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E-Mentoring for Knowledge Sharing among Lecturers in Higher Technical Education Institutions: A Conceptual Framework

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ABSTRACT

A higher education institution serves as a centre for the creation, exchange, and sharing of information. Technical institutions play an important role in the creation and dissemination of technical knowledge to assist economic development. Experienced senior academics share their knowledge with newly appointed lecturers through a mentoring programme. The traditional mentoring relationship is a dynamic one in which a senior member of an institution or profession pays attention to a junior and provides professional and psychological aid. Because of technological advancements, HTEIs must use this chance to develop, share, and exchange knowledge regardless of time, space, or location through e-mentoring. E-mentoring is a revolutionary setting in which the mentoring interaction between the mentor and mentee is exclusively conducted online. The fundamental distinction between traditional mentoring and e-mentoring is the communication channel used. The e-mentoring concept is developed within the context of the HTEIs, using the Adult Learning Theory and the SECI Model. The concept's expected impact is measured using The Kammeyer-Mueller and Judge (2008) Framework, which describes the mentoring effect of a mentee in the mentoring programme. However, additional research is needed to assess the outcomes of e-mentoring, particularly in technical fields where face-to-face mentoring is favoured.

1. Introduction

Numerous organisations recognise the importance of mentoring and implement such programmes covers variety of objectives, including talent discovery, career development, socialisation, and performance enhancement (Gupta, 2020). Public awareness of mentoring's perceived importance in professional careers has sparked attention in this situation in the higher technical education (HTE) sectors, with the logic being that if mentoring results in accomplishment in a profit-oriented and highly competitive atmosphere, it would hold better potential in academic, knowledge-oriented environments such as higher education institution (Lunsford et al., 2017).

Mentoring takes on a variety of forms, from traditional mentoring to developmental mentoring, co-mentoring, goal-specific mentoring, muse mentoring, mentoring circles, peer-to-peer mentoring, e-mentoring, and relational mentoring, all of which elicit a variety of diverse sorts of arrangements, from informal to formal, mentoring circles, pairs, senior to junior, peer to peer, and one-to-one. To offer a fresh, knowledge-based viewpoint on the mentoring in HTE and to develop a preliminary conceptual framework to contribute a model which could examine mentor-mentee relationship through e-mentoring method. This article focuses on the socialisation dimension, that is, the virtual transfer of knowledge, particularly tacit knowledge between mentors and mentees (Nonaka and Takeuchi, 2001). To generate new knowledge, individuals possessing the information and know-how must be prepared to share it with others (Swart et al., 2014).

Mentoring failures are often attributed to an absence of mentoring procedure, as both employees and management are unaware of the magnitude of the benefit, or because they do not grasp the method and underlying success factor in terms of knowledge management performance in the organisation (Yap & Lock, 2017). Studies have shown that new lecturers encounter significant dissatisfaction and uncertainty upon entering the TVET institution (Omar et al., 2018). Omar et al. (2018) emphasises further that if a new lecturer does not get enough assistance and mentorship, the lecturer may opt to quit the profession due to the tiredness and stress caused by the abrupt career shift. Le Maistre and Pare' (2010) assert that all new lecturers need assistance during their first years of teaching. New lecturers may feel alone and unsupported, which may result in job discontent (Hudson, 2012).

While peer mentoring is a well-known strategy, admit that comprehensive evaluations of peer mentoring programmes are generally lacking in previous literature (Cassese & Holman, 2018). However, there is some evidence that peer mentoring increases job-related feedback, career planning, knowledge sharing among other advantages (Angelique, Kyle, & Taylor, 2002). It has been found to be effective at removing structures between the affected parties, it has already been found to limit career-enhancing functions as peers have less exposure to academia and their networks are not as extensive as those presented by mentors in conventional relationships (Angelique et al., 2002). Additionally, since peers have the same degree of experience and are constrained by similar views, they are often unable to help one another with hindsight knowledge (Angelique et al., 2002).

According to a study conducted in a Turkish school, newly appointed teachers are required to teach in crowded classrooms and multi-grade, face difficulties accessing teaching materials, are overworked, lack access to experienced teachers who can guide them at their school, and are not provided with acceptable support by the management (Alemdag & Erdem, 2017). Additionally, the research found that new teachers were unable to get assistance from experienced teachers and administrators, and mentors provided insufficient support. As a result, educational programmes that offer the assistance to newly assigned instructors are critical (Alemdag & Erdem, 2017). This problem usually associated with the location and time constrained of the experienced staff in mentoring of new staff especially located in rural or remote location. This problem could be alleviated

by utilising e-mentoring or online based mentoring in the institution's mentoring program. To alleviate the problem of mentoring, there is an urged to develop a framework for e-mentoring program. Therefore, the main purpose of this article is to develop a conceptual framework of e-mentoring program for lecturers in the higher technical education institution.

2. The Concept of Mentoring

The classic mentoring relationship is a dynamical one in which a senior academic staff takes an attention in a new academics and offers professional and/ or psychological assistance in the institution (Kram, 1985). Mentees have added professional experiences than non-mentees in terms of both subjective and objective job performance. This has subsequently expanded, with mentoring now being used as constructive enhancement program at all levels of an institution, serving as a critical platform for information sharing amongst workers. Nurturing a relational mentoring values that emphasises employee learning process, progress, and advance can help encourage high-quality mentoring (Ragins, 2016). Mentoring programmes come in a wide variety of forms, as do the beliefs that support them. While much has been published about mentoring in the perspective of a student being mentored by a lecturer or professor (Holmes, 2018), less has been written on official staff mentoring programmes in the higher education sector (Goerisch et al., 2019).

