

**Using an Exploratory Technology Enhanced Learning
Experience to Increase Career Adaptability and
Reduce Career-Related Anxiety**

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A project submitted to the University of Dublin, in partial fulfilment of the requirements for the
degree of Master of Science in Technology and Learning

2017

Declaration

I declare that the work described in this document is, except where otherwise stated, entirely my own work and has not been submitted as an exercise for a degree in any other university.

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Acknowledgments

I would like to thank my supervisor, Richard Millwood for all his feedback and support throughout this process. I would also like to thank Nina Bresnihan, Brendan Tangney and all my fellow TCD Technology and Learning students for their invaluable feedback and advice throughout the last year and to Lisa Hegarty for being a great class representative. A special thank you to Eoghan Scott and Caroline Connor for their endless support and encouragement with my research and to the participants, to whom I am forever grateful for giving their time. I appreciate their courage in participating and taking on a topic area that can be personally challenging. Hopefully this is the start to helping and encouraging many others.

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Abstract

The current study sought to assess the use of technology enhanced learning (TEL) to increase career adaptability and reduce career anxiety. It also sought to examine the success of the TEL and its overall impact on participants. Good communication skills, career awareness and flexibility are all examples of good career adaptability (Brown et al., 2006). Poor career adaptability not only impacts negatively on career choices but is also linked to higher levels of career anxiety (Brown & Lent, 2004). Intervention programs to increase career adaptability indicated good outcomes thus far (Lindsay, 2014; Rogers et al. 2008). While research regarding online intervention is sparse, early outcomes indicate TEL as a tool, has the potential to increase career related adaptability and decrease career anxiety (Andersson, 2009). Participants ($n=32$) were adult learners from the republic of Ireland. The study employed qualitative and quantitative methods to collect data. Measures included the Career Adaptability Scale (CAAS) (Savickas & Porfeli, 2012) and the Career Anxiety Scale (CAS) (Thai et al. 2014). The TEL was an online course hosted through Moodle. The TEL was designed with five structures in mind; 1) content design, 2) instructional design, 3) course design, 4) learning outcomes and 5) learning resources. Results indicated that after taking part in the TEL, participants reported an increase in career adaptability and a decrease in career related anxiety. Overall, findings suggested the TEL was successful and had a positive impact on career adaptability and career related anxiety. The availability of research examining the success of online interventions is small in number and calls for an increase in research in this field.

Keywords: career adaptability, career anxiety, technology enhanced learning, online learning.

Using an Exploratory Technology Enhanced Learning Experience to Increase Career Adaptability and Reduce Career-Related Anxiety.

The first aim of this study was to examine how can interacting with an exploratory Technology Enhanced Learning (TEL) increase career adaptability and decrease career related anxiety. This was based on literature clearly indicating the important role of career adaptability (Hirschi, 2009) and the potential outcomes of poor career adaptability (Super, Savickas & Super, 1996). Koen, Klehe and Van Vianen (2012) outlined the potential benefits of interventions to increase career adaptability and decrease career anxiety, whether TEL interventions, online interventions or career interventions. This leads to the second aim of the study; to examine the success of the current TEL intervention design. The third and final aim was to examine the impact completing this TEL experience had on the learners' future career decision making.

Career Adaptability

Research indicated that there are two phases when making a career choice; firstly, setting a goal and secondly putting plans in place to implement the goal (Brown & Lent, 2004). Research suggested the two main aspects of career development are self-exploration and environmental exploration. An individual will spend time exploring options that are available to them; they will then weigh up the choices that best suit them from both the self-exploration and environmental exploration aspects (Tolentino, Garcia, Restubog, Bordia & Plewa, 2014; Baumeister & Vohs, 2007; Savickas, 1997). However, not every learner navigates the process of choosing a career with ease; which can negatively impact on an individual's future career opportunities (Germeijs & Verschueren, 2007; Kelly & Lee, 2002). Theory suggested that this is grounded in the concept of career adaptability outlined by Savickas (1997) and his career adaptability framework titled the 'Career Construction Theory', which is based around these four core dimensions; 1) concern, 2) control, 3) curiosity and 4) confidence (Savickas, 2002, 2012).

Career Related Anxiety

Higher levels of career related anxiety are associated with individuals who have less control over their career aspirations (Weinstein, Healy & Ender, 2002). Choosing a career path can be a cause for major psychological stress among college students (Brown & Lent, 2004). According to Fouad et al. (2006), the more undecided students are about their career path; the higher their levels of stress and anxiety. Despite this, many students do not seek help (Eisenberg, Golberstein & Gallant, 2007). Further evidence of the negative impact of career anxiety is seen in a health survey on American college students (2010), that revealed 48% of college students felt “overwhelming” anxiety within the last twelve months (ACHA, 2010). Other studies have reported that negative career thinking can be associated with an increase in career anxiety along with low levels of decidedness with career choice (Bullock-Yowell, Peterson, Reardon, Leierer & Reed, 2011). Stress can lead to psychological issues, physiological issues and has the potential to negatively impact a learner’s academic performance and potential career options (Speilberger, 2013).

Career Adaptability Interventions

In addition to support from teaching personnel, interventions have also been established as a good tool for supporting learners with career related anxiety and uncertainty around career choice (Koen et al. 2012; Daniels, Clifton, Perry, Mandzuk, & Hall, 2011). There are few interventions surrounding career adaptability (Koen et al., 2012), though Savickas (2009) argued that researching the effectiveness of interventions to increase career adaptability is of great importance. Learners comfort levels with computer and technology usage for study, work and socialising are quite high (Caruso & Salaway, 2008) and technology usage continues to increase (ROA, 2011). Coolen (2014) highlighted that there have been online interventions that have worked well to increase career adaptability, which focused on the areas of both self-exploration and environmental exploration. Though as mentioned by Koen et al. (2012) above, few interventions exist and even fewer online interventions have been accessed.

The Current TEL Intervention Design

With the small number of research studies surrounding the success of online intervention, the current study designed an exploratory TEL to increase career adaptability in Irish adult learners. The design of the TEL intervention was influenced by; Savickas (2000) four core dimensions of career adaptability, the ARCS Motivational Model (Keller, 2000), the Five-Stage Model for online learning (Salmon, 2000), learning outcomes to achieve career adaptability (Brown & Lent, 2004) and numerous learning strategies for online learning (Galvin & O'Neil, 2013; Palloff & Prant, 2002). These five design aspects of the TEL intervention formed organically from the research that took place for this study and was separated into the areas of Content Design, Instructional Design, Course Engagement, Learning Outcomes and Learning Resources. These five key elements of the design are not put in any specific order and can be adapted as needed. Literature reviewed showed the potential for triangulation of data collected through the overlap of design models; this is discussed in detail in the design section of this study.

The current study

The overall rationale for carrying out this research was to increase the learner's career adaptability and consequently reduce their overall career related anxiety surrounding choosing a career. Another important aspect was to assess the design of the current TEL. The current study sought to fill the gap in literature and examine the potential success of a TEL intervention. Such interventions are extremely important given the potential impact that low levels of career adaptability can have on learners. Positive outcomes from the TEL suggested that such designs could be implemented on a national level. The following sections include a literature review that examines career adaptability and career anxiety, and how they impact on the working lives of individuals. The literature review clearly outlines the hypotheses for this piece of research. The design of the TEL itself is outlined in detail in the design section that follows the literature review. This is then followed by an in-depth methodology and a results section. The study itself concludes with a discussion of the results.

Literature review

The following literature review explores two of the main themes within this study, namely, career adaptability and career anxiety. Each variable is defined and current literature findings are examined. The literature culminates in the rationale for the current study.

Career choice and development involving the self and the environment, stems from Savickas' (1997) work on career adaptability. Super and Knasel (1981) were the first to suggest career adaptability as a concept within their work on vocational psychology, though it was Savickas who first developed the concept into theory; the Career Construction Theory (Savickas, 1997). Savickas stated that the concept of career adaptability could be operationalised by 'self' and 'environment' exploration, career planning and decision making, and defined career adaptability as "*the readiness to cope with the predictable tasks of preparing for and participating in the work role and with the unpredictable adjustments prompted by the changes in work and work conditions*" (Savickas, 1997, p.254). Other research has operationalised career adaptability in similar ways. Duffy and Blustein (2005) outlined career adaptability as career decision self-efficacy and one's commitment to a career choice. Zikic and Klehe (2006) explained career adaptability as career exploration and career planning. Bimrose, Barnes, Brown and Hughes (2011) suggested that career adaptability relates to when an individual has the capacity to progress successfully despite substantial change in employment circumstances.

While career adaptability is defined in many ways, most theories are based around the four core dimensions in Savickas model (2002, 2012); 1) concern, 2) control, 3) curiosity and 4) confidence. 'Concern' relates to the learning experience and process of developing career, while also having an optimistic and positive attitude towards the future (Savickas et al., 2009). Concern is also related to the planning and active involvement in thinking about career aspirations (Coolen, 2014). Rogers, Creed and Glendon (2008) emphasised how critical the final school years are when it comes to the process of career decision making. The authors stated that this is when learner's; establish their ideas for future employment and education, begin to make decisions and plans for their future, and explore their future career options. Rogers et al. (2008,

pg.14) stated that “*individuals who are conscientious and open to experiences are more likely to engage in career planning.*” However, career concerns must be followed by actions such as planning and setting goals to achieve.

‘Control’ surrounds the aspects of planning personal development, goal setting and personal reflection on development. Research has identified control as a major factor in reducing career indecision and increasing career adaptability, and work placement or part time jobs, help learners become in control of their work ambitions (Daniels et al., 2006). Duffy (2010) agreed, citing that students, who felt in control, also felt they were more adaptable to the world of work. Wright and Frigerio (2015) suggested that control within career adaptability was related to the intra-personal processes that get the individual to self-regulate and feel in control of their future.

‘Curiosity’ is concerned with widening career choices by gaining access to information and engaging with mentors. Poor career curiosity can lead to individuals having inaccurate views of themselves and the wider world (Brown & Lent, 2014). According to Mitchell, Levin and Krumboltz (1999), the more traditional career counselling interventions are obsolete and counsellors need to encourage exploration behaviours to increase the discovery of learning opportunities and preferred employment. The authors suggested that employment opportunities are often found in unexpected ways. Individuals need to be able to explore the self and environment to access these unplanned career routes and opportunities (Bimrose et al., 2011). Franklin, Yanar and Feller (2015) concur, stating that curiosity is an important variable in managing one’s career. They also stated that curiosity and exploration indicated a higher likelihood of actions and effectiveness in managing careers and furthermore, that curiosity and exploration led to increased self-esteem and empowerment.

‘Confidence’ is surrounded with the learners’ mental health and general well-being, as well as the activities that the learner can plan and engage in (Savickas, 2002). Confidence and self-belief in learners was seen to relate to wider ranges of career options considered, as well as increased decision making processes in career development (Betz & Hackett, 1986). The prospect of job promotion is also an important factor of confidence building for learners and also

encourages a learner to have ambitions, which can lead to improvement in confidence (Bimrose et al. 2011). Confidence is an important part through the process of attaining a career, for example, job interviews (Baur, Damian, Gebhard, Porayska-Pomsta & André, 2013) and job performance (Nygyen, Johnson, Collins & Parker, 2016).

Each of the four dimensions discussed above are important factors for successful career adaptability and provide many positive consequences. Viewing career adaptability as a whole rather than the sum of its parts; it is evident that there are many positive outcomes from increased levels of career adaptability. Fugate, Kinicki and Ashforth (2004) stated that having high levels of career adaptability can aid a person dealing with job loss in a more productive manor than someone with low levels of or no career adaptability. Numerous studies reported that young people in education that have greater levels of career adaptability have a greater chance of success when transitioning from education to the workforce (Germeijs & Verschueren, 2007; Patton, Creed, & Muller, 2002). In fact, having strength in career adaptability, as a potential employee, can help a person develop skills in order to make them more employable (McArdle, Waters, Briscoe & Hall, 2007). Overall, career adaptability is an extremely important skill needed for job success and a skill that is important from the early stages in career choices (Hirschi, 2009). Heightened levels of career adaptability also bring with it the possibility of increasing the chances for job promotions (Bimrose et al. 2011). Employers are aware that graduates with greater adaptability, goal setting and management skills determine greater success in the workplace (Coetzee, 2014). Not only can career adaptability increase job prospects, it has the potential to increase life satisfaction (Hirschi, 2009). According to Bimrose et al., (2011, pg.54) *“career adaptability has the potential to empower individuals to take positive decisions and actions regarding their skills development.”*

However, not every person is successful in attaining career adaptability and there can be many negative outcomes as a consequence of poor career adaptability. For example, Kelly and Lee (2002) stated that career indecision impacted the way an individual explores career choice while also stating that a lack of career adaptability can have a negative impact on career opportunities. Career indifference is the term sometimes used for a lack of career concern and indicates pessimism and not forward planning around future careers (Brown & Lent, 2014).

Coetzee (2015) also agreed that career indecision can have negative consequences and that low levels of control over one's career can lead to subsequent struggles in the workplace.

Stress is also another negative outcome of poor career adaptability (Super, Savickas & Super, 1996). Students with less control of their career ambitions felt greater career related anxiety (Weinstein, Healy & Ender, 2002; Brown & Lent, 2004). According to Morgan and Ness (2003), a majority of undergraduate students experience anxiety in relation to their career decisions. The authors stated that 50% of students find it difficult to make decisions about their future careers. Furthermore, a health survey on American college students in 2010 revealed that 48% of college students felt “overwhelming” anxiety within the last twelve months (ACHA, 2010). According to Fouad et al. (2006), the more undecided students are about their career path, the higher their levels of stress and anxiety. Stress can lead to psychological issues, physiological issues and has the potential to negatively impact a student's academic performance and potential career options (Fouad et al., 2006; Savickas & Porfeli, 2012; Spielberger, 2013). Psychological stress can have a negative impact on thinking patterns. Bullock-Yowell et al. (2011) reported that negative career thinking can be associated with an increase in career stress and decrease in career choice decidedness. Despite this, many students do not seek help (Eisenberg et al. 2007).

Zacher (2014) argued that career adaptability changes greatly over time and that age and experience are two main factors in understanding about career adaptability. It could be possible that there is too much focus on career adaptability for young students (Greene, 2006). While research shows that those with poor career adaptability are more likely to be less satisfied with their career (Zitic and Klehe, 2006); it does not take into account for opportunities to increase career adaptability in later stages of career. When trying to increase career adaptability, there should be caution in regards to age appropriateness. Hartung, Porfeli and Vondracek (2008) stated that the pressure to begin to develop the core competencies outlined by Savickas (2002) is getting earlier in today's society and the simplicity of play in childhood is getting shorter.

However, if someone does not have good career adaptability, it could be argued that there is no immediate cause for concern, as career adaptability is a skill that can be developed over time. Brown, Bimrose and Hughes (2011) states that in order to ease the type of pressure of focusing on career awareness and decision making from an early age, it is worth acknowledging the benefits of developing career adaptability at work and learning on the job. This can be done from; mastering practical skills, being challenged within an employment role, learning communicative skills and cognitive requirement of certain employment positions, updating or learning a new knowledge base, learning from particular types of work interactions and from engaging with self-directed learning (Brown et al., 2011). There are still many opportunities to improve career adaptability at a later stage in life while also working, such as updating or learning a new knowledge base. This can be done through Continuing Professional Development (CPD) and certain work activities (Brown et al. 2011).

Considering the potential negative outcomes from poor career adaptability and the need to attain employment after education; increasing career adaptability is potentially both useful and logical. There are many different ways one might go about increasing career adaptability, which can often be explained through self and environmental exploration. An individual will spend time exploring options that are available to them; they will then weigh up the choices that best suit them from both the self-exploration and environmental exploration aspects (Tolentino et al. 2014; Baumeister & Vohs, 2007; Savickas, 1997). Zitic and Klehe (2006) also highlighted the role of self and environment exploration and how this results in better informed career decisions and consequently, increased happiness and productivity. They also stated that engaging in the process of environmental exploration is linked to the increase of finding a job that is suitable (Zitic & Klehe, 2006). A study by Coolen (2014, pg.2) involving online interventions that included self-exploration and environmental exploration, highlighted '*the significance of self-exploration before conducting environmental exploration.*' The author also stated that if a person engages in self-exploration before environmental exploration they will set more career goals. Other research that includes self and environment exploration is Lindsay (2014), which outlined a learning model that included the cognitive learning of skills and knowledge, as well as the interpersonal and intrapersonal skills of career development. This model incorporates attributes

of career adaptability into an overall model that outlines the different aspects that make up the complete professional, while increasing career adaptability through exploration of the self and the environment.

While self and environment exploration is outlined as important for career adaptability, individuals often need help to achieve these skills. Support can originate from friends and family. Teaching staff also play a pivotal role in supporting students to increase career adaptability. Interventions and help from university staff is reported to help with career indecision and career anxiety (Daniels et al., 2011; Koen et al. 2012). For example, an Australian study with 414 high school students that explored social supports and goals within career exploration discovered that *'levels of planning were highest when social support and goals were highest.'* (Rogers et al. 2008, pg.2). Rogers et al. (2008) found a direct relationship between career supports (parents, teachers, friends) and career exploration and career planning; whereas other researchers have found indirect relationships between supports and choice action behaviours. Support continues to be a central factor in increasing career adaptability. In a study by Hirschi (2009) with 330 Swiss students, those with no plans to go on to further education and training reported lower levels of support in their career development. Koen et al. (2012) developed a training program to increase career adaptability in university students. Results indicated that the 32 students who took part in the study had increases in concern, control and curiosity about their career decisions. A six month follow up indicated better career outcomes based on outcomes from a control group of students who did not take part in the training. Brown and Lent (2014) state that career counseling intervention help individuals to be clearer on choices and to feel more in control. Spurk, Kauffeld, Barthauer and Heinemann, (2015) completed an intervention study with 81 research associates of German university that granted support for encouraging the growth of personal career resources (such as changes within career planning), career coaching and networking. This resulted in the recognition of a relationship between increasing personal career resources and career success, which displayed the relevance of career support interventions that promote the growth of personal career resources.

