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The Effectiveness of A Joint Attention Training Program On Improving Communication Skills Of Children With Autism Spectrum Disorder

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Abstract
The Purpose of this study was to explore the effect of a joint attention intervention program on improving joint attention and communication skills in children with autism disorder. Participants were ten children between the ages of five and seven who attended a school for children with developmental disabilities (Tarbya Fekrya). A pre- post design was used to examine the joint attention intervention program on improving joint attention and communication skills of the target students. Findings from this study indicated the effectiveness of the joint attention intervention program on joint attention and communication skills in children with autism disorder. On the basis of the findings, the study advocated for the effectiveness of the joint attention intervention program on joint attention and communication skills in children with autism disorder.

Keywords *Joint attention, communication skills, children with autism disorder*

Introduction

One of the major diagnostic criteria associated with Autism Spectrum Disorder focuses on impairments in communication development. Therefore, issues related to communication should elicit specific attention from those individuals working with ASD. The development of communication in a neuron-typical individual must be comprehended in order to fully understand the extent to which such impairments affect individuals with ASD. Hart (1993) recognized three major categories subsumed within the area of communication as communication, language, and speech.

In the context of ASD, deficits accompanying the development of communication skills involve both the spoken and written word (Autism Society of America, 2006). Many individuals with ASD have difficulty understanding the rules of communication, and therefore, experience complications when trying to participate in joint communication.

Language difficulties commonly occurring within the spectrum include using only nonverbal forms of communication, having delayed speech, participating in the use of echolalia, using only single words to communicate, and exercising other abnormalities in the use of language. These difficulties often contribute to many of the behavioral issues observed in ASD because the individuals become frustrated with the task of trying to portray the appropriate message to others.

Fahey and Reid (2000) further discussed the implications of ASD on the development of communication characteristics. Some children may produce words in early infancy but experience regression in their language between 18 and 30 months. This can, most likely, be attributed to the variation of disorders found along the spectrum. The authors noted that approximately 50 percent of individuals diagnosed with ASD would never develop functional language production. Characteristics observed in those individuals who do learn to speak may include:

(*a) the use of echolalia (i.e. immediate or delayed repetition of part or all of someone else's language); (b) improper use of pronouns to refer to self (e.g., .you,. .she,. .he.); (c) repetitive speech without apparent functional value; (d) monotonous inflection, rhythm, pitch, rate, and articulation; (e) confusion in grammar and meanings; and (f) impaired understanding of nonverbal gestures, facial expressions, and physical distance from others (Fahey and Reid, 2000, p. 278).*

Additional setbacks regarding communication may occur in the individual's ability to understand abstract concepts such as time, to interpret figurative language, to comprehend

what has been read, and to write with meaning (Adel Abdulla, M.& Mourad , A. Eissa, 2014).

Joint attention deficit in autism

Joint attention refers to the ability to "coordinate attention between interactive social partners with respect to objects or events in order to share an awareness of the objects or events" (Mundy et al., 1986, p. 657).

Joint attention behaviors include sharing attention (e.g., through the use of alternating eye gaze), following the attention of another (e.g., following eye gaze or a point), and directing the attention of another. Many infants display all of these skills by 12 months of age (Carpenter et al., 1998), and some infants display some aspects of joint attention (e.g., matching the direction of the mother's head turn to a visible target) as early as 6 months of age (Morales et al., 1998). In children with autism, previous research has established joint attention ability as an early-emerging and fundamental social-communication impairment, present by 1 year of age and incorporated into the diagnostic criteria for autism (American Psychiatric Association, 1994; Mundy et al., 1986). Some studies have shown that children with autism are better able to use gestures to request objects or events than they are able to use similar gestures to initiate joint attention (Mundy et al., 1986). These findings indicate an apparent dissociation in the early social skill development of children with autism (Mundy, 1995).

Joint attention ability has been found to distinguish preschool age children with autism from those with DD and typical development (Bacon, Fein, Morris, Waterhouse, & Allen, 1998; Charman et al., 1998; Dawson, Meltzoff, Osterling, & Rinaldi, 1998). In young infants, however, some evidence suggests that social orienting impairment might be a better discriminator of autism.

In a home videotape study of 1st birthday parties of infants later diagnosed with autism, mental retardation, or typical development (Osterling et al., 2002), 1-year-olds with autism looked at people and oriented to their own names less frequently than did infants later diagnosed with mental retardation and infants with typical development. Both infants with autism and infants with mental retardation, however, displayed fewer joint attention and other gestural behaviors compared with typically developing infants.

Joint attention has become increasingly important in autism research because it is one of the earliest emerging social behaviors and deficits in joint attention are apparent prior to language acquisition. Because autism is often not diagnosed until a child is three or four years of age (Sigman & Capps, 1997), it is critical that researchers look for indicators prior to language emergence such as joint attention so that appropriate treatment may be provided at a younger age.

Bruner (1995, p.11) states that "without a ready ability for joint attention, human beings fall into a grievous state of pathology". Research findings suggest that a disturbance in the development of joint attention skills is an important characteristic of social deficit in young autistic children (Bruner, 1995; Mundy et al, 1986; Mundy, Sigman and Kasari, 1994). Recently, deficits in joint attention have been cited as a potential component deficit that accounts for the abnormal development of communication, speech and social behaviors and is now considered one of the earliest emerging signs of the disorder. Children with Autism are not impaired in 'manding', such as pointing to request or in the ability to appropriately respond to joint attention bids but display profound impairment in 'tacting', such as pointing or commenting to share attention and initiating joint attention bids (Whalen & Schreibman, 2003).

In other words, they can use the behaviors of gaze shifting and pointing for instrumental purposes, ('manding'), but not for the social purpose of sharing attention with another person,('tacting') (Naoi et al., 2008).

Intervention Studies

Whalen and Schreibman (2003) examined the effects of a naturalistic behavior modification procedure on the acquisition of responding and initiating joint attention. The study had eleven participants, five with an Autism diagnosis and 6 typically developing children all between the ages of two and five. In the study, they used pivotal response training and discrete trial training. Pivotal response training (PRT) is derived from applied behavior analysis and focuses on core deficits and excesses of Autism which are considered pivotal areas (Burris 2009). PRT emphasises the child's motivation by providing choices of reinforcement, reinforcing attempts at responding and interspersing maintenance tasks. The reinforcers which are used are initially directly related to the task so the child can establish a link between the target behavior and the reinforcer which leads to generalisation. Discrete trial training (DTT) has also been used. It involves the process of breaking a skill down into discrete components and using repeated trials until the skill is mastered. A discrete trial is a three term contingency, the delivery of a discriminative stimulus followed by a prompt if necessary which is faded over time and finally, a response. If the response is correct, there is a consequence which is planned to function as a reinforcer. If the response is incorrect a variety of procedures such as error correction to elicit the correct response are used (Burris 2009).

The training in Whalen and Schriebman's (2003) study included the use of pivotal response training techniques, turn taking and the use of high preference natural consequences as reinforcement. There were two main phases, responding to joint attention training and initiating joint attention training. The training procedure successfully taught all participants the skills to initiate and respond to joint attention and this successfully generalized for all participants except one whose initiation skills did not generalize. It was found at follow up testing that there was a marked decrement in the initiation of joint attention skills. Whalen and Schreibman (2003) suggest that the decrease in the initiation skills could be due to parents having not known how to maintain the skills. The study provides evidence that joint attention skills can be taught by behavioral interventions to children with impaired joint attention.

Holth and Isaksen (2009) conducted a study on four children diagnosed with Autism aged between 3 and 6 years to investigate if joint attention can be successfully taught by a training protocol based on a combination of procedures. The study addressed the flaws in Whalen and Schriebman's (2003) study by including parents in the training procedure and training them to implement the procedures. Additionally, Holth and Isaksen's (2009) study used generalized reinforcers, such as social interaction, which motivate typically developing children to engage in joint attention. According to Holth and Isaksen (2009) the main treatment goal must be to teach the child with Autism Spectrum Disorder to respond to the same types of social cues as typically developing children do. The study used a modified version of the Early Social Communication Scale (ESCS) (Mundy, Delgado, Block, Venezia, Hogan & Seibert, 2003) to obtain baseline scores and establish adult social responses as conditioned reinforcers for the child's behavior.

The assessment was divided into two main parts. The first part targeted responding to joint attention and involved following a proximal point and a distal point. The second part targeted initiating joint attention and consisted of two subtests that assessed alternated gaze, pointing and vocal responses in two toy activation tasks and a book presentation. The intervention involved three phases, responding to joint attention, establishing social conditioned reinforcers such as smiling and nodding, and the finally switching between initiating and responding to joint attention behaviors using tasks involving turn taking. The results from the study indicate that there was progress in both responding to and initiating joint attention skills when baseline and post training scores were compared. There were no changes during baseline scores suggesting that the improvements had to be from the explicit

training. The skills that were taught during the training were maintained and in some cases improved immediately after the training until the follow up test, a month after the training was complete. Results suggest that the effects of smiling and nodding as generalized social reinforcers were maintained in daily life. Parents reported that their children used the skills that they learnt in different settings. After completing the study, all children were reported to engage in joint attention behaviors and showed enjoyment when doing so. This study further suggests that behavioral interventions can successfully teach children with Autism Spectrum Disorder joint attention skills these can be maintained once parents have been trained to reinforce them at home.

Sharonia's pilot study(2011) examined the general question; To what extent can joint attention be developed and generalized by children with Autism Spectrum Disorder? Children's joint attention level was assessed and a behavioral intervention program based on the research of Holth (2005, 2006, 2009), was used to target deficits in responding and initiating joint attention. Four children diagnosed with Autism Spectrum Disorder (ASD) aged between 4 and 7 years were assessed prior to an intervention phase which targeted the joint attention behaviors of gaze following, monitoring, social referencing, verbal tacting and manding. Post assessments were conducted after the intervention. Intervention results showed that training of specific joint attention skills were successful. In particular, high level behaviors increased at post assessment whereas the low level behaviors decreased. The results show that behavioral intervention programs can successfully teach joint attention skills and those skills can be generalized and maintained after the intervention.