Mentoring occurs at a variety of levels across higher technical education institutions (HTEI)s, according a study. Mentoring occurs both inside departments, when a senior academic staff mentors a more junior lecturer, and between faculties and departments, via official mentoring programs in which pairing process is explicitly coordinated by the institution's mentoring coordinator. This prevents exploitative scenarios in which the mentor may abuse the mentee by setting unrealistic expectations or putting unreasonable demands on their time (Lim et al., 2020).

Ironically, in conventional mentoring, it is often believed that the mentor is more experienced or of unequal standing to the mentee (Damnjanovic, Proud, & Milosavljevic, 2020). In relational mentoring, age is not a given, and although mentoring may occur between individuals of similar age and rank, mentors will often have more years of working experience compared to the mentee. While mentors may have greater experience, the competent mentor today ensures that this expertise is not used negatively, and when positive connections are formed, the mentor reduces the base of authority and approaches the relationship from a position of vulnerability and mutuality (Ragins, 2016). Through eschewing the conventional bureaucratic roles, the partnership is transformed into a space for common learning, development, and findings (Ragins, 2016). While the pairing process remains conventional, i.e., hierarchical, the connections, are more relational in character, which helps both mentor and mentee.

3. E-mentoring: The Practice

E-mentoring is a novel environment in which the mentoring relationship between the mentor and mentee is conducted entirely online. The primary distinction between conventional mentoring and e-mentoring is the method of communication utilised. Mentoring in the conventional sense happens in personal encounters in which mentors and mentees are physically meet and engage in real time. However, e-mentoring communicates through technology. When addressing e-mentoring, it is necessary to distinguish between blended and virtual e-mentoring. Mentors and mentees utilise a mix of face-to-face encounters and online components, with the potential of both asynchronous and synchronous method of communication (Cordie et al., 2020). Bang and Luft (2013) proposed a combined model in which mentors and mentees engage in both face-to-face interactions and virtual interactions in order to develop the abilities, skill, and knowledge of new elementary level students. As a result, two types of e-mentoring are possible: blended or combined e-mentoring and fully virtual e-mentoring. In developing the e-mentoring concept, this article will concentrate on virtual e-mentoring, in which technology completely mediates the connection between mentor and mentees.

Due to the virtual nature of the connection, e-mentoring may conduct anywhere and at any time if mentors and mentees have internet access, providing more possibilities for mentor-mentees to contact each other (Bierema & Hill, 2005; Headlam-Wells, Gosland, & Craig, 2005). As a result, e-mentoring may be more cost efficient and improve mentors' time with mentees (Tanis & Barker, 2017). Additionally, it expands possibilities for mentor-mentees contact and establishes a boundary-free framework, in contrast to conventional face-to-face mentoring (Arora & Goel, 2018). Increased interaction may result in increased mentoring success. Spanorrigha, Tsiotakis, & Jimoyiannis (2018) discovered a favourable correlation between the effectiveness of e-mentoring programmes and the mentor-mentees interaction rate. Additionally, e-mentoring has the potential to expand the pool of mentors and mentees. Since face-to-face interactions are restricted by distance, conventional mentoring relationships might limit the resource pool, while e-mentoring offers a wider external resource pool (Bierema & Hill, 2005). Additionally, e-mentoring increases flexibility since both mentors and mentees might communicate, not obligated to reply quickly, and can examine interaction at any time of the day (Headlam-Wells et al., 2005).

4. Conclusion the Importance of Mentoring in Higher Technical Education Institution

Mentoring enables instructors to collaborate and share their professional experiences, to debate new ideas or practises they discover, and to educate one another about effective teaching techniques (Hakro & Mathew, 2020). Agreeing with Hakro and Methew, gathering inexperienced instructors to talk and share their experiences enables them to acquire new strategies for classroom behaviour. Additionally, the experienced teacher may serve as a mentor, providing them with additional information about how to conduct themselves in their new professions.

Mentoring is critical for acclimating a new lecturer to organisational circumstances (Barrett, Mazerolle, & Nottingham, 2017). Barrett et al. (2017) emphasises further that the new environments in which the employee finds himself/herself may be a risk because the person is unsure of what to do, or they can be a challenge since the employee is tasked with completing their responsibilities to the best of their ability. The perception that certain workers at a technical education institution come from industries where they have little experience or understanding of the classroom environment. Mentoring may be critical in such instances.

Mentoring is critical for new lecturer because mentors may model the course for their mentee, assisting them in gaining information about how to deliver their lesson in class (Hudson, 2012). Burchill and Anderson (2019) agree that newly appointed lecturer would provide more effective lectures if given the time and chance to watch experienced lecturers model their delivery. On the other hand, Abugre and Kpinpuo (2017) believe that new lecturers should study their mentees' teaching methods in order to observe and acquire classroom management abilities.

Mentoring is critical in that it develops into a collaborative process in which both the mentor and the mentee participate in professional development (Nottingham & Mazerolle, 2018). Additionally, the authors emphasise that mentoring is a learning method that offers a framework and opportunities for both the mentors and new lecturer to participate actively in the development of professional knowledge and abilities. Believing that just because a mentor has more work experience, does not mean mentors understands everything. While seniors may have greater job experience, some skills may be picked up by the new lecturers. Thus, mentoring may serve as a vehicle for enhancing the people engaged in many spheres of life (List & Sorcinelli, 2018).

The advantages of mentoring are classified by Stuckey et al. (2019) into three categories. They categorise them as interpersonal, organisational, and political relationships. According to a research performed in the United States by Herrera, DuBois, and Grossman (2013), new lecturers who participate in mentorship report fewer mentees exhibiting signs of depression. In this case, the mentees perceived greater acceptance from their colleague, as well as more constructive beliefs about their capability to be successful.

5. Theoretical Framework

5.1 Adult learning theory

Institutions must have a strategy for coping with the experience of adults who are compelled to unlearn what they already have in order to absorb something new. Anxiety is classified into two types: learning anxiety and survival anxiety. Once survival anxiety exceeds learning anxiety, knowledge is acquired. Learning can be created in a safe atmosphere with few repercussions for failure. Survival worry may be heightened by the prospect of job loss, a lack of stability, or recognition of market competitors.