However, Koen et al. (2012) did also state that very few interventions on career adaptability exist, despite Savickas (2009) argument that studying the effectiveness of interventions to increase career adaptability is of great importance. Even fewer TEL and online interventions exist, which is surprising in the current digital age. Once such online intervention by Coolen (2014) aimed to enhance students' career adaptability and found an increase in all career adaptability measures. In particular the intervention seemed to be more effective on enhancing concern and curiosity. Online interventions have been successful in many areas, for example, Hallam and Creagh (2010) found that there is a high level of interest in ePortfolios in the higher education because it helps students become reflective learners and being aware of their personal and professional strengths and weaknesses. Research by Alexiou and Paraskeva (2010) showed that students' self-regulated learning skills were enhanced when using TEL and online learning platforms. Given the potential positive outcomes of TEL and online learning and their ability to promote self-management; there are potential benefits for its use as a career adaptability intervention. Online and TEL interventions have also been successful in improving a wide range of psychological issues (Spek, Cuijpers, Nyklicek, Riper, Keyzer & Pop 2007; Andersson, 2009).

The literature clearly indicates the important role of career adaptability (Hirschi, 2009). It also outlined the positive and negative consequences of poor career adaptability with an emphasis on career related anxiety (Super et al., 1996). The literature also outlined the potential benefits of interventions (Koen et al., 2012). Acknowledging students' use of technology, the importance of career adaptability and career related anxiety, the success of online self and environmental exploration interventions being used to increase career adaptability and decrease career related anxiety; the current study provided learners with an exploratory TEL experience that enabled the learner to explore their personal work related skills and encourage them to navigate potential work environments and/or possible employment.

The points outlined above lead to the rationale of the current study. The main overall aim was to examine how can interacting with Technology Enhanced Learning increase career adaptability and reduce career related anxiety?

Hypotheses

- 1) Overall Career adaptability scores will significantly increase after engaging in the TEL.
- 2) Anxiety related to career choice will significantly reduce after engaging in the TEL.
- 3) Anxiety scores will be significantly related to career adaptability scores.

Questions to assess the success of the TEL

- a) Did the course keep participants' attention?
- b) Did participants feel that the course content was relevant?
- c) Did completing the course increase confidence in this topic?
- d) Were participants satisfied with the course?
- e) Was career adaptability changed and career-related anxiety changed, and in what way?

Design

The rationale set out in the current study was to examine how interacting with an exploratory Technology Enhanced Learning (TEL) can increase career adaptability and reduce career related anxiety. The next stage was to design the actual TEL intervention. An important aspect of the design was to engage and motivate the learners to take part in and complete this TEL and to encourage self and environment exploration. The target group were adult learners in Post Leaving Certificate Colleges (PLC) in Ireland. The design of the TEL intervention was influenced by these five key elements; Savickas (1997) four core dimensions of career adaptability, the ARCS Motivational Model (Keller, 1999), The Five Stage Model for online learning (Salmon, 2013), learning outcomes to achieve career adaptability (Brown & Lent, 2004) and numerous learning resources and strategies for Technology Enhanced Learning (Galvin & O'Neill, 2013; Palloff & Prant, 2002). The TEL intervention was designed in Moodle around these five influential aspects of the design (see Table 1) that were identified from previous research and literature. There is no specific order to these five TEL intervention design aspects. They will be discussed in detail in this section.

Table 1

Five Key Elements of the TEL Intervention Design

TEL Design	
Content Design	Four core dimensions of career adaptability: Concern, Control, Curiosity, Confidence <i>(Savickas, 1997).</i>
Instructional Design	ARCS Motivational Model <i>(Keller, 1999).</i>
Course Engagement	Five-Stage Model for Online Learning <i>(Salmon 2000; 2013).</i>
Learning Outcomes	Learning Competencies <i>(Brown and Lent, 2004).</i>
Learning Resources	Learning Strategies <i>(Galvin and O'Neill, 2013).</i>

Content design

From researching literature and previous TEL intervention designs it was decided that the four core dimensions of career adaptability proposed by Savickas (2002; 2013) would be utilised as a central aspect of the content design of the TEL intervention. These four core dimensions are; concern, control, curiosity and confidence. There are numerous studies that have used the Savickas (2002) model to guide educators in the design of career development programs. For example, Wright and Frigerio, (2015) outlined how educators can engage students with the general processes of career development and their learning experience by encouraging students to take action with personal development and planning. This process can initiate goal setting and learning outcome reflection. From here the educator can provide students with; access to information on careers, help expand their career perspectives through work related learning, an introduction to prospects outside of the learning environment and guidance from past students.

Finally, the authors drew attention to the importance of students being aware of their mental health and well-being. This can be achieved through engagement in student activities within societies, taking on student representative roles or taking part in student led events. Such activities can lead to student empowerment and improvements in general wellbeing. Koen et al. (2012) reported increases in career adaptability following a ‘repeated measures analyses’ intervention. The authors revealed that the outcome of this study also showed that by equipping learners with career adaptability resources can boost their prospect of achieving employment of a higher satisfactory quality to them. Other studies have incorporated the Savickas model, or one or more of the different dimensions into course design (Daniels et al., 2006). These studies were used as a model when designing the current TEL intervention and are discussed in more detail below.

The current study. For the ‘Concern’ aspect of this TEL, the focus was on encouraging the learners to be actively involved in thinking about the future career and planning (Savickas et al., 2009; Savickas, 2013). Rogers et al. (2008) suggested that ‘concern’ about career can be attained by encouraging students to plan and explore career options, thus creating an openness and awareness to engage in career planning. This was done through activities and tasks in Section 1, for example, asking students to identify their career interests, which encouraged exploration of learner’s personal preferences.

The focal point of the ‘Control’ aspect of this TEL was on helping students to take ownership of their career plans. Daniels et al. (2006) suggested that control of career can be attained through work placement or part time jobs. The course aimed to help students to work towards this goal. This was achieved by strengthening the learners understanding of goal setting, planning personal development and reflection as suggested by Wright and Frigerio, (2015). For example, activities and tasks in Section 2, such as practical interview skills, helped broaden the learner’s knowledge around the requirements within the interview process. Learners were also encouraged to reflect on what strengths they already had in this area and what improvements they needed to work on.

‘Curiosity’ within this TEL was targeted by engaging the learners to broaden their career choice through exploration learning and gaining access to information as suggested by Mitchell et al. (1999), while also being open to unplanned career routes and opportunities as highlighted by Bimrose and Brown (2011). This was achieved through Task 3.3 which asked the learners to work out all the different routes they could take in order to get to the ideal job for them. This helped the learners make a step by step plan to achieving their goals. This exploration style of learning can trigger curiosity within the learner while also leading to empowerment and increased self-esteem.

For the ‘Confidence’ feature within this TEL the focus was on encouraging the learners to build self-belief and confidence, as well as increasing their career decision making processes while considering a wider range of career options, as outlined by Betz and Hackett, (1986). Bimrose et al. (2011) discussed the importance of increasing career confidence and strengthening their ambitions with the prospect of job promotion. The authors also outlined how increased career confidence can lead to lifestyle improvements. This was achieved through activities and tasks in Section 4. For example, asking learners to review their own career related anxiety and identify their career related concerns or anxieties on a multiple-choice list. Other activities included suggestions around a five-step relaxation practice and reflections on how difficult or easy they found the proposed practice.

There were numerous other tasks within the TEL to encourage development of the four career adaptability dimensions (see Appendix 1). There was overlap between the dimensions and the course was split into four sections; career choice, getting the job, creating other options and self-belief. This design incorporated both self-exploration and environment exploration within the intervention design, alongside the four dimensions in order to increase career adaptability as suggested by Savickas et al. (2009).

Instructional Design

From researching previous TEL instructional design models and reviewing literature, particularly around motivating learners it was decided the ARCS Motivational Model (Keller, 1999) would be chosen as the TEL interventions instructional design model. This model included four dimensions; Attention, Relevance, Confidence and Satisfaction, which analyse the motivational needs of the learner. Early work by Keller (1987) expressed that in order to be successful in applying the ARCS Motivational Model, it is important to recognise the user or *'targeted audience'* of the intervention and have an understanding of them and their needs. This instructional design model was used for both the overall course design and throughout the development of each of the sections within the course as suggested by Keller (1999). The author outlined how this model has been used successfully in classroom settings, distance reading materials and computer based learning courses. Keller (2009) argued that motivational design features should not only engage the learner but should promote learning. It is also required to have knowledge of the content that will be implemented into the online intervention. This approach is enforced in order to stimulate and sustain *'the goal-oriented behaviour of learners'* (Keller, 2009, p. 23).

Research suggests that by using interesting graphics and encouraging problems solving will gain a student's attention and encourage curiosity (Keller & Suzuki, 2004). This demonstrates how the attention component of the ARCS Motivational Model (Keller, 1999) can be utilised to encourage the curiosity dimension outlined by Savickas model of career adaptability. Distance online learning can create problems regarding student motivation and Keller and Suzuki (2004) reported that use of the ARCS Motivational Model in online learning lowers dropout rate. Marshall and Wilson (2011) stated that it is well worth planning certain aspects of an online interest with accurate and intentional instructional design and emphasised how this can inflate performance. Marshall and Wilson (2011) examined the ARCS Motivational Model and stated that each of the ARCS elements are designed to trigger learners to be motivated to interact with online interventions and to inspire the learners to be motivated to complete online intervention course work such as activities and tasks.

The current study. The following paragraphs outline how the ARCS Motivational Model (Keller, 1999) was implemented and integrated into each part of the TEL design. The design of the TEL environment was clean and simple, as suggested by (Keller, 2000). It was also consistent with one core colour with some splashes of positive colours, the most important parts of the text were given a colour, which all helped to gain and maintain the learner's attention. Within the course content there was a clear message from the top of the page, which was broken down into separate sections that represent each section. Learners were able to navigate through these sections with great ease and were guided to the next section.

The following is an example of one of the design features that was implemented in order to keep the learners attention and encourage engagement within the TEL: an 'Announcement' Forum was sent up, which enabled the facilitator to send out emails to each learner to bring certain items to their attention or this was used as a reminder tool to remind the learners about certain items that need to be completed within a certain time scale. Keller and Suzuki (2004) suggested the use of group and personal messages to improve dropout rates. These messages could be reminder, encouragement or advice. Huett, Kalinowski, Moller and Huett (2008) argues that motivation is important in designing online learning courses, as many students will initially find web based environments fun but lose interest and motivation quite quickly. To avoid large dropout rates; the online learning environment must continue to keep the learners attention. The authors suggested that emailing students with content that follows the ARCS components can help keep students motivated.

Keller and Suzuki (2004) stated that attention is not sufficient and that course materials must be relevant. The authors suggest that the course content must be compatible to the learning styles and personal experiences of the learners. The current course incorporated different types of learning styles, such as; videos for those learners who were visual or spatial learners, audio introduction for aural or auditory learners, a mock interview for physical or kinesthetic learners. There was a sense of relevance to the content that was learned as the skills that the learners gained for example, practical interview skills are directly related to those needed when seeking employment and when working within a chosen career.

The type of tasks within this unit of learning, were specifically set out to be achievable and manageable. There was clear explanation and direction with each activity and task. Learners were encouraged and there were positive reinforcements such as feedback from course facilitator. The intention of all of this was to help learners to build confidence when completing the activities and tasks, such as completing a career plan for Activity 4.6 (see Appendix 1) or problem solving in relation to changing jobs for Activity 3.2 (see Appendix 1). Learners were asked to actively seek feedback on their strongest personal skills for Activity 2.3 (see Appendix 1). Keller and Suzuki (2004) argue that for online content to continue to keep the learners attention, the course should have changes of pace. The current study assigned different numbers of tasks and different levels of activities to the four sections of the online course (see Appendix 1).

In order to help the learners receive satisfaction from taking part in the learning experience they completed tasks sent out specifically to help them realise what they had learned. They were also asked to interact with other learners online, along with most of the tasks they were asked to complete. This engagement with other learners helped to bring a sense of community to the TEL experience, which can help with making the completion of activities and tasks worthwhile which may then lead to satisfaction.

Course Engagement

From researching literature and previous TEL intervention about learners' engagement it was decided that it was important to base the design of the current TEL intervention on an online learning model that focuses specifically on engaging learners. Therefore, it was decided to use Salmon's (2000) Five-Stage Model in order to keep the learners engaged with the learning experience (see Figure 1). This model would also aid in keeping the learners motivated to complete the TEL. Salmon (2000) outlines a five-stage process to engage the student with online technology; stage 1) access and motivation, stage 2) online socialisation, stage 3) information exchange, stage 4) knowledge construction and stage 5) development. Some of the main features of the model include how to use activities, to encourage students to interact with each other and

the person moderating the course. The author stated this was preferable rather than just accessing the materials online.

Other research has highlighted the importance of focusing on course engagement supporting Salmon (2000), for example Handelsman, Briggs, Sullivan and Towler (2005) highlighted that the amount a learner engages with a learning experience is linked to the achievement anticipated for a learner. The authors reported that there are four specific and dependable aspects of course engagement; '*participation/interaction engagement, skills engagement, performance engagement and emotional engagement*' (Handelsman et al., 2005 pg. 186). Studies have also shown that a combination of both the amount a learner becomes involved in academic life along with other scholarly activities and the extent in which a learner becomes engaged in a learning experience can influence the success levels of a learner (Svanum & Bigatti, 2009). The authors also revealed the importance of advance planning of what needs to be done to in order to support, encourage and sustain each learners involvement with a learning experience (Svanum & Bigatti, 2009).

Salmon's (2013), framework equips the learner with 'skills and comfort' within a TEL. This includes learning, networking with the online community and working on each task. It also assists the educator in knowing what needs to be done at each stage in order to help pace the learning that is taking place, to support the learners needs and to engage and motivate the learners (Salmon 2013). Moule (2007, p37) argued that the Salmon framework is widely used and that '*while constructivist online learning communities are often adopted in higher education the five-stage model has not reflected the potential available to use e-learning as part of an integrated approach that includes face-to-face deliver.*' However, given the complete online nature of the current study, the Salmon framework was seen to be a good fit for design.

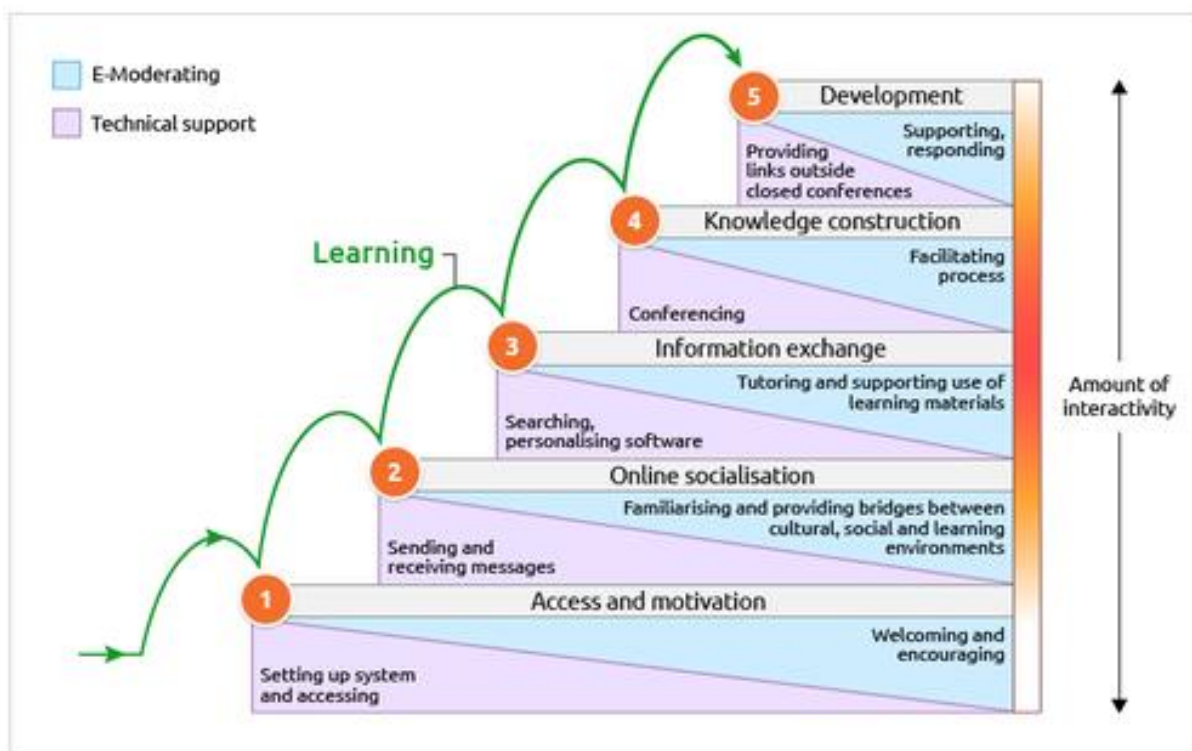


Figure 1. Five-Stage Model (Salmon, 2000)

The current study. Below is a breakdown of stages and how they were achieved through the course design.

