

The Effects of “Transition to Professional Life” Course on Career Decision-Making Self-Efficacy

“Profesyonel Hayata Geçiş” Dersinin Öğrencilerin Kariyer Kararı Verme Yetkinlikleri Üzerindeki Etkisi

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Özet

Üniversite son sınıf öğrencilerinin kariyer gelişimleri için gerekli yetkinliklerin kazandırılması ve var olan yetkinliklerinin geliştirilmesi amacıyla tasarlanan ESTÜ401 Profesyonel Hayata Geçiş (1+1; 2 ECTS) dersinin, öğrencilerin kariyer kararı verme yetkinlik (KKVY) düzeyleri üzerindeki etkililiğinin incelenmesi çalışmanın amacını oluşturmaktadır. Çalışmada, ESTÜ401 dersini alan VIII. yarıyıl öğrencilerinin kariyer kararı verme yetkinlikleri üzerindeki etkisi ve bu düzeyleri etkileyen faktörlere göre farklılaşma durumlarının değerlendirilmesini amaçlayan ön test-son test kontrol gruplu deneysel model kullanılmıştır. Tüm analizler R ile yapılmıştır. Sonuç olarak, ESTÜ401 dersini alan öğrencilerin kariyer kararı verme yetkinliklerinin tüm faktörlerde artış gösterdiği tespit edilmiştir. Bunun yanı sıra, Öğrenim Görülen Bölümden Memnuniyet Düzeyi'ne göre öğrencilerin KKVY düzeylerinin farklılık gösterdiği belirlenmiştir. Elde edilen sonuçların, Covid-19 pandemisi nedeniyle çevrimiçi olarak verilen bir kariyer dersinin öğrencilerin KKVY üzerindeki etkilerinin ortaya konulması açısından literatüre önemli bir katkı sağlayacağı düşünülmektedir.

Anahtar Kelimeler: kariyer kararı, kariyer kararı verme yetkinliği, profesyonel hayata geçiş, kariyer dersi, çevrimiçi kariyer müdahalesi

With the increasing complexity of professional life in today's working conditions, the new generation career models have become remarkably diverse. Researchers investigating the development and transformation of career models emphasize that individual competencies are important in the professional development and success of individuals (Akkermans et al., 2013; Hirschi & Koen, 2021).

Abstract

This study aims to reveal the effectiveness of the ESTU401 Transition to Professional Life (1+1; 2 ECTS) course, designed to help university senior students gain the competencies needed for career development and to develop their existing competencies, on the students' career decision-making self-efficacy (CDMSE) levels. An experimental model with pretest-posttest control group was used, with an effort to evaluate the effect of the students taking the 8th semester ESTU401 course on their career decision-making self-efficacy and the differentiation status based on the factors affecting these levels. All the analyses were done by using R. The results show that the career decision-making self-efficacy of the students who took the ESTU401 course increased in all of the factors. In addition, the CDMSE levels of the students were found to differ in the Level of Satisfaction with the Department. These results make an important contribution to the literature by revealing the effects of a career course given online during the Covid-19 pandemic on students' CDMSE.

Keywords: career decision, career decision-making self-efficacy, transition to professional life, career course, online career intervention

Efficacy beliefs, (ie. self-efficacy), are the beliefs about the ability of individuals to regulate and manage the forms of action necessary to achieve a certain outcome. This belief affects many factors, ranging from which course of action to choose, to how much effort to make and how much to resist obstacles and failures (Bandura et al., 1999). Therefore, efficacy can affect all choices in individuals' personal lives as well as their career choices (Kılıç-Ulaş, 2018).

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Yükseköğretim Dergisi / TÜBA Higher Education Research/Review (TÜBA-HER), 13(1), 61-73. © 2023 TÜBA
Geliş tarihi / Received: Aralık / December 27, 2022; Kabul tarihi / Accepted: Şubat / February 20, 2023
Bu makalenin atıf künyesi / How to cite this article: Ünder, Ü., Çavuş, M., Munusturlar, M. A., Akdoğan E.,
Görkem, S. F., Öztürk, E. T., Balkan, S. A., & Banar, M. (2023). The Effects of “Transition to Professional Life” Course
on Career Decision-Making Self-Efficacy. *Yükseköğretim Dergisi*, 13(1), 61-73. doi: 10.2399/yod.23.1224043
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Taylor & Betz (1983), who first associated the self-efficacy theory proposed by Bandura (1977) with career decision, put forward the concept of career decision-making self-efficacy (CDMSE), arguing that the underlying cause of career indecision is low-level CDMSE. Similarly, Lent et al. (2002) also emphasized that in order to have a realistic career expectation during the transition to a healthy professional life and to turn to career options, individuals must first have a CDMSE. Ceschi et al. (2017) also argue that one of the career competencies should be CDMSE. Low career decision-making self-efficacy expectation causes the person to avoid tasks and behaviors related to career decision (consistent self-assessment, professional information gathering, goal selection, future planning, problem-solving), or not to try at all, and to remain indecisive (Taylor & Betz, 1983). Therefore, CDMSE, which is defined as “*the belief in the ability to take the necessary steps to achieve career goals to make a career decision*”, represents an important factor that can affect career success (Taylor & Betz, 1983). For this reason, it is important to examine the CDMSE levels of especially senior university students who are faced with making career decisions during their transition from school to work.

As stated by Kuijpers & Scheerens (2006), the need emerges for a multidimensional assessment that covers career-oriented decision-making self-efficacy of students along with individual skills, including both cognitive and other processes in the career journey. As such, the aim of the study is to examine the effectiveness of the ESTU401 Transition to Professional Life (1+1; 2 ECTS) course, which aims to provide the last year undergraduate students at Eskisehir Technical University with the necessary competencies for their career development and to develop their existing competencies, on their CDMSE levels.

