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THE RELATIONSHIP BETWEEN EMOTIONAL INTELLIGENCE, SELF-DIRECTED LEARNING READINESS AND ACHIEVEMENT

Research Article

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Abstract

The aim of this study is to understand the influence of emotional intelligence and self-directed learning readiness on achievement and the influence of emotional intelligence on self-directed learning readiness of students who are in their first or second-year education in a private university in Ankara. The scales used are self-directed learning readiness scale and Schutte et al.'s (2001) emotional intelligence. SPSS version 20 is used by the researcher to carry out correlation and regression analysis to reach conclusions about the research questions. It is found that emotional intelligence and self-directed learning readiness are strongly correlated. Also, emotional intelligence predicts self-directed learning readiness with very little support from gender. However, there is no relation found between self-directed learning and GPA as well as emotional intelligence and GPA. Participants' being from different departments does not have an influence on GPA.

Keywords: self-directed learning readiness, emotional intelligence, achievement.

1. Introduction

In this section, self-directed learning readiness (SDLR) and emotional intelligence (EI) and the literature gap will be explained.

1.1 Emotional intelligence (EI)

EI has been studied in the domain of education for quite some time. A general description of EI by Mayer & Salovey (1997, p. 5) is as follows: "Emotional intelligence involves the ability to perceive accurately, appraise and express emotion; the ability to access and/or generate feelings when they facilitate thought; the ability to understand emotion and emotional knowledge; the ability to regulate emotions to promote emotional and intellectual growth."It has been studied under two topics as trait and ability emotional intelligence. Trait emotional intelligence (TEI) measures use self-report whereas ability emotional intelligence applies tests to understand the degree of expression, regulation and understanding of emotions. Examples of TEI scales are "The Schutte Self Report Emotional Intelligence Test" (SSEIT) and "The Trait Emotional Intelligence Questionnaire" (TEIQue). EI is defined by Schutte et al. (2001) as "the ability or tendency to perceive, understand, regulate, and harness emotions adaptively in the self and in others".

TEI uses self-report questionnaires about people's perceptions about their emotional world and is concerned with personality issues regarding emotions. According to Petrides et al. (2007), it is different from ability emotional intelligence in that it depends on hierarchical models of personality rather than cognitive abilities.

When we look at EI as an ability, we see that in an attempt to distinguish EI from personal and social intelligences, Mayer, Caruso & Salovey (2016) define a set of principles stating that

EI can best be measured as an ability and add that it is a broad ability focused on rapid information processing.

Goleman's (1995) definition of EI roots from distinguishing IQ from EQ by emphasizing that success in life is driven more by EQ than IQ saying that only 20% of IQ contributes to a happy life in general. Goleman describes EI as abilities including "regulation of motivation, understanding others' emotions, and controlling and understanding one's own emotions".

1.2 Self-Directed Learning

Self-directed learning(SDL) is a concept found in individuals who are efficient at controlling learning with their own preferences and choices which confirms their best way of learning. Self-directed individuals accept their own responsibility with support from their mentors. Garrison (1997) mentions that self-directed learners monitor themselves and make learning meaningful. SDL in its core has ties to metacognitive, cognitive and social strategies as they are related to autonomous learning. The importance of metacognitive skills can be seen in related research. For instance, Doyle (2008, p. 69) states that he sees a few students that are efficient in his classes and according to his observation, he identified the following 8 general skills of students who follow principles of self-directed learning, supporting that the learners need to organize, monitor and evaluate their own learning:

- *Finding and evaluating quality sources of information*
- *Identifying important information in quality sources*
- *Organizing information in meaningful ways*
- *Writing reports and papers*
- *Managing time*
- *Remembering what has been learned*
- *Using problem-solving systems*
- *Monitoring one's own learning (metacognition)*

Also Kleden (2015) uses similar footprints of SDL when he finds in his research that they give better outcomes of achievement as opposed to conventional methods of teaching. Gibbons (2002,p.11-12) explains that self-directed learning activities should essentially contain the following principles: "Student control over as much of the learning experience as possible,…skills development,… student self-management,…"

Knowles' (1975) definition of SDL involves processes where learners can understand what they need to learn and build strategies and set goals for learning. They also evaluate their learning outcomes. Knowles also thinks that this can occur with or without help of others such as peers or teachers. This means that if learners have not discovered this type of learning on their own naturally or if they have not been exposed to SDL by other means, the only way they will learn this kind of learning is with the help of tutors. While it is possible that learners developed themselves as self-directed learners or life-long learners, given the circumstances where the teacher is there for support and the method used in teaching is compatible with SDL, it is a question that learners will adapt themselves to this kind of learning. In this research study, though first and second-year university students constitute the sample, it is expected to shed some light on the issues concerned.