Accordingly, as joint attention has been linked to language and social cognitive processes which have been found to be deficient in children diagnosed with Autism, early intervention programs which successfully target joint attention have the potential to provide significant breakthroughs for the area of autism. This study seeks to explore the effectiveness of an autism intervention program; joint attention training program, that aims to improve joint attention as well as communication skills of children with autism spectrum disorder.

This study seeks to give answers to the following questions

1- Are there differences in post – test scores ranks between control and experimental groups on Joint Attention?
2- Are there differences in re-post test scores ranks for the experimental groups on Joint Attention?
3- Are there differences in post – test scores ranks between control and experimental groups on Communication Skills?
4--Are there differences in re-post test scores ranks for the experimental groups on Communication Skills?

Methods

Participants

Participants were ten children between the ages of five and seven who attended a school for children with developmental disabilities (Tarbya Fekrya).All children attended the same classroom within the school. Parental informed consent forms were sent home by the school director and school psychologist to parents of potential participants telling them about the study and requesting them to give permission for their children to participate. Through a previous comprehensive psychological evaluation each targeted child had received a primary diagnosis of Autistic Disorder. All children were also capable of communication using speech

assessed through a combination of teacher report and observation. They were so-called high functioning.

Criteria for participation in the present study included: (1) A diagnosis of ASD from child psychologist based on The Scale for Screening Autism Disorder (Mohammed, 2003); (2) Deficits in Joint attention, as the aim of this study was to improve these deficits through the training program. Deficits in Joint attention were defined as an inability to intentionally communicate to direct another's attention to an object or event through gaze shifts, gestures or verbal communication.

Instruments

Teacher's rating of child's Joint Attention Scale. The test was developed to assess joint attention in children with autism disorder. The scale is a 3 point rating scale – Always (2), Sometimes (1) and Never (0). There are four domains in the *Teacher's rating of child's Joint Attention* Scale they are Eye Contact (5 Items) , Gesturing (5 Items) , Follow the instructions (5 Items) , Initiating caressing/singing (5 items). Reliability and Validity of the scale was established and the final checklist consisted of 20 items.

Functional communication questionnaire. a 20-item teacher-report questionnaire. It is based on the Autism Diagnostic Scale (Adel Abdulla Mohammed, 2003). Respondents are asked to rate their level of agreement using a five point Likert response scale(3 = Always, 2 = Sometimes , 1 = Never). The Cronbach alpha value was high (0.89) indicating excellent internal consistency.

Procedures

Screening Participants were ten children between the ages of five and seven who attended a school for children with developmental disabilities (Tarbya Fekrya). Each child also had the following characteristics: : (1) A diagnosis of ASD from child psychologist based on The Scale for Screening Autism Disorder(Mohammed, 2003); (2) Deficits in Joint attention, as the aim of this study was to improve these deficits through the training program. (3) ability to read and comprehend words, and (4) ability to follow directions.

Pre-intervention testing : Teachers were asked to rate child's Joint attention on Teacher's rating of child's Joint Attention Scale and their communication skills on Functional communication questionnaire.

General Instructional Procedures: The program used in the current research in order to improve communication skills in children with autism disorder depends on training in: visual communication, self-awareness, visual discrimination, assertiveness, discrimination forms, distinguish colors, and means of transportation. Children were seated at a table facing the experimenter on the other side of the table in a room with pictures on the wall and toys on a bookshelf behind the experimenter. Each toy was presented one at a time to the child to determine if and how the child requested items and to assess joint attention and turn taking.

Results

Joint Attention intervention and development of joint attention

The first objective of the study was to determine if use of joint attention intervention would be more effective for the treatment group compared to the control group .For this purpose, the post intervention scores of both treatment and control groups were analyzed. Table 1. shows Z Value results for the differences in post- test mean rank scores between

experimental and control groups in Social Skills Rating Scale. The table shows that (Z) values were (-2.435) for Eye Contact, (-2.631) for Gesturing, (-2.711) for Follow the instructions, (2.701) for Initiating caressing/singing and (-2.688) for the composite score. These values are significant at the level (0.01) in the favor of experimental group.

Table 1. *Z Values results for the differences in post- test mean rank scores between experimental and control groups in Teacher's rating of child's Joint Attention Scale*

Variables	**Groups**	**N**	**Mean Ranks**	**Sum Ranks**	**Mann-whiteny**	**Z Value**	**Sig.**
Eye Contact	Ex	5	8	40	Zero	-2.435	0.01
	Cont.	5	3	15			
Gesturing	Ex	5	8	40	Zero	-2.631	0.01
	Cont.	5	3	15			
Follow the instructions	Ex	5	8	40	Zero	-2.711	0.01
	Cont.	5	3	15			
Initiating caressing/singing	Ex	5	8	40	Zero	-2.701	0.01
	Cont.	5	3	15			
Composite	Ex	5	8	40	Zero	-2.688	0.01
	Cont.	5	3	15			

The second objective of the study was to determine the effect of joint attention intervention on improving joint attention in children with autism disorder. The children's performance on joint attention was measured pre and post intervention. Table 2. shows Z Value results for the differences in pre and post test mean rank scores for the experimental group in *Teacher's rating of child's Joint Attention Scale*. The table shows that (Z) values were (-2.612) for Eye Contact, (-2.523) for Gesturing, (-2.632) for Follow the instructions, (-2.604) for Initiating caressing/singing and (-2.655) for the composite score. These values are significant at the level (0.01). This indicates that use of Joint Attention intervention had a positive effect on improving Joint Attention in children with autism disorder.

Table 2. *Z Values results for the comparison of mean rank scores of experimental group at pre- and post intervention in Teacher's rating of child's Joint Attention Scale*

Variables	**Negative Ranks**	**Sum**	**Positive Ranks**	**Sum**	**Z Value**	**Sig.**
	Mean		**Mean**			
Eye Contact	3	15	Zero	Zero	-2.612	0.01
Gesturing	3	15	Zero	Zero	-2.523	0.01
Follow the instructions	3	15	Zero	Zero	-2.632	0.01
Initiating caressing/singing	3	15	Zero	Zero	-2.604	0.01
Composite	3	15	Zero	Zero	-2.655	0.01

Joint Attention intervention and improvement of communication skills

The third objective of the study was to determine if use of joint attention intervention would be more effective for the treatment group compared to the control group .For this purpose, the post intervention scores of both treatment and control groups were analyzed. Table 3. shows Z Value result for the differences in post- test mean rank scores between experimental and control groups in communication skills. The table shows that (Z) value was (-2.660).This value is significant at the level (0.01) in the favor of experimental group.

Table 3. *Z Values results for the differences in post-test mean rank scores between experimental and control groups in Functional communication questionnaire*

Variables	Groups	N	Mean Ranks	Sum Ranks	Mann-Whitney	Z Value	Sig
Communication skills	Ex	5	8	40	Zero	-2.660	0.01
	Cont.	5	3	15			

The fourth objective of the study was to determine the effect of joint attention intervention on communication skills in children with autism. The children's performance on communication skills was measured pre and post intervention. Table 4. shows Z Value result for the differences in pre and post test mean rank scores for the experimental group in functional communication questionnaire. The table shows that (Z) value was(-2.032). This value is significant at the level (0.01) .This indicates that use of Joint Attention intervention had a positive effect on communication skills in children with autism.

Table 4. *Z Values results for the comparison of mean rank scores of experimental group at pre- and post intervention in Functional communication questionnaire*

Variables	Negative Ranks	Sum	Positive Ranks	Sum	Z Value	Sig.
	Mean		Mean			
Communication skills	3	15	Zero	Zero	-2.032	0.01

Discussion

The present study evaluated the effects of joint attention intervention on improving Joint Attention and communication skills in children with autism disorder. The study results showed that the joint attention intervention was effective in improving eye contact, gesturing, follow the instructions, initiating caressing/singing (Joint attention subscales) and communication skills of all children participated in this study.

Children in this study did not receive any type of reinforcement or behavior modification strategies while participating in the sessions. Removing strategies such as prompting techniques, token systems, and other reinforcement systems reduced the potential for confounds within the study. Therefore, one can conclude that Joint Attention Intervention was primarily responsible for the change in the Joint Attention and communication skills of children participated in the study .

In summary, joint attention intervention effectively improved the joint attention and communication skills of the children who participated in this study. Overall, results from this study contribute to the joint attention intervention literature for improving the joint attention and communication skills of children with autism disorder. The present study lends empirical support to the notion that children with autism disorder, can be taught so that their joint attention and communication skills can be improved.

Recommendations

Further research is still required to explore the potential benefits of Joint Attention Intervention for children with autism disorder. Such research may include large scale studies, and a further exploration of the exact influence of student attendance, teacher training, classroom conditions and treatment duration and intensity.

The effects of joint attention intervention on other behaviors such as play, and positive affect should also be examined. In addition, future studies should begin to look at

why children with autism are so impaired in joint attention skills and how existing interventions might be modified to remediate joint attention deficits in children with autism. Finally, it will be important for researchers to assess the developmental progression of joint attention and other behaviors and to study how joint attention training might impact a child's future development.

References

Adel Abdulla, M.& Mourad , A. Eissa (2014). *Contemporary Perspectives on autism Identification, assessment, problems, intervention, and instruction*. Arees University Press.

American Psychiatric Association (1994). *Diagnostic and statistical manual of mental disorders*. 4th ed. Author; Washington, DC .

Bacon AL, Fein D, Morris R, Waterhouse L, Allen D. (1998).The responses of autistic children to the distress of others. *Journal of Autism and Developmental Disorders*,28:129–142.

Bruner, J. (1995) From joint attention to meeting of minds: an introduction. . In C. Moore P. Dunham (Eds.), *Joint attention: Its origins and role in development* (pp.1-14). Hillsdale, NJ:Nawrence Erlbaum Associates.

Burris, H. (2009). *An Assessment of a Naturalistic In-home Training Protocol to Establish Joint Attention Responding with Children Diagnosed with Autism Spectrum Disorder* (Unpublished master's thesis). University of South Florida, South Florida.

Carpenter M, Nagell K, Tomasello M.(1998). Social cognition, joint attention, and communicative competence from 9 to 15 months of age. *Monographs of the Society for Research in Child Development*, 63:1–143.