Studies on Career Decision-Making Self-efficacy

The research literature on career decision-making self-efficacy can be classified as “experimental” and “relational” studies. The majority of these *experimental studies* examine whether career interventions (programs) have an effect on career decision-making self-efficacy. According to studies, the transition from school to work is crucial in the career development process of university students in particular. Career counseling and interventions are effective in this transition process and make a significant difference in the career development of students (Kılıç-Ulaş, 2019). There are many empirical studies in the literature examining the impact of such interventions on career decision-making self-efficacy, and the main difference between these studies is the type of intervention. These studies have analyzed the difference in self-efficacy created by the use of different intervention types, such as career development courses (Baig, 2012; Lip, 2014), interactive group lessons (Di Fabio & Maree, 2013), inventories where the professional personality type is determined by the questions in which the student evaluates himself and suggestions are presented to the student (Joslyn, 2015; Luzzo & Day, 1999; Luzzo

et al., 1996; Maples & Luzzo, 2005), computer-assisted inventory (McLaren, 2013), group studies evaluating these inventories (Luzzo & Day, 1999), workshops (Foltz & Luzzo, 1998; Joslyn, 2015; McLaren, 2013), video recordings of people describing their career journey (Luzzo et al., 1996), career counseling (Maples & Luzzo, 2005; Nguyen, 2005), and a semester-long 1-credit course including interactive lectures, group activities, invited speakers, assignments, and evaluations (Reese & Miller, 2006). Considering the findings in these studies, it can be concluded that career interventions increase students’ career decision-making self-efficacy levels. These interventions facilitate the career development process by helping students build self-confidence and self-belief, and make a choice according to their personal characteristics, abilities, and interests (Kılıç-Ulaş, 2019). In addition, the meta-analysis results of Kılıç-Ulaş (2019) show that career interventions help university students and that the use of different interventions together produces more effective results. Therefore, the current study is important in that the intervention (ESTU 401 course) for the experimental group covers university students who are close to graduation, that it includes different types of interventions such as invited speakers, group works, workshop, performance evaluations, and that unlike other interventions it is carried out online, due to the COVID-19 pandemic. Thus, this study is expected to make an important contribution to the literature in revealing how online interventions affect students’ career decision-making self-efficacy levels.

The *correlational studies* on career decision-making self-efficacy can be classified as career-related, personal, psychological, and demographic (Choi et al., 2012). The related literature has various studies examining the relationship between career decision-making self-efficacy and many career-related factors such as career indecision (Bergeron & Romano, 1994; Betz & Voyten, 1997; Creed et al., 2006), career decision-making attitudes and skills (Luzzo, 1993a), career choice and process (Pulliam et al., 2017; Solberg et al., 1995), decision-making styles (Chuang et al., 2020), career decision-making difficulties (barriers) (Albaugh & Nauta, 2005; Gushue et al., 2006), career outcome expectation (Adachi, 2004; Metheny & Mcwhirter, 2013; Shen et al., 2014). In addition, self-evaluation (Koumoundourou et al., 2012), self-esteem (Betz & Klein, 1996), emotional intelligence (Park et al., 2019; Santos et al., 2018), personality traits (Brown & Cinamon, 2016; Jin et al., 2009; Wang et al., 2006), social support (parent/teacher/peer support) (Gushue & Whitson, 2006; Metheny & Mcwhirter, 2013; Metheny et al., 2008) and attachment (Blustein et al., 1991; Lease & Dahlbeck, 2009; Wolfe & Betz, 2004) are some other personal and psychological variables whose relationship with career decision-making self-efficacy has also been examined. The meta-analysis of Choi et al. (2012) found that personal and psychological variables have the greatest effect on career decision-making self-efficacy, the effect of career-related variables is moderate, and demographic variables have no effect on it (Choi et al., 2012).



The first of the demographic variables examined in relation to the career decision-making self-efficacy of university students is gender. There has been no clear research conclusion about whether the career decision-making self-efficacy of university students differs by gender (Söner, 2021). While some studies have concluded that career decision-making self-efficacy differs by gender (Brown et al., 2006; Gianakos, 2001; Kılıç-Ulaş, 2018; Lease, 2004; Wolfe & Betz, 2004); some studies have identified no significant difference in the level of self-efficacy by gender (Boysan & Kağan, 2016; Chung, 2002; Leung et al., 2011; Nawaz & Gilani, 2011; Ulaş & Yıldırım, 2016). Age is another demographic variable whose effect on CDMSE has been researched. Studies have found that there is a positive relationship between the CDMSE and the age of university students (Arjanggi et al., 2020; Kelly & Hatcher, 2013; Norvilitis et al., 2010; Sneva, 2011; Womack, 2014; Yaşar & Sunay, 2020). According to Sarikaya & Khorshid (2009), students in the 17-19 age group mostly choose a profession based on the suggestions of others, but as they get older, they gain better self-efficacy in making career choice decisions. In addition, some studies have focused on the relationship between income level and CDMSE. While some studies have revealed that students with high family income also have high CDMSE scores (Tel Aydın & İşçi, 2020), some studies have found no significant differences between the CDMSE scores of university students with their varying income levels (Bağlama & Uzunboylu, 2017).