2. Literature Review

In this section, the concepts of SDLR and EI are reviewed and the research questions are shared.

2.1. Emotional Intelligence

The association among EI and academic success is researched in various studies to understand whether it acts directly, indirectly, or is mediated by other factors. Having emotional competencies enables learners to be better at various forms of adjustments, achievements and interpersonal skills (Adeyemo, 2005; Schutte et al., 1998; Wright, 2012). In a study by Yıldızbaş (2015) trying to tie EI to teacher leadership styles, positive results were found and it is stated that this is important for teachers to become role models and develop professional competencies. In literature, it is seen as the teachers' responsibility to take care of their students' emotional feelings. Especially in language learning, teachers' emotional intelligence is directly related to their success (Ghanizadeh & Moafian, 2010). Through teacher training programs, teachers should find ways to raise their emotional competencies and support students' emotional development. The same could be said for the materials and techniques used in language teaching (Shao et al., 2013). It would seem not only learners benefit from EI but also teachers who possess these competencies are better at concentration and strengthening their weaker points. Studies by Rahimi (2016), Sünbül & Aslan (2007) show meaningful relationships between EI and academic achievement. Furthermore, people with greater EI are more persistent with academic activities (Clariana et al., 2012; Parker et al., 2006). Urquijo & Extremera (2017) find that not only EI is positively related to academic satisfaction but also academic engagement mediated EI and academic satisfaction while sociodemographic and personality variables are controlled. Urquijo & Extremera (2017) also point out that emotions are components of academic engagement. That is why, it is supported that students who are more aware of their emotional abilities fulfill academic responsibilities better than others.

There are also studies that are concerned with the utilization of EI as a predictor of achievement levels through abilities such as coping with different kinds of stress. These studies perform mediation analysis with the mediating factors such as learning adaptability (Fei-Zhou et al., 2013), confidence and cooperating with others (Nasir & Masrur, 2010), assertiveness, self-motivation, and self-control (TEI). Some of these abilities become sub-elements of different EI scales.

Explanations above show direct or indirect positive effects of EI on learner achievement via mediating roles (MacCann et al., 2011). While EI is related to academic achievement, the prediction of achievement in long term studies is not sustained if other individual factors such as coping with stress, academic stress and test anxiety are accounted for. Barchard (2003,p.850) finds "…it is clear that the cognitive and personality domains are able to predict academic achievement but that a collection of unselected EI measures is not".

Literature shows gender to be a differentiating factor of EI. Generally, female students have better EI scores than male students in social dimensions according to various studies (Petrides & Furnham, 2000; Rahimi, 2016; Schutte et al., 1998).

Perera (2016) also goes on to say that there is a lack of theoretical explanations of TEI for achievement. While there are many instruments for measuring EI effect on achievement, confusion exists in self-reported instruments due to measuring intelligence and interpretation of data. The degree of representations of TEI differs from one study to another and that is why different results are observed. There are many factors that underlie TEI such as regulation of attention turning into other emotional strategies since academic achievement requires a lot of different input, abilities and state of mind as it is seen as a multi-stage process.

There are also studies that find no significant relationship between EI and academic achievement. For instance, the study by Shipley et al. (2010) finds no significant association between global trait EI and academic achievement. Furthermore, Koifman's (1998) study shows no relationship between EI and academic achievement.

2.2. Self-Directed Learning Readiness

Previous literature studies about SDL show that this kind of learning is related to personality traits (Cazan, 2015; Roberson and Merriam, 2005). Oddi (1987) suggests studying personality traits as they are free of learning mode and they constitute a more reliable indicator of SDL.