Adult learners have unique demands and requirements. Adults are, first and foremost, independent and self-directed. This requires their instructors to engage them actively and to serve as facilitators, leading them toward their own knowledge rather than just providing them with information. Additionally, adults have amassed with life experiences and wisdom. This may include professional activities, family obligations, and previous education experience. Adults must establish a link between learning and this body of knowledge/experience, able to connect theories and ideas to participants and understand the importance of experience in the learning process. Adults, on the other hand, are goal-oriented. Adults are clear about the objectives they want to accomplish. As a result, they value programmes that are well-organized and have clearly defined components. To be valuable, learning must be relevant to their job or other obligations. Instructors must communicate clearly to participants how the course will benefit them on the job. Finally, adult learners deserve respect. Adult participants contribute a variety of experiences to the classroom, which instructors must recognise. Additionally, the adults must be let to express their views openly in class.

Adult learners may also encounter certain obstacles throughout the learning process. Adults have a plethora of obligations, which must be balanced with the demands of education. These challenges include an absence of time, interest, confidence or self-esteem, management support, money, lack of information about available educational prospects, scheduling challenges, life responsibilities which might coincide with learning opportunities, caring toward others and transportation arrangements. The findings emphasise the critical significance of motivating adult learners by increasing their motivations for registering and removing obstacles to enhanced knowledge. Individuals learn continuously throughout their lives. Thus, since people learn at varying rates, it is normal to feel worried or apprehensive when confronted with a learning scenario. Positive reinforcement, as well as the instructor's timing, may aid in learning. Motivation, reinforcement, retention, and transference are four essential components of learning that guarantee that individuals learn.

Adult learning idea was developed by Knowles (1978) which is developed into andragogy, a specialised method and practise of educating adults, as illustrated in Figure 1. Knowles idea is grounded on the previous work of Lindeman (1926), which thought that learn new knowledge should be seen as a lifelong endeavour and comprehended at the adult level in order to create a longing to learn continuously throughout life. According to Knowles (1978), if learning is to be revived, accelerated, and transformed into an adventure once again, new ideas, new motivations, and new techniques need to be investigated. Knowles (1978) continued Lindeman's study by focusing on how people developed life-long learning habits and the links that might be established between learning theories. Based on Knowles (1978) theory of adult learning, following key concepts from Lindeman (1926), adults are motivated to gain new knowledge because they have needed that learning will satisfy; 1. learning is self-centred through life circumstances; 2. experience is the most valuable asset; 3. adults have a strong necessity to be self-directed; and 4. adult require individualised instruction.

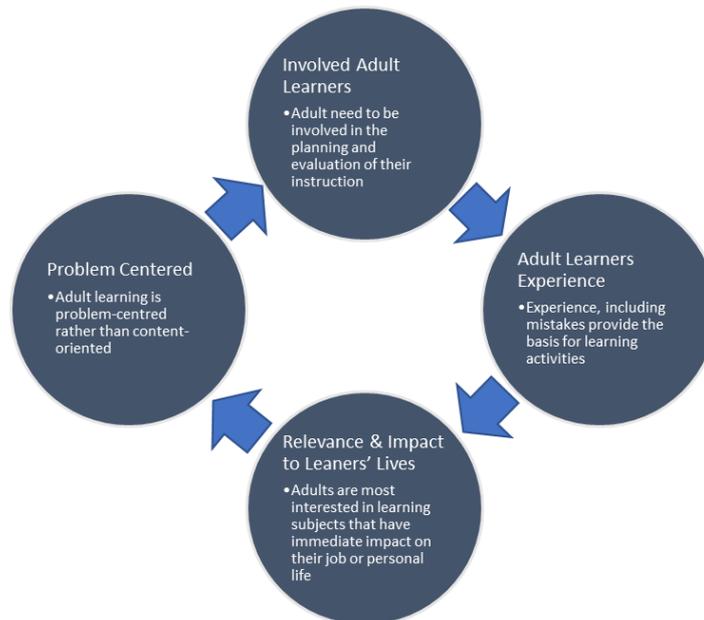


Figure 1. Adult learning theory (Knowles, 1978)

5.2 The SECI model: Knowledge exchange

Without context, knowledge is just information. When people interpret information provided in a particular context, such as a mentoring relationship, it becomes belief. The most frequent method of transmitting tacit information is via verbal communication. Tacit knowledge is embedded in employees' brains and must be transmitted to people inside companies through mentorship or other similar interventions (Argote and Ingram, 2000). This procedure may be challenging and time consuming due to the difficulties inherent in expressing tacit knowledge (Fullwood, Rowley, and McLean, 2019).

According to Lam (2000), the interplay between explicit and tacit knowledge is critical to the generation of new knowledge. Knowledge transfer and sharing may be described as people exchanging appropriate knowledge and experience with others within the institution (Lin, 2007). Employees that are devoted to the organisation are considerably further ready to share tacit knowledge (Hislop, 2003). Lin (2007) discovered that poor levels of tacit knowledge sharing are most probable due to a lack of institutional confidence and commitment among co-workers. When individuals gain tacit knowledge from others, refer to this as socialisation, or an active interchange between institutional members and their surroundings (Nonaka and Takeuchi, 2001). Figure 2 illustrates the SECI model which described the relationship knowledge exchange (Nonaka and Takeuchi, 1995).

The SECI method focuses on turning learning into new tacit knowledge (socialisation), which may be accomplished via mentees observing and perceiving. The framework depicts the translation of tacit knowledge to explicit knowledge via articulation (externalisation), transformation of explicit knowledge of the mentors into new or more intricate explicit knowledge fusion for the mentee and lastly the structuring of the new explicit knowledge into tacit knowledge to be shared to the

organisation (internalisation), thus allowing an atmosphere for the knowledge further developed (Nonaka and Takeuchi, 1995).