Considering the different results obtained in the studies on demographic variables, this study examines the effect of gender, age, and income level on CDMSE. In addition, the variables related to the academic field were included among the variables that may affect university students' CDMSE levels. The first of the variables related to the academic field whose relationship with students' career decision-making self-efficacy levels have been examined in the literature is the department/academic field in which the students major (Bağkiran, 2019; Bağlama & Uzunboylu, 2017; Kılıç-Ulaş, 2018; Lent et al., 1984; Sneva, 2011; Stacy, 2003; Sumari, 2006; Ulaş, 2016). In some of these studies, no significant difference was found between the career decision-making self-efficacy levels of students from different departments (Bağkiran, 2019; Bağlama & Uzunboylu, 2017; Kılıç-Ulaş, 2018), while some did find a significant relationship (Sneva, 2011; Stacy, 2003; Ulaş, 2016). Some other studies have examined the relationship between students' CDMSE level and their satisfaction with the academic field (Doo & Park, 2019; Kılıç-Ulaş, 2018; Nauta, 2007; Tel Aydın & İşçi, 2020). According to Nauta (2007), students with a high level of satisfaction with their major feel more efficacious in making career decisions, since they have made their first difficult career choice successfully. However, the research literature examining the effects of university students' past and present internship experience, work experience, and academic grade point average on their CDMSE is quite limited.

As a key component of experiential learning, participation in internship programs (Stajkovic & Luthans, 1998) and work experience (Stringer & Kerpelman, 2010) have been found to affect students' career decision-making self-efficacy. In other studies on the academic field, a statistically significant difference has been identified between the CDMSE scores of university students by their work experience (Kılıç-Ulaş, 2018); but no significant difference has been found in terms of internship status and grade point averages (Kılıç-Ulaş, 2018; Ulaş & Özdemir, 2018). Tel Aydın and İşçi's study (2020) on senior university students studying in health sciences departments revealed a difference between students' career decision-making competencies and the level of evaluation of their academic achievements. Thus, examining the CDMSE levels of the students studying in different departments by their satisfaction levels, work and internship experience, and grade point averages (GPA) is expected to help address this limitation in the literature.

As such, the aim of the study is to examine the pre- and post-semester differences between the experimental model and CDMSE scores of the university students who have taken the ESTU401 course, and to reveal the differences, if any, in their end-of-semester CDMSE scores by several variables. The factors considered for this purpose are gender, age, monthly household income, type of academic program, level of satisfaction with the academic program, work experience, internship experience, and GPA.

Method

Research Design

In this study, the pretest-posttest control group experimental design was implemented, which aims to evaluate the effect of taking the ESTU401 course on 8th-semester students' CDMSE levels and the differentiation of these levels by several factors. Pre-test and post-test measurements of the experimental and control groups constitute the experimental process of the study.

While the experimental group was taught the ten-session ESTU401 Transition to Professional Life curriculum, no intervention was implemented with the students in the control group. The post-test data were collected after the final session, with the completion of the ESTU401 course.

Participants

To examine the CDMSE levels of university students who took the ESTU401 Transition to Professional Life course, the data were collected from the experimental and control groups, in line with the pretest-posttest control group experimental design.

Experimental Group: It consists of students who took the ESTU401 course in the spring semester of the 2020-2021 academic year.

CDMSE scale, which determines the CDMSE levels of university students, was administered at the beginning and end of the term to the students who took the course and volunteered to participate in the research.

Control Group: The data were collected by distributing questionnaires at the beginning and end of the semester to the control group students who did not take the ESTU401 course in the spring semester of the 2020-2021 academic year, and volunteered to participate in the research.

193 students participated in the pre-test study, 121 in the control and 72 in the experimental group, and a total of 169 students participated in the post-test study, of which 103 were in the control and 66 in the experimental group. The control and experimental groups in the pre-test and post-test stages mainly consisted of students who were near graduation (pre-test control group graduate status: 81/40, pre-test experimental group graduate status: 52/20, post-test control group graduate status: 69/34, post-test experimental group graduate status: 42/24). Regarding the income status of the groups, a homogeneous distribution is observed, with the participants mostly belonging to middle (2001- 3000 TL and 3001-4000 TL) and high-income (> 5000 TL) groups. The highest number of participants were from the Faculty of Architecture and Design and Faculty of Sports Sciences, and those who did not have work experience but had internship experience made up the majority.

Examining the overall *GPA* and *departmental satisfaction levels* of the participants in the control and experimental groups, the average GPA of the students in the control group was calculated as 2.76 and that of the students in the experimental group was 2.81. The average level of satisfaction with the department of the control group was found to be 3.65 and that of the experimental group to be 3.71. As can be seen, the GPAs and satisfaction levels of both groups were very close.

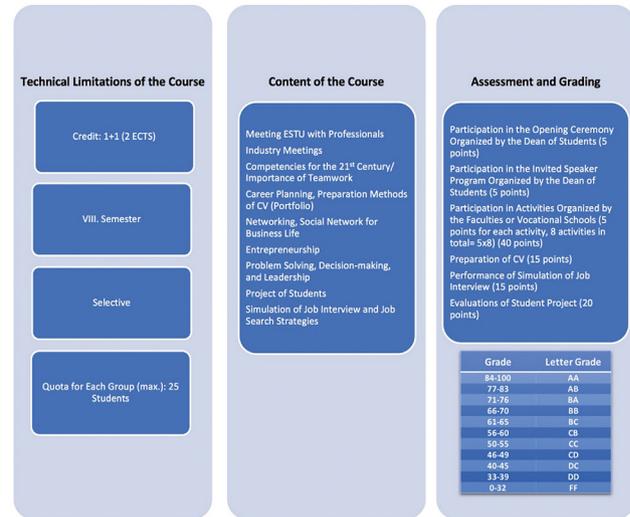
Intervention

The career intervention tested in this study is the undergraduate course titled “ESTU401 Transition to Professional Life” which was delivered for one semester. Established by the Dean of Students at Eskisehir Technical University in Türkiye and implemented first in the 2019-2020 Academic Year, the *Transition to Professional Life* course with the code ESTU401 is designed to provide students with the competencies necessary for their career development and to develop existing competencies. This course aims to help students who have reached the graduation stage and are preparing to step into professional life to

- Get together with the representatives of various sectors,
- Get to know the business dynamics and business processes of the sector,
- Become aware of the importance of career planning.