There are external and internal factors that affect SDL. External factors are support from "family and friends, faculty facilities, problems encountered, peer relationships and influence of parents and friends." Internal factors are "physical health, leisure time availability, hobby or passion, self-maturity and intelligence" (Nyambe et al., 2016, as cited in Ramli et al, 2018(p.38)). Both internal and external factors have social dimensions and both are important for academic achievement.

SDL has also been studied together with topics that are included due to the strategies that must be implemented as learners are planning, monitoring and evaluating their learning. Time management is studied by Başak & Aslan (2008) and the participants' academic success as well as their time management skills is high. Procrastination behavior is found to be negatively correlated with SDL (Hariyati & Tarma, 2017). Hematian et al. (2017) find that teaching how to set goals to students increases their SDL and motivates them but it has no significant effect on their achievement.

Studies that focus on the relations between SDL and academic performance find positive correlations (Baker et al., 2009; Cleary, Platten, & Nelson, 2008). While self-regulated learning and SDL are supposed to be distinct due to their micro and macro levels (Saks & Leijen, 2014) respectively, they are both related to motivation, persistence and academic performance (Zimmerman, 2008). Abd-El-Fattah (2010,p.594) in his study, discovers that "self-management was marked as the strongest predictor of academic achievement" which is an SDL component he chooses.

Literature represents studies including online learning and teaching which find out that students' self-directed learning correlates with academic achievement (Gradinetti, 2013; Zimmerman & Kitsantas, 2005). In a study by Kırmızı (2015,p.133), using "Online Learning Readiness Scale developed and validated by Hung et al. (2010)" as a sub-dimension, SDL correlates most significantly with student achievement and Kırmızı (2015,p.140) explains that "self-directed learning is the most important predictor of academic achievement…" in distance education students. Merriam & Caffarella (1991) also find significant relationships between SDL and achievement. Heo & Han (2018,p.66) study reveals that "online learning opportunities, responsibility for learning, love of learning,… self-concept as an effective learner…" and "independence in learning" correlates positively with motivation and negatively with academic stress.

Ramli et al.'s (2018) study shows that academic environment as facilities and atmosphere has positive effects on students' SDLR which coincides with Huang's (2008) study which finds that perceptions of supportive learning environment influence SDLR. Saeid & Eslaminejad (2017) find that SDLR significantly correlates with achievement motivation and self-efficacy. This finding is further validated by Lounsbury et al.'s (2009) study that show positive correlation between GPA and SDL.

2.3. The Relationship between Self-Directed Learning Readiness and Emotional Intelligence

The relationship between EI and SDLR is not very clear. Generally literature reveals that EI is more present in SDLR than given credit for.

Learners must regulate what they learn and self-regulation requires a set of skills that are difficult to acquire. These skills demand cognitive, metacognitive, motivational and emotional

controls at various levels such as the reduction of stress, adaptation to different circumstances, regulation of motivation and affect and the like. A study done by Delfino et al. (2010) which is about comparing self-regulated learning types in different online activities based on interaction analysis of the exchanged messages, it is found that the "nature of the task" (p.303) determines how students use self-regulation.. The indicators of self-regulation include the motivational/emotional aspects at individual and social levels. So motivational/emotional support is needed for the self-regulation strategies to work or made the self-regulation work better. Hence it can be assumed that students with high EI would give better support for themselves and for their social group. The motivational/emotional component of self-regulated learning is calculated as the highest in the evaluation part of the tasks. In SDLR, it is expected that learners monitor, evaluate and plan their own learning so making their own evaluation of the work is where the EI works best and where learners can reflect for professional growth.

Heo and Han(2018) found that academic stress can predict SDLR. Also, in Khiat's (2017) study on determining the indicators of SDL, it is found that stress management as an indicator needs further investigation because it does not show a direct influence on academic performance and it does not reflect a real stress level. As the stress level is seen as an emotional aspect or an aspect that can be avoided using emotional strategies, it is related to EI. A research study done by Elizabeth & Chirayath (2013) accepts that EI could be an important factor to determine learning outcomes and learning styles. SDL can be expressed by learning styles so learning styles employ both SDL and EI at their core. It can be seen that characteristics of self-regulated learning have elements of emotional control and emotionally balanced nature.

