An Investigation of Metacognition, Self-Regulation and Social Intelligence Scales' Level of Predicting Pre-Service Teachers' Lifelong Learning Trends

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Abstract

Shaping teaching as a profession that requires expertise within the lifelong learning trends increases the quality of the guided learning support to be provided to students. Learning is a lifelong process. Such process will emerge in pre-service teachers' responsibility, metacognitive skills required for their own personal development, demonstration of social , self-regulated skills in a related structure, maintenance of lifelong learning. The notion of this study is the identification of the relationships between metacognition, self-regulation, social intelligence, lifelong learning trends which should be possessed by teachers in this regard, the general purpose of this study is to explore how much pre-service teachers' lifelong learning trends are predicted by metacognition, self-regulation, social intelligence variables. The study was designed according to procedural model in relational screening method. The study was conducted with 443 2nd and 4th year pre-service teachers who were enrolled in Kafkas and Çukurova University Education Faculty, Pre-school Teaching Department and Classroom Teaching Department. Multiple regression analysis was performed for the analysis of the data collected using the Metacognition Scale, Self-regulated Learning Scale based on Zimmerman's Model, Social Intelligence Scale, Lifelong Learning Trends Scale. Analysis results showed that total scores of the Lifelong Learning Trends Scale were significantly predicted by the Self-reflection subscale of Self-Regulated Learning Scale and by the Social Knowledge, Social Skill, Social Awareness subscales of the Tromso Social Intelligence Scale; motivation subscale was significantly predicted by the Forethought, Self-Reflection subscales of the Self-Regulation Scale, Social Knowledge, Social Skill subscales of the Tromso Social Intelligence Scale.

Key words: lifelong learning; metacognition; self-regulated; social ıntelligence

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INTRODUCTION

Learning to learn and learning to think will be encountered as an essential component in the process of personal development. It is inarguable that an individual's taking the responsibility of his/her own learning and using the planning, organization and evaluation process in each phase of learning will put the her/him in a more independent position. In such process, metacognition will take place in every phase of the learning process. Hence, while metacognition is defined as individuals' awareness and control of their own thinking (Flavell 1979), self-regulated learning is their independence in planning, monitoring and evaluating their own learning (Zimmerman 2002). On the other hand, metacognition is a cognitive process, belief and knowledge that involves evaluation, control and monitoring of cognition. These processes involve the followings:

(1) "a person's cognitive state, abilities, and introspective knowledge about their function"

(2) "using the metacognitive knowledge in a strategic way for reaching the goals (strategic regulation)

(3) "Monitoring thoughts cognitively (an individual's ability to read his/her own psychological state)" (Bacow, Pincus, Ehrenreich, Brody 2009).

Metacognition helps learners to evaluate their reactions about their own performance and to develop an integrated learning process which includes dealing with their own behaviours (Kim, 2018). It has generally been accepted since Flavell (1979; in, Gaile and Adams 2018) that metacognition is a combination of information and skills. Knowledge of metacognition is composed of person, task and information strategies. Knowledge of a person is the person's ability to think about what s/he knows, to understand how to achieve learning best, and to become aware of failure. As to the knowledge of task, it is the capacity to understand the goals of the task and cognitive needs. Knowledge of strategy is the understanding of the activity in a task, assessments related to it, and how to use a strategy (Gaile and Adams 2018). Metacognition is the process of one's taking the responsibility of handling his/her own learning with knowledge of tasks and knowledge of strategy aspects; individuals who are successful in such process will take control of their own learning responsibilities. Hence, the importance of the metacognitive process has recently been accepted in empirical studies as well (Boekaerts et al. 2005; Dunlosky and Bjork 2013; Hacker et al. 2009; in, Kim 2018).

Self-regulated learners struggle for controlling and improving their learning progress (Winne 2017). Zimmerman and Schunk (1989 in Boekaerts and Niemivirta 2005) define self-regulated learning as thoughts, feelings and actions that are produced systematically in order to reach learners' goals. On the other hand, self-regulation is defined as an individual's ability of sustaining the behaviours, attitudes and cognitive processes and using them for activation (Zimmerman & Kitsantas 2014). Self-regulated learning is also considered as a multidimensional structure (Dörnyei & Ryan 2015; in Li, Zheng, Liang, Zhang, Tsai 2018) that involves cognitive, metacognitive, motivational, behavioral and environmental processes. It also explains the student's ability to understand and control the learning environment with external and internal effects (Schraw, Crippen and Hartley 2006). Metacognition, which is supplementary of self-regulation, involves the skills of monitoring, regulating, understanding and organizing one's own cognition. As for self-regulated learning, it is determined by individual comprehension (perception, effect, academic success) and mutual behavioral and environmental factors (teacher's feedback, program). In this case, individuals are seen as active organisms who act, regulate, plan and control their own learning rather than passive organism who are stimulated by genetic stimulus and shaped by the environment (Sha, Looi, Chen, Seow and Wong 2012). On the other hand, Zimmerman (2008) emphasizes that self-regulated learning involves self-productive thoughts, feelings and actions that are planned and cyclically adapted in order to realize individual goals. Accordingly, metacognition that involves planning learning is composed of motivational aspect involving self-regulated activity and behavioral aspect involving the selection and construction of the learning unit. Again, there is a cyclical self-regulated learning process among forethought, performance, and self-reflection in the model developed by Zimmerman (2002); in such

model, it is inevitable that the planning, organization, and evaluation skills of metacognition and self-regulation skills are closely associated with each other. Hence, studies have proven that the development of students' self-regulation and metacognitive skills are important factors that have positive effects on students' learning and academic achievement (Bingham, Holbrook, and Meyers 2010; Black and Wiliam 2009; Hudesman, Crosby, Flugman, Issac, Everson and Clay 2013). In such process, learners should actively use the planning, organization, regulation and evaluation skills of metacognition process in the aspects of one's knowledge and control about self and one's knowledge and control about the learning process; this way, they can use and improve self-regulation skills in their own learning processes. The relationship between self-regulation and metacognition is somewhat expected in such process.

Social Intelligence

Social intelligence, which is a concept proposed by Thorndike (1920; in Weis and Suess 2007), is defined as behaving wisely in human relationships. According to Goleman, social intelligence is mainly composed of two dimensions as social awareness and social skill. Social awareness is about sensing other people's feelings and ideas and understanding their complicated social situations. In this regard, social awareness is composed of main empathy, adaptation, emphatic determination (recognizing other people's ideas, feelings and aims correctly), social cognition (having information about the function of the social world) while social skill is composed of concurrence (smooth communication at nonverbal level), presentation of self (introducing self in a way to affect people), influence (changing the directions and outcomes of the social interactions), care (giving importance to other people's needs and demonstrating behaviours appropriate to the situation). In line with this, according to Goleman (2014) people have the ability to understand people and events, foresee the things that will happen beforehand, and change the direction of the events in the desired way. In a similar vein, according to Albrecht (2006), social intelligence is defined as the ability to get on well with people and to persuade them to cooperate. According to Kihlstrom and Cantor (2000), social intelligence is the depth of knowledge about social world; this process is composed of two structures called understanding other people's behaviours and coping with other people's behaviours. Silvera, Martinussen and Dahl (2001) emphasize that social intelligence is composed of three dimensions called (a) social knowledge, (b) social awareness, and (c) social skill. According to Hampel, Weis, Hiller and Witthöft (2001) social memory, social perception and social flexibility come together to form social intelligence; social intelligence, which interacts with social information in such process, reveals social behaviours. Goleman (2014) describes social intelligence with its dimensions such as being able to organize groups, find solutions by discussing, establishing personal connections, and making social analysis. Carreras, Braza, Muñoz, Braza, Azurmendi, Pascual-Sagastizabal, Cardas and Sánchez-Martin 2014) divide social intelligence into three categories which include processing social information that expresses the ability to understand social clues, social awareness that applies to emotional perspective, and social skills that are related to an individual's social performance. Additionally, Silberman (2000) defines social intelligence and the features possessed by people who have social intelligence in eight dimensions called (i) understanding people (ii) expressing feelings and opinions openly, (iii) expressing needs (enterprise), (iv) giving feedback to the person they communicate with, (v) affecting, motivating and persuading others, and (vi) finding creative solutions to complicated situations. On the other hand, the related literature has no consensus about the definition, scope and measurement of social intelligence. However, multiple design studies (MTMM) have been applied within the last decade in order to investigate the structure and construct validity of social intelligence (Jones & Day 1997; Lee, Day, Meara, & Maxwell 2002; Lee, Wong, Day, Maxwell, & Thorpe 2000; Wong, Day, Maxwell, & Meara 1995; in Weis and Sues 2007). Pre-service teachers who have social intelligence can make their social intelligence more functional if they can use the required organization and evaluation skills in the emphatic relationships they would establish with other people.