Charman T. (1998). Specifying the nature and course of the joint attention impairment in autism in the pre-school years: Implications for diagnosis and intervention. *Autism: The International Journal of Research and Practice*,2:61–79.

Dawson G, Meltzoff A, Osterling J, Rinaldi J. (1998).Neuropsychological correlates of early autistic symptoms. *Child Development*,69:1247–1482.

Fahey, K. R. & Reid, D. K. (2000). *Language development, differences, and disorders: A perspective for general and special education teachers and classroom-based speech-language pathologists*. Austin, TX: Pro-Ed.

Hart, R.P. (1993). Why communication? Why education? Towards a politics of teaching .*Communication Education*, 42, 97-105.

Holth, P. (2005). An Operant Analysis of Joint Attention Skills. *Journal of Early and Intensive Behavior Intervention,* 2 (3), 160 – 175.

Holth, P (2006). An Operant Analysis of Joint Attention Skills. *European Journal of Behavior Analysis,* 1(7), 77 – 91.

Holth, P & Isaksen, P (2009). An Operant Approach to Teaching Joint Attention Skills to Children with Autism. *Behavioral Interventions,* 24, 215-236

Morales M, Mundy P, Rojas J.(1998). Brief report: Following the direction of gaze and language development in 6-month-olds. *Infant Behavior & Development*. 21:373–377.

Mundy, P. (1995). Joint attention and social-emotional approach behavior in children with autism. *Development and Psychopathology*, 7, 63–82.

Mundy, P., Sigman, M., & Kasari, C. (1994). Joint attention, developmental level, and symptom presentation in young children with autism. *Development and Psychopathology*, 6, 389–401.

Mundy P., Sigman M., Ungerer J. & Sherman T. (1986). Defining the social deficits of autism: the contribution of non-verbal communication measures. *J. Child. Psychol. Psychiatry* ,27, 657–669.

Naoi, N., Tsuchiya, R., Yamamoto, J. & Nakamura, K. (2008). Functional training for initiating joint attention in children with autism. *Research in Developmental Disabilities*, 29, 595 – 609.

Osterling J, Dawson G, Munson J.(2002). Early recognition of one year old infants with autism spectrum disorder versus mental retardation: A study of first birthday party home videotapes. *Dev Psychopathol*,14:239–252.

Sigman, M., & Capps, L. (1997). *Children with autism: A developmental perspective*. Cambridge, MA; London: Harvard University Press.

Whalen, C., & Schreibman, L. (2003). Joint attention training for children with autism using behavior modification procedures. *Journal of Child Psychology and Psychiatry and Allied Disciplines*, 44(3), 456–468.

Social intelligence and leadership styles of the school administrators in Turkey

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Abstract
The aim of this research was to examine the relationship between social intelligence levels and leadership styles. The study was conducted with 202 administrators employed in the primary schools of Turkey. The data collection instruments were administered to the school administrators who came from different parts of Turkey and attended the educational administrators' meeting held in Gaziantep, Turkey. For this study, "Leadership Styles" questionnaire developed by Günbayı (2005) and "Social Intelligence Scale" developed by Silvera et al. (2001) were administered. The data were analyzed using MANOVA and Pearson product-moment correlation coefficient analysis techniques. In the study, significant relationships were found between some dimensions of social intelligences and leadership styles of the administrators.

Keywords: goal emphasis; interaction facilitation; social awareness; social skills; support

Introduction

Leadership is an important part of our life and has both social and emotional dimensions. At the workplace, for instance, employers and leaders have to be in a social interaction that necessitates adaptation to the social environment (Kobe *et al.*, 2001). Goleman (2006) suggests that positive interactions improve leadership styles of the managers. He gives the example of Ms Smith, a middle school principal, who managed to orient the new teachers in her school by spending social time with them, outside the school. Goleman benefits from the field of neuroscience to explain how the performance of the managers and teachers, and also the climate of schools are affected when they are motivated or stressed (Goleman, 2006). Goleman *et al.* (2004) list six leadership styles that can be effective for creating a positive school environment, where people feel motivated to show their best performances. These styles are visionary, affiliative, coaching, democratic, pacesetting and commanding (Goleman, 2006). Bush (2011) also argues that if we are looking for successful schools which provide good learning opportunities for students, effective leadership and management is necessary.

Some researchers provided a connection among the concepts of social and emotional intelligence (Seal *et al.*, 2006). People's intelligence in general is examined within the subareas of social behavior and emotions (Salovey and Mayer, 1990). Because the organized response of emotions "lead to a transformation of personal and social interaction into enriching experience" (Salovey and Mayer, 1990, p.186), emotional intelligence is seen in its relationship to social intelligence. Emotional intelligence refers to intrapersonal skills such as self-awareness and self-management, while social intelligence implies interpersonal skills such as social awareness and relationship management (Seal *et al.*, 2006). The combination of both intelligences fosters one's ability to understand others' needs, emotions, perceptions, and thoughts and manage his/her relationships with others in social interactions.

Seal *et al.* (2006) discussed the effect of emotional and social intelligence (ESI) on the performance in organizations. The emotional and social competencies are necessary to adapt to the organizational environment as well. Leadership performance effectiveness is closely related to one's emotional and social competencies, both intrapersonal and interpersonal abilities (Boyatzis, Stubbs and Taylor, 2002, cited in Seal *et al.*, 2006).

There are studies that examined the relationship between emotional intelligence and leadership. In their study, Kotze and Venter (2010) for example, aimed to find to what extent emotional intelligence predicted leadership effectiveness. The findings showed the dimensions of emotional intelligence such as problem solving, stress tolerance, problem

solving, reality testing, self-awareness, stress tolerance, and empathy significantly predicted leadership effectiveness. Deniz (2012) examined the relationship between emotional intelligence of managers in health sector with their leadership practices. He found that female managers had better skills in evaluating their own and others' emotions than those of male managers. The study also showed that managers with more than 11 years of experience benefited from emotions better than managers with less experience.

The researcher came across with few studies that deal with ESI and leadership effectiveness. Birknerova (2011) studied social and emotional intelligences in school environment and analyzed if school administrators were socially and emotionally competent. The overall findings revealed significant differences between gender and factors of emotional intelligence. Yet statistical significance was not found between factors of social intelligence and gender. Furtner et al. (2010) examined associations between self-leadership and socioemotional intelligence. The study revealed significant associations between social sensitivity and emotional expressivity. But no associations were detected for emotional control.

Goleman and Boyatzis (2008) discuss how emotional intelligence with its aspects of empathy and self-knowledge played an important role for effective leadership. Leaders with emotional intelligence are able to define, use, understand and direct emotions, which are significant skills necessary especially in team work (cited in Caruso & Salovey, 2004). Yet, today the field of social neuroscience is involved in the discussions of "what makes a good leader" (p.74). Namely, it is important what we feel and think in our brain when we are interacting with people.

The main concern of the present research is how social intelligence influences leadership styles of the administrators. Goleman and Boyatzis (2008) list the following characteristics of effective leaders with social intelligence: empathy, conforming to others, fostering positive feelings in others, inspiring others to be effective, and so forth. Kotze and Venter's (2010) study that examined the relationship between emotional intelligence and leadership effectiveness, defines leadership effectiveness with the following dimensions: "environmental orientation, vision formulation and sharing, preparing the organization for implementing the vision and implementing the vision" (p.31).

Günbayı (2005) who adapted the Leadership Styles" Questionnaire into Turkish examined the responses of female and male teachers to leadership styles. The leadership styles were listed as follows: 1) support, 2) interaction facilitation, 3) goal emphasis and 4) work facilitation (p.691). Support implied behavior that helped someone feel worth and important. Interaction facilitation meant behavior that encouraged someone to develop close interactions and relationships with others. Goal emphasis implied behavior that encouraged someone to achieve his/her goals by involving activities such as scheduling, coordinating, and planning (Kast & Tosenzweigh, 1981, cited in Günbayı, 2005). We now live in a global world which provides various opportunities for organizations. Organizations are becoming complex and dynamic environments in which leadership is crucial for effective management, controlling diverse teams, and implementing strategies (Ekelund and Adl, 2012).

Effective leaders should have the skills of empathy and self-knowledge, which are closely associated with emotional intelligence. If leaders have interpersonal competencies and social skills, that means they have social intelligence. In organizations, leaders having social intelligence can reinforce social links between themselves and their employees. They can "foster a positive mood in their teams" (Goleman and Boyatzis, 2008:4).

With the impact of globalization, Turkish education system is involved in a serious restructuring process. Between the years 1985-2010, Ministry of National Education

completed 21 projects within the framework of the adaptation process to European Union (Kucuker and Gurbuz, 2012). The Europeanization reforms in Turkey should also impact schools. In Turkey both public and private schools are structured in such a way that leadership and management duties are held by the school principal (Babaoğlan and Litchka, 2010). However, democratic leaders recognize the potential of their followers and emphasize teamwork. Such leaders are also aware of the significance of teamwork, interaction and collaboration that make the teamwork more effective (Yun, Cox and Sims, 2007). Working with either individuals or a large group in a team, understanding and responding to them require social intelligence (Hughes, Thompson and Terrel, 2009).

There are various studies related to school leadership in Turkey (Uğurlu and Hovardaoğlu, 2011; Ağaoglu, Altınkurt, Yılmaz and Karaköse, 2012; Babaoglan and Litchka, 2010; Aydın, Sarıer, ve Uysal, 2013; Gündüz, 2012). Yet, the researcher did not come across with any study that examined the direct relationship between social intelligence and leadership styles. The researcher therefore believes that this study may have a significant contribution to the area.

The purpose of this research is to analyze the relationships between social intelligence and leadership styles of school administrators. Answers were sought to the following questions:

1 a) What are the leadership styles (support, interaction facilitation, goal emphasis, work facilitation) of the administrators?

b) What are the social intelligence levels (social information processing, social awareness, social skills) of the administrators?

2. Are there significant differences between school principals and assistant principals in terms of;

a) Leadership styles (support, interaction facilitation, goal emphasis and work facilitation)

b) Levels of social intelligence (social information process, social awareness and social skills)

3. Does the social intelligence of the school administrators predict their leadership styles?

Method

Sample

In this study correlation and descriptive analysis methods were used. The study was conducted with 202 school administrators employed in the different cities of Turkey. Table 1 presents information related to the demographic characteristics of the sample. The data collection instruments were administered to the school administrators, who came from different parts of Turkey and attended the educational administrators' meeting held in Gaziantep, Turkey.