Clearly knowledge in the HTEIs is our most significant resource. Knowledgeable workers are defined as those who practice professional knowledge acquired through their own experiences and outstanding achievements, production and management skills, knowledge application activities within a specific project, and, in general, they have a strong knowledge base, capability, or talent for solving complex and abstract problems in the environment (Mohammed, Alnoori, and Jasim, 2020). As previously discussed, knowledge is power, especially in academic institutions.

Encouraging senior academics to contribute some of this knowledge/power within a mentoring relationship, not only discipline-specific information but also that important tacit knowledge, may be difficult. Additionally, a good communication environment has an effect. The more information an individual accumulates, the more probable it is that they will give to others (Van den Hooff and De Ridder, 2004). According to Eliyana and Christiananta (2020), successful commitment is linked to people' desire to give and receive information if they believe it will be respected, appreciated, and utilised.

According to Swart et al. (2014) when information is shared, it is created and modified via an interpretive process including equally the giver and the receiver, and it is appended to current knowledge. Stating Kang, Snell, and Swart (2012), the process of combining the new information into previously held beliefs results in a new understanding, which researchers refer to as representational re-description. Referring to Nonaka and Takeuchi (1995), knowledge creation is a spiraling process of connections between tacit and explicit information in which physical face-to-face encounters are critical for tacit knowledge conversion and transmission. Mentors offer their expertise of processes, people, and systems. According to Nonaka and Takeuchi (1995), such human interaction is necessary for the creation of new knowledge.

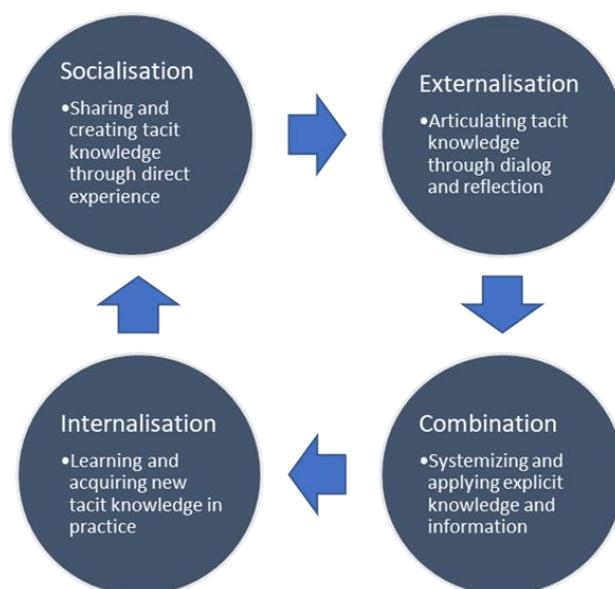


Figure 2. SECI model (Nonaka & Takeuchi, 1995)

6. E-Mentoring Concept for Higher Technical Education Institutions Lecturers

It is suggested that the e-mentoring process will be led by someone who is a senior lecturer and has a history of success in the academic field. This must be conducted by senior academics with a track record of success, as they will be able to advise newly appointed lectures on how to deal with various kinds of students and help them in achieving and increasing their respective students' test scores. This must occur prior to the new lecturer beginning his or her first class. An online workshop such as introduction to curriculum development, students' assessment development and class management is needed to prepare new lecturer in the demanding education sector. Even better, a lesson might be mimicked for them so they know what is required when delivering a lesson. They must get this training in order to improve the self-esteem prior to joining the class.

Mentors must be trained in this approach and be acquainted with the department's regulations and expectations. New lecturers should be supervised by mentors from the same departments to ensure that they may easily get help with whatever is needed. The institution must have a pool of mentors who have received training and are familiar with the institution's requirements. These benefits other member in the institution by ensuring that all departments have competent mentors who are familiar with their respective departments' requirements. Mentoring must be limited to a certain time period, such as six months to a year, which serves as a trial period. Then, the newly appointed lecturer might be trusted and promoted to permanent employee status, bypassing the probationary term. This also can be performed in accordance with the government or statutory agencies circulars relating to the appointment of new academic staff.

Newly appointed lecturers should get a thorough introduction on their respective campuses, since each campus has unique needs for various levels of workers. Before the lecturer is permitted to teach in the classroom, he or she should undergo at least one week of induction. The introduction to lectures should contain topic expectations and guidelines, as well as assessment rules and regulations. Additionally, it is suggested that those doing the introduction of lecturers be acquainted with what occurs in the classroom or have previously taught in a school. Mentors might utilise online platform such as MS Teams, Google Meet, WebEx and etc. to conduct discussion session with mentees. Collaborative platform such as MS Teams and Google can be utilised to record discussion and provide a save space for documentation proposes.