Stage 1: Access and motivation. Salmon (2013), states that a fundamental aspect of online learning is that the learners can proceed to the online system with ease. Before beginning this TEL experience each learner were emailed a link to the course and given a username and password with a detailed explanation of the next steps to take. Also attached to that email were details of how to set up and add details to their user profile.

In order for learners to be able to actively engage with the TEL experience they need to be given the details of how to participate (Salmon, 2013). With that in mind an audio introduction to the course was provided with an explanation of how to take part. There was also a text based introduction with an overview of what the course entails, with certain keys words being highlighted to catch the learners attention. Each section was clearly labelled, with details of what was covered. For clarity each activity/task was allocated a number for example, Task

1.1. Each activity/task had numbered steps with clear instructions of what was required. Each activity/task also had a forum that was linked to it, which was where the learner could add their input to the activity/task. Each forum was located below the corresponding activity/task in order to make it easy to access.

A technical difficulties forum was set up in order for learners to express technical problems they may be having. Learners were encouraged to add to the discussion forum and help each other out. The facilitator was also available to advise. This forum was put in place as Salmon (2013 pg. 14) suggested the importance of producing an *'introduction to using the technological platform and acknowledgement of the feelings surrounding using technology.'* The main aim of this is to empower the learner to get started and encourage the learner to continue returning to the TEL experience Salmon (2013).

Salmon (2013) highlights another essential component that was needed, which involved motivating learners to spend time in the TEL experience and to create an environment where they also feel motivated to return to. This was done by designing the activities and tasks to be achievable, the way they were constructed was to have value to the learner and to encourage them into an exploratory learning environment. In order to cater for learners that needed competency motivation they were eased into the course work, with the initial activities and tasks being designed to be less difficult than the later activities and tasks, which became gradually more challenging. The content was designed to engage the learner by being relevant to them, in doing this they were asked to explore options and to select the options that they felt were related to them as an individual. The language used within the content of the activities and tasks was clear and easy to understand. Learners were encouraged to succeed in completing the activities, tasks and overall course. There is considerable overlap with the ARCS section on motivation.

As with online learning, learners are not always online at the same time or regularly so it can be difficult to keep track of who has completed work or who has been engaging with the TEL experience. Salmon (2013) reported the benefits of encouraging learners to regularly log into the TEL experience as once they fall behind with work it can be difficult to catch up. In order to combat this issue regular announcement were sent to out to learners that included

encouraging language and reminders of certain learning milestones that had recently been completed.

Stage 2: Online socialisation. Salmon (2013) expresses the importance of an online community within a learning experience and states that '*Many participants are very excited at the potential of sharing in the thoughts, experience and work of others but find that it is hard to start*' (Salmon 2013 pg. 20). Therefore forums were created within this TEL experience. Within the tasks the learners were asked to view other learners input and to give feedback on their tasks/input. This helped establish relationships within the TEL experience and build trust with other learners. One of the components of getting more comfortable and building up trust online is known as mutuality (Salmon, 2013).

Stage 3: Information exchange. Course information was restricted to a short amount of space in order to keep the learner's attention and not to overload them with too much information, (Salmon 2013 pg. 26), '*information in e-tivities should be short and should be there to initiate action and interaction.*' At this stage learners can get easily distracted from the learning (Salmon 2013), in order to eliminate any such diversion all of the videos link and where possible the website links were embedded into the course content. This would deter learners from ending up on a website that they could get side tracked with.

Salmon (2013), states that this is a good time to offer more content once it does not take away from interacting with one another. Therefore this is when more slightly challenging activities and tasks were introduced to the TEL experience.

Acknowledgement of posts from learners is very important from the facilitator and also from other learners (Salmon 2013). Responses were sent to all learners who posted to the first number of activities and tasks and as the course goes on the facilitator responded to a number of learners and made sure to be fair to respond to a variety of different learners.

Stage 4: Knowledge construction. Salmon (2013), highlighted the importance of making an online learning experience relevant to the learner and stated that there needs to be a link with the learner's personal experience in order to engage them in the learning. In the current TEL

intervention learners were encouraged from the start to relate the activities to themselves and their own experiences. Such as task 1.1 (see Appendix 1) which asked learners to pick three career interest categories from a list that they felt most suited them. Also task 2.3 (see Appendix 1) which asks the learner to have a discussion about what their strengths or areas of improvements may be and to then make a list of these. Salmon (2013) also suggested when designing online learning the value in promoting learners to engage with '*the process of actively thinking and interacting with others online*'. Therefore, for both of the activities above the learners were asked to add the outcome from the tasks to a linked forum, for example Task 1.1 Forum and Task 2.3 Forum for these tasks. They were then asked to discuss them with others learners and to also engage with providing feedback to other learners.

Stage 5: Development. Learners were encouraged to take responsible for their own learning, Salmon (2013) at this stage of the TEL experience. An example of this is with Task 1.3 and 1.4 (see Appendix 1) which asked the learner to research a job vacancy that seemed suitable for them within a career path that they were interested in. They were asked to then look into in depth details about the position, company background and policies, terms of employment etc. They were then asked to list ways in which they could gain more information about the position if there was little information online, for example phone call, email, drop in, make an appointment to meet someone from the company. These tasks help learners take more responsibility for their learning and give them an active role within the learning experience. This also helped them '*build on the ideas acquired through the e-tivities and apply them to their individual contexts*' (Salmon, 2013).

Salmon (2013) also stated within this stage learners can become more self-reflective. Self-reflection was encouraged throughout the current TEL intervention but more so in section four (see Appendix 1), which was the final section of the learning experience. For example Task 4.1 was a self-evaluation activity. Learners were asked to select from a list of career concerns and anxieties that they felt most related to them. In Task 4.1 (see Appendix 1) they were then asked to add three of the career concerns or anxieties they felt they would like to improve. Activities and tasks such as these helped encourage learners to self-reflect.

Learning Outcomes

The importance of learning outcomes within a TEL intervention was discovered when researching literature and previous TEL intervention. Therefore, it was decided to focus on designing specific learning outcomes for the current TEL intervention for example, what skills and competencies did the course want learners to achieve?

When a learner has completed engaging with a learning experience it is thought that they should be able to demonstrate the knowledge and skills that they have learned and developed from participating in the learning process. Previously, the more traditional way to design course work had been based on a teacher centered approach, which involved decisions from the teacher of what would be in the course content and how it would be assessed. The teacher determined the level of which the learner '*absorbed the material taught*' (Kennedy, 2006 pg.3). Current practice outlines the use of clear learning outcomes. Learning outcomes are important as they don't just look at how many credits a learner may obtain from a learning experience but at what the learner can do once they have obtained the learning and credits from the learning experience. Learning outcomes are a forward thinking approach as they state the potential outcomes the learning experience can have on a learner's future (Kennedy, 2006). The author, highlighted that this type of approach is considered less 'teacher centred' and focuses more on 'student centred' learning and the intention of this approach is to set out the expectation of what the learners should be able to do by the time the learning experience is complete (Kennedy, 2006).

Another part of the design was to outline how students could achieve the learning outcomes. The basis for the design of this part of the course stems from work by Brown and Lent (2004). The authors examined the four dimensions of concern, control, curiosity and confidence outlined by Savickas (1997) model of career adaptability. The authors detailed the cognitive competencies required to change vocational behavior, alongside the types of interventions needed to increase career adaptability. For example, competencies needed to improve career adaptability on the four dimensions set out by Savickas (1997) were; planning, decision making, exploring and problem solving (Brown & Lent, 2004). The types of interventions discussed were; orientation exercises, decisional training, information seeking activities and self-esteem

building. The current study took both the competencies and the interventions as basis for the learning outcomes of the course, in other words; to improve career concern by encouraging students to plan through orientation exercises, to improve career control through decision making and decisional training, to improve career curiosity through exploring and informational seeking activities and lastly, to improve career confidence through problem solving and self-esteem building. Brown and Lent (2004) argued that if learners achieve these competencies and continue to engage in these competencies that this will strengthen the skills needed for a successful career.

The current study. In order to best equip the learners for building on their career adaptability with the potential for a successful career it was decided that the framework for the design of the learning outcomes would be a combination of Savickas (1997) four dimensions of concern, control, curiosity and confidence, alongside planning, decision making, exploring and problem solving (Brown & Lent 2004) as seen on Table 2 below. This table was used as a planning guide for the TEL experience. The content, activities, resources and strategies were all linked in with these learning outcomes and showed which aspects it helps to fulfil when developing career adaptability. Brown and Lent (2004) outlined that interventions should set reasonable challenges and break these into achievable steps. The authors also state that some strategies that can be put in place to improve career adaptability, helping the student to access different supports and resources (Brown & Lent, 2004). Within the current TEL intervention learners were encourage to engage in activities and tasks that help improve career confidence through problem solving and self-esteem building. Activities 4.2 (See Appendix 1) helped learners review the resources that they have already have from home, college, self and other. Task 4.2 (See Appendix 1) allowed for them list three of the most important resources which allowed for reflection, self-esteem building and confidence building.

Table 2

Savickas (1997) Core Dimensions and Competencies Planning Guide

Core Dimensions	Competencies/Activities
Concern	Planning
Control	Decision Making
Curiosity	Exploring
Confidence	Problem Solving

Learning Resources

From researching literature and previous TEL interventions the value of designing distinct learning resources for TEL interventions was highlighted. The learning resources for the current TEL intervention incorporated strategies that were used throughout the TEL in order to strengthen and expand the learner's career adaptability. They also overlap with difference aspects of the other course design elements for example instructional design and learning outcomes (See Figure 2).

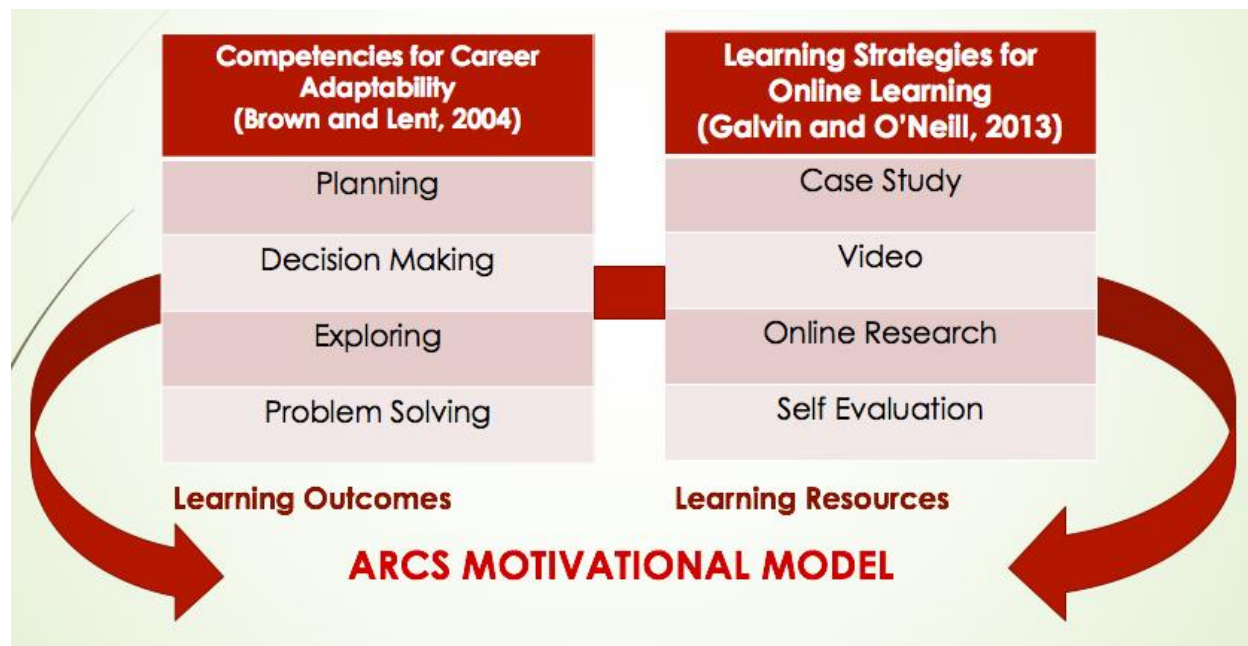


Figure 2. Example of overlap between difference aspects of the course design elements

Palloff and Prant (2002) highlighted that teaching online involves much more than traditional methods of providing notes and lectures. An online learning experience should be just as concerned with interactivity than with content and must provide adequate support, such as technical support and good response times (Palloff & Prant, 2002).

Rennie and Morrison (2013) explains that learning resources are materials that are used by teachers to assist learners in meeting the expectations of the learning experience and in order to attain the learning outcomes. This can include videos, computer software, research resources among many. Galvin and O'Neill (2013) state that when selecting resources for a TEL intervention it is important to firstly recognise the needs of the learners that will be engaging with the TEL. This can be done by reviewing the main intention of the learning experience and what it is hoped the learners will achieve by the time the learning experience has been complete. It is also essential that the resources within a TEL make sense within the context of the learning. The resources need to be associated with a task within the TEL, it's important that the related assessment within the TEL is aligned with the resources, they also need to be available to

learners when they need them and in a format that is accessible to use (Galvin & O'Neill, 2013). Another resource that is a vital aspect for nurturing learners to be successful within an TEL environment is to have adequate support around technology, how to use it and how to engage with it (Baran & Correia, 2014). Boettcher (2007) stated that an important facet of the learning resource is that they enhance the learning experience for the learner. It is crucial to create an environment that the learners will want to engage with and will invest as much time as possible in. Therefore, it is fundamental to have an effective, progressive and interactive learning experience for learners to interact with.

The current study. A number of resources and strategies were used to encourage and develop career adaptability. One resource that was used within the TEL experience where case studies for example, Activity 3.2 (see Appendix 1) gives an example of a person's experience of starting a position with a new employer and it was not what they thought it would be. Learners are asked to come up with a solution of how the person could improve the situation, they are then asked to add it to a corresponding forum and to discuss their solution with other learners. This helps learners' problem solve without being too close to the problem themselves while to interacting and expressing their recommended solution with other learners. Marshall and Wilson (2011) reported that there are huge benefits for learners gaining knowledge from case studies, which can help share extensive expertise and experience from many years of work in a certain area or on a specific topic. The author expressed that by presenting a real-life problem to a learner it makes them challenged to consider how that challenge might best be resolved. The author also stated that case studies align with Keller's (1999) ARCS Motivational model in particular the categories that focus on Attention and Relevance (Marshall & Wilson 2011).

Technology Design for TEL – Moodle

Figure 3. TEL Intervention - hosted and designed in Moodle

Costa et al. (2012) emphasises the significant role that ICT has in education, Moodle being one of the most well known Learning Management Systems (LMS) and universally used open-source e-learning platforms, which allow the formation of an online learning experience where learners need specific access in order to enrol. Learning platforms such as Moodle contribute to examining new ways of learning and also teaching. The authors also stated that the platform has numerous capabilities and actions that can be used such as conversation, interaction, networking and feedback. For example, the conversation aspects allow learners to communicate with each other or the online facilitator through synchronous and asynchronous communication. Synchronous communication which entails instant discussion and asynchronous communication allows for discussion within forums. There are also features for managing learner's tasks and assessments (Costa, Alvelos & Teixeira, 2012).

Moodle was chosen to host and design the current TEL intervention (See Figure 3) as it met all the needs and requirements for the design and delivery of this TEL experience. Below are some examples of how Moodle was used for certain activities and tasks.

Course content. Moodle allowed for uploading of PowerPoint presentations, which was used for Activity 3.3 (See Appendix 1) for a presentation on ‘Different Routes to getting the Perfect Job!’ This activity helped learners understand the possibilities that they can achieve through career planning.

Instructional Design. Moodle allowed for clean and simple design, adding images and changes to the text colour. These were all important aspects to gaining and maintaining the learner’s attention (See Appendix 1).

Course Engagement. Moodle allowed for the setting up of forums where learners could submit the work they completed for the tasks, they could also upload files and the forums also allowed for learners to view other learners input and to interact with other learners by giving feedback to what they have added to the forum. The use of forums helped the learners to establish relationships and build trust with other learners. This helped to create an online community within a TEL intervention.

Learning Outcomes. Moodle allowed for using a PowerPoint presentation as a task tool by asking learners to download a prepared PowerPoint presentation and to then input information into certain selected slides of the PowerPoint presentation. They were then asked to upload and submit the PowerPoint presentation to the corresponding forum and within the forum they were asked to discuss what they had added to the slides of the PowerPoint presentation.

Learning Resources. Moodle allowed for choice activities. These were a helpful resource as they allowed for learners to complete a task quickly. An idea could be presented to the learners and once the learner selected their answers an overview of the answers were immediately available and they could be easily analysed.

There are log in details below in order to access and view this current studies TEL intervention.

Please find below the link for you to access the TEL intervention.

<https://careers.moodlecloud.com/course/view.php?id=3>

When you click on this link you will be asked for your username and password, please enter these details are below in order to access and view the TEL intervention.

username: **visitor**

password: **career80**

Methodology

Participants

There were 32 participants in this study. There were 9 male participants and 23 female participants. All participants were students over the age of 18 who are in either full time ($n=22$) or part time ($n=22$) education. All participants were currently living in the Republic of Ireland at the time of taking part in this study. Participants were recruited through Post Leaving Certificate Colleges (PLC) throughout Ireland. The link was passed to other students, through evidence from online introductions. All students, regardless of level of education, were included in the study.

