). Youth with disabilities. *Handbook of youth mentoring*, 493 – 507.
- Newman, L., Browne-Yung, K., Raghavendra, P., Wood, D. & Grace, E. (2016). Applying a critical approach to investigate barriers to digital inclusion and online social networking among young people with disabilities. *Information System Journal*, DOI: 10.1111/isj.12106.
- Onwubiko, E.C. (2012). Unifying Role of Malay Language in a Multilingual Nation: A Case of Malaysia. *US-China Foreign Language* 1349.
- Othman, R. (2013). Workforce diversity in Malaysia: Current and future demand of persons with disabilities. *Cultural and Social Diversity and the Transition from Education to Work, Technical and Vocational Education and Training: Issues, Concerns* 17: 87 – 110.
- Patrick, S. & Wessel, R.D. (2013). Faculty mentorship and transition experiences of students with disabilities. *Journal of Postsecondary Education and Disability* 26(2): 105 – 118.
- Powers, L. E., Schmidt, J., Sowers, J. A. & McCracken, K. (2014). Qualitative investigation of the influence of STEM mentors on youth with disabilities. *Career Development and Transition for Exceptional Individuals*, DOI: 10.1177/2165143413518234.
- Schoon, I. & Silbereisen, R.K. (Eds.). (2009). *Transitions from school to work: Globalization, individualization, and patterns of diversity*. Cambridge University Press.
- Shpigelman, C.N. & Gill, C.J. (2013). The characteristics of unsuccessful e-mentoring relationships for youth with disabilities. *Qualitative health research*, 23(4): 463 – 475.
- Shpigelman, C.N., Weiss, P.L.T. & Reiter, S. (2009a). E-Mentoring for all. *Computer in Human Behavior* 25: 919-928.
- Shpigelman, C.N., Weiss, P.L. & Reiter, S. (2009b). e-Empowerment of young adults with special needs: Behind the computer screen I am not disabled. In *Virtual Rehabilitation International Conference, 2009* (pp. 65-69). IEEE.
- Shrestha, C.H., May, S., Edirisingha, P., Burke, L. & Linsey, T. (2009). From face-to-face to e-mentoring: Does the “e” add any value for mentors? *International Journal of Teaching and Learning in Higher Education* 20(2): 116 – 1124.
- Stumbo, N.J., Blegen, A.R. & Lindahl-Lewis, P. (2008). Two mentorship case studies of high school and university students with disabilities: Milestones and lessons. *Journal of Rehabilitation* 74(3): 45-51.
- Stumbo, N.J., Martin, J.K., Nordstrom, D., Rolfe, T., Burgsthaler, S., Whitney, J. & Miguez, E. (2014). Evidence-based practices in mentoring students with disabilities: Four case studies. *Journal of Science Education for Students with Disabilities* 14(1): 4.
- Sum, A., Khatiwada, I., Trubskyy, M., Ross, M., McHugh, W. & Palma, S. (2014). The plummeting labor market fortunes of teens and young adults. *Washington, DC: The Brookings Institution*.
- Trainor, A.A., Murray, A. & Kim, H. (2014). *Postsecondary transition and English learners with disabilities: Data from the Second National Longitudinal Transition study* (No. 2014-4). WCER Working Paper.
- Wehmeyer, M.L., Smith, S.J., Palmer, S.B. & Davies, D.K. (2004). Technology use by students with intellectual disabilities: An overview. *Journal of Special Education Technology* 19(4): 8 – 21.