Lifelong Learning Trends

Due to its nature, learning is a lifelong process. Lack of definition of learning accepted by everyone is caused by the fact that everybody attributes different meanings to learning in this lifelong process. Hence, with the longevity of today's world, adaptation to scientific, technological and social changes makes lifelong learning inevitable. All processes in which learners attend in line with their interests, needs and expectations could be considered within the scope of lifelong learning. According to Akbaş and Özdemir (2002), the purposes of lifelong learning mentioned by the European Union in 1996 include three main items: encouraging the concept of lifelong learning, explaining its meanings and features, and realizing this concept for all European Union citizens. On the other hand, lifelong learning encompasses all learning activities throughout life from personal, civil, social and job related perspectives with a view to transmitting knowledge, skills and abilities; due to its nature, this kind of a process lasts lifelong. According to Delors (1996), there are four sources of lifelong learning; these are learning to learn, learning to make, learning to live together, and learning to be (taking personal responsibility). Features of learning to learn and taking the responsibility of one's own learning are main factors which also exist in metacognition. Lifelong learning is a process which is the learner's own responsibility, which requires individuals to be aware of the missing points in their learning or the things they want to improve. Hence, it has been a hot topic in the agenda of Turkey since the beginning of 2000, sensitivity of Directorate General for Lifelong Learning about this issue could be an indicator. Lifelong learning program of the related directorate includes four sectorial programs that focus on school education (Comenius), higher education (Erasmus), Vocational Education (Leonardo da Vinci), and Adult Education (Grundtvig); common program aiming at similar fields, and Jean Monnet Program that supports instruction, research and thinking with European integration and main European institutions and unions (Lifelong Learning Application Guide 2007-2013). Similarly, when considered in terms of the learning types, lifelong learning encompasses formal learning, non-formal learning and informal learning (Commission of the European Communities 2001). In such process, lifelong learning encompasses an individual's all learning activities for improving his/her features (CEDEFOP 2008). On the other hand, European Union Education and Culture Commission identified eight main competencies for lifelong learning (Figel 2007; in Demirel 2009) as communication skills in mother tongue, communication skills in foreign languages, competence in mathematics and science/technology, digital competency, learning to learn, social and citizenship-related competences, enterprenuionship, and cultural awareness, which shows the place of metacognition in the lifelong learning process.

Metacognition, Self-regulation, Social Intelligence and Lifelong Learning Trends

Learning to learn is the most important concept in the lifelong learning process. An individual's identifying his/her learning needs and searching for learning in this direction is something associated with the use of metacognitive skills. In such process, metacognition is the way of learning to learn, and it becomes more meaningful with the person's becoming aware of self and ways of learning, controlling and planning self, monitoring the way s/he learns, regulating learning, and self assessment. An individual who associates and uses self-regulation skills with social awareness skills will choose the information and attitudes that s/he needs in lifelong learning and look for solutions. Shaping teaching as a profession that requires expertise will increase the quality of the guided learning support to be provided to students. Lifelong learning process is a fundamental requirement of today's globalizing world in which teachers who have metacognition, social awareness and self-regulation skills will be effective in shaping the learners' autonomy. Hence, the report published by the State Planning Organization Specialized Board in 2001 states that the value given to metacognition, self-regulation and social awareness in lifelong learning show itself in the aspects of adopting the diversity in the learning and teaching method and its meanings that distinguish lifelong learning from traditional methods and motivating individuals by constructing the individual's personal features and increasing his/her capacity by focusing on self-regulated learning style.

Learning is a lifelong process. Learning is in fact a thinking process in which the most comprehensive structure is one's own learning and awareness about the learning process, namely metacognition capacity. Metacognitive skills are shaped by various preferences formed according to the individual's abilities and features. Particularly planning activities, monitoring what to do and how to do things and evaluating are among these preferences. Metacognition is a thinking process which takes place in every phase of learning and which is reflected on students' behaviours. Lifelong learning trends to be owned by pre-service teachers include higher-order thinking processes and skills that involve social awareness, metacognition, and self-regulation skills. Particularly developing positive beliefs about lifelong learning may require the investigation of the relationship between being open to learning to learn process, taking the responsibility of one's own learning, and reflecting social learning processes and skills. Lifelong learning process requires individualism. Such process will emerge in pre-service teachers' responsibility, metacognitive skills (planning, organization, evaluation) required for their own personal development, demonstration of social and self-regulated skills in a related structure, and maintenance of lifelong learning (Yıldırım, Genc & Eryaman, 2016). Hence, teachers who value other people's feelings and thoughts, who take the responsibility of their own learning, and who have self-regulation skills will provide their students with the necessary guidance, which contributes to becoming an information society   and being in a position to produce information. On the other hand, the literature in Turkey indicates no studies that investigated the relationship among metacognition, self-regulation and social intelligence and lifelong learning trends together.

Aim of the Study

The notion of this study is the identification of the relationship among metacognition, self-regulation, and social intelligence and lifelong learning trends to be owned by teachers. The main purpose of the study is to investigate the predictive relationships among education faculty students' perceptions about "teacher lifelong learning trends" and "metacognition, self-regulation and social intelligence". In line with this purpose, the study sought answers to the following questions:

1. Do metacognitive skills, self-regulation and social intelligence variables significantly predict pre-service teachers' perceptions about lifelong learning trends?

2. Which one of the metacognitive skills, self-regulation and social intelligence variables predict pre-service teachers' perceptions about lifelong learning trends?

METHODS

Research Model

This study is relational and predictive in nature. Predictive studies provide us with three types of information: (1) predictability of the behaviours pattern taken as criteria, (2) indicators of the behaviours taken as criteria, (3) predictor validity of the test or tests associated with the behaviours taken as criteria (Borg and Gall 1989). In this study, teacher perceptions of lifelong learning trends were taken as criterion behavior pattern; in other words, dependent variable and metacognitive skills, self-regulation, and social intelligence were taken as predictor variables.

Target Population and Sample

Target population of the study was pre-service teachers who were enrolled in the Classroom Teaching and Pre-service Teaching Departments in the Education Faculties at Kafkas and Çukurova University. Target population of the study was 557 pre-service teachers who were enrolled in the departments selected using non-probability cluster sampling method. Of all the participants, 289 students (65,2%) were enrolled in Çukurova University, 147 students (33,2%) were enrolled in Kafkas University, and 7 students (1,6%) did not indicate the university they were enrolled in. An analysis of

the sample according to class levels showed that 196 students (44,2) were enrolled in second year, 246 students (55,5%) were enrolled in fourth year and one student (0.2%) was enrolled in third year. While 291 students (65,7%) were enrolled in the Classroom Teaching Department, 146 students (33%) were enrolled in Pre-school Teaching Department, and 6 students (1,4%) did not indicate their departments. As to gender, 283 students (63,9%) were female, 155 students (35%) were male and 5 students (1,1%) did not indicate their gender.