Design

The study was a cross-sectional, mixed design; incorporating both qualitative and quantitative data. The study used a repeated measures design, where participants completed a questionnaire before and after taking part in an online intervention course. The study employed within and between groups analysis.

Procedure

Students were invited to take part in the study through college e-mail. Those who opted to take part in the study were asked to read the participant information form and to give informed consent (see Appendix 2). Participants then completed the pre-questionnaire before taking part in the TEL experience (see Appendix 2). This pre-questionnaire included setting up a username that would help them access the TEL experience, providing a contactable email address, demographic questions, the Career Adaptability Scale – CAAS (Savickas & Porfeli, 2012), the Career Anxiety Scale – CAS (Thai, Unno & Montgomery, 2014; Gündüz & Yilmaz, 2016) and debriefing information. Once the course modules were completed, participants were then asked to complete the post questionnaire. This post questionnaire included course feedback questions in relation to the ARCS Motivational Model (Keller, 1999) and on the impact the TEL experience had on

learners' future career decision making and both the Career Adaptability Scale – CAAS (Savickas & Porfeli, 2012) and the Career Anxiety Scale – CAS (Thai et al. 2014; Gündüz et al. 2016) again. When participants completed the research, they were fully debriefed (see Appendix 2).

Measures

The Career Adapt-Abilities Scale (Savickas & Porfeli, 2012): The Career Adapt-Abilities Scale (CAAS) consisted of four scales, each scale has six items. The subscales measure concern, control, curiosity, and confidence. These four subscales represent the four dimensions of career adaptability as outlined by Savickas et al. (2009). Each of the items on the subscales are “psychosocial resources for managing occupational transitions, developmental tasks, and work traumas” (Savickas & Porfeli, 2012). Participants were given a list of strengths and asked to rate how strongly they felt they have developed each of these strengths. Items are answered on a five point Likert scale, ranging from 1=strongest to 5 = not strong. The following are examples of the strengths that are presented to participants; “*thinking about what my future will be like*”, “*planning on how to achieve my goals*” and “*becoming curious about new opportunities*”. There are 24 questions in total. Total scores range from 24 to 120. The higher the total scores the higher the career adaptability of the individual. Reliabilities for this study were good with Cronbach alpha of .88 for concern .87 for control, .86 for curiosity and .87 for confidence. The reliability of the total scale was also very high, with an alpha of .94. Vianen et al. (2012) reported a similarly high Cronbach alpha score of 0.89 and confirmed convergent validity with self-esteem measures significantly correlated with career adaptability ($r = .38$).

Career Anxiety Scale (Thai et al. 2014; Gündüz et al. 2016): There are 12 items in the Career Anxiety Scale (CAS). Items are answered on a six point Likert scale, with 1 = strongly disagree and 6 = strongly agree. Total scores range from 6 to 36. Higher scores on the CAS indicate higher levels of career related anxiety. Participants are asked how strongly they agree with a list of 12 statements, such as “*Thinking about my future career is scary*”, “*I worry about not being able to find a job*” and “*I am afraid of being dissatisfied with my chose career*”. Three

of the statements are reverse scored (items 3, 5 and 7). This scale is relatively new and not widely used, however it was found to be the most relevant as previous studies adapted general anxiety scales, whereas this measure is designed specifically for career related anxiety.

Cronbach's alpha for the total scale was .91.

Both of these scales were included in the pre and post questionnaire. These results were compared in order to analyse if there was a noticeable difference with their career adaptability and career related anxiety after engaging with the TEL experience.

Ethics

The study was fully approved by the Ethics Boards at Trinity College Dublin (TCD). Throughout this study appropriate measures were taken to ensure to follow; the Code of Professional Conduct for Teachers (The Teaching Council of Ireland, 2012), the Ethical Code of Conduct of the Psychology Society of Ireland (PSI, 2011), the Data Protection Guidelines on research in the Health Sector (Commissioner, 2007) and the guidelines set out in the Teaching Council Act (2001).

Statistical Analysis

All quantitative data were screened for errors and normal distribution before statistical analysis took place. Scales used were tested for reliability. Descriptive analysis for demographic variables and mean scores across each measurement was conducted. Pearson's r correlational coefficients were used to test for associations between variables and a paired samples t -test was used to test for significant difference before and after the TEL intervention.

All qualitative data gathered was analysed through thematic analysis as outlined in Braun and Clarke (2006). The data was analysed for general themes and was also analysed for specific themes in relations to the assessment of the TEL intervention.

Results

Screening the Quantitative Data

Data from pre and post TEL intervention was screened prior to statistical analysis. Missing data and input errors were screened using descriptive statistics and frequencies. Of the questionnaires from 70 participants who initially enrolled on the TEL course, 32 were found to be complete and suitable for analysis. Distribution, skewness and kurtosis across the CAS scale and the CAAS scale was analysed for pre and post intervention.

Skewness and kurtosis values for the Career Anxiety Scale – CAS (Thai et al. 2014; Gündüz et al. 2016), the Career Adapt-Abilities Scale – CAAS (Savickas & Porfeli, 2012) and the four CAAS subscales from the pre TEL intervention are outlined in Table 3.

Table 3

Skewness and Kurtosis Values Pre TEL Intervention

Measure	Skewness	Kurtosis
CAS	.81	-1.25
CAAS Total	.33	-.68
CAAS Concern	.26	-.35
CAAS Control	.23	.30
CAAS Curiosity	.69	-.09
CAAS Confidence	.93	.23

Skewness values for the CAS, the CAAS and its four subscales all showed scores on the right side of the mode, which indicated a mild positive skew. All skewness values were within the ranges of -1 and +1 and indicated values within acceptable normal distribution ranges (Pallant, 2013). Kurtosis values for the CAS, the CAAS total, the CAAS concern and the CAAS curiosity were negative and indicated a mildly leptokurtic curve of distribution. The kurtosis values for the CAAS control and the CAAS confidence were positive and indicated a mildly platykurtic curve of distribution. The CAAS and its four subscales all had values within -1 and +1 and suggested acceptable normal distribution ranges (Pallant, 2013). The CAS kurtosis values fell just outside this range. Further analysis using boxplots indicated no outliers for the CAS (see Figure 4). Therefore, all data from the pre TEL intervention was deemed appropriate for parametric testing.

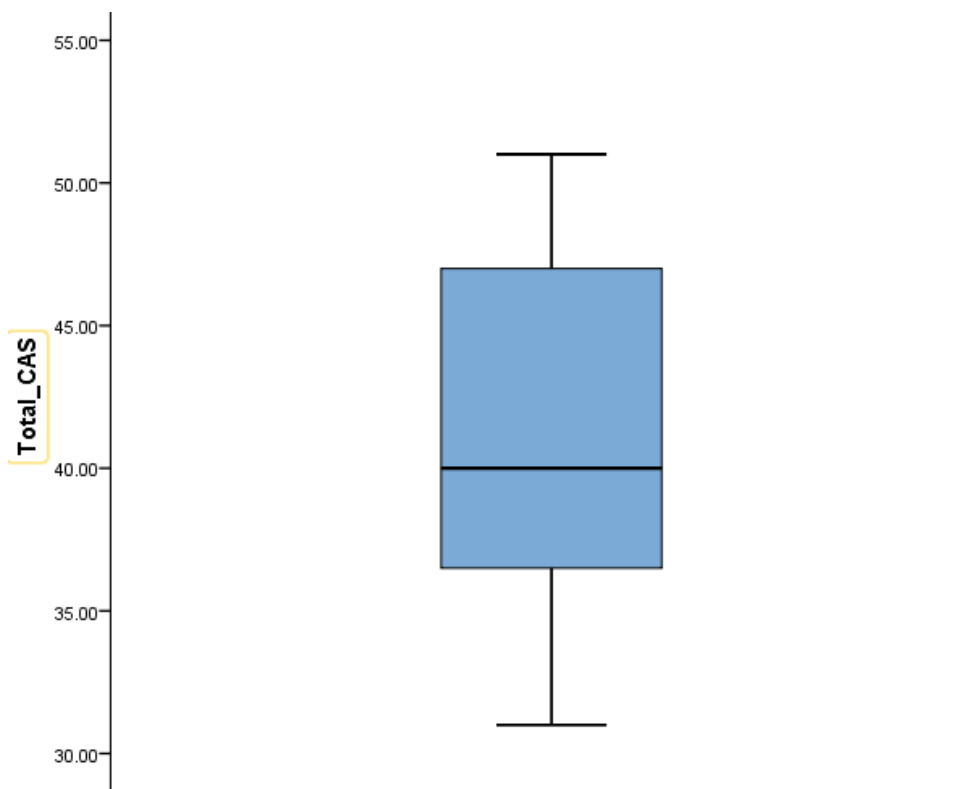


Figure 4. Boxplot of CAS total Pre TEL intervention

Skewness and kurtosis values for the Career Anxiety Scale – CAS (Thai et al. 2014; Gündüz et al. 2016), the Career Adapt-Abilities Scale – CAAS (Savickas & Porfeli, 2012) and the four CAAS subscales from the Post TEL intervention are outlined in Table 4.

Table 4

Skewness and Kurtosis Values Post TEL Intervention

Measure	Skewness	Kurtosis
CAS	.46	-.49
CAAS Total	-.42	-.14
CAAS Concern	-1.15	2.70
CAAS Control	-.15	-.55
CAAS Curiosity	-.26	-.41
CAAS Confidence	-.90	1.86

Skewness values for the CAS showed scores on the right side of the mode, which indicated a mild positive skew. Skewness values for the CAAS and its four subscales were on the left side of the mode, which indicated a mild negative skew. The CAS, the CAAS total, The CAAS control, the CAAS curiosity and the CAAS confidence skewness values were within the ranges of -1 and +1 and indicated values within acceptable normal distribution ranges (Pallant, 2013). Skewness values for the CAAS concern fell just outside these parameters. Further analysis using boxplots indicated one outliers, however this was not highlighted as an extreme outlier and was seen acceptable to include within the data set (Pallant, 2013) (see Figure 5).

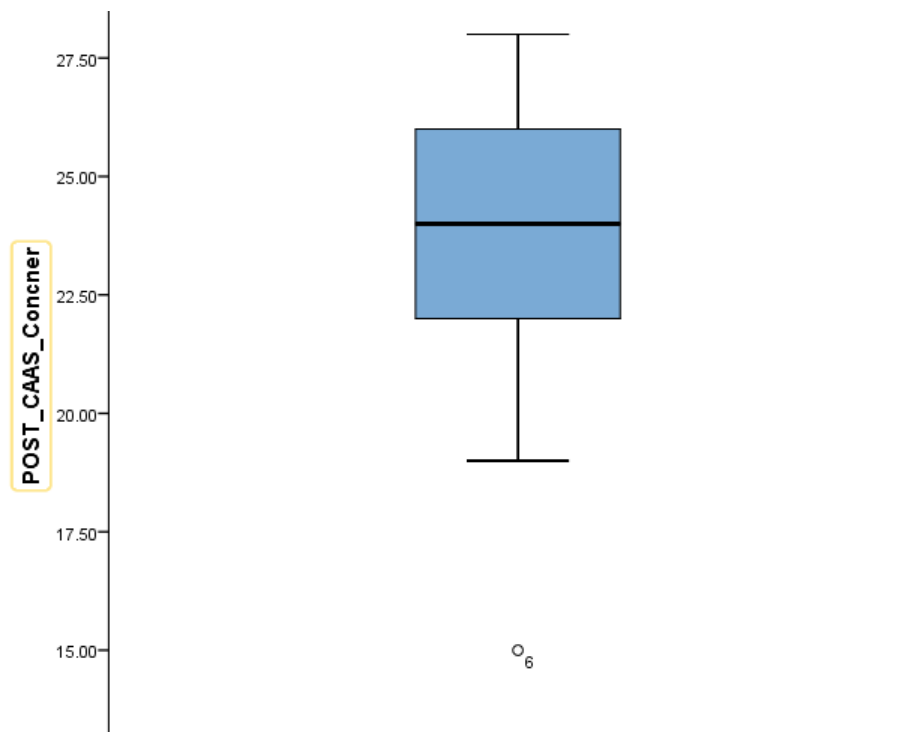


Figure 5. Screening for outliers on the CAAS Concern Subscale Post TEL Intervention

Kurtosis values for the CAS, the CAAS total, the CAAS control and the CAAS curiosity were negative and indicated a mildly leptokurtic curve of distribution. The kurtosis values for the CAAS concern and the CAAS confidence were positive and indicated a mildly platykurtic curve of distribution. The CAS, the CAAS total, the CAAS Control and the CAAS Curiosity all had values within -1 and +1 and suggested acceptable normal distribution ranges (Pallant, 2013). The CAAS concern and the CAAS confidence kurtosis values fell outside this range. Further analysis using boxplots indicated no outliers for the CAAS concern (see figure 6). Further analysis using boxplots indicated one outlier for the CAAS confidence, however this was not indicated as an extreme outlier and seen acceptable to include in the data set (see figure 7). Therefore, all data from the Post TEL intervention was deemed appropriate for parametric testing.

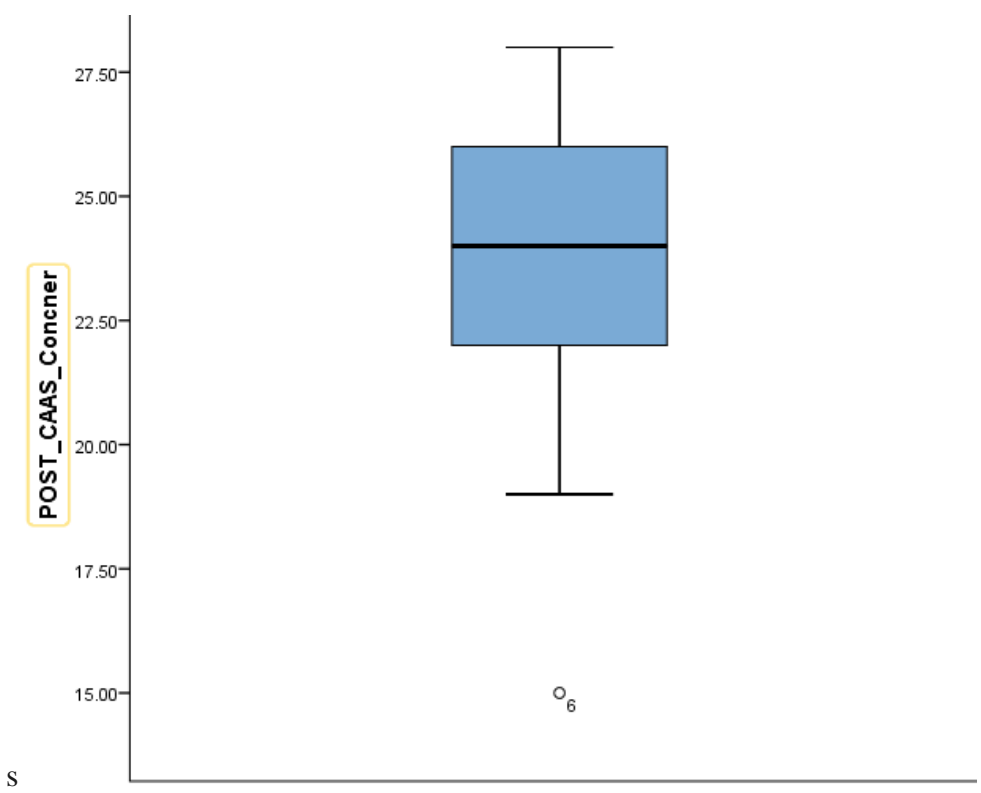


Figure 6. Screening for outliers on the CAAS Concern Subscale Post TEL Intervention

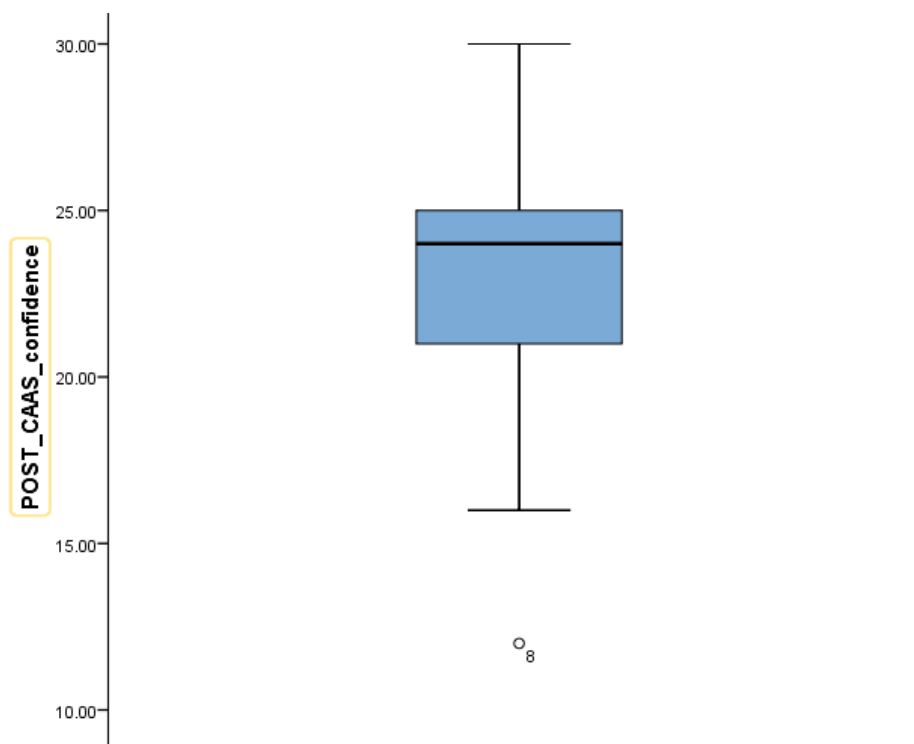


Figure 7. Screening for outliers on the CAAS Confidence Subscale Post TEL Intervention

Reliability Analysis

Cronbach alpha values Pre TEL intervention were at an acceptable of consistency for the sample (George and Mallery, 2003; Pallant, 2013). Similar findings were reported for the Post TEL intervention for all scales except the CAAS concern, which suggested unreliable consistency. Consistency increased to a maximum of .34 when item 8 was removed, though still not increasing to an acceptable level. However, looking at figure 6 and 7 of the Post TEL skewness and kurtosis boxplots, participant number 6 was identified as an outlier. While this did not affect the suitability of the data to use parametric testing, it was seen to impact the reliability of the CAAS concern score. When participant number six was removed, alpha values increased to .60 and an acceptable level of consistency. It seems the scale itself is robust (see Table 5).