Research shows that SDL is linked to personality traits and SDL can itself be a personality trait. In Cazan & Schiopca's (2014) study, big personality traits such as openness, extroversion, emotional stability, conscientiousness and agreeableness were tested for correlation against SDL. The areas of SDL are "awareness,…, learning strategies,…, learning activities,…, evaluation,… and interpersonal skills" Cazan & Schiopca's (2014,p.641). It is found out that emotional stability is not related to any areas of self-directed learning. However, interpersonal relations are connected to EI. In Schutte et al.'s (2001) study, it is shown that high EI means better adaptation, cooperation and inclusion, and more satisfactory relationships with partners. Especially in their experimental study which is part of several studies, Schutte et al. (2001) come to the conclusion that EI is a desirable quality and it facilitates interpersonal relations. While interpersonal skills seem detached from EI in SLD, they are actually linked. Moreover, social influence, awareness, self awareness and self regulation work together to improve interpersonal skills in an emotionally intelligent individual (Kunnanatt, 2004). As seen, there is more to the link between EI and SDL-.

Buzdar et al. (2016) state that they see a gap in literature between the psychological aspects of students' online readiness for learning and EI in terms of causal relationships. In this study the researcher will try to expand the nature of this relationship and the effect of EI on readiness for learning.

2.4 Research Questions

1. Is there a significant correlation between EI and GPA of students?
2. Is there a significant correlation between self-directed learning readiness and GPA of students?
3. Can self-directed learning readiness of students be predicted from their EI?
4. Can self-directed learning of students be predicted from gender and being from different departments?

3. Method

This is a non-experimental research design that relies on correlational data. to understand correlations among SDL, GPA and EI. Also multiple-regression is used to see if SDLRS could be predicted from gender, being from a different department and EI.

3.1. Participants

The sample is 259 students from the Department of Mathematics Teaching Education, the Department of Turkish Language Education and the Department of Primary Education in the Faculty of Education at a private university in Ankara. 40.1% of students are from Turkish Language Education, 40.5 % from Primary Education and 19% from Mathematics Teaching Education.

3.2. Instruments

In this study, two instruments named as "Assessing Emotions Scale (AES)" by Schutte et al. (1998) and "Self Directed Learning Readiness Scale (SDLRS)" which is also known as "Learner Preference Assessment" by Guglielmino (1977) are utilized within the body of research.

The first scaleand it branches into expression, utilization, regulation and appraisal of emotions. This 5-point Likert-like scale consists of 33 items and it focuses on trait emotional intelligence. Some researchers find one factor solution (Brackett & Mayer, 2003; Schutte et al., 1998); whereas other researchers (Austin, Saklofske, Huang & McKinney, 2004; Ciarrochi, Chan, & Bajgar, 2001;) discover subfactors and they consider it to be better to focus on them rather than one factor.

For this study, the item number of the subfactors discovered in Ciarrochi et al.'s (2001,as cited in Schutte et al(2009)) study are as follows:

"Perception of Emotions (items 5, 9, 15, 18, 19, 22, 25, 29, 32, 33), Managing Own Emotions (items 2, 3, 10, 12, 14, 21, 23, 28, 31), Managing Others' Emotions (items 1, 4, 11, 13, 16, 24, 26, 30), and Utilization of Emotions (items 6, 7, 8,17, 20, 27)."

"An internal consistency analysis showed a Cronbach's alpha of 0.90 for the 33-item scale." by Schutte et al. (1998, p 171). Also the internal consistency measures of subscales of AES by Ciarrochi et al. (2001,p 1112) on higher education students are found to be: "…perception,(α= 0.76),…Managing Self-Relevant Emotions (α= 0.63),…Managing Others' Emotions, (α=0.66),… and utilizing emotions(α= 0.55)" respectively. Additionally, "Two-week test-retest reliability was 0.78." by Schutte et al. (1998, p.173).

For Self-Directed Learning Readiness Scale, while Knight finds 8 subfactors of the scale in her study, Guglielmino (1977) recommends using the scale without subfactors and as a score. He reports a reliability coefficient of .87 using the Cronbach's alpha, and test-retest ability reliability is reported to be .82 by Finestone (1984).