Data Collection Tools

Data were collected using the "Socio-demographic Form" for identifying personal features, "Lifelong Learning Trends Scale" (LLTS) for identifying the lifelong learning trends, "Metacognition Scale" (MS) for measuring metacognitive skills, "Self-regulated Learning Trends Scale (SRLTS) for identifying self-regulation processes, and "Tromso Social Intelligence Scale" (TSIS) for identifying social intelligence.

Socio-Demographic Form

Socio-demographic Form developed by the researchers was used with a view to collecting data about the independent variables of the scale and identifying the sample in terms of the personal features. The form includes four questions about the type of education, class level, department, and gender.

Lifelong Learning Trends Scale (TSIS)

While Diker and Coşkun (2009) developed the Lifelong Learning Trends Scale, research data were obtained using 6-point Likert type "Lifelong Learning Trends Scale" responded on answers that included "very true", "partly true", "infrequently true", "infrequently untrue", "partly untrue", "never true". Content validity of the pilot form that consisted of 74 items was enhanced with expert opinions. Another study performed for the content validity of the scale investigated its correlation with another scale which is known to measure the same content. For appropriateness, Curiosity Index (in Fulcher 2004) developed by Erwin (1998) was adapted to Turkish and utilized; Pearson correlation coefficient that shows the relationship of this Lifelong Learning Trends Scale with "Lack of Curiosity" subscale was found .76. After the draft form of Lifelong Learning Trends was formed, the form was piloted with 700 students who were enrolled in different faculties and departments in seven universities in Turkey. As a result of this study, 58 forms that were not filled in accurately were eliminated, and varimax rotation and and principal components analyses were performed using explanatory analysis with the data obtained from 642 students. Factor analysis results showed that for 74 items the scale had four main subscales with eigenvalue of over 12. The items obtained from the factor analysis results showed that the items were collected under four different subscales that affected the Lifelong Learning Trends in a negative or positive way. The first factor explains the "Motivation" subscale (6 items); the second factor explains the "Persistence" subscale (6 items); the third factor explains the "Lack of Learning in Regulation" subscale (6 items); the fourth factor explains the "Lack of Curiosity" subscale (9 items). These subscales obtained from the factor analysis are in line with previously proven definitions in the related literature (Crick and Claxton 2004; Litzinger, Wise, Simpson and Joshi 2001; Harpe and Radloff 2000). Cronbach's alpha internal coefficient of consistence was calculated for identifying reliability of the scale. Reliability of the pilot scale that consisted of 74 items was found .93. Another study conducted for identifying the reliability of the scale included item analysis based on the highest and lowest 27 percentiles group mean score differences. According to the t value results, items that were not significant were eliminated from the scale. Another study for the reliability of the scale was conducting item analysis and calculating correlation coefficients between the item score and scale score. As a result of this calculation, level of effect of each item on the scale reliability was identified, and the items with item-total correlations of less than r:0,30 were eliminated from the scale. 27-item final scale was found to have Cronbach's Alpha value of .89. Reliability analysis conducted for this study indicated that Cronbach's Alpha internal consistency for the whole scale was .92. Cronbach's Alpha values in the subscales were .85 for the "Motivation"

subscale; .88 for the "Persistence" subscale; .83 for the "Lack of Learning in Regulation" subscale; and .89 for the "Lack of Curiosity" subscale.

Metacognition Scale (MS)

Metacognition Scale (MS) was developed by Demir (2013) for identifying pre-service teachers' metacognitive skills levels. The scale had KMO=.914; Barlett Sphericty test $\chi2$ =1.853 df =153 p<.001 values. MS consists of three subscales called Evaluation, Organization and Planning. Cronbach's Alpha internal coefficient for the whole scale was .89. One item in the Evaluation subscale was "I question whether I understand or not while listening to the lesson"; Cronbach's Alpha coefficient of the scale was .87. One item in the Organization subscale was "I check while I am doing things about the content of the course"; Cronbach's Alpha coefficient of the scale was .65. One item in the Planning subscale was "I can create the necessary conditions so that I can achieve the course aims"; Cronbach's Alpha coefficient of the scale was .70. Three subscales explain 53.07% of the total variance. With confirmatory factor analysis, chi-square value calculated for model-data compatibility was found to be significant $\chi2$=151.90, sd=74, p<.01. Some compatibility statistics found using the same analysis were ($\chi2$/sd)=2.05, RMSEA=0.064, RMR=0.045, GFI=0.92, AGFI=0.89, NNFI=0.91, NFI=0.87, CFI=0.93). Reliability analysis performed for this study indicated that Cronbach's Alpha internal consistency was .90 for the whole scale. Cronbach's Alpha values in the subscales were 0.80 for the "Evaluation" subscale; 0.67 for the "Organization" subscale; and 0.73 for the "Planning" subscale.

Tromso Social Intelligence Scale (TSIS)

The 21-item scale is a 5-point Likert scale adapted by Doğan and Çetin (2009) who performed its reliability and validity. The scale includes Social Knowledge, Social Skill and Social Awareness subscales. Cronbach's Alpha reliability of the total scale was .83; it was .76 for Social Knowledge; .83 for Social Skill and .71 for Social Awareness. In addition, the subscales were found to explain 44.79% of the total variance. Reliability and validity analyses were repeated in line with the current research data. Total reliability coefficient was .79, and the total variance explained by the three subscales was 43.72%. Confirmatory factor analysis (CFA) that aimed to identify the level of reliability showed GFI=.85, AGFI=.80, RMR=.08, IFI=.86, CFI=.86, NFI=.81, $\chi2$=842.08, sd=186, $\chi2$/sd=4.52 and RMSEA=.08 values. Analysis results showed that it was appropriate to modify between S11-S8, S15-S2 and S16-S12 items. Results of the modification showed that the new values were GFI=.89, AGFI=.85, RMR=.06, IFI= .91, CFI=.91, NFI=.85, $\chi2$=616.31, sd=183, $\chi2$/sd=3.36 and RMSEA=.06. A holistic analysis of these values shows that reliability values of the second analysis were more compatible in comparison to the first analysis. Arithmetic means were interpreted as "very low" for 1.00 to 1.80; "low" for 1.81 to 2.60, "medium" for 2.61 to 3.20, "high" for 3.21 to 4.20, and "very high" for 4.21-5.00. Reliability analysis performed for this study indicated Cronbach's Alpha internal consistency coefficient as .84. Cronbach's Alpha values in the subscales were found .80 for the "Social Knowledge" subscale, ".73 for the "Social Skill" subscale, and .79 for the "Social Awareness" subscale.

Self-Regulated Learning Trends Scale (SRLTS)

Eryılmaz and Mamadov (2017) developed a measurement tool based on Zimmerman's model to measure self-regulated learning status. It is a 4-point Likert type scale that has 47 items whose validity and reliability was performed.

a. Findings about the forethought phase: Like in other scales, items that were with factor loads less than 0.30 and under more than one factor were excluded from the analysis in the forethought subscale. For the "Task Analysis" subscale, Kaiser-Meyer-Olkin (KMO) value was 0.75, Bartlett's Test of Sphericity was 414,943 (p<.01). Task analysis has two subscales called "Goal setting "and "Strategic planning". Items belonging to the related scale explain 60.72% of the total variance, and factor load values of the items range between 0.71 and 0.83. "Self-Motivational Beliefs", another

subscale of the forethought scale, includes the "Self-efficacy", "Outcome Expectations", "Task Interest Value", and "Goal Orientation" subscales. Value and Self-Efficacy subscales of the Motivational Beliefs subscale consist of 7 items. Kaiser- Meyer-Olkin (KMO) value belonging to the related scale was 0.78 and Bartlett's Test of Sphericity was 364,536 (p<.01). The items explain 57% of the total variance. Load values of the items range between 0.59 and 0.87.