Table 5

Cronbach alpha values for the CAS and CAAS measurements

Measurement	Cronbach's Alpha	
	Pre TEL	Post Tel
	Intervention	Intervention
CAS	.80	.76
CAAS Total	.90	.83
CAAS Concern	.69	.25
CAAS Control	.80	.60
CAAS Curiosity	.86	.67
CAAS Confidence	.80	.76

Descriptive Statistics

Of the participants who took part in this study ($n=32$), 28.1% were male ($n=9$) and 71.9% were female ($n=23$). Ages of participants ranged from 18 – 52 years ($M=26.78$, $SD = 10.46$). All 32 participants were in education, with 68.8% in full time education ($n=22$) and 31.2% in part time education ($n=10$).

Analysis of employment indicated that 50% were employed ($n=16$), 40.6% were no employed ($n =13$) and 9.4% indicated other ($n =3$). For those employed ($n =16$), 12.5% were employed fulltime ($n =2$), 75% were employed part-time ($n =12$) and 12.6% did not indicated the status of their employment ($n =6$). The means and standards deviations for each of the measurements used pre and post TEL are in table 6 below.

Table 6

The mean and standard deviation for the measurements used in the current study pre and post TEL intervention.

Measurement	PRE TEL		POST TEL	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
CAS	41.53	6.30	30.16	6.36
CAAS Total	68.94	15.02	92.94	10.45
CAAS Control	19.44	4.72	23.63	3.34
CAAS Concern	15.91	4.37	23.69	2.61
CAAS Curiosity	15.91	5.23	22.22	3.58
CAAS Confidence	17.69	4.99	23.41	3.71

Inferential Statistics

According to Pallant (2013) the following assumptions must be met in order to conduct a paired samples t-test:

- The dependent variable must be at interval or ratio level.
- The independent variable should have two categorical variables or related groups.
- The data should be normally distributed for the two groups.
- There should be no significant outliers.

According to Pallant (2013) the following assumptions must be met in order to conduct a Pearson's r correlational coefficient:

- The variables should be measured at the interval or ratio level.
- There should be a linear relationship between the variables.
- There should be no significant outliers.
- The data should be normally distributed.

The above assumptions were met for parametric testing on the hypotheses 1, 2 and 3.

Evaluating the data

There are three parts to the analysis of this study:

Part 1. Evaluating the hypotheses 1, 2 and 3

Part 2. Evaluating the Course Content and Design of TEL

Part 3. Evaluating the impact completing the TEL had on learners future career decision making

Each section is outlined below and contains details of the method of analysis and the type of data used, i.e. quantitative or qualitative or both.

Part 1. Evaluating the hypotheses 1, 2 and 3

The analysis of the main research hypotheses is examined through quantitative data from the PRE and POST Questionnaires.

The hypotheses were as follows:

- 1) Overall Career adaptability scores will significantly increase after engaging in the TEL.
- 2) Anxiety related to career choice will significantly reduce after engaging in the TEL.
- 3) Anxiety scores will be significantly related to career adaptability scores.

Hypothesis 1) Overall Career adaptability scores will significantly increase after engaging in the TEL.

A paired samples t-test was conducted to test if career adaptability would significantly increase following a TEL intervention. Results indicated that there was a significant difference between the Pre CAAS scores and Post CAAS scores ($t(31) = -8.83, p < 0.01$). Pre career adaptability was significantly lower ($M=68.94, SD=15.02$) when compared to Post career adaptability scores ($M=92.94, SD = 10.45$) as shown in figure 8.

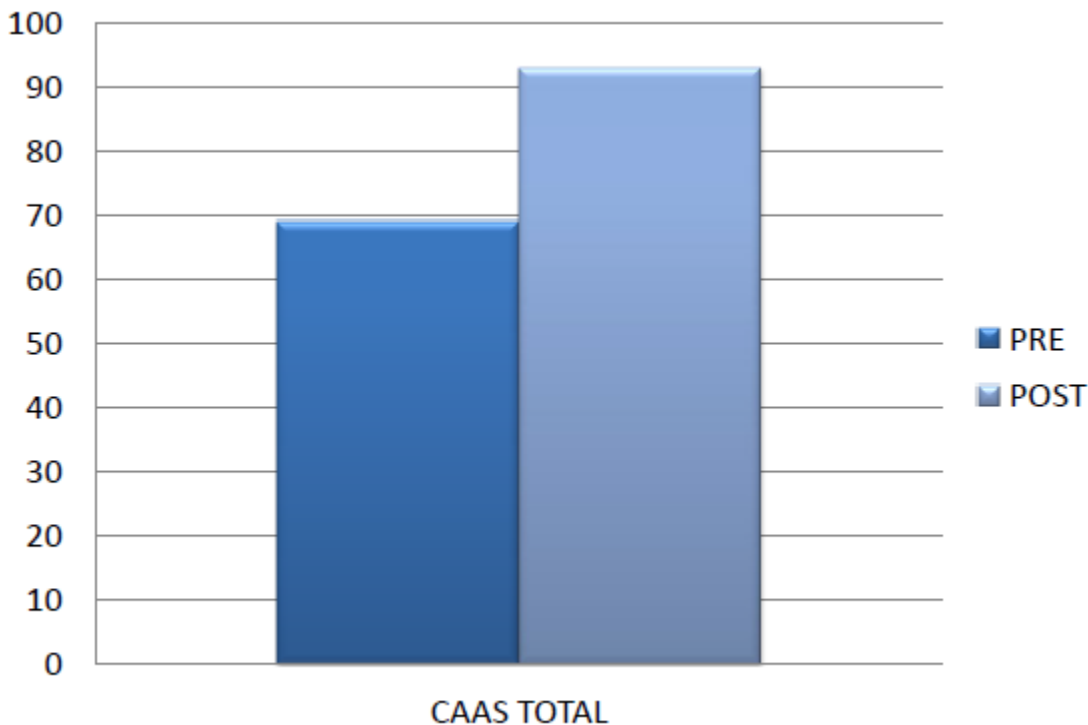


Figure 8. Mean differences Pre and Post TEL Intervention for the CAAS Total.

Similar findings were reported across each of the subscales (see figure 9).

CAAS Concern Subscale. There was a significant difference between the Pre TEL intervention concern subscale ($M=15.91$, $SD=4.34$) and the Post TEL intervention concern subscale ($M=23.69$, $SD = 2.61$), where $t(31) = -9.85$, $p<0.01$. Pre career adaptability concern subscale was significantly lower when compared to Post career adaptability concern subscale scores as shown in figure 9.

CAAS Control Subscale. There was a significant difference between the Pre TEL intervention control subscale ($M=19.44$, $SD = 4.72$) and the Post TEL intervention control subscale ($M=23.63$, $SD = 3.36$), where $t(31) = -4.39$, $p<0.01$. Pre career adaptability control subscale was significantly lower when compared to Post career adaptability control subscale scores as shown in figure 9.

CAAS Curiosity Subscale. There was also a significant difference between the Pre TEL intervention curiosity subscale ($M=19.44$, $SD = 4.72$) and the Post TEL intervention curiosity subscale ($M=15.91$, $SD = 5.23$), where $t(31) = -6.74$, $p<0.01$. Pre career adaptability curiosity subscale was significantly lower when compared to Post career adaptability curiosity subscale scores as shown in figure 9.

CAAS Confidence Subscale. Lastly, there was a significant difference between the Pre TEL intervention confidence subscale ($M=17.69$, $SD = 4.99$) and the Post TEL intervention confidence subscale ($M=23.41$, $SD = 3.71$), where $t(31) = -6.19$, $p<0.01$. Pre career adaptability confidence subscale was significantly lower when compared to Post career adaptability confidence subscale scores as shown in figure 9.

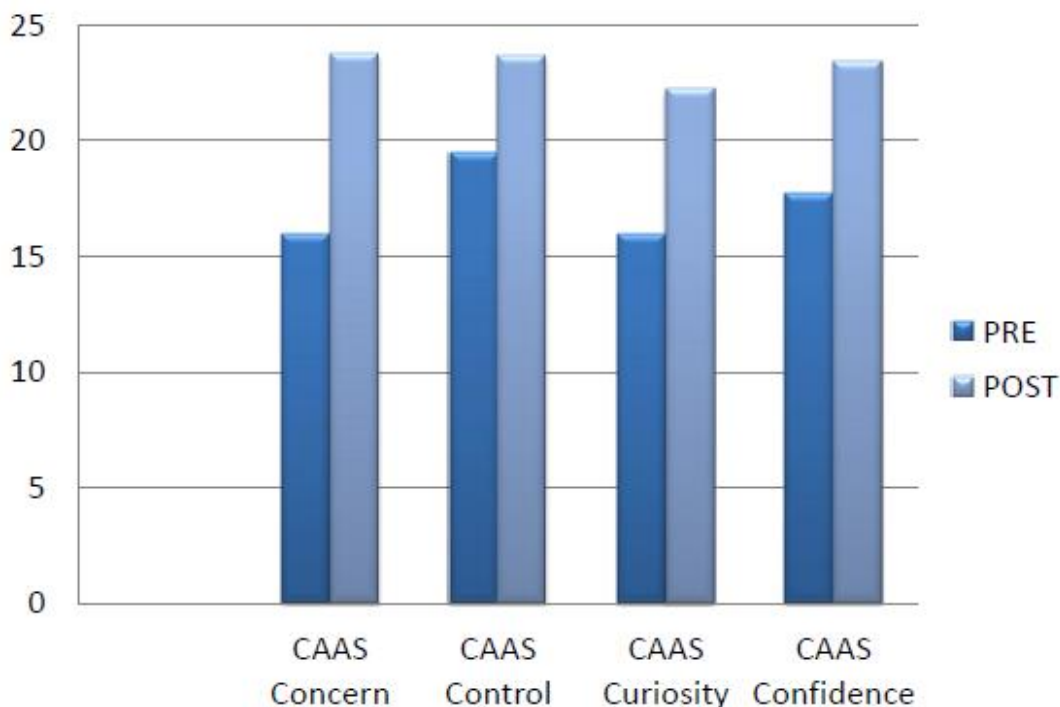


Figure 9. Mean differences Pre and Post TEL Intervention for the CAAS Subscales.

Hypothesis 2) Anxiety related to career choice will significantly reduce after engaging in the TEL.

A paired samples t-test was conducted to test if career anxiety would significantly increase following a TEL intervention. Results indicated that there was a significant difference between the Pre CAS scores and Post CAS scores ($t(31) = 7.72, p < 0.01$). Pre career anxiety was significantly higher ($M=41.54, SD=6.30$) when compared to Post career anxiety scores ($M=30.16, SD = 6.36$) which were significantly lower as indicated in figure 10.

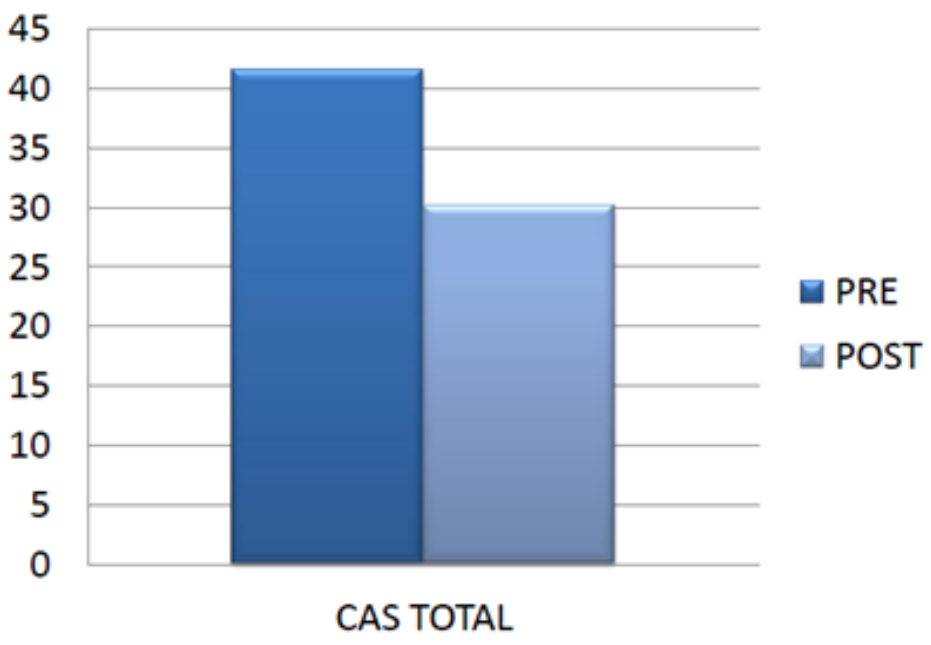


Figure 10. Mean differences Pre and Post TEL Intervention for the CAS total.

Hypothesis 3) Anxiety scores will be significantly related to career adaptability scores.

A Pearson's r correlation coefficient was conducted to test for associations between career anxiety, career adaptability and each of the career adaptability subscales Pre TEL intervention. Results indicated that there were no significant associated between the variables.

A Pearson's r correlation coefficient was conducted to test for associations between career anxiety, career adaptability and each of the career adaptability subscales Post TEL intervention. Results indicated that there was a significant negative correlation between career anxiety and the career adaptability subscale curiosity ($r = -.35, p < .05$). This suggested that after the TEL intervention, lower scores in career anxiety were associated in higher levels of career curiosity. There were no other significant associations between the other variables.

Part 2. Evaluating the Course Content and Design of TEL

The course content and design was evaluated by testing the following questions to assess the success of the TEL:

- a) Did the course keep participants' attention?
- b) Did participants feel that the course content was relevant?
- c) Did completing the course increase confidence in this topic?
- d) Were participants satisfied with the course?

How was this achieved:

This was achieved through the following methods:

1. Quantitative Data from Moodle
 2. Quantitative data from the POST Questionnaire which assessed the ARCS components on a 6 point Likert scale.
 3. Qualitative Data from opened ended question on the POST Questionnaire. This data was analysed for themes specially related to Attention, Relevance, Confidence and Satisfaction based on the ARCS Model Motivational Model (Keller, 1999).
1. ***Quantitative Data from Moodle.*** The quantitative data from learners Moodle log details included; the number of course information items opened, the number of course forums opened, the number of tasks completed, comments posted, login start and finish hours, and if multiple choice activities completed and/or viewed. Moodle data also included information on whether participants; listened to the audio files, posted a self-introduction, read announcements, read extra resources or read the technical difficulties forum.
 2. ***Quantitative Data POST Questionnaire.*** The quantitative data in the POST Questionnaire was; a) I feel that the course material was relevant to me, b) I am satisfied with the course, c) I feel more confident in my career choices, d) I feel less anxious about my career choices, e) I feel more capable with my career choices. Learners were asked

the rate each of the statements on a six point Likert scale from strongly disagree to strongly agree.

3. ***Qualitative Data from opened ended question on the POST Questionnaire.*** The qualitative data stemmed from learners answers to the following open question; “*This course focused on career adaptability. Now that you have completed the course, what impact do you feel it will have on career decision making in the future?*” This qualitative data was analysed using thematic analysis methods (Braun & Clarke 2006).

Quantitative Data Post Questionnaire

Hypothesis a) Did the course keep participants attention?

Quantitative Data – Moodle Details. Completion of the course itself is a strong argument for keeping the participants attention. Although the amount of work in reading and posting tasks varied considerably, all 32 participants completed some level of work and took the time to complete the post TEL intervention questionnaire.

Data collected from Moodle also supported that the course kept the attention participants. There were 24 items in total on the TEL course that could be read by participants. Twelve or more items were read by 22 (65.6%) of the 32 participants. Course forums opened ranged from 1 to 20 items. There were 17 tasks altogether. 27 of the 32 participants completed at least 1 task (15.6%), 16 completed at least 6 of the 18 tasks (50%) and 11 (28%) completed at least 10 or more of the tasks. 24 of the 32 participants (53.1%) took time to read the optional tasks and 4 (12.5%) completed optional tasks. 12 participants also took time to post feedback and comments outside of the required tasks (37.5%). 31 read the multiple choice activities and 9 completed once multiple choice activity and 20 completed two of the multiple choice activity. 20 of the participants listened to the introductory audio file and 15 participants posted a personal introduction online. Lastly, 12 read online announcements and 22 read the extra resources. The time spent online was difficult to examine as Moodle provided data of log in times and

downloads but does not show the length of each log in. Therefore it was difficult to estimate how long it took participants to complete the course overall.