Table shows that 10.0% of the participants are female, and 89.1% of them are male. The majority of the participants are between the ages of 30 and 39 (41.1%). 59.4% of the participants are principals, and 40.6% of them are assistant principals.

Table 1. *Descriptive Statistics for Sample Distribution*

		F	**%**
Gender	Female	22	10,9
	Male	180	89,1
Age	18-29	10	5,0
	30-39	83	41,1
	40-49	72	35,6
	50-65	34	16,8
	65-above	3	1,5
Status	Principal	120	59,4
	Assistant Principal	82	40,6
	Total	202	100,0

Data collection tools

For this study two instruments were utilized as follows:

Leadership Styles Questionnaire

Leadership Styles Questionnaire was developed by Bowers and Seashore (1966) and adapted to Turkish by Günbayı (2005). This questionnaire was originally developed for teachers and aims to determine what leadership styles teachers would adopt if they became administrators. A sample statement in the questionnaire is as follows:

"If I become an administrator, I will support interpersonal relationships between myself and the other school staff."

Item wordings in the questionnaire were changed and made it suitable for administrators. A redesigned sample item is as follows:

"I as an administrator, support interpersonal relationships between myself and the other school staff."

The Cronbach Alpha Reliability Coefficients of the redesigned "Leadership Styles" Questionnaire are .77 for "support" sub-dimension, .76 for "interaction facilitation," .66 for "goal emphasis," and .64 for "work facilitation."

The questionnaire has 20 Likert-type items. The leadership styles are: Support, interaction facilitation, goal emphasis, work facilitation. The points received for each dimension in the questionnaire range between 1-5.

Social Skills-Tromso Social Intelligence Scale

The Tromso Social Intelligence Scale (TSIS) was developed by Silvera, Martinussen and Dahl (2001) in order to determine the social intelligence levels. It is a self-report type of instrument that has 21 items. This questionnaire was translated into Turkish by Doğan and Çetin (2009), who also analyzed the validity, reliability and factorial structure of the Turkish version of the scale. TSIS measures social intelligence in three sub-dimensions

Sub-dimensions

The items 2, 4, 5, 8, 11, 12, 13, 15, 16, 20 and 21 were reverse coded.

Social Information Processing	1-3-6-9-14-15-17-19	8
Social Skills	4-7-10-12-18-20	6
Social Awareness	2-5-8-11-13-16-21	*7*

Data Analysis

Descriptive statistics were used to analyze the data obtained from the research. For the sub-dimensions of social intelligence levels and leadership styles, the means, ranges and standard deviations were calculated.

In order to make the calculated mean more comprehensible, the mean was divided by the maximum score that could be obtained from that particular sub-dimension. With this way, percentages were found.[i] MANOVA was used to assess whether or not there is a significant difference between the leadership styles and social intelligence levels of the principals and assistant principals. Pearson Product –Moment correlation was performed to test the relationships between the social intelligence and the leadership styles.

Results

Findings of this study are presented as shown below, starting with the scores of leadership styles and social intelligence levels of the administrators. The data of the study were analyzed by MANOVA and Pearson product-moment correlation coefficient analysis techniques. Findings related to the first research question: What are the leadership styles (support, interaction facilitation, goal emphasis, work facilitation) and social intelligence levels of the administrators?

Table 2. *Descriptive Statistics for Leadership Styles and Social Intelligences of the Administrators*

	Sub-dimensions		**Mean**	**S.D.**	***Min.-Max.**	****%**
Leadership Styles	Support		19,78	3,043	5-25	**73**
	Interaction Facilitation		20,04	2,951	5-25	**75**
	Goal Emphasis		19,47	2,830	5-25	**72**
	Work Facilitation		19,43	2,713	5-25	**72**
			19,68	2,56		
	Total	73	78,73	10,25	20-100	**73**
Social Intelligence	Social Information Processing	30	29,22	5,319	8-40	**66**
	Social Skills	17	22,72	3,684	6-30	**69**
	Social Awareness	28	25,29	4,445	7-35	**65**
			25,74	3,51		
	TOTAL	**73**	**77,24**	**10,53**	**21-105**	**66**

Table 2 shows that the sub-dimension “interaction facilitation” had the maximum mean score. This means that school administrators used the leadership style of “interaction facilitation” more than the other styles. Concerning the social intelligence levels of the administrators, the maximum mean score belongs to the sub-dimension “social skills.” This shows that administrators used “social skills” level of social intelligence more than the other levels.

Findings related to the second research question: Are there significant differences between school principals and assistant principals in terms of;

1) Leadership styles (support, interaction facilitation, goal emphasis and work facilitation)

2) Levels of social intelligence (social information process, social awareness and social skills)

Table 3. *MANOVA Results for the Comparisons Between Principals and Assistant Principals Concerning Their Social Intelligences*

Social intelligence sub-dimensions	**Status**	**N**	**Mean**	**S.D.**	**F**	**Sig**
Social information processing	Principal	120	29,80	5,224	3,567	,60
	Assistant Principal	82	28,37	5,374		
Social skills	Principal	120	22,63	3,675	,173	,67
	Assistant Principal	82	22,85	3,715		
Social awareness	Principal	120	25,11	4,481	,485	,487
	Assistant Principal	82	25,56	4,405		
Social Total	Principal	120	77,55	10,561	,256	,613
	Assistant Principal	82	76,79	10,555		

Wilks' Lambda= ,966; $F_{(3,198)}$=2,3272; p= ,076

The findings of MANOVA analysis are summarized in Table 3. Concerning the sub-dimensions of the social intelligence, no significant difference was found between principals and assistant principals [WilksLambda(Λ,985; F(3.19)=2.32, p>0,01)]. This finding shows that social intelligence levels of the principals and assistant principals are similar.

Table 4. *MANOVA Results for the Comparisons between Principals and Assistant Principals Concerning their Leadership Styles*

Leadership sub-dimensions	**Status**	**N**	**Mean**	**S.D.**	**f**	**Sig**
Support	Principal	120	19,76	3,177	,013	,908
	Assistant Principal	82	19,81	2,855		
Interaction Facilitation	Principal	120	20,12	3,120	,219	,640
	Assistant Principal	82	19,92	2,697		
Goal Emphasis	Principal	120	19,54	3,006	,187	,666
	Assistant Principal	82	19,36	2,565		
Work Facilitation	Principal	120	19,59	2,714	1,041	,309
	Assistant Principal	82	19,19	2,710		
Total	Principal	120	79,02	10,73	,239	,625
	Assistant Principal	82	78,30	9,559		

Wilks' Lambda= ,985; $F_{(4,197)}$=,756; p= ,555

Table 4 summarizes the results of the MANOVA statistics. No significant difference was found between principals and assistant principals concerning their leadership styles and the sub-dimensions of leadership styles (support, interaction facilitation, goal emphasis, work facilitation) [WilksLambda (Λ,985; F(4.19)= .756, p>0,01)] This finding shows that the leadership styles of the principals and assistant principals are similar.

Findings related to the third research question: Does the social intelligence of the school administrators predict their leadership styles?

Table 5 shows that the sub-dimensions of social intelligence has a moderate and a significant relationship with the leadership styles of the administrators (R=0.39, R^2 =0.15, p<.05). These sub-dimensions explain 15% of the variance in the total leadership styles. According to the standardized regression coefficients (β), the order of importance of the predictor variables for the leadership styles of the administrators are as follows: social information processing, social skills and social awareness. The t-test results concerning the

significance of the regression coefficients show that social information processing and social skills variables significantly predict the leadership styles of the administrators.

Table 5. *Regression Analysis as Predicting the Relationship between the School Administrators' Social İntelligence and Their Leadership Styles*

Predictor Variables	**Criterion Variables**									
	Leadership		**Support**		**Interaction facilitation**		**Goal Emphasis**		**Work Facilitaiton**	
Social Intelligence	β	T	B	T	β	T	β	T	B	T
Constant	-	10.07*	-	7.03*	-	8.38*	-	10.64*	-	9.33
Social Information Processing	.21	2.71*	.19	2.52*	.27	3.53*	.13	1.66	.14	1.74
Social Awareness	.08	1.14	.14	1.94	.08	1.16	-.03	-.47	.10	1.42
Social Skills	.18	2.07*	.20	2.39*	.11	1.27	.14	1.51	.18	2.11*
	R= .39 R^2= .15 F =12.01* *p< .05		R= .43 R^2= .18 F= 15.32* *p<.05		R= .39 R^2= .15 F= 12.06* *p< .05		R= .23 R^2= .05 F= 3.80* *p< .05		R= .35 R^2= .12 F= 9.34* *p< .05	

Social information processing, social awareness and social skills as the sub-dimensions of social intelligence have a significant relationship with the "support" sub-dimension of the leadership styles (R=0.43, R^2 =0.18, p<.05). The sub-dimensions of social intelligence explain 18% of the total variance of "support." According to the standardized regression coefficients, the order of importance of the predictor variables for "support" is as follows; social information processing, social skills and social awareness. The t-test results concerning the significance of the regression coefficients show that social information processing and social skills variables significantly predict "support."

The sub-dimensions of social intelligence which are social information processing, social awareness and social skills have a significant relationship with "interaction facilitator" sub-dimension of leadership styles (R=0.39, R^2 =0.15, p<.05). The sub-dimensions of social intelligence explain 18% of the total variance of "interaction facilitator. According to the standardized regression coefficients (β), the order of importance of the predictor variables for "interaction facilitator" are as follows: social information processing, social skills and social awareness. The t-test results concerning the significance of the regression coefficients, show that only "social information processing" significantly predict "interaction facilitator."

Social information processing, social awareness and social skills as the sub-dimensions of social intelligence has a low and a significant relationship with "goal emphasis" sub-dimension of leadership styles (R=0.23, R^2 =0.05, p<.05). The sub-dimensions of social intelligence explain 5% of the total variance of goal emphasis. According to the standardized regression coefficient (β), the order of importance of the predictor variables for "goal emphasis" are as follows: social skills, social information processing and social awareness. The t-test results concerning the significance of the regression coefficients show that these variables did not significantly predict "goal emphasis."