b. Findings in relation to the performance phase: The second subscale of the Self-Regulated Learning Model is the Performance subscale. This scale is composed of Self-Control and Self-Observation subscales. Self-control scale has 14 items. KMO value belonging to these items was 0.79, and Bartlett's Test of Sphericity value was 1002,748 (p<.01). The items explain 60% of the total variance. Item values belonging to the Self-Control subscale range between 0.56 and 0.83. KMO values of the Self-Observation subscale was .72 and Bartlett's Test of Sphericity value was found 495,310 (p<.01). Items in this subscale explain 70% of the total variance. The lowest item value belonging to the related subscale was 0.72, and the highest item value was found 0.89.

c. Findings in relation to the self-reflection phase: The third scale of the Self-Regulated Learning Scale is the Self-Reflection subscale. This scale is composed of Self-Judgment and Self-Reaction subscales. KMO values belonging to the Self-Judgment subscale was 0.78, and Bartlett's Test of Sphericity value was 552,967 (p<.01). These results indicate that the sample size is sufficient and the sample meets the multi-variate normality assumptions. Items belonging to the related subscale explain 55.92% of the total variance. Load values of the items belonging to the Self-Judgment subscale range between 0.50 and 0.85. KMO values of the items belonging to the Self-Reaction subscale that consists of Self-satisfaction and Adaptive subscales was 0.80, and Bartlett's Test of Sphericity was 425,324 (p<.01). Items belonging to this subscale explain 66.34% of the total variance. Item values range between 0.67 and 0.86. The Forethought subscale consists of Task Analysis and Self-Motivation Beliefs subscales; Performance subscale consists of Self-Control and Self-Observation subscales; and Self-Reflection subscale consists of Self-Judgment and Self-Reaction subscales. Reliability of the Self-regulated Learning Scale was analyzed using Cronbach's Alpha internal consistency technique for each scale. Cronbach's Alpha values were found 0.72 for the Task Analysis of the Forethought subscale, 0.66 for the Goal Setting subscale, 0.78 for the Strategic Planning subscale. Reliability analysis results were found as follows for the Motivational Beliefs subscale: Cronbach's Alpha values were found 0.76 for the Motivational Beliefs subscale, 0.69 for the Task Interest Value subscale, and 0.69 for the Self-Efficacy subscale. Reliability values for the Self-control subscale of the Performance subscale had Cronbach's Alpha value of 0.83. Cronbach's Alpha values were found 0.77 for Focusing Attention subscale, 0.74 for Imagery subscale, 0.59 for Self-instruction, and .71 for Task Strategies. Self-observation subscale of the Performance scale according to Zimmerman's Model showed that the reliability value belonging to this subscale was 0.79. Reliability value was 0.80 for the Self-Recording subscale and 0.76 for the Self-Experience subscale. Analysis results for Self-reflection scale was as follows: Cronbach's Alpha value of 0.70 for the Self-Evaluation subscale, and 0.74 for the Causal Attribution.

Cronbach's Alpha value of the total Self-Judgment subscale was 0.80. Reliability values of the Self-Satisfaction/Affect subscales indicated Cronbach's Alpha value of 0.76 for the Self-satisfaction/Affect subscale, and Cronbach's Alpha value of 0.71 for the Adaptive/Defensive subscale. Cronbach's Alpha value for the total Self-Reflection subscale was found 0.80 (Eryılmaz and Mammadov 2017). An analysis of the whole scale for this study indicated Cronbach's Alpha value of 0.92, Cronbach's Alpha value was 0.78 for the Forethought subscale, 0.87 for the Performance subscale, and 0.85 for the Self-reflection subscale. Figure 1 (Zimmerman 2002) displays the structure about the subscales of the scale.
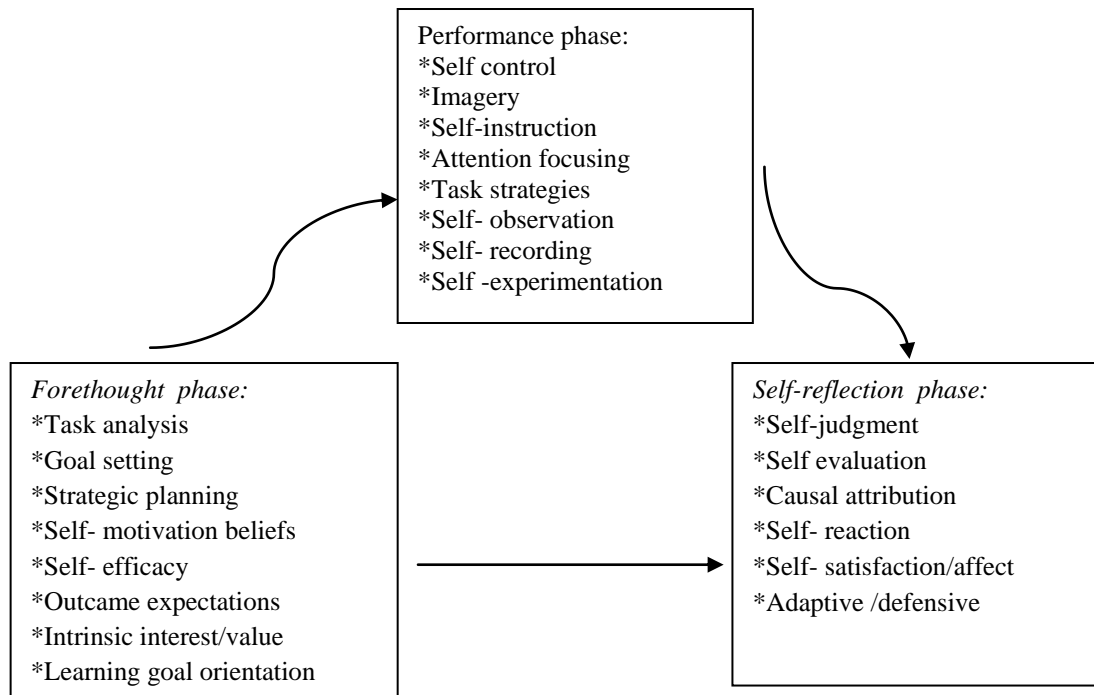
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┌─────────────────────────────────┐
│ Performance phase:              │
│ *Self control                   │
│ *Imagery                        │
│ *Self-instruction               │
│ *Attention focusing             │
│ *Task strategies                │
│ *Self- observation              │
│ *Self- recording                │
│ *Self -experimentation          │
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┌──────────────────────────────┐   ┌──────────────────────────────┐
│ *Forethought phase:*   │   │ *Self-reflection phase:*   │
│ *Task analysis   │   │ *Self-judgment   │
│ *Goal setting   │   │ *Self evaluation   │
│ *Strategic planning   │   │ *Causal attribution   │
│ *Self- motivation beliefs   │   │ *Self- reaction   │
│ *Self- efficacy   │ ─────────────────▶ │ *Self- satisfaction/affect   │
│ *Outcame expectations   │   │ *Adaptive /defensive   │
│ *Intrinsic interest/value   │   │   │
│ *Learning goal orientation   │   │   │
└──────────────────────────────┘   └──────────────────────────────┘

Figure 1: Phases and Subprocess of Self-Regulation

Data Analysis

Before data were analyzed, missing or inaccurate codes were reviewed. Following this, outlier value analysis was performed in order to investigate the regression analysis assumptions, and values with high Mahalonobis distance value were eliminated. In the last phase, multicollinearity, variance inflation (VIF) and tolerance values between the variables were investigated; no tolerance close to zero, variance inflation VIF bigger than 5, equation with two variances bigger than 0.50, and condition index bigger than 30 were found. As a result, analyses were performed with 443 participants. Multiple linear regression analysis was performed in order to predict the dependent variables. Dependent variable of the study was the score obtained from the Teacher Lifelong Learning Trends Scale; independent variables were the scores obtained from the MS, SRLTS, TSIS subscales. However, the last three items of the third subscale were excluded from the analysis as they were not comprehensible. Multiple Linear Regression Analysis was performed in order to identify how much Teacher Lifelong Learning Trends Scale was predicted by the Planning, Organization, Evaluation and total subscales of MS, total and subscales of SRLTS, and subscales and total of TSIS scores. In this analysis, rank order of the independent variables in equation are identified according to statistical criteria. Each independent variable is identified according to what is added in terms of its rank (Tabachnick and Fidell 2001). Statistical significance was taken .05.