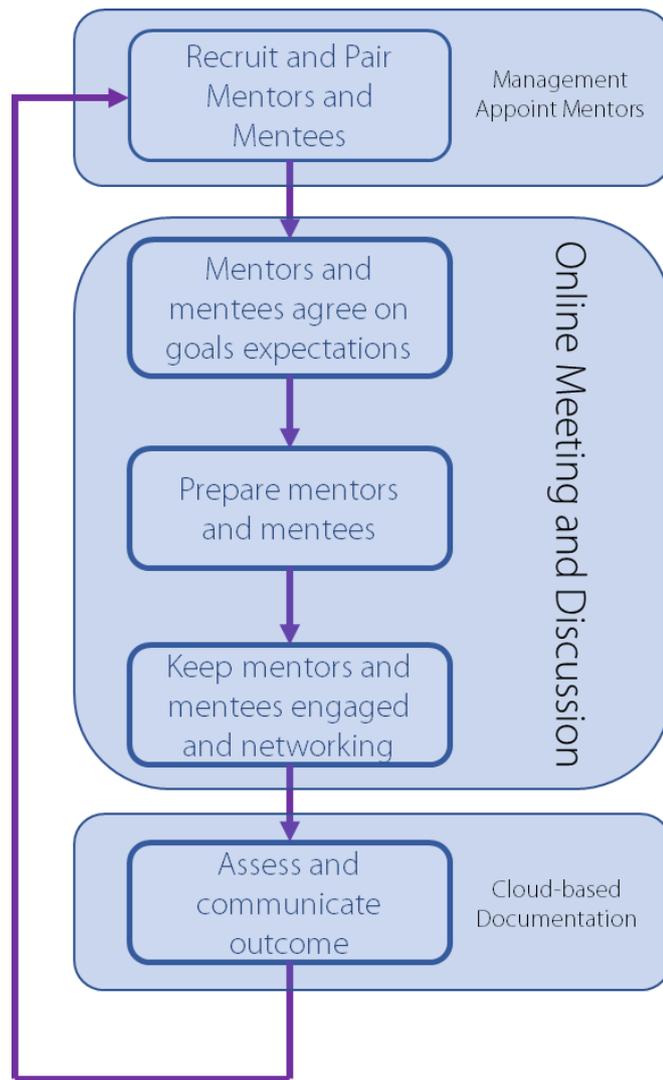


Figure 3. Systematic e-mentoring process

Additionally, it is suggested that senior lecturers with lack of motivation are refrain from taking on the role of mentors. This is the path for this process's failure, since it is a mandated obligation, not a choice, for senior lecturers. It is suggested that management identify people who have a love for mentoring or are ready to do so. The programme requires individuals with a track record of success who can mentor new lecturers in all facets of teaching. They must be provided with specific training in order to stay current on current mentoring skills. Management must determine how to encourage them in such a way that they will continue to do their duties gladly and without complaint. The HTEIs management must identify senior staff not only capable to guide mentees but able to use technology-based tools to enhance the mentoring process.

The whole process of e-mentoring covers both the Adult Learning Theory and the SECI Model. The adult learning theory will be taken as a whole because it involves all aspect of adult learning in the mentoring process. In addition, both mentors and mentees are working and this will affect the outcome of the mentoring program. Whereas, on the SECI model only two aspects are related to the mentoring process which are Socialisation and Internalisation. Both Socialisation and Internalisation

cover the characteristic of mentoring process in an organisation. Therefore, the e-mentoring concept by utilising Adult Learning Theory and SECI Model are illustrated in Figure 4.

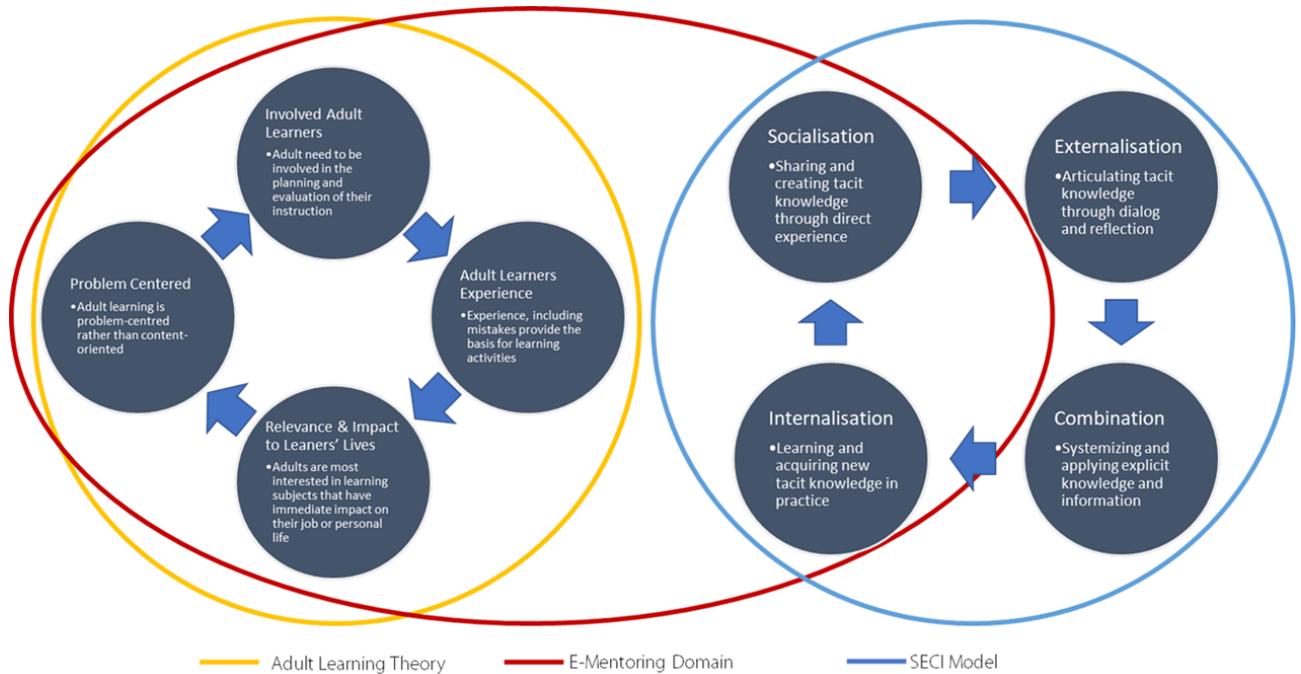


Figure 4. The conceptual framework for e-mentoring in higher technical education institutions (HTEIs)