Social information processing, social awareness and social skills as the sub-dimensions of social intelligence has a significant relationship with the sub-dimension "work

facilitator. (R=0.35, R^2 =12, p<.05). The sub-dimensions of social intelligence explain 12% of the total variance of "work facilitator." According to the standardized regression coefficients (β) the order of importance of the predictor variables for "work facilitator" are as follows: social skills, social information processing and social awareness. The t-test results concerning the significance of the regression coefficients show that only "social skills" variable significantly predict "work facilitator."

Discussion and Conclusions

The relationship between social intelligence levels of the school administrators with the sub-dimensions of social information processing, social skills and social awareness, and their leadership styles with the sub-dimensions of support, interaction facilitation, goal emphasis and work facilitation were examined in this study.

The findings related to the first research question showed that the "interaction facilitation" sub-dimension of the "leadership styles" had the maximum mean score. Yet, there are not many differences between the mean scores of the sub-dimensions of the leadership styles. This situation shows that although the administrators used the leadership style of "interaction facilitation" more than the other leadership styles, they gave importance to other leadership styles (support, goal emphasis, work facilitation) in a similar level. It is significant that the administrators of the present study gave a considerable importance to "interaction facilitation" since it is an important aspect of leadership behavior. A similar study conducted by Ahmetoğlu, Premuzic and Furnham (2010) in their study examined how interpersonal relationship orientation predicted leadership capability. The researchers measured interpersonal relationship orientation through the training program called Fundamental Interpersonal Relationship Orientations-Behavior (FIRO-B) in order to predict leadership capability and managerial level of attainment. They conducted the study with 547 managers and executives from different countries and industries. The researchers also examined how intelligence and demographic characteristics predicted leadership and managerial level. The results showed that FIRO-B positively predicted leadership capability which is also influenced by intelligence and some demographic variables.

Concerning the social intelligence levels of the administrators, the present study revealed that "social skills" sub- dimension of the social intelligence received the maximum score. Yet, there are not many differences in the other mean scores of the sub-dimensions. This means that the social intelligence levels of the administrators are similar in all three dimensions. Social skills imply "communication skills such as active listening, acting boldly, establishing, maintaining, and breaking up a relationship" (Doğan and Cetin, 2009: 713). These characteristics are needed for effective interpersonal communication in organizations. Riggio and Reichard (2008) defined social skills in three components: social expressiveness, social sensitivity and social control. The researchers discussed how these skills as part of social intelligence are related to effective leadership in social settings.

The second research question was related to the comparisons between principals and assistant principals in terms of their social intelligence levels and leadership styles. The researcher expected to find some differences between principals and assistant principals concerning these variables due to the fact that in Turkish Education system, all authority belongs to the principals and assistant principals simply follow the orders of their superiors in the school hierarchy. However, the findings did not reveal any significant difference. This finding may reveal that in Turkish schools principals and assistant principals may perform similar duties and may not differ much in their roles and status as expected. These similar

characteristics may cause them to display similar leadership behaviors and approaches in social settings.

The findings of the third research question showed that the sub-dimensions of social intelligence significantly predicted the leadership styles of the administrators. This finding is also supported by Ahmetoğlu, Premuzic and Furnham's (2010) study that also revealed positive influence of interpersonal relationships on leadership effectiveness with the help of Fundamental Interpersonal Relationship Orientations-Behavior (FIRO-B) training program. There are other evidences that social skills dimension of social intelligence has a significant influence on leadership behaviors in social settings. Riggio *et al.* (2003) conducted three studies to examine the role of social/communication skills in leaders' effectiveness. These studies in general revealed that social skills led to leader satisfaction. Yet, the performances of only leaders with higher status were influenced by the social skills.

Carson's (2011) study conducted with 124 mid-to-upper level managers showed positive relationship between social skill and transformational leadership style. This type of leadership refers to the following behaviors: idealized influence, individualized consideration, intellectual stimulation and inspirational motivation (Avolio, Bass & Jung, 1999, cited in Carson, 2011). These leadership components may be different from the leadership styles discussed in the present study. Yet, Carson's research still gives us an idea about how social skill is positively related to effective leadership behaviors.

Mestry and Singh (2007) emphasize the importance of continuing professional development for principals. The authors examine the perceptions of principals on how the Advanced Certificate in Education (ACE) course influences their leadership styles. ACE is a new professional development programme initiated by the Faculty of Education in the University of Johannesburg and a non-governmental organization to help principals in South African Schools to develop their leadership skills. A similar program can be suggested in Turkey. Through such a programme principals can be offered some professional development courses by the universities, where they can learn the techniques of how to improve their emotional and social intelligence and leadership skills.

Limited research on the relationship between social intelligence and leadership necessitates further research on this subject. For example, this study can be replicated with other sample groups from different professions. Besides, "emotional intelligence" variable can be added to "social intelligence" and their relationship with leadership styles can be studied.

References

Ahmetoglu G, Premuzic T C & Furnham A (2010). Interpersonal relationship orientations, leadership, and managerial level: Assessing the practical usefulness of the FIRO_B in organizations. *International Journal of Selection and Assessment,* 18(2): 220-225.

Agaoglu E, Altınkurt Y, Yılmaz Y & Karaköse K (2012). Okul yöneticilerinin yeterlikleriyle ilişkin okul yöneticilerinin ve öğretmenlerin görüşleri (Kütahya ili). *Eğitim ve Bilim, 37*(164): 157-175.

Aydın A, Sarıer Y & Uysal Ş (2013). Okul müdürlerinin liderlik stillerinin, öğretmenlerin örgütsel bağlılığına ve iş doyumuna etkisi. *Kuram ve Uygulamada Eğitim Bilimleri, 13*(2): 795-811.

Babaoglan E & Litchka P 2010. An examination of leadership competencies of school principals in Turkey and the United States. *Eğitim ve Bilim,* 35(158): 58-74.

Birknerova Z (2011). Social and emotional intelligence in school environment. *Asian Social Science, 7*(10): 241-248.

Bowers D G & Seashore S E (1966). Predicting organizational effectiveness with a four factor theory of leadership. *Administrative Science Quarterly*, *11*(2): 247-256.

Bush T 2011. Preparing new principals in South Africa: the ACE: School leadership programme. *South African Journal of Education*, 31: 31-43.

Carson M A (2011). Antecedents of effective leadership: The relationships between, social skills, transformational leadership, leader effectiveness and trust in leadership. Unpublished PhD dissertation, The University of North Carolina at Charlotte, North Carolina.

Caruso D R & Salovey P (2004). *The emotionally intelligent manager: How to develop and use the four key emotional skills of leadership*. San Francisco: Jossey-Bass.

Deniz M (2012). Duygusal zeka boyutları ile liderlik uygulamaları arasındaki ilişki: Sağlık sektörü yöneticileri üzerine bir araştırma. *e-journal of New World Sciences Academy, 7*(2): 45-65.

Doğan T & Çetin B (2009). The Validity, reliability and factorial structure of the Turkish version of the Tromso Social Intelligence Scale. *Kuram ve Uygulamada Eğitim Bilimleri*, 9(2): 709-720.

Ekelund H & Adl R 2012. Globalization demands consistent leadership development, *BTS Insights*. Available at http://www.bts.com/docs/newsletter/bts-insights-globalization-demands-consistent-leadership-developmentD22AFEF0569D. Accessed 25 March 2015

Furtner M R, Rauthmann J F & Sachse P (2010). The socioemotionally intelligent self-reader: examining relations between self-leadership and socio-emotional intelligence. *Social Behavior and Personality*, *38*(9): 1191-1196.

Goleman D, Boyatzis R & McKee A (2004). *Primal leadership: Learning to lead with emotional intelligence*. Boston: Harvard Business School Press.

Goleman D (2006). The socially intelligent. *Educational Leadership*, *64*(1):76-81.

Goleman D & Boyatzis R (2008). Social intelligence and the biology of leadership. *Harvard Business Review*. Available at http://www.sladenconsulting.com/resources/Social%20Intelligence.pdf. Accessed 23 March 2015.

Günbayı İ (2005). Women and men teachers' approaches to leadership styles. *Social Behavior and Personality*, 33(7): 685-698.

Gündüz Y (2012). An investigation of the effective leadership behaviors of school principals. *e-Kuramsal Eğitim Bilim Dergisi,* 5(2): 237-253.

Hughes M, Thompson H L & Terrel J B (2009). *Working with either individuals or a large group in a team, understanding and responding to them requires social intelligence*. Handbook for Developing Emotional and Social Intelligence, California: Pfeiffer Publishing

Kobe L M, Palmon R R & Rickers J D (2001). Self-reported leadership experiences in relation to inventoried social and emotional intelligence. *Current Psychology*, *20*(2): 154-163.

Kotze M & Venter I (2010). Emotional intelligence as a predictor of leadership effectiveness in the workplace: An empirical study. *The International Journal of the Humanities, 8*(2): 31-49.

Küçüker E & Gürbüz A (2012). Türkiye'de uygulanan dış kaynaklı eğitim projeleri nasıl bir toplumsal dönüşümü hedefliyor?. *Milli Eğitim, 194*: 59-71.

Mestry R & Singh P (2007). Continuing professional development for principals: a South African perspective. *South African Journal of Education, 27*(3): 477-490.

Riggio R E, Riggio H R, Salinas C & Cole E J (2003). The role of social and emotional communication skills in leader emergence and effectiveness. *Group Dynamics: Theory, Research, and Practice, 7*(2): 83-103.

Riggio R E & Reichard R J (2008). The emotional and social intelligences of effective leadership: An emotional and social skill approach. *Journal of Managerial Psychology, 23*(2): 169-185.

Salovey P & Mayer J D (1990). Emotional intelligence. *Imagination, Cognition and Personality, 9*: 185-211.

Seal C R, Boyatzis R E & Bailey J R (2006). Fostering emotional and social intelligence in organizations. *Organization Management Journal, 3*(3): 190-209.

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

Uğurlu O & Hovardaoğlu S (2011). Liderlik davranışının değerlendirilmesinde liderin cinsiyeti, değerlendiren kişinin cinsiyeti ve liderlik stili arasındaki ilişki. *Türk Psikoloji Dergisi, 26*(68): 14-27.