3.3. Procedure and Analysis

Both scales are translated into Turkish with an expert on English, expert opinions are obtained from two experts in the field and the questions are modified accordingly. There is not enough time to do a pilot study but the analysis shows that the students understand the questions well. The students are given the instruments after they had their final exams. The forms are completed by the participants. The results of the forms were entered into SPSS version 20 by the researcher and after that, the negative statements in the forms were reverse coded. 18 participants do not complete all of the AES so they are omitted and some of the participants fail to fill in the SDLRS so they are also omitted. The researcher uses correlation and regression analysis to reach conclusions about the research questions.

4. Results

For this study, the internal consistency for AES and SDLRS are found to be .88 and .93 respectively with Cronbach's alpha.

While subfactors of AES are moderately correlated amongst each other, it is found that they are not correlated with the GPA.

It is found that EI as a score and GPA are not significantly correlated so first research question is rejected. Results of the Pearson correlation indicate that there is no significant association between EI and GPA (r(221)=.036, p=.599. The results of the Pearson correlation indicate that there is no significant association between GPA and sub-factors of Perception of Emotions (r(221)=-.018, p=.79), Managing Own Emotions (r=221)=.059, p=.38), Managing Other's Emotions (r(221)=.101, p=.134) and Utilization of Emotions (r(221)=-.045, p=.501).

It is also found that SDLRS and GPA are not significantly correlated. The results of the Pearson correlation indicate that there is no significant association between SDLRS and GPA (r(221)=.069, p=.309). That is why the second research question is rejected.

It is found that SDLR and EI were significantly correlated. The results of the Pearson correlation indicate that there is a significant association between SDLRS and EI (r(259)=.629, p<.01. This statistical data will be further analyzed in the prediction of SDLRS from EI.

Principal component analysis is carried out to see the subfactors of AES and for this particular sample, 10 subfactors are found. Similarly, 15 subfactors of SDLRS are found, furthermore, the creators of SDLRS recommended that score of the scale should be used instead of subfactors. So it is decided to use the scale as the mean score of questions for both instruments.

4.1. Prediction of SDLRS from EI, GPA, Gender and Department

The sample consist of 222 female and 37 male students. Their departments were Primary, Turkish and Elementary Mathematics Education. Dummy variables are created such as PrimaryandOthers and TurkishandOthers. To test if EI and being from a different department and gender significantly predict SDLRS, multiple regression analysis is used. All variables are entered in regression model, departments and GPA are excluded. The results of the regression analysis indicate the two predictors as EI and gender explain 41% of the variance (R_2=.38, F(1,218)=5.56, p<.001).

It is seen that gender and EI together can explain for 41% of variance and most of this comes from EI. Also male students' EI is a better predictor of their SDLR than female students. It is also seen that there is not a significant collinearity between gender and EI. So third research question is accepted and fourth research question is partially accepted since gender has very little prediction of SDLRS and being from a different department has none.

5. Discussion and Conclusion

This study confirms a positive relationship between SDLR and AES. However, it is found out that there is no relationship between SDLR and GPA or AES and GPA. The researchers who study the relation or predictive force of EI on academic achievement generally use subfactors of EI scale. In finding no relation between SDLR and achievement, this research study bears similarities to Lotfi et al. (2012). Also, Rahimi (2016), and Yıldızbaş's (2017) studies find no significant relationship between EI scale they use and academic achievement. Some studies find indirect effect of EI on academic achievement such as academic motivation (Naik & Kiran, 2018), time management, goal achievement, and assertive communication (Nelson, 2003). In Arradaza-Pajaron's (2015) and Doost's (2017) study, it was concluded that EI can predict academic performance and it has a direct effect in studies such as Shao et al.