It is a course that is held for 1 hour once a week for 10 weeks and includes 10 different subjects with multiple interventions such as seminars, invited speakers, written tasks, workshops, brainstorming, and group activities. Technical constraints such as quota, credit, and semester, as well as the scope and assessment of the course are shown in ■ Figure 1 (ESTU 401 Procedures and Principles, 2020). The course was delivered online in the Spring semester of 2020-2021 due to the Covid-19 pandemic.

■ **Figure 1.** Details about the ESTU401 transition to professional life course.



During the preparation of the course, studies based on social cognitive career theory were reviewed. In the creation of seminar titles and contents to be included in the curriculum, competencies put forward by Crites (1978), sources of efficacy expectations proposed by Bandura (1977), and the effective career intervention components explained by Brown & Krane (2000) were used. Regarding self-appraisal competency, seminars on 21st-century competencies, the importance of teamwork, networking, entrepreneurship, problem-solving, decision-making, and leadership are included so that the students taking the course would become aware of their own interests, talents, and professional skills. To develop students' competency in occupational information, homework and seminars such as meetings with professionals and student projects were included. Topics such as career planning, CV (Portfolio) preparation, interview simulation, and job search strategies were included in the competency areas of goal selection and planning. Finally, in the area of problem-solving competency, leadership seminars given by professionals focusing on the obstacles they encountered in their careers and how they solved these problems were included (Crites, 1978). All these seminars gave the students the message that they can develop their career-related competencies through their own personal efforts. To encourage students in their career journey by modeling and to keep them motivated, all of these seminars were given by experts in the sector related to the students' own professional fields.



In addition, the course assessment and feedback on activities such as CV preparation, interview simulation, and student projects were designed in a way to encourage and motivate the students (Bandura, 1977).

Further, (a) written exercises, (b) individualized attention, (c) information on the world of work, (d) vicarious learning experiences, and (e) attention to building support were taken into account, at least three of which are suggested by Brown & Krane (2000) to be included in career courses. All of these dimensions were included in the ESTU401 course. In the selection of the guests to give the seminars particular attention was paid to ensure that, they had the ability to individually evaluate the tasks given to the students, giving one-to-one feedback, having experience in the sector, having gone through similar education paths that the students would go through (having graduated from the same department or university, having recently graduated, etc.) and that they were experts who could demonstrate a supportive and motivating approach to students with their experiences, narratives, and feedback.

At the beginning of the semester, all guests who were to conduct the course were informed about the targeted course outcomes and the issues they needed to consider.

Procedures

After obtaining the ethics committee approval from the related university Social and Human Sciences Ethics Committee to conduct the research, students who took the course (experimental group) and students who did not (control group) at the beginning of the semester (26 March- 6 April 2021-pre-test) and at the end of the semester (June 15-29, 2021-posttest) answered the prepared questionnaire. Out of 102 students who took the course, 72 students answered the survey at the beginning of the semester and 66 students answered it at the end of the semester. The surveys were sent as an online link with the assistance of the coordinators in each unit. Participation was completely voluntary; no identifying information was requested from the students, and they were informed that they could leave the study whenever they wanted.

Measures

There have been many studies conducted to develop or adapt scales for CDMSE or determine/test its psychometric properties. After the scale developed by Taylor & Betz (1983) to measure career decision-making self-efficacy for the first time, various other studies have attempted to prove its psychometric properties (Chaney et al., 2007; Luzzo, 1993b; Peterson & Delmas, 1998; Taylor & Popma, 1990). However, due to concerns about the large number of items in the scale, Betz et al. (1996) developed the Career Decision-Making Self-Efficacy Scale-Short Form. Studies have been carried out to test the psychometric properties of this short scale as well (Betz et al., 2005; Creed et al., 2002; Miller et al., 2009; Nam et al., 2011).

The Turkish adaptation of the short form of the scale was made by Büyükgoze-Kavas (2014), Işık (2010), and Şeker (2020). Ulaş (2016) developed a new career decision-making self-efficacy scale as part of his dissertation. In the current study, the Career Decision-Making Self-Efficacy Scale (CDES) developed by Ulaş & Yıldırım (2016) measuring the career decision-making self-efficacy levels of university students was used because it was found to be contextually appropriate and relevant. The main reasons for the preference of the scale are that it was developed and verified in Türkiye and in Turkish and that it was developed for university students. In addition, the scale was developed based on the career maturity model of Crites (1969, 1978), like the ESTU401 course. This scale, whose validity and reliability study was conducted on data obtained from 523 university students, consists of 5 sub-dimensions and 45 items (eg, *having information about where to learn about job opportunities*). While the reliability coefficient for the scale was found to be .97, split-half reliability was calculated to be $r_{xx}=.95$. In this study, similar Cronbach's alpha values were obtained (pretest 0.9682, posttest 0.9764).

Accordingly, the internal consistency of the measurement tool used in the study was found to be quite high. The dimensions of the scale were job/profession info (11 items), knowing one's self (10 items), career choice (6 items), career planning alternatives (14 items), and updating professional topics (4 items). The high score obtained from the five-point Likert scale (1= Not at all competent, 2= Not competent, 3= I am partially competent, 4= I am competent, 5= I am quite competent) indicates that the university students' career decision-making self-efficacy levels are high; therefore, they regard themselves as competent in making career decisions.

In addition to the CDES, a personal information form was also included in the data collection. In this form prepared by the researchers, various questions were included to collect information about the academic status of the participants such as graduation status, faculty, work experience, internship experience, GPA, and satisfaction with the department, as well as demographic characteristics such as gender and income.