Yun S, Cox J & Sims H P (2007). Leadership and teamwork: The effects of leadership and job satisfaction on team citizenship. *International Journal of Leadership Studies, 2*(3): 171-193.

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The Effectiveness of a Visual Thinking Networks Training Program on improving Visual Thinking Skills and Science Achievement among Hard of Hearing Students with Visual Perception Disability

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Abstract
This study investigated the effect of using Visual thinking networking on improving visual thinking , visual perception and science achievement among hard of hearing students with visual perception disability. Eight students identified as having hard of hearing and deafness participated. The sample was divided into two groups; experimental (n= 4)and control (n= 4). Re-post and follow up tests were employed for data analysis. Findings from this study indicated the effectiveness of Visual thinking networking on improving visual thinking, visual perception and science achievement in the target students. On the basis of the findings, the study advocated for the effectiveness of Visual thinking networking on visual thinking, visual perception and science achievement among hard of hearing students with visual perception disability.

Keywords :*Visual thinking networking, visual thinking, visual perception, science achievement, hard of hearing students with visual perception disability*.

Introduction

Visual thinking networking represents the most recent metacognitive and knowledge representation strategy (KRS) used to enhance student learning (Fisher, Wandersee & Moody, 2000; Longo 2001a, 2001b, 2002). As a new theory driven strategy VTN encourages the learner to integrate multiple ways of thinking that inform concept formation. VTN was being developed at the time Anderson (1991, 1992, 1997) began paving a crucial path in science education, linking the empirical and theoretical findings from neurobiology and neurocognitive science to a constructivist view of learning.(Longo, 2001a).

Students use VTNs for organizing their science knowledge by constructing black and white or color network diagrams on paper using semantic and pictorial elements to represent knowledge relationships. It is important to note that although Cliburn (1990) used color coding in concept mapping, no study had been previously conducted to test the effectiveness of adding this attribute with respect to student learning and achievement. As a metacognitive learning strategy, VTN "empowers the learner to take care of her/his own learning in a highly meaningful fashion" (Novak, 1998a, p.1). The term "visual thinking" is derived from the work of Rudolf Arnheim (1969). For Arnheim "the perception of shape marks the beginning of concept formation" (p. 27).

Bloom's contextual mapping (1995) represented a critical shift towards enhancing learning away from students constructing meaning solely derived from propositional (semantic) relationship to a strategy that encourages the "emotion-values-aesthetics, interpretive frameworks, personal experiences, and metaphors" (p. 169). Visual thinking networking extends the notion of Bloom's "contexts of meaning" by offering a place for learners to incorporate her/his visual metaphors as referents for non-concrete experiences. These metaphors specify meaning and aesthetic quality with the use of color and symbolic visualizations, in addition to incorporating knowledge derived from propositional relationships. VTN, then, is a tool for the learner to represent, organize, and revise her/his meaning-making of science knowledge by chunking and linking conceptual labels with symbolic visualizations of scientific concepts, processes, and experiences into a coherent whole.

The planning, organizing, the making of the chunks and the connections are undirected by the teacher and become an aspect that is most crucially idiosyncratic and imaginative.(Longo, 2001a).

Visual thinking networking among the deaf and hard of hearing students

The importance of visual thinking networking highlights as it helps to focus learner attention easily on ideas and make it easy to focus, freedom of thought and exploration, provide feedback to the ideas and complex meanings, allow changing and developing ideas easily and to express it in understanding way and characterized by diversity to meet all learners needs (Saleh & Mohamed, 2014)

Many deaf and hard of hearing students are passive learners; many of them process text by focusing on understanding word meanings first before analyzing the whole text (Long & Aldersley, 1984). visual thinking networking can be a tool for visual thinking ; those students become active learners through the use of visual thinking networking . Visual thinking networking is a way to help students visually decipher the meanings of learning materials. To learn meaningfully, individuals must choose to relate to new knowledge to relevant concepts and propositions they already know. This can be accomplished through visual thinking networking. Visual thinking networking "represent meaningful relationships between concepts in the form of propositions" (Novak & Gowin, 1985) (p. 15).

The construction of a visual thinking network can be viewed as a problem space to solve with a goal of building a meaningful structural knowledge base that shows relationships between concepts, principles, and theories. Overtime the novice learner should then have the capacity to transfer this problem solving skill to new situations. According to Novak (1998), since "metacognitive strategies are strategies that empower the learner to take charge of her/his own learning in a highly meaningful fashion… the learner who has knowledge organized into large, integrated conceptual frameworks can assimilate more related knowledge in less time and with greater potential for transfer and application" (p. 1).

Visual thinking networking represent mental map followed by it the learner during practicing education process and thinking as it sets a starting point and finishing with putting technique to develop learners learning and monitor performance, to identify strengths points to be strengthened and weaknesses to be improved in order to achieve the desired goals of the education process, as it provides organized knowledge which is working to find a relations and interdependence between them and the abstract concepts which are involved, and practicing different science processes among students(Saleh& Mohamed, 2014). According to Mourad Ali (2012) , it is effective across subject areas because they provide visual cues designed to assist students in their understanding of information by organizing information.

Visual thinking and science teaching

Visual thinking presents information structurally and serially. Visual thinking helps to understand the centre, lines and lets mentally move to the other place. It fixes partial figures and that is why it is needed for orientation in the maps in geography. Gazit E. (2005) proves the importance of visual thinking in astronomy. Visual thinking can help to understand the movement of stars and the laws of the solar system in this range. Visual thinking is important for spatial processes in science education (Bilbokaitė,2008) and etc. Spatial thinking is a kind of visual thinking or, it could be said, the part of visual thinking because it contains all operations suited with the location in space and perception of its variations. Since spatial thinking has very clear functions it is analyzed as an independent kind of thinking in scientific literature.

The importance of visual thinking in natural science disciplines is growing because of spatial abilities. These abilities are frequently needed for perception, comprehension and realization of the concepts. Visual thinking is given a sense because of visual representations. The last mentioned objects are the mostly recommended communication mode. The visual presentations show the full-scale perspective view of functions and connections (Bilbokaitė, 2008).

Visual thinking networking strategies encourages learners to choose meaningful color and symbolic visualizations to the scientific concepts, processes, and experiences into a coherent whole. In doing so, we encourage a broadened epistemological view of color as knowledge. This view supports Eisner's arguments for "a transformation of the ways in which we teach, the curriculum resources we employ, and the forms we allow students to use in order to represent what they have come to know" .(Longo, 2001a).

Further research is necessary to build on the vast amount of research into visual thinking networking with the deaf and hard of hearing students. This will allow researchers to determine how visual thinking networking can be best used as an intervention with the deaf and hard of hearing students as there is a dearth of research with this population.

Method

Participants

Eight hard of hearing with visual perception disability middle first grade students from Abi Muhjin Althagafi school in Taif participated in the present study.They were divided evenly into two groups;one experimental and the other was control group. Their age ranged from (12 to 13.6 years, M=13.1, SD 0.32) and their IQ ranged from 100-105, M=103,5 , SD= 1.92) .

The two groups were matched on age, IQ, visual thinking, science achievement, and visual perception (pre-test).

Table 1. *Mann-Whitney, Z Value, and significance level for experimental and control groups on age IQ, visual thinking, science achievement, and visual perception (pre-test).*

Variable	**Ex Group N=4**		**Con. Group N=4**		**Mann-Whitney**	**Z Value**	**Sig**
	Mean Ranks	Sum Ranks	Mean Ranks	Sum Ranks			
Age	4	16	5	20	6	0.584	-
IQ	4	16	5	20	6	0.584	-
Visual Thinking	3.38	13.50	5.63	22.50	3.5	1.340	-
Science Achievement	4.75	19	4.25	17	7	0.316	-
Visual Perception	3.75	15	5.25	21	5	0,949	-

Table 1 shows that all Z values did not reach significance level. This indicated that the two groups did not differ in age, IQ, visual thinking, science achievement, and visual perception (pre-test).

Instruments

Nonverbal Intelligence Test (Saleh, 1978). Originally, depends on perceptions of the relationship between a range of shapes and the selection of the different one between the Group's units. It contains 60 questions, each question has five shapes, from which one is different. The respondent should recognize this different shape. The test lasts for 10 minutes. The test has good reliability and validity.

Visual Thinking Test .It consists of five sub skills; namely recognizing the visual shape skill, Analyzing the visual shape skill , relating relations in visual shape skill,

interpretation of ambiguity in the visual shape skill, and extracting meaning from visual shape skill. It is a multiple choice test. The test lasts for 40 minutes. The test has good reliability and validity.

Visual Perception Test. It contains 8 questions. The first question has some geometric shapes . The respondent chooses the shapes that is typical to the one on the right of the box . In the second question, there are five pictures for a person , two of which are the same . The respondent says which are the same. In the third question , there are 3 series of pictures for which the respondent tells which picture is different . In the fourth questions, there are some scattered words.

The respondent finds the word above the web. In the fifth question, respondents complete the incomplete parts of the words. In the sixth question, there is a maze. The respondents help the rabbit to go to the end. In the seventh question, the respondents math the letter with the right word. In the eighth question, the respondents help the bear get to the snake . when the student scores 17 , this means that he has not visual perception disability. The test lasts for 55 minutes. The test has good reliability and validity.

Science Achievement Test. It assesses hard of hearing student's acquisition of facts , concepts and principles included in the " Nature of matter" Unit. The test has good reliability and validity.

Procedure

Pre-intervention testing: All the eight tudents completed the Nonverbal Intelligence Test , Visual Thinking Test, Visual Perception Test and Science Achievement Test.

General Instructional Procedures: Instruction was delivered to the students in Abi Muhjin Althagafi school in Taif. Permissions were obtained from students' fathers, and the school principal. Students received 3 training sessions a week, lasting for 45 minutes. The training program itself lasted for 21 sessions.

Design and Analysis

The effects of implementing visual thinking networking intervention on visual thinking skills and science achievement among hard of hearing students with visual perception disability were assessed using pre- post- and follow-up testing.