7. Expected e-Mentoring Outcomes in the Context of Higher Technical Education Institutions

The reviewed literature demonstrates that both the institution and the person benefit from an academic career development environment. Mentoring results in the development of a relevant skills, viewpoint, professional behaviours, greater self-awareness, and increased self-confidence (Anderson et al., 2015). A well-mentored employee benefits from significantly improved career planning, further education, and the chance to acquire insights into professional growth (Barnová, Krásna, & Gabrhelová, 2019). Mentoring may also assist new academics in comprehending the value of collaborative work, sharing experiences, cultivating an awareness for diversity, serving as a good example for mentoring, developing abilities, and fostering connections between experienced and new academician (Cleary et al., 2017). Additionally, Cleary et al. (2017) stated that easily quantifiable mentorship outcomes include academic indicators such as funding, publications, commitment, satisfaction, career advancement, beneficial peer relationships, career acknowledgement and accomplishment, and enhanced skill competencies and growth. When compared to individuals who have not been mentored, mentees report better professional happiness, career progress, job involvement, career aspirations, work contentment, higher compensation, organisational commitment, and reduced desire to leave (Dougherty and Dreher, 2007). Another critical aspect of this connection is the acknowledgement of corporate culture, which includes the

vision, values, systems, norms, and assets necessary for a positive mentoring implementation (Manson, 2016).

Mentoring relationships of high quality may be characterised as mutually beneficial partnerships that fulfil the requirements of members (Ragins, 2016). Mentorships, on the other hand, may vary significantly in terms of quality and depth, as well as some mentoring relationships are just ordinary (Ragins, 2016). Ragins (2016) asserts that average connections produce ordinary results which refutes the idea that mentoring produces exceptional outcomes that grow workers, enhance their performance, and drive their careers. Ragins (2016) believes that exceptional results need extraordinary connections. Additionally, Ragins (2016) also believes that although academics have documented the most frequent mentoring experiences, they have unsuccessful to grab the exceptional experiences and distinctive dynamics of quality partnerships.

The e-mentoring in the HTEIs can be implemented systematically using a developed framework as illustrated in Figure 3. The first step is to recruit and pair mentors and mentees with similar technical background. As discussed previously, the mentors should have the qualities that meet the intended outcome of the mentoring program. The second phase is the mentoring itself with both mentors and mentees discussed the expected goals, preparation and regular meetings and discussion thorough online platform. Finally, mentoring program is assessed and documented using cloud-based system so that the outcome can be shared with others to enhance the knowledge in the organisation. To examine mentoring's anticipated results, Kammeyer-Mueller and Judge (2008) use a structural framework of the connection linking mentoring and outcome. The researchers discovered a link between mentorship and job and career happiness, and concluded that both general mentorship and career mentoring are significant predictors of professional success. They concluded that further study was necessary to fully explain career success, i.e., rather than focusing only on mentor functional scales, there could be a need to examine the mentor process more extensively.

The methodology developed by Kammeyer-Mueller and Judge (2008) enables them to evaluate the different contributions of career and psychological mentoring if both are included. However, their findings also indicated that mentoring had a modest to poor impact on career outcomes like as performance, job satisfaction, and career satisfaction, which is interesting to investigate further in the perspective of technical education lecturers. Figure 5 depicts the different approaches to evaluating mentoring results. The first route assesses the mentee's performance in terms of income and promotions, whereas the second path assesses factors for successful and fundamental output. The Kammeyer-Mueller and Judge (2008) model is used to formalise many of the concepts that discussed the connection describing mentors and mentees about the results of their mentoring relationships. The aim of these relationships is to determine if mentors and mentees at the institution had linked and unrelated outcomes, such as promotions and pay increases, as well as increased work and career satisfaction.

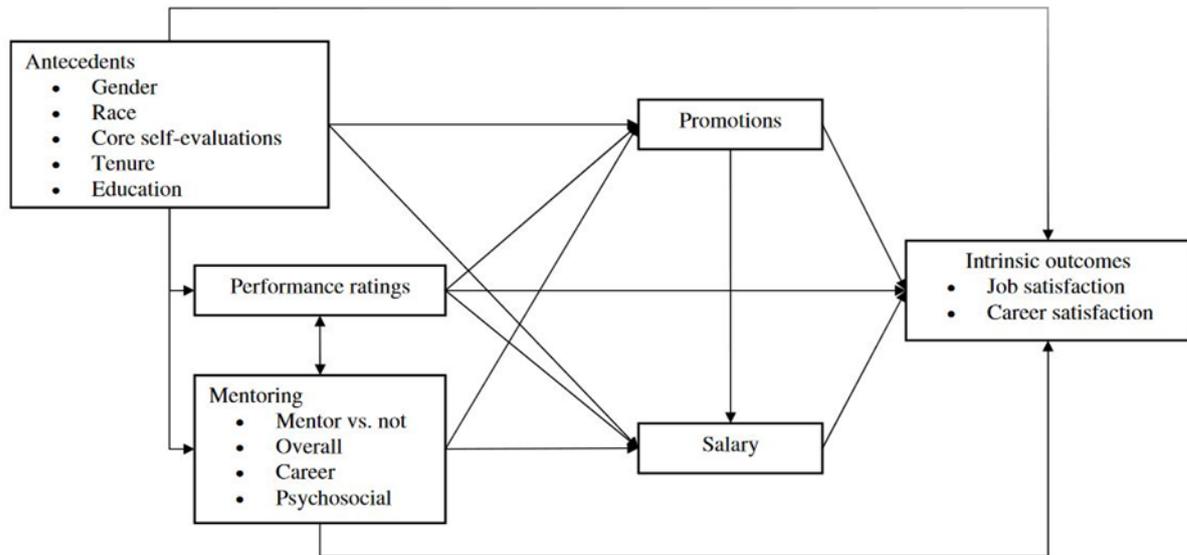


Figure 5. The Kammeyer-Mueller and Judge (2008) framework

8. Conclusion

Mentors main function is to assist mentees in making judgments on various roles and relations in light of the mentee's targeted advancement objectives and career plans. Mentorship is highly dependent on the mentor's expertise, dedication, and experiences, as well as those of the mentee. Setting and reviewing realistic and attainable objectives to help mentees in achieving their future plans for personal and professional development is a trust-based relationship.