FINDINGS

Multiple regression analysis was performed in order to identify the variables that predicted pre-service teachers' lifelong learning trends. Table 1 demonstrates arithmetic means, standard deviations and correlation values between the variables. Findings involve initially descriptive values that show arithmetic means, standard deviations, and correlation matrix and then multiple regression analysis results.

Correlation Between The Variables

Arithmetic means of the dependent variables ranged between 24,52 and 1.027, and standard deviation ranged between 22.37 and 6.18. Given that the dependent variables were measured on a six-

point scale; arithmetic means seem to be high. As for the Independent (predictive) variables, their mean scores ranged between 1.027 and 11.61 and standard deviations between 17.98 and 2.02. Mean scores of the independent variables measured on the seven, four and five-point Likert scales also indicated high mean scores. Majority of the predictor variables were found to have moderately significant relationship with the dependent variables. Majority of the predictor variables were not related in a way to form multiple connection problems with each other, yet they had moderately significant relationships. On the other hand, Lack of Learning in Regulation subscale of Lifelong Learning Trends Scale had no significant relationships with Forethought and Performance subscales of the Self-regulated Learning Scale. In addition, there seemed to be no significant relationships between Social Awareness subscale of the TSIS, MST, Evaluation, Organization, Planning, Forethought, Performance and Self-Reflection subscales of SRLTS. On the other hand, Lack of Curiosity subscale of LLTS demonstrated a low level, significant relationship with the Evaluation subscale of MS.

Power of MS, SRLTS, TSIS Subscales in Predicting LLTS Total Scores

The first multiple regression equation was formed in the structure in which Metacognition, Self-regulated Learning and Tromso Social Intelligence Scales subscales were predictors and Lifelong Learning Trends Scale total score was the dependent variable. Table 1 demonstrates the analysis results.

Table 1. Multiple regression analysis results in relation to lifelong learning trends total score and predictor variables

Variable	B	St Error B	B	T	P	Paired r	Partial R
Persistence	1,634	9,537		,171	,864	-	-
Evaluation (MS)	-,302	,296	-,065	-1,020	,308	,0243	-,049
Organization (MS)	,662	,702	,060	,944	,346	,212	,045
Planning (MS)	1,029	,576	,112	1,787	,075	,240	,086
Forethought (SRLTS)	,358	,225	,082	1,594	,112	,250	,076
Performance (SRLTS)	,034	,168	,012	,204	,838	,262	,010
Self-reflection (SRLTS)	,812	,283	,152	2,866	,004	,278	,136
Social Knowledge (TSIS)	,467	,114	,188	4,106	,000	,362	,194
Social Skill (TSIS)	,452	,156	,136	2,902	,004	,384	,138
Social Awareness (TSIS)	,799	,115	,298	6,942	,000	,397	,316
R=0.575 ; R^2=0.331; Adjusted R^2=0.317; F$_{(9,433)}$= 23,787 ; p=.000							

As it is seen in Table 1, all predictor variables together significantly explain 33% of the variance in the LLTS total score (R=.575, R^2= .331, F$_{(9,433)}$= 23,787, p<.001). According to the Standardized regression coefficients (β), comparative importance rank of the predictor variables over Lifelong Learning Trends total score was Social Awareness (.298), Social Knowledge (.188), Self-reflection (.152), Social Skill (.136), Planning (.112), Organization (.060), Performance (.012) and Evaluation. An analysis of the t-test results in relation to the significance of the regression coefficients, Evaluation, Organization, Planning subscales of Metacognition and Forethought and Performance subscales of Self-regulation did not significantly predict Lifelong Learning Trends Scale total scores. On the other hand, Self-reflection subscale of Self-regulation and Social Knowledge, Social Skill and Social Awareness subscales of Tromso Social Intelligence Scale significantly predicted Lifelong Learning Trends Scale total scores.

Power of MS, SRLTS, TSIS Subscales in Predicting Motivation Scores of LLTS

The second multiple regression equation of the study was formed in the structure in which Metacognition, Self-regulated Learning and Tromso Social Intelligence Scale subscales were

predictors and Lifelong Learning Trends Scale Motivation score was the dependent variable. Analysis results are presented in Table 2.

Table 2. Regression analysis results in relation to lifelong learning trends scale motivation score and predictor variables

Variable	B	St Error B	β	T	P	Paired R	Partial R
Persistence	-2,739	3,124		-,877	,381	-	-
Evaluation (MS)	-,079	,097	-,055	-,814	,416	,194	-,039
Organization(MS)	,354	,230	,104	1,539	,124	,216	,074
Planning (MS)	,002	,189	,001	,012	,991	,200	,001
Forethought (SRLTS)	,214	,074	,158	2,901	,004	,277	,138
Performance (SRLTS)	-,002	,055	-,002	-,038	,970	,281	-,002
Self-reflection (SRLTS)	,189	,093	,114	2,035	,042	,267	,097
Social Knowledge (TSIS)	,214	,037	,278	5,749	,000	,387	,266
Social Skill (TSIS)	,186	,051	,181	3,645	,000	,332	,173
Social Awareness (TSIS)	-,030	,038	-,036	-,793	,428	,103	-,038
R=0.499 ; R^2=0.249; Adjusted R^2=0.234; F$_{(9,433)}$= 15,968 ; p=.000							

As it is seen in Table 2, all predictor variables together significantly explain 25% of the variance in the LLTS motivation score (R=.499, R^2= .249, F$_{(9,433)}$= 15,968, p<.001). According to the standardized regression coefficients (β), comparative importance rank of the predictor variables over motivation subscale were Social Knowledge (.278), Social Skill (.181), Forethought (.158), Self-reflection (.114), Organization (.104), Planning (.001), Performance (-.002), Social Awareness (.-036) and Evaluation (.-055). Analysis of the t-test results in relation to the significance of regression coefficients showed that the Motivation subscale was significantly predicted by Forethought and Self-Reflection subscales of Self-Regulated Learning Scale and Social Knowledge and Social Skill subscales of Tromso Social Intelligence Scale. However, Evaluation, Organization and Planning subscales of Metacognition and Performance subscale of Self-regulated Learning and Tromso Social Intelligence Scale Social Awareness subscale did not significantly predict the Motivation subscale.

Power of MS, SRLTS, TSIS Subscales in Predicting Persistence Scores of LLTS

The third multiple regression equation of the study was formed in the structure in which Metacognition, Self-regulated Learning and Tromso Social Intelligence Scale subscales were predictors, and Lifelong Learning Trends Scale Persistence score was the dependent variable. Analysis results are presented in Table 3.