Results

R ver 4.1.1 was used for the analysis of the data collected in the study and stats (R Core Team, 2021), readxl (Wickham & Bryan, 2019), dplyr (Wickham et al., 2021), Power (de Micheaux & Tran, 2016), lsr (Navarro, 2015), ggplot2 (Wickham, 2016), DescTools (Signorell, 2021) packages were used. In order to test the equality of the answers, Student-t and Wilcoxon Rank tests were used based on whether the relevant factor follow a normal distribution or not at the level of factors (1st Factor: Job/Profession Info, 2nd Factor: Knowing One's Self, 3rd Factor: Career Choice, 4th Factor: Career Planning alternatives, 5th Factor: Updating Professional Topics) the average given by the control and experimental groups

Since all the students who answered the survey gave the requested information and answered the questions completely, no missing data were observed. The Shapiro-Wilk normality test was used to test whether the average score of the answers given by the students follows a normal distribution by the factors and groups and the results are given in ■ Table 1. The answers given by the students in the control group to the questions in the 4th factor for the pre-test, and the answers of the students in the test group for the 1st, 2nd, 4th, and 5th factors follow a normal distribution at the 95% confidence level. In the post-tests, the average score of the answers given by the students in the control group to the questions in the 1st and the 4th factor show normal distribution at the 95% confidence level. Therefore, the t-test was used to test the equality of the mean answers given by the control and experimental groups to the questions in the 4th factor, and the Wilcoxon Rank test was used for the others. Cohen's d was used to calculate the effect sizes.

■ **Table 1.** The normality test results for the groups and the factors.

Test	Group	Factor	Normality test	
			T	p-value
Pre-test	Control	1	0.9530	0.0003*
		2	0.9310	<0.0001*
		3	0.9227	<0.0001*
		4	0.9790	0.0565
		5	0.9766	0.0334*
	Treatment	1	0.9859	0.6064
		2	0.9726	0.1180
		3	0.9608	0.0246*
		4	0.9712	0.0985
		5	0.9751	0.1636
Post test	Control	1	0.9880	0.4925
		2	0.9476	0.0004*
		3	0.9585	0.0026*
		4	0.9768	0.0676
		5	0.9699	0.0189*
	Treatment	1	0.9505	0.0104*
		2	0.9481	0.0079*
		3	0.9482	0.0080*
		4	0.9536	0.0150*
		5	0.9376	0.0024*

*p < 0.05, T: test statistic

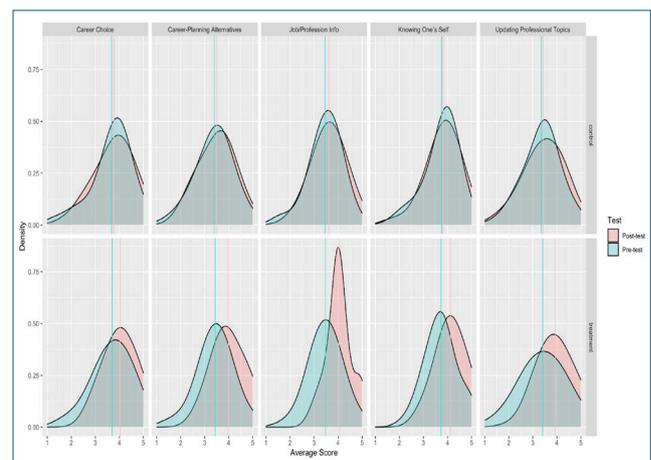
The results of the pre-test scores difference analysis show that there is no statistically significant difference between the control and experimental groups for all the factors as seen in ■ Table 2.

Examining the difference between the pretest and posttest scores of the control and experimental groups, there is no statistically significant difference between the pretest and posttest mean scores of the control group at the 95% confidence level, according to the results given in ■ Table 3

(1st factor: $T = 5561.5$, $p=0.1655$, $d=0.2220$; 2nd factor: $T=6000.5$, $p=0.6327$, $d=0.0940$; 3rd factor: $T=5959$, $p=0.5721$, $d=0.1143$; 4th factor: $T=-1.0315$, $p= 0.3035$, $d=0.1378$; 5th factor: $T=5798.5$, $p=0.3681$, $d=0.1052$), and significant statistical differences are observed between the pretest and posttest mean scores of the experimental group (1st factor: $T=1125.5$, $p=0.0001$, $d=0.9494$, 2nd factor: 1486.5 , $p=0.0001$, $d=0.6334$, 3rd factor: $T=1831.5$, $p=0.0198$, $d=0.4620$, 4th factor: $T=1377$, $p=0.0001$, $d=0.8180$; 5th factor: $T=1546.5$, $p=0.0003$, $d=0.6659$). As such, while no change was observed in the control group, a positive change was observed in the experimental group. As can be seen, the students who took the ESTU401 course improved in terms of CDMSE compared to the students who did not take this course.

When the results are examined at the factor level, a positive development is observed in the experimental group students regarding all the factors. Considering the increase in their average scores, the students in the experimental group showed the highest improvement in *Job and Profession Info*, *Career Planning Alternatives*, *Updating Professional Topics*, *Knowing One's Self*, and *Career Choice*.

In ■ Figure 2, the distribution of the average pre-test and post-test scores of the control and experimental groups is given. The vertical lines in each cell in the figure represent the average of the response scores of the relevant group in the pre-test and post-test. The differences between the pre-test and post-test average scores of the experimental group can be clearly observed, while the differences in the control group are quite low. The average response scores of the students in the experimental group at the post-test stage show a statistically significant improvement compared to the control group in the pre-test stage, as seen in the figure.



■ **Figure 2.** Distribution of the mean pre- and post-test scores of the control and experimental.

Another aim of the present study is to investigate the differences between the students' mean CDMSE scores by their demographic and academic variables. ■ Table 4 shows the results of the normality, homogeneity of variance, and difference tests of the post-test scores by the variables included in the study.



Table 2. The statistical test results for the groups.