The mentoring program's goal is to create a solution and to provide important information about work duties, career growth, and the institution's vision and mission to the mentees. In other words, by integrating e-mentoring techniques, organisations may significantly increase their chances of achieving critical organisational objectives. Technology has now entered the twenty-first century, and it is critical that businesses expand their use of technology to allow development and innovation in the workforce nowadays. Through the use of information technology, such as video conferencing, e-mail, voice mail, and other over-the-internet methods, e-mentoring may be utilised as a novel instrument for the synchronous and asynchronous transmission of shared knowledge.

It has been shown that organisations with formal and structured mentoring programmes reap many advantages. Organisational performance increased from establishing an e-mentoring programme. With the current technological advancements, it is conceivable that e-mentoring implementation in an organisation will have a larger effect on people who depend on social networking. E-mentoring may aid in the process of knowledge creation, which is advantageous in the area of management science. As Nonaka and Takeuchi (1995) and Knowles (1978) explain, e-mentoring may increase possibilities and access to knowledge transfer within an adult networking context. According to the Kammer-Mueller and Jugde (2008) model, effective mentorship results in career and professional success. Thus, by adopting e-mentoring in the setting of a higher technical

education institution, favorable benefits such as promotion, salary rise, and career satisfaction would be generated. Nevertheless, more study is needed to determine the outcomes of e-mentoring, particularly in the technical area, where face-to-face mentoring is preferred.

References

- Abugre, J. B., and Kpinpuo, S. D. (2017). Determinants of academic mentoring in higher education: Evidence from a research university. *Educational Process: International Journal*, 6(2), 20.
- Alemdag, E., and Erdem, M. (2017). Designing an e-mentoring program for novice teachers in Turkey and investigating online interactions and program outcomes. *Mentoring & Tutoring: Partnership in Learning*, 25(2), 123-150.
- Anderson, M. K., Tenenbaum, L. S., Ramadorai, S. B., and Yourick, D. L. (2015). Near-peer mentor model: Synergy within mentoring. *Mentoring & Tutoring: Partnership in Learning*, 23(2), 116-132.
- Angelique, H., Kyle, K., and Taylor, E. (2002). Mentors and muses: New strategies for academic success. *Innovative Higher Education*, 26(3), 195-209.
- Argote, L., and Ingram, P. (2000). Knowledge transfer: A basis for competitive advantage in firms. *Organizational behavior and human decision processes*, 82(1), 150-169.
- Arora, R., and Goel, S. (2018, August). Supporting e-mentoring for programming labs in engineering education. In *2018 Eleventh International Conference on Contemporary Computing (IC3)* (pp. 1-6). IEEE.
- Bang, E., and Luft, J. A. (2013). Secondary science teachers' use of technology in the classroom during their first 5 years. *Journal of Digital Learning in Teacher Education*, 29(4), 118-126.
- Barnová, S., Krásna, S., and Gabrhelová, G. (2019). E-Mentoring, E-Tutoring, and E-Coaching in Learning Organizations. *Edulearn 2019 Proceedings*, 6488-6498.
- Barrett, J. L., Mazerolle, S. M., and Nottingham, S. L. (2017). Attributes of effective mentoring relationships for novice faculty members: Perspectives of mentors and mentees. *Athletic Training Education Journal*, 12(2), 152-162.
- Bierema, L. L., and Hill, J. R. (2005). Virtual mentoring and HRD. *Advances in Developing Human Resources*, 7(4), 556-568.
- Burchill, K. P., and Anderson, D. (2019). A study of novice faculty members' experiences during the mentoring process. In *Faculty roles and changing expectations in the new age* (pp. 217-231). IGI Global.
- Cassese, E. C., and Holman, M. R. (2018). Party and gender stereotypes in campaign attacks. *Political Behavior*, 40(3), 785-807.
- Cleary, M., Jackson, D., Sayers, J. M., and Lopez, V. (2017). Building Early Academic Career Capacity through Mentoring. *Issues in Mental Health Nursing*, 38(11), 971–973.
- Cordie, L. A., Brecke, T., Lin, X., and Wooten, M. C. (2020). Co-Teaching in Higher Education: Mentoring as Faculty Development. *International Journal of Teaching and Learning in Higher Education*, 32(1), 149-158.