(2013), Pope et al. (2012), Walsh-Portillo (2011), and Fei-Zhou et al. (2013). These are all significant factors. Moreover, the study by Fei-Zhou et al. (2013) finds that EI is significantly related to academic achievement, also learning adaptability or EI predict academic achievement alone. A study by Alam & Ahmad (2018) reports significant relationship between a teacher's EI and student achievement. While it is explained by Lounsbury et al. (2009) that SDL can happen without some guidance from the teacher, Khiat (2017) shows that academic performance depends on the teacher as a factor as teachers maintain balance by keeping external control to ensure intended educational outcomes. It is thought that these examples show the link between EI and SDLR through complex mechanisms such that teacher's high EI can make students better self-directed learners and increase their motivation through studies. Elizabeth & Chirayath's (2013) study reveals that managing and understanding emotions as part of EI is strongly related to academic success. Goodwin (2016) supports this by saying that emotional competencies are predictors of academic achievement. While Fayombo (2012) states that EI partially predicts academic achievement, Hadiwijaya & Hutasoit (2017) emphasize the influence of social awareness on learning achievement. Alam & Ahmad (2018) add school culture as the mediating factor to the relationship between EI and achievement. While these factors are not included in this research, it can be a future reference to include school culture and social awareness.

Recent research studies show SDL competence as positively related to academic performance. The study by Khiat (2017,p.47) shows that the respondents "had the highest competence for two indicators of self-directed learning: Goal Setting and Technical Readiness". It appears that this relation remains almost the same whether we change the courses applied to be online, in-class or hybrid according to studies of Alonderiene & Suchotina (2017), Nikitenko (2009), and Triastuti (2016). A study by Saeid & Eslaminejad (2017) relates achievement motivation to SDL. Dağal & Bayındır (2016) in their study find no significant relation between SDLR and academic achievement. Study by Chou (2012) finds significant positive results between students' level of SDL and online learning performance.

Studies that include both SDLR and EI are scarce in literature. In studies where EI and SDL are both examined, there are commonalities in measurement instruments which could well be the cause of such high correlation. These commonalities show themselves in studies where EI and SDLR are examined separately. Mueller (2007) finds significant correlations between SDL and EI as .59. He finds that task performance is indirectly related to EI with elements of perseverance, commitment and self-confidence. While people can be trained in EI, it is considered as an innate ability and it develops self-confidence and self-competence. It is thought that this is the key point where EI and SDL intersect. It is apparent when Barr-On (1997) goes on to say that independence as a competence is to be self-directed in making decisions and thinking. Furthermore, Boyatzis et al. (2011) emphasize that self-directed learning can improve EI through creation of personal learning agenda. Straka & Schaefer (2002) count accompanying emotions such as joy, anger and boredom with SDL. Present research is similar in finding predictions of EI and SDL on managerial performance of Mueller (2007) such that EI and SDL are highly correlated.

The link between EI and self-directed learning shows itself in defining greater academic goals and better organization of learning. Regulation of emotions helps develop intrinsic motivation (Costa & Faria, 2015). Goleman (1998) also puts motivation as a sub element of EI. Bar-On (1997) connects self-directed learning and EI as self-planning whereas Hamachek (2000) sees self-directed learning as an outcome of EI. Bar-On (2004) also emphasizes that people with increased levels of EI are better decision makers and planners. Bar-On (1997) confirms the link between EI and SDL in competences he uses in his scale and says that being-self-directed is an emotional competence. The trait emotional intelligence model takes motivation into account (Mueller, 2007). Emotional ability is strongly tied to motivation

because by definition it is an ability to motivate oneself (Johnson, 2016) and motivation is a dimension of trait emotional intelligence (Perera, 2016).

As stated before, the relationship between SDLR and AES could be explained by their commonalities, i.e., the common concepts they use when testing for the influence on concepts such as achievement, job performance. When we try to understand why there is a strong relationship between SDLR and EI, we are faced with motivation in a great deal of research. Achievement motivation, motivation to learn, self-motivation, motivation for success, and performance motivation are all studied extensively under the topics of SDL, EI and SDLR. Firstly Garrison's model of self-directed learning accepts motivation as a link between self-monitoring and self-control (Garrison, 1997). Motivation is also a factor that affects readiness of an individual to complete a task in varying degrees (Richards, 2005). Artist & Harris (2007) also support this idea by saying that SDL is affected by motivation to learn independently. Self-motivation is defined as an important factor in removing obstacles to overcome self-confidence and doubt to achieve self-directed learning as well as autonomy Eggen & Kauchak (2007).