Factor	Group	n	Mean	S. Deviation	Statistical test		
					T	p-value	Effect size
1	Control	121	3.4620	0.6629	4475.5	0.7508	0.0252
	Treatment	72	3.4785	0.6313			
2	Control	121	3.7479	0.6961	4786.5	0.2510	0.0256
	Treatment	72	3.7305	0.6482			
3	Control	121	3.6763	0.8289	4422.5	0.8599	0.0252
	Treatment	72	3.6967	0.7743			
4	Control	121	3.3931	0.7316	-0.4077	0.6840	0.0601
	Treatment	72	3.4365	0.7040			
5	Control	121	3.3574	0.7670	4190.5	0.6581	0.0653
	Treatment	72	3.4097	0.8519			

Examining the results, the average post-test scores by the demographic variables are observed to follow a normal distribution at the 95% confidence level, with homogenous variance. Therefore, Student's t-test was used for variables Gender, Work Experience, and Internship Experience to test the equality of differences in mean scores, and ANOVA F-test was used for variables with more than two levels. In the calculation of the effect size (d), Cohen's d was used when two levels were compared, and eta-squared was used when more than two levels were compared.

The results revealed a statistically significant difference at a 95% confidence level ($T=3.198$, $p=0.0189$, $d=0.1700$) between the average post-test scores of the students in the post-test scores of only in the level of Departmental Satisfaction.

No difference was identified between the post-test average response scores of the students based on the levels of Gender, Income, Faculty, Work Experience, Internship Experience, and Grade Point Average.

Table 3. The statistical test results for the groups and factors.

Factor	Group	Test	n	M	SD	Statistical test		
						T	p	d
1	Control	Pre	121	3.462	0.662	5561.5	0.165	0.222
		Post	103	3.609	0.660			
	Treatment	Pre	72	3.478	0.631	1125.5	<0.000*	0.949
		Post	66	4.028	0.517			
2	Control	Pre	121	3.747	0.696	6000.5	0.632	0.094
		Post	103	3.813	0.700			
	Treatment	Pre	72	3.730	0.648	1486.5	0.000*	0.633
		Post	66	4.121	0.580			
3	Control	Pre	121	3.676	0.828	5959	0.572	0.114
		Post	103	3.768	0.780			
	Treatment	Pre	72	3.696	0.774	1831.5	0.019*	0.462
		Post	66	4.025	0.634			
4	Control	Pre	121	3.393	0.731	-1.0315	0.303	0.137
		Post	103	3.492	0.705			
	Treatment	Pre	72	3.436	0.704	1377	<0.000*	0.818
		Post	66	3.983	0.628			
5	Control	Ön	121	3.357	0.767	5798.5	0.368	0.105
		Post	103	3.439	0.790			
	Treatment	Pre	72	3.409	0.851	1546.5	0.000*	0.665

Table 4. Difference analysis results of experimental group post-test scores by demographic variables.

Variables	Levels	n	M	Normality test		Variance homogeneity test		Statistical test		Effect size
				T	p	T	p	T	p	
Gender	Female	36	4.01	0.655	0.720	0.004	0.949	0.132	0.895	0.032
	Male	30	4.03	0.476	0.787					
Income (TL)	< 2000	5	4.22	0.733	0.692	1.786	0.143	1.089	0.370	0.070
	2001-3000	16	4.12	0.159	0.923					
	3001-4000	8	4.24	0.994	0.608					
	4001-5000	15	3.86	0.513	0.773					
	> 5000	22	3.93	0.104	0.949					
Faculty	Science	15	4.09	0.110	0.946	1.193	0.322	0.100	0.982	0.006
	Aviation and Space Sciences	8	3.95	3.756	0.152					
	Architecture and Design	14	3.99	1.207	0.546					
	Engineering	16	3.99	0.672	0.714					
	Sport Sciences	13	4.03	0.066	0.967					
Work experience	Yes	22	4.12	0.579	0.748	0.011	0.914	1.012	0.316	0.263
	No	44	3.97	0.519	0.771					
Internship experience	Yes	29	4.04	0.720	0.697	0.506	0.479	0.323	0.747	0.078
	No	37	4.00	0.803	0.669					
GPA	< 1.99	1	4.00	-	-	0.840	0.504	0.674	0.613	0.040
	2.00 – 2.50	10	3.90	0.497	0.779					
	2.51 – 3.00	35	4.02	0.198	0.905					
	3.01 – 3.50	15	3.96	0.783	0.675					
	3.51 – 4.00	5	4.39	0.729	0.694					
Departmental satisfaction (1=Very dissatisfied, 5=Very satisfied)	1	2	4.09	-	-	1.072	0.377	3.198	0.018*	0.170
	2	8	3.55	0.905	0.635					
	3	17	4.09	0.659	0.719					
	4	28	3.96	0.865	0.648					
	5	11	4.39	0.928	0.628					

Tukey HSD test was applied to determine which pairs caused the difference between the levels of Departmental Satisfaction variable, which had a significant difference according to the ANOVA test results, and the average differences (\bar{d}) and adjusted p-values were calculated. The results are given in Table 5. Whereas no statistically significant difference was identified between “I am not at all satisfied-Very satisfied” ($\bar{d}=-0.308, p=0.9441$), “Partially satisfied-Very satisfied” ($\bar{d}=-0.3090, p=0.5498$), Satisfied-Very satisfied ($\bar{d}=-0.4387, p=0.1417$), “Partially satisfied -Very dissatisfied” ($\bar{d}=-0.0081, p \sim 1$), “Dissatisfied – Very dissatisfied” ($\bar{d}=-0.5429, p=0.6846$), “Satisfied – Very dissatisfied” ($\bar{d}=-0.1378, p=0.9963$), “Dissatisfied – Partially satisfied” ($\bar{d}=-0.5347, p=0.1337$), “Satisfied – Partially satisfied” ($\bar{d}=-0.1296, p=0.9277$), and “Satisfied – Dissatisfied” ($\bar{d}=-0.4050, p =0.3123$), a statistically significant difference was found between the groups who answered “I am not satisfied” and “Very satisfied” ($\bar{d}=-0.8437, p=0.0082^*$). This difference is in favor of the students who answered “I am very satisfied” with a score of approximately 0.85.