Qualitative Data: Other support for the course keeping attention of participants stems from comments analysed through thematic analysis, see Appendix 3. For example more than half ($n=17$) of the learners emphasised that the course kept their attention. Thematic analysis on the ‘Attention’ component of the ARCS was indicated by participants through statements such as; ‘*Great examples of how to be adaptable when moving career*’ and ‘*It’s ok to have different types of intelligence’s it doesn’t make them worth any less*’ and ‘*I realised during the course, I want something better for myself in my life*’ and ‘*Before doing this course I had anxiety when I thought about my career and all the decisions I needed to make now I feel very excited about the future and my career*’.

Hypothesis b) Was the content relevant?

The content itself was designed around the concern, control, curiosity and confidence dimension of Savickas (1997) model of career adaptability. Career paths and choice take a main role in the lives of students and all learners signed up to the course on the premise of gaining skills for future employment.

Quantitative Data Post Questionnaire. All 32 participants agreed that the course was relevant, with 28.1% somewhat agreeing ($n=9$), 46.9% agreeing ($n=15$) and 25% strongly agreeing ($n=8$) that the content of the TEL was relevant. Participants signed up to the course by their own choice and the extent of online activity and the completion of the pre and post questionnaires suggested the participants felt that the course content was in some way relevant to them. This was further supported by qualitative data which is explained below.

Qualitative Data: Other support for the course content being relevant to participants’ stems from comments analysed through thematic analysis, see Appendix 3. The majority ($n=26$) of the learners reported that the course content was relevant (in relation to the impact the TEL

had on their future career decision making.) Participants expressed that certain content was relevant to them and that it helped them in some way including thinking about moving forward with their career, for example, *'I do think it will help me move forward with my career'* and *'I found even reading over the information helped me'* and *'As soon as I did some of the tasks it made me realise all the options I have'* and *'I will take everything I learnt in this course and use it when making career decisions moving forward.'*

Hypothesis c) Did completing the course increase confidence?

Quantitative Data – Post Questionnaire. The majority of participants ($n=31$) felt more confident having took part in the course; with 28.1% somewhat agreeing ($n=9$), 50% agreeing and 18.8% strongly agreeing that they felt more confident with their career choices. Only 3.1% of the participants felt that they were less confident ($n=1$).

Qualitative Data. Other support for the course content increasing confidence in participants stems from comments analysed through thematic analysis, see Appendix 3. Two thirds ($n=22$) of the learners expressed that completing the course increased their confidence. Evidence of increased confidence is suggested through comments such as; *'This course made me think of all career possibilities. I feel more open minded about my career now'* and *'I now am making choices for my own career and future. it gave me the confidence to move on with my positive career choice'* and *'This really aided my decision making'* and *'I feel more focussed than I was before doing the course. It also gave me a boost in my confidence around what I want to do.'*

Hypothesis d) Were participants satisfied with the course?

Quantitative Data – Post Questionnaire Q3 b). All 32 participants were satisfied with the course, with 12.5% somewhat agreeing ($n=4$), 59.4% were agreeing ($n=19$) and 28.1% strongly agreeing ($n=9$) that they were satisfied with the course. These findings were further supported by the qualitative data, which outlined below.

Qualitative Data. Other support for participants being satisfied with the course content stems from comments analysed through thematic analysis, see Appendix 4. Two thirds (22) of the learners highlighted that they were satisfied with the course, for example, *'This course has helped me to identify which area I would like to specify in'* and *'I'm glad that I took part and will definitely use all the tips moving forward'* and *'I think if I have to move to different roles within a job or even move to a different company this course has helped me with knowing that change is ok'* and *'I think I am more focused on beginning to look to the future'*.

Part 3. Evaluating the impact completing the TEL had on learners future career decision making

This part of the results section analysed the following hypothesis:

Hypothesis e) Was career adaptability changed and career-related anxiety changed, and in what way?

How was this achieved:

This was achieved through the following methods:

1. Quantitative data from the POST Questionnaire
2. Thematic analysis of the open ended question in POST Questionnaire
 1. ***Quantitative data from the POST Questionnaire.*** Quantitative data was gathered through the following statements; “*I feel less anxious about my career choices*” and “*I feel more capable with my career choices.*” Both statements were answered on a 6 point Likert scale.
 2. ***Thematic analysis of the open ended question in POST Questionnaire.*** The qualitative data was collected from the post questionnaire, as seen in Appendix 4, which took place within the week following the completion of the TEL experience. It was hoped to discover common themes within the group of participants or that similarities would be found within the answers given from participants, as seen in Appendix 4. This was achieved using the Thematic Analysis (Braun & Clarke, 2006) approach, which analysed the data. A number of themes were identified for each question, which is explained in details below. Participants were asked: “*This course focused on career adaptability. Now that you have completed the course, what impact do you feel it will have on career decision making in the future?*”

Part 3. Results

Quantitative Data – Post Questionnaire. 15.5% of participants strongly agreed that they felt more capable (n=5), 50% felt agreed that the felt more capable with career choices, 31.3% somewhat agreed that they felt more capable with their career choices and 3.1% somewhat disagreed that they felt more capable with their career choices.

Qualitative Data– Post Questionnaire. Five themes emerged from completing the thematic content analysis on the question above. These themes all relate directly to the specific question that was based on the impact that the TEL experience topic had on the learner’s future career decision making. Each of the themes will be list below with the outcome details of each one.

Theme 1) Recognition of career adaptability. Six participants reported their recognition of career adaptability within the TEL experience. Four of these participants specifically related their awareness around being able to adapt from one career to another, for example, ‘*I can put my skills in any job by bringing my skills to one job to another*’ and ‘*I think if I have to move to different roles within a job or even move to a different company this course has helped me with knowing that change is ok.*’

Theme 2) Open to change or identify the ability to change. Eleven participants expressed their openness to change from engaging with the TEL experience. Six of these participants specifically brought attention to being open to change around their future career plans, for example, ‘*It has helped make me understand the steps that I need to make towards getting the career that I really want*’ and ‘*I now am making choices for my own career and future.*’

Theme 3) Change in confidence. Ten participants recognised a change in their confidence levels after completing the TEL experience. Seven of these participants specifically mentioned feeling more confident about moving forward with their career path, for example, ‘*I feel very excited about the future and my career journey*’ and ‘*I feel so much more ready to start my music career journey*’ and ‘*It gave me the confidence to move on with my positive career choice.*’

Theme 4) Identify more awareness in relations to career adaptability. Twenty-four participants established a recognition of identifying more awareness from participating in the TEL experience. Eight of these participants specifically referred to being more aware of selecting a career choice they are happy with while also acknowledging they do not have to stay in a job they are unhappy in, for example, *'It will make me think about the right career for me. If I don't like something I don't have to stay stuck in the job'* and *'It gave a very broad range of tasks that helped not only with where I want to work but what will make me happy within my career choice.'*

Theme 5) Gain focus. Seven participants acknowledged that they had gained focus from engaging with the TEL experience. Four of these participants specifically recognised that they had gained focus on moving forward with their career path, for example, *'It will also help me become focused for college next year'* and *'I think I am more focused on beginning to look to the future.'*

Discussion

The overall aim of this study was to examine how can interacting with an exploratory Technology Enhanced Learning (TEL) increase career adaptability and reduce career related anxiety. The rationale for the study was based on three main points. Firstly, it was intended to explore literature that clearly indicated the important role of career adaptability (Hirschi, 2009) along with inspecting the potential outcomes that poor career adaptability can have (Super et al., 1996). Secondly, the plan was to analyse the possible benefits of different types of learning interventions including career interventions, online interventions or TEL interventions (Koen et al., 2012) and then once the TEL experience was complete to examine the success of the TEL intervention. Finally, this study also intended to find out the impact completing this TEL experience had on the learners' future career decision making.

The first aim of the study was to examine how can interacting with an exploratory Technology Enhanced Learning (TEL) increase career adaptability and reduce career related anxiety. Results from part 1 of the analysis of the quantitative data indicated that there were significant differences between scores on career adaptability before and after the TEL intervention. Career adaptability scores were significantly higher after the TEL intervention. These higher results were for total career adaptability scores as well as scores on the subscales of concern, control, curiosity and confidence. Similar significant findings were reported on the career anxiety scale, but with significantly lower scores of career anxiety after the TEL intervention. When testing for relationships between career anxiety and career adaptability, the results indicated no association between the variables before the TEL intervention. However, there was a significant relationship after the TEL intervention, where higher levels of career anxiety were associated with lower levels of career curiosity.

The second aim was to examine the success of the TEL itself, which was examined through the ARCS Motivational Model (Keller, 1999). Findings from part 2 of analysis indicated that overall, the TEL design was a success. For example, findings indicated that participants felt that the TEL was relevant, with over half of them having opened all of the course materials from

the TEL experience. The majority of participants felt that their confidence had improved after taking part in the TEL experience and the subscale of the Career Adaptability Scale (CAS) that measures confidence supported this, indicating a significantly higher level of confidence after engaging with the TEL experience. Other evidence of increases in confidence are illustrated by quotations from the qualitative data such as; *“I've realised where my strong points are”* and *“It also gave me a boost in my confidence around what I want to do”* and *“It's ok to have different types of intelligence's it doesn't make them worth any less”*. All of the participants that took part in the study also reported that they were satisfied with the TEL experience and stated *“I'm glad that I took part and will definitely use all the tips moving forward”* and *“I now am making choices for my own career and future”* and *“Overall the thing I liked about this course was that a lot of the tasks were very practical and I've gained some skills also”*.

In regards to the overall success of the TEL, the statistical analysis showed significantly higher levels of career adaptability and statistically lower career anxiety after taking part in the TEL. The qualitative themes that were discovered in this study also supported this ascertain and will be discussed along with Part 3 of the findings in more detail below.

When examining the success of the TEL, also revealed in the findings, were discussed in Part 3 of the analysis. This indicated that overall, participants felt they were more capable and less anxious about making career choices. Qualitative feedback indicated a positive impact from participants after taking part in the TEL experience, as evidenced by statements such as *“Before doing this course I had anxiety when I thought about my career and all the decisions I needed to make now I feel very excited about the future and my career journey”* and *“This really aided my decision making. The content made me start to put things into a plan and start a more focused process of looking at my career choices”* and *“It was good to read other people's posts and see that I'm not the only one that's worried about career and choices for the future”*.

Further confirmation that participants were potentially impacted after engaging with the TEL intervention is illustrated through the five emerging themes in the thematic analysis, which

were; 1) adaptable recognition, 2) open to change or identify the ability to change, 3) change in confidence, 4) identify more awareness and 5) gain focus.

These five themes, that surfaced from the thematic analysis explored the final aim of the study. This aim intended to review what type of impact completing the TEL experience, had on the participant's future career decision making. The results showed that many participants expressed that they felt the TEL experience had helped them with their future career decision making and that it had impacted them in a positive way, for example from the theme that emerged on 'identify more awareness' increases in awareness was stated such as "*I will take everything I learnt in this course and use it when making career decisions moving forward*" and "*The stuff in this course was interesting and I thought about stuff I hadn't thought of before*" and "*I now know what career I could be good in*" and "*It has also helped me to understand ways that I can improve my chances of getting a job*".

Both the quantitative and qualitative data allowed for triangulation to support the overall findings. For example, statistical analysis of the quantitative data indicated changes in levels of career adaptability and career related anxiety, this was also supported by findings in the qualitative analysis. Another example of triangulation was the overlap in the two types of qualitative analysis that emerged, for example the ARCS thematic analysis that was revealed in part 2 of the findings looked at confidence and satisfaction. This was supported by findings in part 3 of the findings from the general thematic analysis, where themes also supported confidence and satisfaction.

Looking more closely at findings from part 1 of the analysis of the quantitative data, overall, the TEL intervention was successful in lowering career anxiety and increasing career adaptability. The significantly higher scores on the Career Adaptability Scale (CAAS) after the TEL intervention supported the current findings that career interventions can improve career prospects through self and environment exploration (Tolentino et al., 2014; Coolen, 2014; Baumeister & Vohs, 2007). For example, the current study encouraged learners to explore job vacancies in a career field that interested them. Coolen (2014) argued that self and environment exploration leads to setting more career goals. While Lindsay (2014) argued that exploration and

goal setting improves career exploration. Overall, the significant improvement to career adaptability after the TEL intervention lends support to the benefits of online career adaptability interventions as outlined by Savickas et al. (2009) and Coolen (2014).

As stated above when looking in more detail at the findings from part 1 of the analysis of this study, there was also a reduction in career anxiety after the completion of the TEL intervention. The decrease in scores of the Career Anxiety Scale (CAS) after the TEL intervention supported the current findings that suggest the importance of improving poor career adaptability (Super et al., 1996) in order to support lowering career related anxiety (Weinstein et al., 2002). For example within the TEL of this study learners were asked, as part of the self-exploration to consider trying new techniques that might potentially help improve career related anxiety such as a career anxieties self-evaluation and assessing supportive resources that were currently available to them which eventually led to them making a career plan. Weinstein et al. (2002) and Brown and Lent (2004) argued that learners with less control of their career aspiration had greater levels of career related anxiety. While Brown and Lent (2014) maintained that lack of career concern can lead to lack of ability to forward plan around future careers. Overall, the notable reduction to career related anxiety after the TEL intervention contributes support to the advantages of improving career related anxiety levels as highlighted by Super et al. (1996), Weinstein et al. (2002) and Brown and Lent (2004).

Coolen (2014) stated that online intervention indicated particular success on the dimensions of career control and career curiosity. This was also evident in the current study in relation to career curiosity. The findings indicated that when levels of career anxiety were decreased, there was an association with levels of career curiosity being increased. This potentially indicated that increasing career curiosity alone may have positive impact on career anxiety levels.

Assessing part 2, which relates to the success of the intervention itself, is difficult in some areas. It is assumed that the relevant content design, the outcomes and quality resources provided, aided the overall success of the TEL when reviewing the literature. However, it is

difficult to quantify these results. Future research could have different comparison groups where one group were not provided with outcomes or resources etc.; though there is strong support for including clear outcomes and resources so it is difficult to see whether this would actually add to the overall design success. However, the data collected could examine the impact that the ARCS motivational model and the Salmon five stage model contributed to the overall success of the TEL.

From looking closely at part 2 of the analysis, that evaluated the course content and design of the TEL intervention by asking the questions that were based on the ARCS Motivational Model (Keller, 1999) in order to assess the success of the TEL, evidence suggested that the TEL experience was a success overall. These findings are supported by Keller's (1987) early work, which suggests that once the TEL educator/designer is aware of the learners and their needs that the ARCS Motivational Model (Keller, 1999) will be successful when implemented. In this current TEL intervention this was done through careful planning and aimed to keep the content simplistic and clear to understand for the targeted, academic level of users. These findings are also support by Huett et al. (2008) who stated that incorporating the ARCS Motivational Model (Keller, 1999) into online learning increases success with learners while also keeping learners interest for longer periods of time and avoid dropout rates. This is backed up by Keller and Suzuki (2004) who reported that use of the ARCS Motivational Model (Keller, 1999) in online learning lowers dropout rate.

It was recognised early in the design process of the TEL intervention that distance online learning can create problems regarding learner's motivation, therefore it was important to implement suggestions found in previous research and literature. Marshall and Wilson (2011) found that the ARCS Motivational Model (Keller, 1999) was a useful tool in motivating learners. Keller and Suzuki (2004) highlighted motivation as an important part of engaging learners online and the key to the success of learners completing a course. The current study supports both of these findings, when use of ARCS Motivational Model (Keller, 1999) motivated learners by giving them clear instructions and guidance of how to complete the activities and tasks. This helped build confidence, which led to motivation to participate with the TEL intervention.

Learners attention was gained and curiosity was strengthened by encouraging them to solve problems with straightforward instructions of the steps that were required to complete each of the tasks.

Results from part 2 of the study findings indicated that the TEL intervention was successful in engaging the learners to part take and finish the course. Salmon (2013) outlined the importance of making the access to the course as user friendly and straightforward as possible in order to encourage users to engage with the course material. This finding is supported in the current study as learners had no difficulty in signing up to the course and no technical difficulties were posted online. Keller and Suzuki (2004) and Salmon (2013) reported the importance of engaging learners through announcements, reminder, encouragement and emails. This was supported in the current study by sending regular announcements to learners to remind them of updates, while also expressing a messages of encouragement in order to sustain continued participation. There was an increase in online activity from learners after emails and announcements. This is reinforced by another potential benefit for the use of group and personal messages within online learning, as suggested by Keller and Suzuki (2004) which is that it can improve dropout rates.

Other aspects of the results from part 2 of the study findings indicated that the TEL intervention was successful in engaging the learner in certain activities within a TEL intervention. Salmon (2013) reported the importance to create a TEL experience that influences the learner to spend time within the TEL intervention and to create an environment where learners feel motivated to return to. There were certain activities within the current TEL intervention that were found to have influenced the learner to spend time there such as the two choice activities within the current TEL intervention. These were the most popular activities the learners engaged with as the majority of the 32 participants interacted with both of the choice activities. These activities enabled learners to do a multiple choice question, where they select several items that they were in agreement with or that related to them. The activity was then integrated into a follow up task. Even learners who did very little of the other TEL tasks and activities completed these two choice activities. This outcome is useful evidence to show the

‘choice’ activities were a useful tool to engage the learners. This evidence is reinforced with a study by Handelsman et al. (2005) who highlighted that the amount of time a learner engages with a learning experience is linked to the anticipated achievement of the learner. While Svanum and Bigatti (2009) stated the extent in which a learner becomes engaged in a learning experience can influence the success levels of a learner. Therefore, it would be encouraged to incorporate more of the ‘choice’ activities into future designs of a TEL intervention in order to increase learner engagement.