In a study by Abd-El-Fattah (2010), it is found out that motivation significantly predicts academic achievement and SDLRS is related to subfactors of academic achievement such as academic self-efficacy and motivation. In addition, Triastuti's (2016) study finds significant correlation between SDLR and motivation to learn. Learning motivation is also affected by becoming self-directed and how much freedom students have in class and in turn will increase their learning results.

It is claimed by Bonham (1991) that SDLRS is a more proper measuring instrument to measure the degree of motivation to learn than being self-directed. This finds evidence since self-directed learning has many factors that are in close ties with motivation for learning and success. In fact, SDL and self-motivation are so closely linked that self-directed learning scale uses self-motivation as subscale. We can also see that readiness is labeled as connected to motivation of learners as it influences satisfaction in online learning (Kırmızı, 2015).

Not only motivation but also the regulation of motivation becomes an important part to sustain SDL and this regulation keeps the learner on the job for his learning goals (Lee et al., 2017). Online readiness scale also shows motivation as a subscale. Results of study by Heo & Han (2018) show that motivation can predict SDLR. These are supported by Gencel and Saracoğlu's (2018) study which finds out that motivation goes hand in hand with SDL readiness for teachers. According to Khiat (2017), motivation is regarded as an important factor for managing learning process and a trait of self-directed learners.

Motivation is a strong indicator of self-regulated learner (Sırakaya & Özdemir, 2018). An instrument developed by Oddi (1984) to measure self-directed learning which contains 3 domains is increased to 4 domains by a more recent Harvey et al's (2006) study. The new factors are (Harvey et al, 2006 p.188) "learning with others, learner motivation/self-efficacy/autonomy, ability to be self-regulating, and reading avidity" . It would appear that self-directed learning is still developing as it includes more concepts that are related to motivation and ways of keeping motivation through the learning process (Chou, 2012). Perera & Digiacomo (2015) argue that TEI causes increased engagement through increasing attention and the sustained attention helps coping with adversities during learning. The researcher thinks that sustained attention is also an element of SDL since it is required to regulate learning. Derryberry & Reed (2008) support this by saying that attentional systems that create the basis of self-motivation ensures the attention required for focusing on academic achievements. According to Perera (2016), TEI can predict achievement much better if affective motivational capacities are included. Perera's (2016) study also finds gender as a predictor of SDLR. However, there are different results in literature. For instance, according to variation as SDLR scores, Alharbi (2018) finds no difference with gender and program types whereas Slater et al. (2017) find SDLR to be significantly higher in females who study in two departments. In Jaleel

& Anuroofa's (2017) study, girls scored higher in both SDL and achievement. Also the study by Osman (2015) finds female scores in SDLR to be higher. This contradicts with the present research study since male students are rated as higher in self-directed learning readiness. Jaleel & Anuroofa's (2017) study also incorporates gender into achievement which is special to information technology in the form of significant positive correlations.

6. Implications and Future Studies

The literature shows that TEI is concomitantly related to achievement. So implementation of emotional training will result in better achievement and better self-directed learning readiness for learners. That is why, EI training should be included in the curriculum. The dimensions of cognitive, motivational and interpersonal mechanisms between trait emotional intelligence and achievement should be tested via empirical data. The effect of EI training in schools should be studied with large populations and with learners from different backgrounds. Also, the specific course design and instructional strategies that reinforce EI such as focus of attention can be implemented to make students more aware of and open to different perspectives. Also, using metacognitive strategies, learners may become ready to learn through EI. The students should be told that the most important things to understand are meanings and positions of opinions in a collaborative manner so as to make room for empathy and managing differences. For homework, this could lead to enhanced levels of EI and benefits of learning. It is recommended that future studies about scale development or adaptation of SDLR and AES focus on separating EI and self-directed learning or accept EI as sub-elements of SDLR or vice versa. Students have to be motivated in order to be taught how to be self-directed learners to pursue interests. That's why teachers have to build enthusiasm in students for their commitment. Adaptation of the course to student experience and for productivity is essential for motivation. In a study by Dulewicz & Higgs (2004) testing whether EI can be developed or not, it is found out that motivation and resilience could be exploited further. For this reason, EI is already embedded in teaching materials and educational programs so that it can support motivation (Goodwin, 2016).

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