Table 3. Multiple regression analysis results in relation to the lifelong learning trends persistence score and predictor variables

Variables	B	St Error B	β	T	P	Paired r	Partial R
Persistence	-2,860	2,790	-	-1,025	,306		
Evaluation (MS)	-,022	,087	-,017	-,257	,797	,245	-,012
Organization(MS)	-,110	,205	-,036	-,535	,593	,221	-,026
Planning (MS)	,437	,168	,173	2,597	,010	,291	,124
Forethought (SRLTS)	,061	,066	,051	,928	,354	,265	,045
Performance (SRLTS)	,104	,049	,132	2,112	,035	,363	,101
Self-reflection (SRLTS)	,200	,083	,135	2,414	,016	,328	,115
Social Knowledge (TSIS)	,135	,033	,196	4,061	,000	,328	,192
Social Skill (TSIS)	,145	,046	,158	3,179	,002	,275	,151
Social Awareness (TSIS)	-,073	,034	-,098	-2,159	,031	,011	-,103
R=0.500 ; R^2=0.250; Adjusted R^2=0.235; F$_{(9,433)}$= 16,066 ; p=.000							

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As it is seen in Table 3, all predictor variables together significantly explain 25% of the variance in the LLTS Persistence score (R=.500, R^2= .250, F$_{(9,433)}$= 16,066, p<.001). According to the standardized regression coefficients (β), comparative importance rank of the predictor variables over Persistence subscale of the Lifelong Learning Trends Scale were Social Knowledge (.196), Planning (.173), Social Skill (.158), Self-reflection (.135), Performance (.132), Forethought (.051), Evaluation (. -017), Organization (.-036) and Social Awareness (.-098). An analysis of the t-test results in relation to significance of regression coefficients showed that the Persistence subscale was significantly predicted by the Social Knowledge, Social Skill and Social Awareness subscales of TSIS, Self-reflection and Performance subscales of SRLTS and Planning subscale of MS. However, it was not significantly predicted by the Forethought subscale of SRLTS and Evaluation and Organization subscales of MS.

Power of MS, SRLTS, TSIS Subscales in Predicting The Lack of Learning in Regulation Scores

The fourth equation of the study was formed in the structure in which Metacognition, Self-regulated Learning and Tromso Social Intelligence scales subscales were predictors and Lifelong Learning Trends Scale Lack of Learning in Regulation score was the dependent variable. Analysis results are presented in Table 4.

Table 4. Multiple regression analysis results in relation to the lifelong learning trends lack of learning in regulation score and predictor variables

Variable	B	St Error B	β	T	P	Paired r	Partial R
Persistence	4,570	2,900		1,576	,116		
Evaluation (MS)	-,042	,090	-,031	-,471	,638	,103	-,023
Organization(MS)	,052	,213	,016	,243	,808	,100	,012
Planning (MS)	,313	,175	,116	1,790	,074	,136	,086
Forethought (SRLTS)	,021	,068	,016	,303	,762	,097	,015
Performance (SRLTS)	-,058	,051	-,069	-1,132	,258	,060	-,054
Self-reflection (SRLTS)	,169	,086	,107	1,964	,050	,117	,094
Social Knowledge (TSIS)	,041	,035	,057	1,198	,232	,188	,057
Social Skill (TSIS)	,024	,047	,024	,497	,619	,257	,024
Social Awareness (TSIS)	,379	,035	,481	10,848	,000	,506	,462
R=0.533 ; R^2=0.285; Adjusted R^2=0.270; F$_{(9,433)}$= 19,138 ; p=.000							

As it is seen in Table 4, all predictor variables together significantly explain 28% of the variance in the LLTS Lack of Learning in Regulation score (R=.533, R^2= .285, F$_{(9,433)}$= 19,138, p<.001). According to the standardized regression coefficients (β), comparative importance rank of the predictor variables over Lifelong Learning Trends Lack of Learning in Regulation subscale was Social Awareness (.481), Self-reflection (.107), Planning (.116), Social Knowledge (.057), Social Skill (.024), Organization (.016), Forethought (.016), Evaluation (.-031) and Performance (.-069). T-test results in relation to the significance of regression coefficients showed that the Lack of Learning in Regulation subscale was significantly predicted by the Social Awareness subscale of TSIS and the Self-reflection subscale of SRLTS; other subscales did not predict it significantly.

Power of MS, SRLTS, TSIS Subscales in Predicting Lack of Curiosity Scores

The fourth multiple regression equation of the study was formed in the structure in which Metacognition, Self-regulated Learning and Tromso Social Intelligence Scales subscales were predictors and Lifelong Learning Trends Scale Lack of Curiosity score was the dependent variable. Analysis results are presented in Table 5.

Table 5. Multiple regression analysis results in relation to the lifelong learning trends scale lack of curiosity score and predictor variables

Variable	B	St Error B	β	T	P	Paired R	Partial R
Persistence	2,663	4,543		,586	,558		
Evaluation (MS)	-,158	,141	-,075	-1,122	,262	,098	-,054
Organization(MS)	,366	,334	,073	1,095	,274	,121	,053
Planning (MS)	,276	,274	,066	1,008	,314	,128	,048
Forethought (SRLTS)	,063	,107	,032	,588	,557	,137	,028
Performance (SRLTS)	-,010	,080	-,007	-,120	,905	,125	-,006
Self-reflection (SRLTS)	,254	,135	,104	1,881	,061	,156	,090
Social Knowledge (TSIS)	,076	,054	,067	1,409	,160	,213	,068
Social Skill (TSIS)	,098	,074	,065	1,316	,189	,286	,063
Social Awareness (TSIS)	,522	,055	,428	9,519	,000	,470	,416

R=0.514 ; R^2=0.264; Adjusted R^2=0.249; F$_{(9,433)}$= 17,263 ; p=.000

As it is seen in Table 5, all predictor variables together significantly explain 26% of the variance in the LLTS Lack of Curiosity score (R=.514, R^2= .264, F$_{(9,433)}$= 17,263, p<.001). According to the standardized regression coefficients (β), comparative importance rank of the predictor variables over Lifelong Learning Trends Lack of Learning in Regulation subscale was Social Awareness (.428), Self-Reflection (.104), Organization (.073), Social Knowledge (.067), Planning (.066), Social Skill (.065), Forethought (.032), Performance (.-007), and Evaluation (.-075). T-test results in relation to the significance of regression coefficients showed that the Lack of Learning in Regulation subscale was significantly predicted by the Social Awareness subscale of TSIS and the Self-reflection subscale of SRLTS; other subscales did not predict it significantly.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Results of this study showed that Self-regulated Learning reflected Self-reflection subscale significantly. In self-regulated learning, the learner takes the responsibility of his/her learning. Such process consists of self-reflection, self-judgment and self-reaction components; an individual's self-evaluation, self-satisfaction, and adaptation are the skills that are required for lifelong learning. Hence, it is somewhat expected that self-reflection predicts lifelong learning total scores. As stated by Azevedo (2009), learning requires the use of self-regulation processes and skills. In a similar vein, according to Zimmerman (2002), who is one of the pioneers in the field, self-satisfaction is related to the individual's performance. Therefore, it is not surprising that a person's satisfaction about her job as a factor of self-satisfaction could be a predictor of lifelong learning. Again, in the process of self-reflection of self-regulation, the individual evaluates the thinking process with his/her current status; this evaluation process contributes to the solutions to the potential problems to be faced in the lifelong learning process. As stated by Zimmerman (2002), self-regulation is not a mental ability or academic performance; it is a self-reflective process that enables learners to turn mental abilities into performance; hence it is somewhat expected that lifelong learning skills of pre-service teachers who have self-reflection could be predicted.

Lifelong Learning Trends Scale total scores were significantly predicted by Tromso Social Intelligence Scale Social Knowledge, Social Skill and Social Awareness subscales. According to Cartledge and Milburn (1983), basic skills that take place in the lifelong learning process include social skills that are specific to the situation or social skills as learned behaviours that change according to the social context and lead to positive response or prevent negative reaction, enable interaction with others, and are socially acceptable (in Yüksel 1998). Hence, it is somewhat expected that dimensions of social skills that enable adaptation to the changes in social skills and effective communication with others are predictor variables in the lifelong learning process. Learners' knowledge, skills and awareness about adaptation to society will be beneficial to them in the maintenance of lifelong learning. Mayes (2013) investigated the relationship between lifelong learning and social responsibilities. Results of the study showed that all levels of society should define and

regulate high social responsibilities, which contributes to lifelong improvement. Similarly, Klamma, Chatti, Duval, Hummel, Hvannberg, Kravcik, Law, Naeve, Scott (2007) reported that lifelong learning is an important concept for information society. Their results indicated that new heterogeneous social software systems in informal learning technologies could be used for lifelong learning, which supports its predictor role in awareness in lifelong learning.