Results

The first objective of the study was to determine if use of visual thinking networking intervention would be more effective for the treatment group compared to the control group. For this purpose, the post intervention scores of both treatment and control groups were analyzed. Table 2 shows Z Value results for the differences in post- test mean rank scores between experimental and control groups in Visual Thinking Test . The table shows that (Z) value was (2.323). This value is significant at the level (0.01) in the favour of experimental group.

Table 2. *Z Values results for the differences in post- test mean rank scores between experimental and control groups in Visual Thinking Test*

Variables	**Groups**	**N**	**Mean Ranks**	**Sum Ranks**	**Mann-Whitney**	**Z Value**	**Sig.**
Visual Thinking	Ex	4	2.5	10	Zero	2.323	0.01
	Cont.	4	6.5	26			

The second objective of the study was to determine if use of visual thinking networking intervention would be more effective for the treatment group compared to the control group .For this purpose, the post intervention scores of both treatment and control groups were analyzed. Table 3. shows Z Value results for the differences in post- test mean rank scores between experimental and control groups in Visual Perception Test . The table shows that (Z) value was (2.337). This value is significant at the level (0.01) in the favour of experimental group.

Table 3. *Z Values results for the differences in post- test mean rank scores between experimental and control groups in Visual Thinking Test*

Variables	**Groups**	**N**	**Mean Ranks**	**Sum Ranks**	**Mann-Whitney**	**Z Value**	**Sig.**
Visual	Ex	4	2.5	10	Zero	2.337	0.01
Perception	Cont.	4	6.5	26			

The third objective of the study was to determine if use of visual thinking networking intervention would be more effective for the treatment group compared to the control group .For this purpose, the post intervention scores of both treatment and control groups were analyzed. Table 4 shows Z Value results for the differences in post- test mean rank scores between experimental and control groups in Science Achievement Test. The table shows that (Z) value was (2.337). This value is significant at the level (0.01) in favour of experimental group.

Table 4. *Z Values results for the differences in post-test mean rank scores between experimental and control groups in Visual Thinking Test*

Variables	**Groups**	**N**	**Mean Ranks**	**Sum Ranks**	**Mann-Whitney**	**Z Value**	**Sig.**
Science	Ex	4	2.5	10	Zero	2.337	0.01
Achievement	Cont.	4	6.5	26			

The fourth objective of the study was to determine the effect of visual thinking networking intervention on improving visual thinking. The children's performance on visual thinking was measured post and follow up intervention. Table 5 shows Z Value result for the differences in post and follow up test mean rank scores for the experimental group in visual thinking test. The table shows that (Z) value did not reach the significance level .This indicates that this are not differences in post and follow up test mean rank scores for the experimental group in visual thinking test .

Table 5. *Z Values results for the comparison of mean rank scores of experimental group at post and follow up intervention in visual thinking test*

Variable	**Ranks**	**No.**	**Mean Ranks**	**Sum Ranks**	**Z Value**	**Sig.**
Visual	Negative	2	2	2	0.577	Not
Thinking	Positive	2	4	2		
	Equal	0				
	Total	4				

The fifth objective of the study was to determine the effect of visual thinking networking intervention on improving visual perception. The children's performances on visual perception was measured post and follow up intervention. Table 6. shows Z Value result for the differences in post and follow up test mean rank scores for the experimental group in visual perception test. The table shows that (Z) value did not reach the significance

level .This indicates that this are not differences in post and follow up test mean rank scores for the experimental group in visual perception test .

Table 6. *Z Values results for the comparison of mean rank scores of experimental group at post and follow up intervention in visual perception test*

Variable	Ranks	No.	Mean Ranks	Sum Ranks	Z Value	Sig.
Visual Perception	Negative	1	2	2	0.577	Not
	Positive	2	2	4		
	Equal	1				
	Total	4				

The sixth objective of the study was to determine the effect of visual thinking networking intervention on improving science achievement. The children's performances on science achievement were measured post and follow up intervention. Table 7. shows Z Value result for the differences in post and follow up test mean rank scores for the experimental group in science achievement test. The table shows that (Z) value did not reach the significance level .This indicates that this are not differences in post and follow up test mean rank scores for the experimental group in science achievement test .

Table 7. *Z Values results for the comparison of mean rank scores of experimental group at post and follow up intervention in science achievement test*

Variable	Ranks	No.	Mean Ranks	Sum Ranks	Z Value	Sig.
Visual Perception	Negative	2	2	4	0.576	Not
	Positive	1	2	2		
	Equal	1				
	Total	4				

Discussion

The present study evaluated the effects of visual thinking networking intervention on improving visual thinking, visual perception and science achievement among hard of hearing students with visual perception disability. The study results showed that the visual thinking networking intervention was effective in improving visual thinking skills and science achievement of all children participated in this study.

Furthermore, the children in this study did not receive any type of reinforcement or behavior modification strategies while participating in the sessions. Removing strategies such as prompting techniques, token systems, and other reinforcement systems reduced the potential for confounds within the study. Therefore, one can conclude that the visual thinking networking intervention was primarily responsible for the change in the visual thinking, visual perception and science achievement of children participated in the study. This goes in line with the results of the many studies in this field (e.g, Ali, 2013; AbdulHamid, 2013; Abdo, 2012; AbdMola, 2010; AbdAlazeim, 2009)

In summary, visual thinking networking intervention effectively improved the visual thinking, visual perception and science achievement among hard of hearing students with visual perception disability who participated in this study. Overall, results from this study contribute to the visual thinking networking literature for improving the visual thinking, visual perception and science achievement among hard of hearing students with visual

perception disability. The present study lends empirical support to the notion that hard of hearing students with visual perception disability can be taught and can learn appropriately.

Implications

The results of this study have several important implications. This study adds to the literature on the effectiveness of visual thinking networking intervention among hard of hearing students with visual perception disability. Results appear to indicate that visual thinking networking intervention is an effective instructional strategy for improving visual thinking , visual perception and science achievement among hard of hearing students with visual perception disability. visual thinking networking intervention provides students with a visual representation of the content in a text and this may facilitate the learning of content knowledge.

References

Abdulkader K.(2013) The effectiveness of the development of the decision (science education for the hearing impaired) using a mixture of learning in academic achievement and the development of some teaching skills and visual thinking among students of the Department of Special Education - Taif University. *Sohag Journal of Education* , 34, 129-153.

AbdMola, U.(2010). *The effectiveness of a program based on social constructivism learning using the mixture in the teaching of social studies on the development of geographic concepts and visual thinking and life skills among deaf prep students.* Doctoral Thesis , Sohag University.

Ali, M. (2013). *Effective use of thinking maps in the development of reasoning skills and Social Studies achievement at the junior high school students*. Master thesis.

Arnheim, R. (1969). *Visual thinking*. Berkeley: University of California Press.

Cliburn, W.J. (1990). Concept maps to promote meaningful learning. *Journal of College Science Teaching*, 19(4) 212-217.

Bilbokaitė, R.(2008). Analysis of Visual Thinking Meaning in Science Education. *Problem of Education in the 21st Century* , 7-13.

Fisher, K.M., Wandersee, J.H., & D. E. Moody. (2000). *Mapping biology knowledge*. Kluwer Academic Publishers, Dordrecht, Netherlands.

Long, G. & Aldersley, S. (1984). Networking: Application with hearing-impaired students. In C. D. Holley & D. F. Dansereau (Eds.), *Spatial Learning Strategies: Techniques, Applications, and Related 1ssues* (pp. 109-123). Orlando, Florida: Academic Press, Inc.

Longo, P.J., (2001a). *Visual thinking networking promotes long-term meaningful learning and achievement for ninth grade earth science students*. Ph.D. Thesis. Teachers College, Columbia University, New York, N.Y.

Longo, P.J., (2001b). What happens to student learning when color is added to a new knowledge representation strategy? Implications from visual thinking networking. *Paper presented at the NARST session of the National Science Teachers Association,* March 23, 2001, St. Louis, MO. (ERIC Document No. ED454095).

Mourad Ali (2012). The Effects of Advance Graphic Organizers Strategy Intervention on Academic Achievement, Self efficacy , and Motivation to learn Social Studies in Learning Disabled second year Prep Students . *International Journal of Psycho-Educational Sciences,* 1(1), pp.2 -12.

Novak, J.D. (1981). Applying learning psychology and philosophy of science to biology teaching. *American Biology Teacher,* 43(1), 12-20.

Novak, J. D. & Gowin, D. B. (1985). *Learning how to learn.* New York, NY: Cambridge University Press.

Salah A. Al-naqa, Mohammed F. & Abu-Owda. (2014). The Effect of Using Thinking Maps Strategy to Improve Science Processes in Science Course on Female Students of the Ninth Grade. *Science Journal of Education. 2*(2), 44-49.

Correlations for Academic Procrastination and Five Factor Personality Traits Among Secondary School Students

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Abstract
The purpose of this study was to explore the relationship between personality traits profiled by Personality Test Based on Adjectives (Neuroticism, Conscientiousness, Extraversion, Agreeableness, Open to experience) and academic procrastination. The research is based on a convenience sample of 200 first year secondary school students from two schools located in Mansoura Governorate. The mean age was 15.7 years (SD= .823). Pearson Product Moment Correlation analysis reported that there were no significant associations between all the personality traits profiled by Personality Test Based on Adjectives (Neuroticism, Conscientiousness, Extraversion, Agreeableness, Open to experience) and academic procrastination.

Key words: Personality traits, academic procrastination, first year secondary school students.

Introduction

Procrastination is defined in many different ways. It is the tendency to avoid tasks or duties that are mandatory to complete (Andreou 2007; Steel 2007), an unnecessary self-depression resulting from the postponement of responsibilities (Solomon, & Rothblum,1984), a strategy for a person to protect self-respect (Lee 2005), a function of behavioral output-putting off the action, or the cognitive output-putting off making a decision (Rosario et al. 2009), the reflection of the delayed tasks in school life (Haycock et al. 1998).Wesley (1994) indicates that academic procrastination is a negative parameter for academic performance of students. Many researchers also consider that academic procrastination causes academic failure, withdrawal of tough courses, absenteeism and school dropouts (Rothblum et al. 1986).It is a trait or behavioral disposition to postpone or delay performing a task or making decisions (Kachgal et al., 2001). Additionally, procrastination has been seen as an impediment to academic success because it decreases the quality and quantity of learning while increasing the severity of stress and negative outcomes in students' lives (Howell & Watson, 2007). The literature has examined procrastination because it involves affective, cognitive, and behavioral mechanisms (Chu & Choi., 2005).