Part 3 of analysis showed that overall, the TEL intervention had a positive impact on the participants. Strauss and Corbin (1990) and Patton (1990) stated that qualitative data can be useful for collecting rich content and allows for in-depth gathering and analysis of research information. Qualitative data can be ‘just as insightful and valuable’ (Strauss and Corbin, 1990, pg 4) as any other data collection method or technique, such as a statistical or quantitative approach to collecting data. This is supported by the current research where themes that emerged gave more in depth data than the direct questioning involved in the statistical analysis process. The qualitative findings also helped reinforce the overall findings. Patton (2005) highlighted that by engaging with qualitative data analysis there is also the chance to cultivate themes and patterns, that can reveal rich narrative descriptions of the research material. There is also evidence of this within the current study as five themes materialised from the thematic analysis that revealed the positive impact, that completing the TEL experience, had on the participant’s future career decision making. The impact the TEL intervention had on learners with their future career decision making that surfaced involved; a change in confidence, a gain in focus, a recognition of adaptability, more of an awareness and an openness to change or an identification of the ability to change in the future. Such results generated useful findings and helped express another angle on the data, which is an aspect that Braun and Clarke (2006) stated is extremely important within qualitative thematic data analysis.

Triangulation

One of the strong points of the current research was the ability to triangulate the findings and support the reliability and validity of the study outcomes. Quantitative data used to test the hypotheses is further supported by the thematic analysis findings both on the ARCS and the general themes. For example, when measuring increases in confidence surrounding career choices, the data from the CAAS subscale directly measures confidence before and after the TEL. These findings could be validated through analysis of the ‘confidence’ component of the ARCS model and also through the thematic analysis of qualitative data both ARCS themes and general themes.

Implications

Savickas et al. (2009) argued that studying the effectiveness of interventions to increase career adaptability is of great importance. Yet very few interventions exist as stated by Koen et al., (2012) and even fewer TEL and online interventions exist (Coolen, 2014). This study hoped to remedy the situation and add its findings to the limited knowledge surrounding TEL and online career adaptability interventions. The results were promising and suggest that TEL can indeed increase career adaptability. Further implications of the study relate to the significantly lower career anxiety scores. Career related anxiety is seen to be a major consequence of poor career adaptability (Brown & Lent, 2004) and the TEL intervention showed potential to lower career related anxiety (Weinstein et al., 2002; Brown & Lent 2004). It could be tentatively suggested that career adaptability interventions can reduce career related anxiety, and consequently encourage learners to explore the self and environment, thus increasing overall career adaptability.

Limitations and Future Research

Sample size. The sample had 32 participants. Although the reliability of both of the scales that were used was very high (CAAS with an alpha of .94 and CAS with an alpha of .91) and an overall success of the TEL intervention was reported, in the future this study may be replicated with a great number of participants in order to review these findings on a larger scale and thus improve the reliability of the findings for a wider context.

Short time. The TEL experience was generally finished within three weeks. Although the findings for the TEL intervention stated the course content and design were found to be effective and the validity of the overall success of the TEL intervention has been emphasised. Some for the participants stated in the course feedback section of the post questionnaire that they felt they would benefit from coming back to the course material in the future. Although there is validity in the learners feedback it is also worth considering that as the TEL intervention was 100% distance learning. Therefore, the accuracy of this feedback should be viewed with caution. However, it would be useful to test the success of the TEL intervention over a longer amount of time. It may also be possible that more participants could have signed up if they were not restricted to a time frame. Furthermore, the time in which this study and TEL intervention took place coincided with exams for many colleges.

Login time duration. Finally, Moodle did not allow in-depth analysis of login time duration and only provided the fact of the number of logins and log outs. As mentioned above, as the TEL intervention was 100% distance learning this made it difficult to keep track of the exact times that the participants spent fully engaging with the course material. Therefore, future research should include a technology that can record data around length of time spend engaging with the TEL intervention itself.

CAS reliability. Alpha values indicated good reliability of this scale. However, as it is a relatively new measure, further research is required.

Conclusion

At present there is a small amount of available research on examining the success of TEL and online interventions. This study adds to this gap in the literature and highlights the need for an increase of research in this field. The findings suggested that the TEL experience had a positive impact on both career adaptability and career related anxiety. This study found that there was an increase in career adaptability and a decrease in career anxiety after participants engaged with the TEL intervention. Curiosity was seen to play a central role in increasing overall career awareness and adaptability. Learners gained invaluable insight of their potential career path by engaging with self and environment exploration. Participants identified a number of helpful tools and how these could be implemented into their future career decision making such as; gained focus, awareness and confidence, openness to change and adaptability. The current TEL intervention design has the potential to assist in future career decision making and increase learner's confidence, focus and awareness, as well as supporting openness to change. It is hoped that such interventions could be made widely available to those who may need them to access career related support services.

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Appendices

Appendix 1: TEL Intervention Overview and Content

Appendix 2: Pre and Post Questionnaire

Appendix 3: Qualitative Data Analysis 1

Thematic Analysis (Braun & Clarke, 2006) - Post TEL Experience Questionnaire in relation to the ARCS Motivational Model (Keller, 1999).

Appendix 4: Qualitative Data Analysis 2

Thematic Analysis (Braun & Clarke, 2006) - Post TEL Experience Questionnaire

Appendix 1: TEL Intervention Overview and Content

TEL Experience Overview

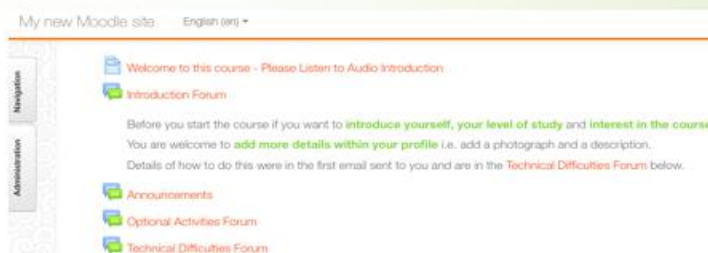
Overview of Course Details

- ▶ The course was broken up into **four sections**:
 - ▶ **Career Choice, Getting the Job, Creating Other Options and Self Belief**
- ▶ Throughout the course there were **Activities and Tasks** that learners were asked to complete.
- ▶ Each **Task** was numbered and linked to a **Forum** which is where learners added their answers/input.
- ▶ There were **Optional Activities** throughout the course that learners could choose to complete and add to the **Optional Activities Forum**.
- ▶ At the end of each section there were additional **Resources** that learners could engage with if they felt they needed them.

TEL Experience Introduction and Forums

Introduction and Forums

- **Audio Introduction** with instructions of how to take part in the course.
- **Introduction Forum** where learners could add details about themselves
- **Announcement Forum** where the educator could announcement updates which were automatically emailed to the learners.
- **Optional Activities Forum** where learners could add their Optional Activities input.
- **Technical Difficulties Forum** where learners could discuss technical issues they were having and gain feedback. Learners were also encouraged to add solutions and to help each other out.




TEL Experience Section 1 Content

1. Career Choice Section

- Covers areas on Personal Preferences
- Career Interest Categories
- Gardner's Multiple Intelligences Test
- Area of Interest/Company Research
- Job Vacancy Research
- Optional:
 - To Present Results from Job Vacancy Research within a PowerPoint presentation.
 - To Schedule a meeting with Career Support Services.
- Resources on Career Choice

My new Moodle site English (en) ▾

1. Career Choice



The **Career Choice** section covers areas on personal preferences with career interests categories, information on multiple intelligences along with a test, career research and vacancy research.

- 📄 General Career Interests
- 📄 Choose Career Interests Categories
- 🗨️ Task 1.1 Forum - Career Interests Categories
- 📄 Take this Multiple Intelligence Test
- 📄 Gardner's Multiple Intelligences
- 🗨️ Task 1.2 Forum - Gardner's Multiple Intelligences
- 📄 Research Chosen Field
- 📄 Company Research Task
- 🗨️ Task 1.3 Forum - Company Research
- 📄 Job Vacancy Research
- 🗨️ Task 1.4 Forum - Job Vacancy Research
- 📄 Optional Activity 1.1 - PowerPoint with Results from Job Vacancy Research
- 📄 Optional Activity 1.2 - Schedule a Meeting with a Support Service
- 📄 Career Choice Resources


TEL Experience Section 2 Content

2. Getting the Job Section

- Covers areas of First Impressions
 - Personal Appearance
 - Body Language
- Job Interviews
- Video on Interview Skills
- Skills List and Assessment
- Good/Bad CV and improvements
- Optional:
 - To Practice Interview Skills
 - To Schedule a Mock Interview
- Resources on Getting the Job

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2. Getting the Job



The **Getting the Job** section covers areas on making good first impressions, job interviews along with practical skills and a skills assessment, an example of a good and bad CV along with how to make improvements and career support services.

- 📄 The Importance of First Impressions and Personal Appearance when Pursuing Employment
- 📄 The Importance of First Impressions
- 📄 What Not to Wear to a Job Interview
- 🗨️ Task 2.1 Forum - 'First Impressions' and 'What Not to Wear to a Job Interview'.
- 📄 Practical Interview Skills Video
- 🗨️ Task 2.2 Forum - Practical Interview Skills Video
- 📄 Skills List and Assessment
- 🗨️ Task 2.3 Forum - Skills List and Assessment
- 📄 Example of Bad CV
- 📄 Details of Bad CV with Suggested Improvements
- 📄 Improvements to Good CV
- 🗨️ Task 2.4 Forum - CV
- 📄 Optional Activity 2.1 - Practice Practical Interview Skills from Video
- 📄 Optional Activity 2.2 - Organise a Mock Interview

TEL Experience Section 3 Content

3. Creating Other Options Section

- Covers areas on Resilience and what to do if you don't get the job or like the job you get
- Case Study about Starting a New Job
- Area of Interest/Company Research
- Different Routes to the Perfect Job
- Optional:
 - To networking and meeting up with someone who might be able to help or advise you on your career path
- Resources on Creating Other Options

My new Moodle site English (en) ▾

3. Creating Other Options

The **Creating Other Options** section covers areas on resilience, what to do if you don't get the job or don't like the job you get, the reality of the job, case studies and video examples of people career path stories, exploring other avenues to success and alternative career routes.

- The Harsh Reality of the Job PowerPoint
- Task 3.1 Forum - The Harsh Reality of The Job
- Case Study about Starting a New Job
- Task 3.2 Forum - Starting a New Job Case Study
- Different Routes to the Perfect Job PowerPoint
- Task 3.3 Forum - Different Routes to the Perfect Job!
- Optional Activity 3.1 - Networking and Meet Up
- Creating Other Options: Resources

TEL Experience Section 4 Content

4. Self Belief Section

- Covers areas on Relaxation Techniques and Exploring Personal Study Space
- Career Anxiety Self-Evaluation
- Assessing Resources Available to You
- Study Time Management
- Making a Career Plan
- Optional:
 - To Practice Relaxation with Videos and Five Step Practice
 - To Schedule a meeting to discuss your Career Plan
- Resources on Self Belief

My new Moodle site English (en) ▾

4. Self Belief

The **Self Belief** section covers areas relaxation techniques, time and career anxiety management, engaging with peers and exploring making an action plan.

- Career Anxiety Self-Evaluation
- Task 4.1 Forum - Career Anxieties
- Resources Example
- Resources Available to You PowerPoint
- Task 4.2 Forum - Resources Available to You
- Study Time Management
- Task 4.3 Forum - Study Time Management
- Personal Study Place
- Task 4.4 Forum - Personal Study Space
- Tips for Relaxation and Five Step Practice
- Activity 4.5 Forum - Tips for Relaxation and Five Step Practice
- Making a Career Plan
- Task 4.6 Forum - Making a Career Plan
- Optional Activity 4.1 - Tips on Relaxation and Five Step Practice
- Optional Activity 4.2 - Videos for Practicing Relaxation
- Optional Activity 4.3 - Schedule a Meeting to discuss your Career Plan.
- Self Belief: Resources

Appendix 2: Pre and Post Questionnaire

Pre Questionnaire

Career Adaptability Survey

Participant Information

Participant Information

· **BACKGROUND OF RESEARCH:** Many people find it difficult to choose the career that is best for them. This study looks at how well people adapt to the demands of their career. This study will explore if an Online Learning experience can increase career adaptability and reduce career related anxiety.

This research contributes to obligatory research components of the researcher's MSc course in Technology and Learning in Trinity College Dublin (TCD).

· You have been asked to take part in an online course. It is hoped that by taking part in this course, that you may increase your ability to select a career path and any career related anxieties that you may have surrounding career choice, could decrease.

· Taking part in this study is voluntary. At any point, you can stop, and withdraw from the course. There are no consequences if you choose to do this.

· If you are happy to participate in the research, you are asked to read this information sheet carefully and to give your permission to the researcher to take part. This is done by filling in the consent form. Once you finish the questionnaire, the researcher will contact you with details on how to enroll on the course.

· The entire course should take a minimum of two hours of your time. You can do the course in your own time. You can spread the course across as many days as you feel you might need.

· You will be asked to provide a username and email address in order to enroll on the course. This information, as well as any answers to course questions, will be kept completely confidential. This information can only be accessed by the researcher and will be stored on a password protected computer. This follows the rules set out by the Data Protection Act (1998, 2003).

· Should you feel any level of career related anxiety during this questionnaire, details of who you can contact will be given at the end of the questionnaire on the section titled 'Debriefing'. This information will also be available on the course website.

· The information collected, might be presented in a journal or at a conference. No personal information will be printed.

· There are no conflicts of interest within this study.

· Cautions about inadvertent discovery of unlawful activity:


If you contact the researcher and provide information that suggests you, or someone else may be at risk of danger, or regarding unlawful activity, the researcher must contact the appropriate authorities.

You must be informed that throughout the duration of this research if you disclose information that may result in you or anyone else being put at risk of harm the researcher may have to inform the appropriate authorities. (PSI, 2011)

· This study involves looking at a computer screen. Therefore, if you or anyone in your family has a history of epilepsy you are proceeding at your own risk.

Student Contact Details: quearnee@tcd.ie

Supervisor Contact Details: richard.millwood@tcd.ie

* 1. I have read a document providing information about this research. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me. 

Yes - I understand and am ready to move onto the consent form

No - I do not want to continue

Next

Career Adaptability Survey

Consent

LEAD RESEARCHER: Emma Quearney

BACKGROUND OF RESEARCH: This study looks at how well people adapt to the demands of their career. This study will explore if an Online Learning experience can increase career adaptability and reduce career related anxiety.

This research contributes to obligatory research components of the researcher's MSc course in Technology and Learning in Trinity College Dublin (TCD).

- I am 18 years or older and give my permission/consent to take part in this study.
- I have read and understand the information in the 'Participant Information Form' above.
- I have had the chance to ask questions and all my questions have been answered.
- I agree that my data can be used in publications from this research and my identity will be protected.
- I understand that I may refuse to answer any question and that I may withdraw at any time.
(Please make note that questions 1-4 on the questionnaire are mandatory in order to take continue to take part in the study).
- I understand that I must give informed consent to be allowed to continue with the questionnaire, which involves answering questions 1-4 of the questionnaire.
- I understand that all the information I give is confidential.
- I agree that the researcher may contact me.
- I understand that if I contact the researcher and provide information that suggests that I, or someone else maybe at risk or danger, or regarding unlawful activity, the researcher must contact the appropriate authorities.
- I understand that if I or anyone in my family has a history of epilepsy then I am proceeding at my own risk.

RESEARCHERS CONTACT DETAILS: quearnee@tcd.ie

* 2. I have read this consent form. I have had the opportunity to ask questions and all my questions have been answered to my satisfaction and understand the description of the research that is being provided to me.

Confirm Consent* 

- Yes, I agree with ALL of the above points and want to take part in this study.
- No, I do not agree with ALL of the above points and want to withdraw from this study.

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Username and Email

Username and Email

Very Important Information

In order to take part in this online course you will need to provide a username of your choice and an email address. Once you add a username below your name will be enrolled on the course and the link will be sent to the email address you provide below. So then you will be able to get started on the course.

Username:

Please make a note of your username once you have entered it below as you will need it to take part in the course.

Email Address:

Please note the email address will not be viewed by anyone but the researcher who will enroll you on the online course.

Once you are finished this course you won't be contacted on this email address and all emails will be destroyed.

Please provide an email address that you check regularly.

Other Information

The main section of the questionnaire will begin on the next page. Please remember that you do not have to answer all of the questions and may withdraw at any time. Although I would encourage all participants to answer all the questions to the best of their ability.

* 3. Please enter a username (please use all lowercase when selecting a username) 

* 4. Please enter an email to contact you on 

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Next

Career Adaptability Survey

General Questions

5. How would you identify yourself 

- Female
- Male
- Other

6. What is your age in years? 

7. Are you currently employed? 

- Yes
- No
- Other

8. If you are employed is it full or part time? 

- Full Time
- Part Time
- Other

9. Are you currently attending an educational course? 

- Yes
- No
- Other

10. If you are attending an educational course is it full or part time? 

- Full Time
- Part Time
- Other

11. How long are you attending this educational course in years? 

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Next

Career Adaptability Scale (CAAS)

DIRECTIONS

Different people use different strengths to build their careers. No one is good at everything, each of us emphasises some strengths more than others.

Please rate how strongly you have developed each of the following abilities using the scale below.