However, Evaluation, Organization, and Planning subscales of Metacognition and Forethought and Performance subscales of Self-regulated Learning did not predict Lifelong Learning Trends Scale total score significantly. The finding indicating that planning, organization and evaluation skills in the learning to learn process do not predict lifelong learning process is somewhat unexpected. A number of studies revealed the importance of the individual's taking the responsibility of his/her own learning and reflecting the planning, organization, and evaluation skills to the lifelong learning process (Parkinson 1999, Knapper and Cropley 2000, Akkoyunlu 2008, Breivik 2000).

The Motivation subscale was significantly predicted by the Forethought and Self-reflection subscales of Self-regulated learning. Having forethought and self-reflection skills in the self-regulated learning is reported to have positive predictor effects on motivating the learner to the learning process. Hence, self-regulation involves the processes that help the individual to organize his own mental processes, regulate learning conditions, adapt to social conditions, which involves a predictor effect related to the motivation in lifelong learning. Similarly, according to Pintrich (2000), motivation is the most important factor that affects self-regulated learning. Formation for motivation and proficiency beliefs is of great importance for the improvement of self-regulated learning. According to the model developed by Zimmerman (2002), self-regulation is closely associated with the environmental and individual conditions. To Zimmerman (2002), there is self-motivation in the process before making efforts to learn, which has effects on the motivation for lifelong learning.

Results showed that the Motivation subscale was significantly predicted by the Social Knowledge and Social Skills subscales of Tromso Social Intelligence Scale. Social skills, which are an important component in social intelligence, predicted motivation in lifelong learning. Hence, motivation is a variable related to innovation and adaptation to the situation; a study conducted by Phipps (2007) shows that social intelligence is associated with the concept of innovation. However, the Motivation subscale of Lifelong Learning Trends Scale was not significantly predicted by the Evaluation, Organization, and Planning subscales of Metacognition and Performance subscale of Self-regulation, and Social Awareness subscale of Tromso Social Intelligence. Although particularly evaluation, organization, planning and performance are fundamental skills that should be in the lifelong learning process, they were not predictor variables in this study, which was unexpected. Similarly, in the lifelong learning process, the individual is expected to have social awareness skills in social life. Hence, the predictor effect of social awareness on the Motivation subscale of lifelong learning was reported in the study conducted by İlhan and Çetin (2014). Individuals with developed motivation subscale of cultural intelligence trust their abilities in adapting different cultures (Ng, Dyne & Ang 2009), which is closely associated with social awareness. However, another unexpected finding of this study was that there was no predictor effect of Social Awareness on the Motivation subscale of lifelong learning.

It was expected that Social Knowledge, Social Skill and Social Awareness subscales of TSIS significantly predicted the Persistence subscale of the Lifelong Learning Trends Scale. Patience and persistence in social relationships are important variables in the social knowledge, skills, and awareness process. Besides, lifelong learning is integrated in life; therefore, it should be considered in terms of social context. It is therefore expected that Social Knowledge, Social Skill and Social Awareness subscales of TSIS could predict lifelong learning significantly. Hence, the study conducted by Tan and Morris (2006) reported the positive relationship between social knowledge, skill and awareness components and lifelong learning and persistence.

It is somewhat expected that the Planning subscale of MS predicted the Persistence subscale of Lifelong Learning. According to Parkinson (1999), fundamental components that support lifelong

learning are self-assessment, self-regulation, focusing on learning, and knowing learning. In a similar vein, the Persistence subscale of Lifelong Learning, with its aspect of being patient and insisting on maintenance, predicted the Planning subscale of learning to learn- one of the 4 main components of lifelong learning (Ersoy and Yılmaz 2009; in Şenyuva 2013) stated in the International Commission UNESCO (1996) report prepared for 21st century education. Again, according to Knapper and Cropley (2000) lifelong learners are individuals who question their learning and learn by planning their own learning, which supports the finding that the Planning subscale predicts the Persistence subscale of Lifelong Learning.

Persistence subscale of Lifelong Learning was significantly predicted by Self-reflection and Performance subscales of SRLTS. Determination and persistence are necessary components for the maintenance of the individual's performance. Duckworth, Peterson, Matthews and Kelly (2007) reported that the concept of determination is an important factor in ability and intelligence measurements. As long as the learner maintains his/her performance in the task, the determination to finish that task will also continue. Therefore, it is expected that performance and self-reflection in self-regulation predicted determination and persistence. Hence, some studies (Duckworth and Quinn 2009) revealed that persistence was closely associated with self-regulation and self-reflection.

On the other hand, the subscales were not significantly predicted by the Forethought subscale of SRLTS and the Evaluation and Organization subscales of MS, which was an unexpected finding. In fact, a learner's taking part in the organization and evaluation in the learning to learn process requires maintenance of the persistence in the process. Hence, studies on metacognition (Yasser 2018) report that determination and persistence in the learning process are important variables in organization and evaluation.

Social awareness subscale of TSIS significantly predicted the Lack of Learning in Regulation subscale. Individuals who are aware of the social processes and relations could have self-regulation skills, as well. Hence, they can find the necessary resources for their own learning and organize them to make their learning effective. Being aware of the social processes and asking for the necessary assistance are important predictors of individuals' learning to learn status (Ryan & Shin 2011).

Self-reflection in self-regulated learning predicted individuals' learning regulation, which is an expected finding. Hence, Zimmerman's (2002) "Social Cognitive Self-regulated Learning Model" includes a cyclic structure of the Forethought subscale, the Performance subscale and Self-reflection subscale. In such process, self-reflection's predicting learning regulation is not a surprising finding. On the other hand, Lack of Learning in Regulation subscale of Lifelong Learning was not predicted by the other subscales.

Lack of Curiosity subscale of the Lifelong Learning Trends Scale was significantly predicted by the Social Awareness subscale of TSIS. Awareness of social processes and resources is closely associated with the Curiosity subscale of Lifelong Learning. Human beings are social creatures, which brings along their curiosity. An individual's finding resources required for his/her own development is closely associated with the feeling of curiosity; which makes the Social Awareness subscale a predictor variable in this process. Hence, Renner (2006) indicated the relationship between social awareness and feeling of curiosity. On the other hand, the Lack of Curiosity subscale of Lifelong Learning was not predicted by other subscales.

In this case, it could be possible to say that Metacognition, Social Intelligence and Self-regulated Learning variables are among the indicators of Lifelong Learning Trends. In line with the results of this study, instruction processes that consider the relationship of pre-service teachers' metacognition, social intelligence, and self-regulated learning and lifelong learning trends with each other will contribute to pre-service teachers to become teachers who are open to lifelong learning process, who improve themselves and thereby who provide their students with the necessary guided learning support.

REFERENCES

Akbaş, O. & Özdemir, S. M. (2002). Lifelong learning in the European Union. Journal of National Education, 155-156.

Akkoyunlu, B.(2008). Information Literacy and Lifelong Learning. Retrieved from http://www.ariokullari.k12.tr/library/egitim/bilgi-okuryazarligi/

Albrecht, K. (2006). Social intelligence: new science of success. Implementation of the human relations theory of multiple intelligences. Translated by: Selda Göktan, Istanbul: Timaş Press, I. Printing.

Azevedo R. (2009). Theoretical, conceptual, methodological, and instructional issues in research on metacognition and self-regulated learning: a discussion. Metacognition and Learning, 4(1), 87-95.

Bacow T.L., Pincus D. B., Ehrenreich J.T., Brody L. R. (2009), The metacognitions questionnaire for children: development and validation in a clinical sample of children and adolescents with anxiety disorders. J Anxiety Disord, 23(6):727–36. DOİ:10.1016.