- Damnjanovic, V., Proud, W., and Milosavljevic, M. (2020). Mentoring development at student international business case competitions. *EuroMed Journal of Business*.
- Dougherty, T. W., and Dreher, G. F. (2007). "Mentoring and career outcomes: conceptual and methodological issues in an emerging literature," in Ragins, B. R., and Kram, K. E., eds., *The handbook of mentoring at work: theory, research and practice*, Thousand Oaks, California: SAGE Publications, 51-93.
- Eliyana, A., and Christiananta, B. (2020). Enhancing Innovative Work Behavior in the Hospitality Industry: Empirical Research from East Java, Indonesia. *International Journal of Business and Society*, 21(1), 96-110.
- Fullwood, R., Rowley, J., and McLean, J. (2019). Exploring the factors that influence knowledge sharing between academics. *Journal of Further and Higher Education*, 43(8), 1051-1063.
- Goerisch, D., Basiliere, J., Rosener, A., McKee, K., Hunt, J., and Parker, T. M. (2019). Mentoring with: reimagining mentoring across the university. *Gender, Place & Culture*, 26(12), 1740-1758.
- Gupta, A. (2020). "Mentoring Faculty for Quality Enhancement in Indian Higher Education," In *The Wiley International Handbook of Mentoring* (eds B. J. Irby, J. N. Boswell, L. J. Searby, F. Kochan, R. Garza, and N. Abdelrahman).
- Hakro, A. N., and Mathew, P. (2020). Coaching and mentoring in higher education institutions: a case study in Oman. *International Journal of Mentoring and Coaching in Education*.
- Herrera, C., DuBois, D. L., and Grossman, J. B. (2013). *The Role of Risk: Mentoring Experiences and Outcomes for Youth with Varying Risk Profiles*. MDRC.
- Headlam-Wells, J., Gosland, J., and Craig, J. (2005). "There's magic in the web": E-mentoring for women's career development. *Career Development International*, 10(6/7), 444-459.
- Hislop, D. (2003). Linking human resource management and knowledge management via commitment: A review and research agenda. *Employee relations*.
- Holmes, A. G. (2018). Problems with assessing student autonomy in higher education, an alternative perspective, and a role for mentoring. *Educational Process: International Journal (EDUPIJ)*, 7(1), 24-38.
- Hudson, P. B. (2012). How can schools support beginning teachers? A call for timely induction and mentoring for effective teaching. *Australian Journal of Teacher Education*, 37(7), 70-84.
- Kammeyer-Mueller, J. D., and Judge, T. A. (2008). 'A quantitative review of mentoring research: test of a model'. *Journal of Vocational Behavior*, 72(3), 269-283.
- Kang, S. C., Snell, S. A., and Swart, J. (2012). 'Options-based HRM, intellectual capital, and exploratory and exploitative learning in law firms' practice groups'. *Human Resource Management*, 51(4), 461-485.
- Knowles, M. S. (1978). Andragogy: Adult learning theory in perspective. *Community College Review*, 5(3), 9-20.
- Kram, K. E. (1985). 'Improving the mentoring process'. *Training and Development Journal*, 39(4), 42-43.
- Lam, A. (2000). Tacit knowledge, organizational learning and societal institutions: An integrated framework. *Organization studies*, 21(3), 487-513.

- Le Maistre, C. and Pare', A. (2010). Whatever it takes: How beginning teachers learn to survive. *Teaching and teacher education*, 26 3), 559-564.
- Lim, S. M., Foo, Y. L., Loh, H. T., and Deng, X. (2020). An Effective Developmental Tool in Mentoring in the Hotel Industry. *Applied Learning in Higher Education: Perspective, Pedagogy, and Practice*, 39.
- Lin, H. F. (2007). Knowledge sharing and firm innovation capability: an empirical study. *International Journal of manpower*.
- Lindeman, E. C. (1926). *The meaning of adult education*. New York: New Republic.
- List, K., and Sorcinelli, M. D. (2018). Increasing leadership capacity for senior women faculty through mutual mentoring. *The Journal of Faculty Development*, 32(1), 7-16.
- Lunsford, L. G., Crisp, G., Dolan, E. L., and Wuetherick, B. (2017). Mentoring in higher education. *The SAGE handbook of mentoring*, 20, 316-334.
- Manson, S. M. (2016). Early-stage investigators and institutional interface: Importance of organization in the mentoring culture of today's universities. *AIDS and Behavior*, 20Suppl 2, 304–310.
- Mohammed, K. N., Alnoori, A. A. H., and Jasim, A. I. (2020). Developing the Knowledge Workers Model for Core Competencies Management in Iraqi Higher Education Institutions. *Journal of Reviews on Global Economics*, 9, 181-190.
- Nonaka, I. and Takeuchi, H. (1995). *The knowledge-creating company: How Japanese companies create the dynamics of innovation*. New York, NY: Oxford University Press.
- Nonaka, I. and Takeuchi, H. (2001). '*Organizational knowledge creation*'. Creative Management, London: SAGE Publications, 64-82.
- Nottingham, S., and Mazerolle, S. M. (2018). Mentoring processes in higher education: perspectives of junior athletic training faculty members. *Internet Journal of Allied Health Sciences and Practice*, 16(4), 1.
- Omar, M. K., Rashid, A. M., Puad, M. H. M., and Azman, A. H. N. (2018). Fostering interests for teaching: Job satisfaction and motivation factors of Malaysian TVET instructors. *International Journal of Engineering & Technology*, 7(4.9), 46-51.
- Ragins, B. R. (2016). 'From the ordinary to the extraordinary: high-quality mentoring relationships at work'. *Organizational Dynamics*, 45(3), 228-244.
- Spanorriga, C., Tsiotakis, P., and Jimoyiannis, A. (2018, June). E-mentoring and novice teachers' professional development: Program design and critical success factors. In *EdMedia+ Innovate Learning* (pp. 1315-1324). Association for the Advancement of Computing in Education (AACE).
- Stuckey, S. M., Collins, B. T., Patrick, S., Grove, K. S., and Ward, E. (2019). Thriving vs surviving: benefits of formal mentoring program on faculty well-being. *International Journal of Mentoring and Coaching in Education*.
- Swart, J., Kinnie, N., Rossenberg, Y. and Yalabik, Z. Y. (2014). 'Why should I share my knowledge? A multiple foci of commitment perspective'. *Human Resource Management Journal*, 24(3), 269-289.

- Tanis, H., and Barker, I. (2017). E-mentoring at a distance: An approach to support professional development in workplaces. *Turkish Online Journal of Distance Education*, 18(3), 135-155.
- Van den Hooff, B., and De Ridder, J.A. (2004) 'Knowledge sharing in context: the influence of organizational commitment, communication climate and CMC use on knowledge sharing'. *Journal of Knowledge Management*, 8(6), 117-130.
- Yap, J. B. H., and Lock, A. (2017). Analysing the benefits, techniques, tools and challenges of knowledge management practices in the Malaysian construction SMEs. *Journal of Engineering, Design and Technology*.