12. Career Adaptability Scale (CAAS) 

	Strongest	Very Strong	Strong	Somewhat Strong	Not Strong
Thinking about what my future will be like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Realising that today's choices shape my future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing for the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming aware of the educational and vocational choices that I must make	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planning how to achieve my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concerned about my career	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeping upbeat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making decisions by myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking responsibility for my actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sticking up for my beliefs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Counting on myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doing what's right for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exploring my surroundings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Looking for opportunities to grow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Investigating options before making a choice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Observing different ways of doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Probing deeply into questions that I have	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming curious about new opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performing tasks efficiently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking care to do things well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning new skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working up to my ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overcoming obstacles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solving problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Participant Debriefing

Participant Debriefing Information

The questionnaire you have just completed was designed to measure Career Adaptability (CAAS) and Career Anxiety (CAS).

Thank you for your participation in this research. Your answers will help define career adaptability and career anxiety while looking at the possibility of a relationship between the two. It is hoped that this information will draw attention to this topic and highlight awareness around it in order to help make improvements.

If the topics covered in this questionnaire have caused you to feel stressed in any way you can find support and information by contacting the following organisations:

Spun Out

<http://spunout.ie/health/article/anxiety-and-stress>

Careers Portal

<http://www.careersportal.ie/>

3TS

<http://www.3ts.ie/need-help/crisis-helplines/>

If you have any questions about this research or would like a copy of the group results of this research, please feel free to contact:

Emma Quearney

Email: quearnee@tcd.ie

14. I have read this debriefing form and understand the content of it. 

- Yes, I understand
- No, I don't understand
- I no longer want to be part of this study, please discard the results

Prev

Done

Link to Pre Questionnaire below:

<https://www.surveymonkey.com/r/pre-course2017>

Post Questionnaire

Username and Email

Username and Email

Very Important Information

In order to take part in this online course you provided a username of your choice and an email address. Please enter both below.

Other Information

The main section of the questionnaire will begin on the next page. Please remember that you do not have to answer all of the questions and may withdraw at any time. Although I would encourage all participants to answer all the questions to the best of their ability.


* 1. Username 

* 2. Email Address 

Next

General Questions

* 3. Course Feedback

Please read the following statements and rate each from Strongly Disagree to Strongly Agree 

	Strongly Disagree	Disagree	Somewhat Disagree	Somewhat Agree	Agree	Strongly Agree
I feel that the course material was relevant to me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am satisfied with the course	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel more confident in my career choices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel less anxious about my career choices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I feel more capable with my career choices	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

* 4. This course focused on career adaptability. Now that you have completed the course, what impact do you feel it will have on career decision making in the future?



Prev Next

Career Adaptability Scale (CAAS)

DIRECTIONS

Different people use different strengths to build their careers. No one is good at everything, each of us emphasises some strengths more than others.

Please rate how strongly you have developed each of the following abilities using the scale below.

* 5. Career Adaptability Scale (CAAS) 

	Strongest	Very Strong	Strong	Somewhat Strong	Not Strong
Thinking about what my future will be like	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Realising that today's choices shape my future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Preparing for the future	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming aware of the educational and vocational choices that I must make	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Planning how to achieve my goals	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Concerned about my career	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Keeping upbeat	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Making decisions by myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking responsibility for my actions	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Sticking up for my beliefs	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Counting on myself	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Doing what's right for me	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Exploring my surroundings	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Looking for opportunities to grow	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Investigating options before making a choice	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Observing different ways of doing things	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Probing deeply into questions that I have	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Becoming curious about new opportunities	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Performing tasks efficiently	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Taking care to do things well	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Learning new skills	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Working up to my ability	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Overcoming obstacles	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Solving problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

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Participant Debriefing

Participant Debriefing Information

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If the topics covered in this questionnaire have caused you to feel stressed in any way you can find support and information by contacting the following organisations:

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<http://spunout.ie/health/article/anxiety-and-stress>

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<http://www.careersportal.ie/>

3TS

<http://www.3ts.ie/need-help/crisis-helplines/>

If you have any questions about this research or would like a copy of the group results of this research, please feel free to contact:

Emma Quearney

Email: quearnee@tcd.ie

* 7. I have read this debriefing form and understand the content of it. 

- Yes, I understand
- No, I don't understand
- I no longer want to be part of this study, please discard the results

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Done

Link to Post Questionnaire below:

<https://www.surveymonkey.com/r/post-course2017>

Appendix 3: Qualitative Data Analysis 1

Thematic Analysis (Braun & Clarke, 2006) - Post TEL Experience Questionnaire in relation to the ARCS Motivational Model (Keller, 1999).

Details of codes:

ARCS Letters colour coded answers

32 Participants = Number of participants who mentioned a theme

P1 = Participant 1

Question: This course focused on career adaptability. Now that you have completed the course, what impact do you feel it will have on career decision making in the future?

Looking for themes that answer the question above in relation to the ARCS Motivational Model (Keller, 1999).

Other questions:

This will be triangulated with the other 4/5? hypotheses and course feedback questions that were in the post questionnaire.

- a) Did the course keep participants attention?
- b) Was the content relevant?
- c) Did completing the course increase confidence?
- d) Were participants satisfied with the course?
- e) Was career adaptability changed and career-related anxiety changed, and in what way?

Theme Number	Wording of Theme	How many participants mentioned* this theme?
Theme 1	Attentions (A)	17 mentioned 29 times
Theme 2	Relevance (R)	26 mentioned 52 times
Theme 3	Confidence (C)	22 mentioned 36 times
Theme 4	Satisfaction (S)	22 mentioned 35 times

*Some participants mentioned a theme more than once within their answer.

P1: ((Great examples of how to be adaptable when moving career.)) (R) (A) (Good examples on how not to panic) (C) and to just take your time and assess (where you can move your skills) (R) to or (how you can progress.) (R) (You don't always have to move company when you feel unchallenged you can look for opportunities within the company.) (S) By creating happenstance situations and telling (people openly about your plans you are more likely to move forward and progress.) (C) (Very useful course material.) (R)

P2: Mainly that I should ((aim for my goals)) (R) (C) and if I'm not enjoying (what I'm doing I could take a new path in the areas I have skills in.) (C)

P3: ((I can put my skills in any job by bringing my skills to one job to another.)) (R) (C) It will also help ((me become focused for college next year.)) (R) (C)

P4: It will make me think about (the right career for me). (R) If I (don't like something I don't have to stay stuck in the job or the position). (C) (I can look at different ways to make my career more enjoyable.) (R)

P5: I hope it has made me (more confident). (C) I found it hard to get the course finished because of the lack of spare time I have available.

P6: I've ((realised where my strong points are)) (C) (S) for example I am a (realist and its ok to have different types of intelligence's it doesn't make them worth any less.) (A) If I take a job in something Im not 100% sure i'll like its ok as I can look at ((the companies internal jobs on offer.)) (A) (R) For example I could take a job in the kitchen of a hospital but then ask around about Hospital Porter jobs.

P7: (Huge impact), (S) you need to (choose wisely when making a decision). (R)

P8: I now know (((what career I could be good in))). (R) (C) (S)

P9: I'm feeling more ((confident in my choice)). (C) (S)

P10: To look ((at different options)). (A) (R)

P11: Career choice (that is right for me.) (S)

P12: I realised during the course, I want something (((better for myself in my life))). (A)(C)(S)

P13: fab course. It has ((helped make understand the steps that I need to make towards getting the career that I really want. It has also helped me to understand ways that I can improve my chances of getting a job.)) (R) (S)

P14: This course gave me a ((focus on my career goals)). (R) (C) It also helped ((me realise all the options I have.)) (C) (R) Before doing this course I had anxiety when I thought about my career and all the ((decisions I needed to make now I feel very excited about the future and my career)) (A) (S) journey. It gave a (very broad range of tasks) (A) that helped not only with where I want to work but what will ((make me happy within my career choice)). (A) (S) I know I ((will use all the knowledge I gained from this course moving forward.)) (S) (C)

P15: I feel ((more ready for interviews now)), (C) (S) I think (the practice information and tasks were helpful.) (R) I also got ((lots of new ideas that)) (R) (C) I had thought of before (((doing this course and realised))) (A) (R) (S) there are other areas that I am not only good at but also interested in.

P16: This course had ((very interesting content)). (A) (S) I am just kicking myself that I didn't have time to fully engage with it. I read most (of the task and documents) (A) and found it helped ((me gain a good amount of knowledge career planning.)) (R) (S) Even though I didn't get to submit much stuff I do feel like ((this course helped me a lot.)) (S) (C) I feel like I would go back to the stuff I saved to my computer when I have some more time as I really (((do think it will help me move forward with my career.))). (A) (R) (C) (S)

P17: Although I didn't get time to submit work for most of the tasks I found even reading (((over the information helped me.))). (R) (C) (S) I saved all the word documents ((and powerpoint presentations to my computer so I feel like it's the type of stuff I will come back to again)). (A) (R) I ((felt all the self-belief stuff was very useful)) (R) (S) too. ((I'm glad that I signed up to do it and only)) (S) (R) wish now I had more time to complete all of it.

P18: I feel more (((focussed than I was before doing the course.))) (C) (S) (R) It also gave me a ((boost in my confidence around)) (C) (S) what I want to do. As soon as ((I did some of the tasks it made me realise all the options I have.)) (A) (R) For example one of the tasks asked me to look up jobs that were linked to my interests I ended up ((finding loads of jobs.)) (R) (A) that I didn't even realise existed ((and I have now applied for a few of them.)) (R) (S) I didn't get a chance to do any of the optional stuff but if I didn't have so much going on in college at the moment I would have. I have saved a lot of the information to my ((computer and think I'll come back to it again)) (A) (R) when I have more time. Overall the (((think I liked about this course was that a lot of the tasks were very practical and I've gained some skills also.))) (A) (R) (C) (S)

P19: I will take everything I learnt in this course and ((use it when making career decisions moving forward.)) (A) (R) Even though I'm nearly sure I want to stick with the career I've chosen I think learning about the different ((career choices has made me realise all the options I could have.)) (R) (A) I think if I (((have to move to different roles within a job or even move to a different company this course has helped me with knowing that change is ok.))) (A) (R) (C) (S)

P20: I feel ((so much more ready to start my music career journey.)) (C) (S) I feel like (the tasks really helped me realise what direction I wanted to take with my career.) (R) This course ((made me think of all career possibilities.)) (A) (R) I feel more (open minded about my career now.) (C)

P21: It will (be very useful) (R)

P22: It has ((certainly made me think about my career)) (A) (R) and ((helped me put things into focus.)) (R) (C) I was good ((to read other people's posts and .)) (R) (A) see that ((I'm not the only one that's worried about career and choices for the future.)) (S) (C)

P23: I think I am more (((focused on beginning to look to the future))). (R) (S) (C) Though I didn't get much time to post tasks, I did ((read all the information)) (A) (R) and feel that I ((have benefited from it overall.)) (S) (C)

P24: This really (((aided my decision making))). (R) (S) (C) The (content made me start to put things into a plan) (R) and ((start a more focused process)) (R) (C) of looking at my career choices

P25: I ((read through the material and found it very useful.)) (A) (R) I did most of the reading on my phone while traveling and couldn't do the tasks very well. I'd need a good deal of time to really get through the (material and intend to read it a few times to) (A) process it properly.

P26: The stuff in this course was interesting and I (thought about stuff I hadn't thought of before.) (R) I submitted some stuff but no everything but I ((did look over the information)) (A) (R) for most of the tasks. (I'm glad that I took part and will definitely) (S) use all (the tips moving forward.) (S)

P27: ((Knowing what career I would be interested in pursuing)). (R) (S)

P28: This ((course has helped me to identify)) (R) (S) which area I would like to specify in.

P29: I'm still confused and not ready just yet to make a career choice but I ((know there are options for me)) (R) (A) and I (don't have to panic) (C)

P30: I now am making ((choices for my own career and future.)) (S) (C) it gave (me the confidence) (C) to move on with my positive career choice

P31: ((the right career)) (R) (A)

P32: (Less stressful) (C)

Appendix 4: Qualitative Data Analysis 2

Thematic Analysis (Braun & Clarke, 2006) - Post TEL Experience Questionnaire

Details of codes:

Colour coded answers

32 Participants = Number of participants who mentioned a theme

P1 = Participant 1

Question: This course focused on career adaptability. Now that you have completed the course, what impact do you feel it will have on career decision making in the future?

Looking for themes that answer the question above, particularly in relation to the impact the TEL experience had on the learners.

Theme Number	Wording of Theme	How many participants mentioned* this theme?
Theme 1	Adaptable Recognition	6 mentioned 9 times
Theme 2	Open to Change Identify the Ability to Change (have options)	11 mentioned 12 times
Theme 3	Change in Confidence	10 mentioned 12 times
Theme 4	Identify more Awareness	24 mentioned 28 times
Theme 5	Gain focus	7 mentioned 7 times

*Some participants mentioned a theme more than once within their answer.

P1: Great examples of how to be adaptable when moving career. Good examples on how not to panic and to just take your time and assess where you can move your skills to or how you can progress. You don't always have to move company when you feel unchallenged you can look for opportunities within the company. By creating happenstance situations and telling people openly about your plans you are more likely to move forward and progress. Very useful course material.

P2: Mainly that I should aim for my goals and if I'm not enjoying what I'm doing I could take a new path in the areas I have skills in.

P3: I can put my skills in any job by bringing my skills to one job to another. It will also help me become focused for college next year.

P4: It will make me think about the right career for me. If I don't like something I don't have to stay stuck in the job or the position. I can look at different ways to make my career more enjoyable.

P5: I hope it has made me more confident. I found it hard to get the course finished because of the lack of spare time I have available.

P6: I've realised where my strong points are for example I am a realist and its ok to have different types of intelligence's it doesn't make them worth any less. If I take a job in something Im not 100% sure i'll like its ok as I can look at the companies internal jobs on offer. For example I could take a job in the kitchen of a hospital but then ask around about Hospital Porter jobs.

P7: Huge impact, you need to choose wisely when making a decision.

P8: I now know what career I could be good in.

P9: I'm feeling more confident in my choice.

P10: To look at different options.

P11: Career choice that is right for me.

P12: I realised during the course, I want something better for myself in my life.

P13: fab course. It has helped make understand the steps that I need to make towards getting the career that I really want. It has also helped me to understand ways that I can improve my chances of getting a job.

P14: This course gave me a focus on my career goals. It also helped me realise all the options I have. Before doing this course I had anxiety when I thought about my career and all the decisions I needed to make now I feel very excited about the future and my career journey. It gave a very broad range of tasks that helped not only with where I want to work but what will make me happy within my career choice. I know I will use all the knowledge I gained from this course moving forward.

P15: I feel more ready for interviews now, I think the practice information and tasks were helpful. I also got lots of new ideas that I had thought of before doing this course and realised there are other areas that I am not only good at but also interested in.

P16: This course had very interesting content. I am just kicking myself that I didn't have time to fully engage with it. I read most of the task and documents and found it helped me gain a good amount of knowledge career planning. Even though I didn't get to submit much stuff I do feel like this course helped me a lot. I feel like I would go back to the stuff I saved to my computer when I have some more time as I really do think it will help me move forward with my career.

P17: Although I didn't get time to submit work for most of the tasks I found even reading over the information helped me. I saved all the word documents and powerpoint presentations to my computer so I feel like it's the type of stuff I will come back to again. I felt all the self belief stuff was very useful too. I'm glad that I signed up to do it and only wish now I had more time to complete all of it.

P18: I feel more focussed than I was before doing the course. It also gave me a boost in my confidence around what I want to do. As soon as I did some of the tasks it made me realise all the options I have. For example one of the tasks asked me to look up jobs that were linked to my interests I ended up finding loads of jobs that I didn't even realise existed and I have now applied for a few of them. I didn't get a chance to do any of the optional stuff but if I didn't have so much going on in college at the moment I would have. I have saved a lot of the information to my computer and think I'll come back to it again when I have more time. Overall the think I liked about this course was that a lot of the tasks were very practical and I've gained some skills also.

P19: I will take everything I learnt in this course and use it when making career decisions moving forward. Even though I'm nearly sure I want to stick with the career I've chosen I think learning about the different career choices has made me realise all the options I could have. I think if I have to move to different roles within a job or even move to a different company this course has helped me with knowing that change is ok.

P20: I feel so much more ready to start my music career journey. I feel like the tasks really helped me realise what direction I wanted to take with my career. This course made me think of all career possibilities. I feel more open minded about my career now.

P21: It will be very useful

P22: It has certainly made me think about my career and helped me put things into focus. I was good to read other people's posts and see that I'm not the only one that's worried about career and choices for the future.

P23: I think I am more focused on beginning to look to the future. Though I didn't get much time to post tasks, I did read all the information and feel that I have benefited from it overall

P24: This really aided my decision making. The content made me start to put things into a plan and start a more focused process of looking at my career choices

P25: I read through the material and found it very useful. I did most of the reading on my phone while traveling and couldn't do the tasks very well. I'd need a good deal of time to really get through the material and intend to read it a few times to process it properly.

P26: The stuff in this course was interesting and I thought about stuff I hadn't thought of before. I submitted some stuff but not everything but I did look over the information for most of the tasks. I'm glad that I took part and will definitely use all the tips moving forward.

P27: Knowing what career I would be interested in pursuing

P28: This course has helped me to identify which area I would like to specify in.

P29: I'm still confused and not ready just yet to make a career choice but I know there are options for me and I don't have to panic

P30: I now am making choices for my own career and future. it gave me the confidence to move on with my positive career choice

P31: the right career

P32: Less stressful