Bingham, G., Holbrook, T., & Meyers, L. E. (2010). Using self-assessments in elementary classrooms. Phi Delta Kappa International, 91(5), 59–61.

Black, P., & Wiliam, D. (2009). Developing the theory of formative assessment. Educational Assessment, Evaluation and Accountability, 21(1), 5–31.

Boekaerts M. & Niemivirta, M. (2005). Handbook of Self Regulation. Monque Boekaerts, Paul R. Pintrich, & Moshe Zeidner (Ed.), Self-regulated learning: finding a balance between learning goals and ego-protective goals (pp. 417–450). San Diego CA: Academic Press.

Breivik, P. (2000). Information Literacy and Lifelong Learning: The Magical Partnership. Lifelong Learning Conference (pp.1-6). Yeppoon, Queensland, Australia. Retrieved from http://acquire.cqu.edu.au:8080

Carreras, M. R., P. Braza, J. M. Muñoz, F. Braza, A. Azurmendi, E. Pascual-Sagastizabal, J. Cardas & J. R. Sánchez-Martin. (2014). Aggression and prosocial behaviors in social conflicts mediating the influence of cold social intelligence and affective empathy on children's social preference. Scandinavian Journal of Psychology, 55, 371–379.

Cedefop. (2008). Terminology of European Education and Traning Policy. Office for Official Publications of The European Communities. Luxembourg. Commission Of The European Communities (2001), European commision white paper a new impetus for european youth, 33-35. Retrieved from http://aei.pitt.edu/1186/1/youth_wp_COM_2001_68 .

Delors, J. (1996). Education: The Necessary Utopia. Retrieved from http://www.unesco.org/education/pdf/DELOR2_E.PDF .

Demirel, M. (2009). Lifelong Learning and Technology, 9th. International Educational Technology Conference (IETC), Hacettepe University, Ankara. State Planning Organization. Special Commission Report. Retrieved from http://ekutup.dpt.gov.tr/egitim/oik584.pdf Accessed 24 March 2018.

Diker Coşkun, Y. (2009). Investigation of Some Variables Lifelong Learning Trends of University Students. (Unpublished PhD thesis). Ankara: Institute of Social Sciences of Hacettepe University.

Duckworth, A. L. & Quınn, P. D. (2009). Development and validation of the Short Grit Scale (grit-s). Journal of Personality Assessment, 91(2), 166-174.

Duckworth, A. L., Peterson, C., Matthews, M. D. & Kelly, D. R. (2007). Grit: Perseverance and passion for long-term goals. Journal of Personality and Social Psychology, 92(6), 1087-1101.

Eryılmaz, A. & Mammadov, M. (2017). Development of self-regulated learning scale based on Zimmerman's Model. Ines Journal, 4(10), s.79-93.

Gaile, J. & Adams, C. (2018). Metacognition in speech and language therapy for children with social (pragmatic) communication disorders: implications for a theory of therapy. Internatıonal Journal of Language & Communıcatıon Dısorders, 53 (1), 55-69.

Goleman, D. (2014). Social intelligence, 4th Edition, Asset Publications.

Hampel, S., Weis, S., Hiller, W. & Witthöft, M. (2011). The relations between social anxiety and social intelligence: a latent variable analysis. J Anxiety Disord, 25 (4), 545-553.

Höp, (2007-2013). Lifelong Learning Program Reference. Retrieved from http://www.ua.gov.tr/docs/hayatboyu%C3%B6%C4%9Frenme/llp_basvuru_kilavuzu1.pdf?sfvrsn=0

Hudesman, B. J., Crosby, S., Flugman, B., Issac, S., Everson, H., & Clay, D. B. (2013). Using formative assessment and metacognition to improve student achievement. Journal of Developmental Education, 37(1), 2–13.

Kihlstrom, J. F., & Cantor, N. (2000). Social intelligence. In R. J. Sternberg (Ed.), Handbook of intelligence (pp. 359-379). New York: Cambridge University Press.

Kim, J. H (2018). The effect of metacognitive monitoring feedback on performance in a computer-based training simulation. Applied Ergonomics, 67, 193–202.

Klamma, R., Chatti, M. A., Duval, E., Hummel, H, Hvannberg, E. T, Kravcik, M., Law, E., Naeve, A., & Scott, P. (2007). Social software for life-long learning. Educational Technology & Society, 10(3), 72-83.

Knapper, C. & Cropley, A. (2000). Lifelong learning in higher education. London: Kogan Page.

Li M., Zheng C., Liang J. C., Zhang Y. & Tsai C. C. (2018). Conceptions, self-regulation, and strategies of learning science among chinese high school students. Int J of Sci and Math Educ., 16, 69–87.

Mayes, R. (2013). Life-long learning and social responsibility obligations. International Association for Development of the Information Society, 381-384.

Ng, K.-Y., Van Dyne, L., & Ang, S. (2009). From experience to experiential learning: cultural intelligence as a learning capability for global leader development. Academy of Management Learning & Education, 8(4), 511–526.

Pintrich, P. R. (2000). The Role Of Goal Orientation In Self-Regulated Learning. In M. Boekaerts, P. R. Pintrich, & M. Zeidner (Eds.), Handbook of Self-regulation (pp. 451–502). San Diego, CA: Academic Press.

Renner, B. (2006). Curiosity about people: the development of a social curiosity measure in adults. Journal of Personality Assessment, 83(3), 305-316.

Ryan, A. M., & Shin, H. (2011). Help-seeking tendencies during early adolescence: An examination of motivational correlates and consequences for achievement. Learning and Instruction, 21, 247-256.

Schraw, G., Crippen, K. J., & Hartley, K. (2006). Promoting self-regulation in science education: Metacognition as part of a broader perspective on learning. Research in Science Education, 36(1-2), 111-139.

Sha, L., Looi, C. K., Chen, W. L., Seow, P., & Wong, L. H. (2012). Recognizing and measuring self-regulated learning in a mobile learning environment. Computers in Human Behavior, 28(2), 718-728.

Silvera, D., Martinussen, M., & Dahl, T. I. (2001). The Tromso Social Intelligence Scale, a self-report measure of social intelligence. Scandinavian Journal of Psychology, 42(4), 313-331.

Şenyuva, E. (2013). Lifelong learning in nursing: perceptions and facts. Florence Nightingale Journal of Nursing, 21(1), 69-75.

Tan, C. L. & Morris, J. S. (2006). Undergraduate college students, laptop computers, and lifelong learning. The Journal of General Education, 54(4), 316-338.

Yasser A. Al-Hilawani (2018). Reflection on metacognition in real life situations: the truth is out there. Reflective Practice, 19:1, 135-144.

Yildirim, Z.; Genc, S. Z. & Eryaman, M. Y. (2016). The Views of Primary School Teachers Towards Lifelong Learning. *Route Educational and Social Science Journal.* 3(1), 337-350

Yüksel, G. (1998). The Turkish version of social skill inventory: validity and reliability studies. Psychological Counseling and Guidance Journal, 2(9), 39-48.

Weis, S. & Suess, H. M. (2007). Reviving the search for social intelligence – A multitrait-multimethod study of its structure and construct validity. Personality and Individual Differences, 42, 3–14.

Winne, P.H.(2018). Theorizing and researching levels of processing in self-regulated learning. British Journal of Educational Psychology, 88, 9–20.

Zimmerman, B. J. (2002). Becoming a self-regulated learner: An overview. Theory into Practice, 41(2), 64–70.

Zimmerman, B. J. (2008). Investigating self-regulation and motivation: historical background, methodological developments, and future prospects, American Educational Research Journal, 45(1), 166-183.

Zimmerman, B. J. & Kitsantas, A. (2014). Comparing students' self-discipline and self-regulation measures and their prediction of academic achievement. Contemporary Educational Psychology, 39(2), 145–155.