Table 5. Post-hoc comparison test results.

Levels	Mean difference	p-adjusted
Very dissatisfied- Very satisfied	-0.3008	0.9441
Partially satisfied-Very satisfied	-0.3090	0.5498
Dissatisfied – Very satisfied	-0.8437	0.0082*
Satisfied-Very satisfied	-0.4387	0.1417
Partially satisfied -Very dissatisfied	-0.0081	1.0000
Dissatisfied – Very dissatisfied	-0.5429	0.6846
Satisfied – Very dissatisfied	-0.1378	0.9963
Dissatisfied – Partially satisfied	-0.5347	0.1337
Satisfied – Partially satisfied	-0.1296	0.9277
Satisfied – Dissatisfied	0.4050	0.3123
*p < 0.05		



Discussion and Conclusion

In this study, hypothesizing that with the completion of the Transition to Professional Life (ESTU401) course, students' self-efficacy in making career decisions would increase, its effect on the students who took this course was experimentally tested. Within the scope of the study, while the students in the experimental group attended the course for one semester, no intervention was implemented for the control group. The analysis applied to the data obtained from the pretest-posttest measurements revealed no significant change in the CDMSE levels of the control group, while it revealed an increase in the CDMSE levels of the experimental group. Furthermore, this increase in the experimental group, (ie. the effect of the intervention program on CDMSE) was found to be independent of the time elapsed. This finding is also supported by studies in the literature reporting that career intervention programs increase career decision-making self-efficacy (Foltz & Luzzo, 1998; Maples & Luzzo, 2005; Nguyen, 2005; Reese & Miller, 2006; Scott & Ciani, 2008).

In the creation of the ESTU401 course, benefiting from all four of the informative sources, namely, performance accomplishments, vicarious experience, verbal persuasion, and emotional arousal, which are highlighted by Bandura (1977) as the factors affecting the efficacy expectation, indicates that this using all these sources together is of great importance in obtaining such efficacy (Fouad et al., 2009).

Betz & Voyten (1997) also states that the starting point for supporting a student experiencing career indecision is including these four sources of efficacy information in career intervention programs. Including seminars on various subjects such as 21st-century competencies, the importance of teamwork, networking, entrepreneurship, problem-solving, decision-making, and leadership in the ESTU401 course helped students realize that they can develop these competencies as a result of their own efforts, not due to luck, convenience or innate characteristics.

In order to strengthen indirect learning, some other seminars were offered by inviting people who could serve as a model for the students and involving professionals working in the fields where students studied, especially as part of the "Advice to the Professionals of Tomorrow" seminar, where success stories of people who had recently graduated from the same department/faculty or who had gone through similar stages were told. Studies show that career programs that include a model that describes how career decisions are made and how the problems encountered during this process are overcome achieve more effective results than career programs given by academic members or interventions that do not contain a modeling element (Brown et al., 2003). To encourage students through social persuasion, students were given various tasks, and professionals were asked to evaluate them. Activities such as project writing, interview simulation, and CV (Portfolio) preparation enabled students to make efforts, receive feedback, and take necessary actions based on this feedback.

In addition, with such activities, the excitement of the students was sustained and they experienced the same emotional states that they could experience during the real performance. Providing students with the opportunity to evaluate themselves and make future plans through written materials, giving individual feedback to students, and making comments about their future plans increase the effectiveness of career intervention programs (Brown et al., 2003; Whiston et al., 2017).

Another reason for ESTU401 course's improvement of students' CDMSE could be that the career intervention program was based on career decision-making components (Betz & Voyten, 1997). Sessions were formed by considering the dimensions of self-knowledge (self-evaluation), recognizing professions (vocational knowledge), selecting a profession (target setting), looking ahead (planning), and what to do (problem-solving), which Crites (1978) defines as five career choice competencies. The results of the current study also indicate an increase in self-efficacy in all dimensions of job and profession info, self-knowledge, career choice, career planning alternatives, and updating professional topics after the students in the experimental group took the ESTU401 course. This finding seems consistent with the inclusion of seminars, where emphasis can be placed on all dimensions, into the curriculum. Among these dimensions, the competencies of the students in the field of business and vocational knowledge were observed to increase the most.

The creation of a separate group in each faculty instead of a common course in the whole university resulted in students' having more information about their own fields. In addition, the seminars given by the guests who directly reported their experiences in the field made the students feel more competent in this dimension. The dimension in which students' competencies increased the least is career choice. Since career choice is the most important decision in the career journey, students' feeling less competent in this regard can be interpreted as quite natural.

Planning the ESTU401 course as a 10-hour and 10-week program that includes different types of activities such as inviting speakers, conducting workshops, group works, simulations, written assignments, and carrying out performance evaluations was effective in producing successful results. As the number of sessions, duration and content intensity of classroom interventions increase, they become more effective than individual and group counseling (Oliver & Spokane, 1988). The career counselor's (the person giving the seminars) having creative and holistic perspective (Amundson, 2006), use of different types of interventions such as texts, materials, and advisor guidance together, and the fact that the population addressed by the course was university students further increased the effectiveness of the course (Kılıç-Ulaş, 2019).

The belief of senior university students in seeing, evaluating, and choosing career opportunities is very important in making the right decisions (Ulaş & Yıldırım, 2016). Thus, the variables affecting career decision-making self-efficacy were also examined in this study. Similar to the results reported in the literature, no difference was found in the current study between CDMSE and *gender* (Boysan & Kağan, 2016; Chung, 2002; Leung et al., 2011; Nawaz & Gilani, 2011; Ulaş & Yıldırım, 2016) *income level* (Baglama & Uzunboylu, 2017), *the department/academic major in which the students study* (Bagkiran, 2019; Baglama & Uzunboylu, 2017; Kılıç-Ulaş, 2018), *internship and grade point average* (Kılıç-Ulaş, 2018; Ulaş & Özdemir, 2018). However, CDMSE was found to differ by students' satisfaction with the department they are studying at. The fact that the students satisfied with their department have a higher CDMSE score can be interpreted as the satisfaction of making the right academic field choice, as the first step in career selection, increases their self-confidence and belief that they can make the right decision in career choice (Nauta, 2007).

This study has both some strengths and limitations. The use of a control group, using a scale developed for Turkish university students, and conducting the study in a natural environment are the primary strengths. The first limitation of the study is that the participants were not randomly assigned to the groups. Despite these limitations, conducting the course online due to the Covid-19 pandemic was very important in terms of testing the effectiveness of such career intervention programs in the online environment.

Since there has been no previous study in the literature measuring the effect of a career intervention course offered online, the results obtained from this study will contribute to both practitioners and the literature. In particular, the findings lend further support to the argument that CDMSE is a formable structure and show that an increase can be observed even with a one-semester course (Scott & Ciani, 2008) delivered through distance education.

This study and this course were only applied to a certain group of students at a state university during a specific time period. Applying the study in several institutions, i.e. private universities, at varying times, with various student groups, i.e. health sciences students, and within various cultures can lead to more generalizable results. However, it is believed that this study is crucial, particularly for introducing a model course to both literature and practice for universities. It is anticipated that better outcomes would be achieved with course adjustments including varying the course's frequency or length, diversifying the methodologies used in the course, and training the instructors, it is believed that greater results would be attained. This suggests that collaborative studies can be conducted in higher education institutions to measure and increase students' levels of CDMSE. These studies may be conducted with the involvement of numerous stakeholders, including public institutions, firms, recently graduated students in working life, unemployed graduates, career centers at universities, and, employment agencies.

Author Contributions/ Yazar Katkıları: UU: Project idea, conceiving and designing the study, study monitoring, interpreting the results, literature research, writing manuscript, critical reading and final check of the manuscript, MC: Project idea, conceiving and designing the study, data collection and data analysis. MAM: Project idea, conceiving and designing the study, study monitoring, literature research and data collection. EA, SFG, ETO, SAB, MB: Project idea, writing manuscript, critical reading, data collection, literature research and final check of the manuscript./ UU: Fikir, tasarım, danışmanlık / denetleme, bulguların yorumlanması, kaynak tarama, makalenin yazılması, eleştirel okuma ve makalenin son kontrolü; MC: Fikir, tasarım, danışmanlık, veri toplama ve veri analizi. MAM: Fikir, tasarım, danışmanlık, denetleme, kaynak tarama, veri toplama ve veri analizi. EA, SFG, ETO, SAB, MB: Fikir, tasarım, makalenin yazılması, eleştirel okuma, kaynak tarama, veri toplama ve çalışmanın son kontrolü.

Funding / Fon Desteği : This study did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors. / Bu çalışma herhangi bir resmi, ticari ya da kâr amacı gütmeyen organizasyondan fon desteği almamıştır.

Compliance with Ethical Standards / Etik Standartlara Uygunluk: This study was approved by Ethical Committee for Social and Human Researches of Eskisehir Technical University (Decision no: 17522; Date: 05.05.2021). The authors stated that the standards regarding research and publication ethics, the Personal Data Protection Law and the copyright regulations applicable to intellectual and artistic works are complied with and there is no conflict of interest. /

Araştırma için Eskisehir Teknik Üniversitesi Sosyal ve Beşerî Bilimler Bilimsel Araştırma ve Yayın Etiği Kurulundan onay (Karar no: 17522; Tarih: 05.05.2021) alınmıştır. Yazarlar bu makalede araştırma ve yayın etiğine bağlı kaldığını, Kişisel Verilerin Korunması Kanunu'na ve fikir ve sanat eserleri için geçerli telif hakları düzenlemelerine uyulduğunu ve herhangi bir çıkar çatışması bulunmadığını belirtmiştir.

Acknowledgement / Teşekkür: This study was conducted during the period when all the authors worked within the Eskisehir Technical University Dean of Students. We would like to thank the following Faculty coordinators responsible for conducting the ESTU401 course from the beginning of the study: Assoc. Prof. Dr. Bilge ERDEM, Assoc. Prof. Dr. Savaş Selahattin ATEŞ, Asst. Prof. Dr. Mehmet İnanç ONUR, Instructor Dr. Gülşah DOĞAN, and would like to thank our guests Oya ÜNLÜ KIZIL, Yakup ÜLÇER, Prof. Dr. Erhan ERKUT, Sancar TOK, and Banu GÜLTEKİN KOCAMAN for their contributions. / Bu çalışma, yazarların Eskisehir Teknik Üniversitesi Öğrenci Dekanlığı bünyesinde görev yaptıkları dönemde yürütülmüştür. Çalışmanın başlangıcından itibaren ESTÜ401 dersinin yürütülmesinden sorumlu fakülte koordinatörleri Doç. Dr. Bilge ERDEM, Doç. Dr. Savaş Selahattin ATEŞ, Dr. Öğr. Üyesi Mehmet İnanç ONUR, Öğr. Gör. Dr. Gülşah DOĞAN'a, ders kapsamındaki seminerlerde değerli bilgi ve birikimlerini öğrencilerimizle paylaşan konuklarımız Oya ÜNLÜ KIZIL, Yakup ÜLÇER, Prof. Dr. Erhan ERKUT, Sancar TOK ve Banu GÜLTEKİN KOCAMAN'a katkıları için teşekkür ederiz.



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