The abovementioned negative results have encouraged researchers to search for relationships between procrastination and other psychological components. They have found a negative correlation between procrastination and academic performance (Steel 2007), self-efficacy (Cerino 2014; Katz et al. 2014), as well as self confidence (Van Erde 2000) and self-esteem (Ferrari 2000). According to Klassen et al. (2010), the lack of the ability of using different strategies, regulating the thoughts and learning process, which are the indicators of self-regulating behavior may cause reluctance of finishing the tasks. On the other hand, Chu and Choi (2005) have declared that some students procrastinate intentionally in order to perform better because those students study much better under stress and time pressure.

According to Firouzeh and Jalil, (2011) procrastination is a weak point of personality and leads to low self-confidence. Perception of university students of themselves as procrastinator varies according to different researcher as it is 95% reported by Ellis and Knaus (1977), 46% by Solomon and Rothblum (1984) and 75% reported by Potts (1987). Furthermore, studies also concluded that the most of the students demonstrate unrelenting and consistent procrastination in daily study activities (Day, Mensink, & O' Sullivan, 2000; Onwuegbuzie, 2000).

It is seen among university students that they use to bunk classes (Rothblum, Solomon, & Murakami, 1986), have low academic performance (Fritzsche, Rapp, & Hickson, 2003), and tardiness (Rothblum, Solomon, & Murakami, 1986).

Academic Procrastination and Personal Traits

Procrastination may have an effect on students' personality traits and their learning. Steel et. al.(2001). addressed this situation by creating scales based on both observed behaviors and a theoretical self-reports, and using these scales to determine procrastination's performance, mood, and personality correlates. One-hundred and fifty-two undergraduates were measured at six time periods during an 11-week introductory psychology course. The course consisted of a computer-administered personalized system of instruction, a system noted for susceptibility to procrastination. Results show that procrastination is an excellent predictor of performance, though some final-hour catching-up is possible. Efforts to clarify its causes were mixed. Procrastination does reflect an excessive discrepancy between work intentions and work actions, as procrastinators tend to have a larger than average intention-action gap, especially at the beginning of the course.

On the other hand, procrastination's correlations with mood (i.e., state and trait affect) and personality (i.e., neuroticism, self-esteem, locus of control, extraversion, psychoticism, dominance, and self-monitoring) are uncertain as results diverge depending upon whether observed or self-report procrastination criteria are used. This dichotomy indicates that self-report procrastination likely reflects a self-assessment influenced by actual behavior but also significantly contaminated by self-concept.

Chooi Seong Lai et al.(2015) examined the association between personality traits and procrastination behavior among 148 university students (52 males, 96 females). Respondents completed two measurements - Leonard Personality Inventory and General Procrastination Scale. Descriptive analysis indicated that Diploma Year 2 students scored the highest (Mean = 58.47), while Degree Year 1 students scored the lowest (Mean = 54.75) in the level of procrastination. Personality traits profiling consistently indicated that the most dominant personality trait of Diploma Year 2, Degree Year 1, 2 and 3 students is Neutral trait (Mean = 78.05, 80.75, 78.84 & 76.82); while the least dominant trait is Decisiveness (Mean = 67.48, 68.25, 69.89 & 68.33). The most dominant personality traits among male university students are Openness (Mean = 75.77), Decisiveness (Mean = 68.69) and Neutral (Mean = 78.48), while female university students are Analytical (Mean = 73.36) and Relational (Mean = 72.42). Meanwhile, male students scored slightly higher in procrastination (Mean = 58.25) as compared to females (Mean = 57.09). However, independent sample t-test indicated no significant gender differences in respondents' level of academic procrastination [t (146) = .702, p > .05]. Finally, correlational analyzes reported no significant associations between the five personality traits with procrastination behavior among university students.

In a recent study by Karatas(2015) that directly focused on the relationship of academic procrastination, personality traits, and academic achievement. The results from the preliminary analysis showed that there was a strong relationship among these variables, especially with academic achievement

Fathi Abdul Hamid Abdul Kader &Mourad Ali Eissa 's study(2015) study was to explore the relationship between personality traits profiled by Personality Test Based on Adjectives(Neuroticism, Conscientiousness, Extraversion, Agreeableness, Open to experience) and academic procrastination. The research is based on a convenience sample of 120 undergraduate students (all of were males) from a variety of departments at Zagazig Faculty of Education, Egypt. The mean age was 19.1 years (SD= 6.3). Pearson Product Moment Correlation analysis reported that there were no significant associations between all the personality traits profiled by Personality Test Based on Adjectives (Neuroticism, Conscientiousness, Extraversion, Agreeableness, Open to experience) and academic

procrastination. The purpose of this study is to explore the relationship between academic procrastination and personality traits among first year secondary school students.

Methods

Participants

The research is based on a convenience sample of 200 first year secondary school students from two schools located in Mansoura Governorate, Egypt. The mean age was 15.7 years (SD= .823). The participants were asked to complete the questionnaires. The students were notified that participation in the research was voluntary and anonymous.

Instruments

Academic Procrastination Scale (APS; Justin, 2011). The APS was developed by means of a pilot study and the SONA participant pool at the University of Texas at Arlington. Item analysis, ensuring that items were highly correlated with total test scores, was used as one criterion for item selection. The APS consists of 25 items and has exhibited a high reliability, $\alpha = .95$. Using item discrimination indicators for item retention, however, may have auto-inflated reliability to some extent. Nevertheless, reliability was extremely high. The APS was validated using 86 undergraduates consisting of diverse academic majors and years of college completion.

Items were scored using a 5-point Likert-type scale where 1 indicates disagree with the item and 5 indicates agree with the item. For example, a participant who agrees to the question "I put off projects until the last minute" would be indicative of an individual who procrastinates to a greater extent. Items were reverse scored for all scales when applicable, and a total across items was created.

Personality Test Based on Adjectives (PTBA) was developed by Bacanli et al. (2009) based on the model of Big Five Personality Traits (Costa and McCrae 1992). PTBA is a Likert type scale including 40 pairs of opposite adjectives that can be graded from 1 to 7. PTBA consists of five dimensions: extraversion (9 items), agreeableness (9 items), conscientiousness (7 items), neuroticism (7 items), and openness to experience (8 items). Five dimensions explain 52.63 percent of the variance of PTBA. The test-retest reliability coefficient of PTBA ranged from .68 to .86 for all dimensions. The Cronbach Alpha coefficient of the dimensions of PTBA was found to be.89 for extraversion, .87 for agreeableness, .88 for conscientiousness, .73 for neuroticism, and .80 for openness to experience.

Procedure

Scales were administered to students in groups, in a class environment. Before administration of the scales, students were given the requisite information about the aim of the research and how the measurement scales should be answered. The relations between students' academic procrastination and the five factor personality traits were investigated.

Results

Research Question: Are there significant relationships between personality traits and procrastination among first year secondary school students?

Table 1. *Correlation between academic procrastination and personality traits*

Variables	Academic procrastination
Neuroticism	
r	.025
sig.(2-tailed)	.079
N	200
Conscientiousness	
r	.036
sig.(2-tailed)	.048
N	200
Extraversion	
r	-.109
sig.(2-tailed)	.068
N	200
Agreeableness	
r	-.080
sig.(2-tailed)	.688
N	200
Open to experience	
r	.177
sig.(2-tailed)	-.085
N	200

Pearson Product Moment Correlation analysis reported that there were no significant associations between all the personality traits profiled by Personality Test Based on Adjectives (Neuroticism, Conscientiousness, Extraversion, Agreeableness, Open to experience) and academic procrastination.

Discussion and Conclusion

The present study seeks to explore the different types of personality and academic procrastination by examining the personality constructs from a traits perspective. The results obtained with this first sample indicated that there were no association between the types of personality and procrastination. This finding goes in the same line with the finding obtained by Chooi Seong Lai et a.(2015), and Fathi Abdul Hamid Abdul Kader & Mourad Ali Eissa (2015) which indicated that there were no association between the types of personality and procrastination, and the association between personality and procrastination is more complex than what the past theorists had predicted (Fleet et al., 1992, 2012).

Limitations and Further Study

One limitation of the current study stems from the fact that academic procrastination was assessed via a self-report instrument, rather than on actual behavior, because it is possible that students may give socially desirable responses. Although self-report measures provide a simple, time efficient approach to measuring aspects of human thought and behavior, the limitation of these measures must be considered in this study. Self-report bias describes when people answer questions about themselves in a manner that is socially desirable, and they often respond in a way they want to see themselves rather than the truth.

However, according to Rothblum et al. (1986, p. 388), self-reported procrastination has been validated against delay in taking self-paced quizzes (Solomon & Rothblum, 1984),

delay in submitting course assignments (Rothblum, Beswick & Mann, 1984), delay in participation in psychology experiments (Solomon & Rothblum, 1984), and lower course grades (Rothblum et al., 1984) . Nonetheless, future studies in this area should consider using behavioral measures of academic procrastination in addition to self-report instruments.

A second limitation of the current study stems from the fact that the scope of the study is limited to the data collected from only boys. Future research should consider gender differences.

References

Andreou C (2007). Understanding procrastination. *Journal for the Theory of Social Behavior*, 37: 183-193.

Bacanli H, Ilhan T, & Aslan S (2009). Development of a personality scale based on Five Factor Theory: Adjective Based Personality Test (ABPT). *Journal of Turkish Educational Sciences*, 7(2): 261–279.

Cerino ES (2014). Relationships between academic motivation, self-efficacy, and academic procrastination. *Psi Chi Journal of Psychological Research*, 19(4): 156-163.

Chooi Seong Lai, Abdul Rahman bin Ahmad Badayai, Khartikka Chandrasekaran, Siew Yen Lee, Rubini Kulasingam. (2015).An Exploratory Study on Personality Traits and Procrastination Among University Students. American *Journal of Applied Psycholog,*. Vol. 4, No. 3-1 , pp. 21-26.

Chu, A. H. C., & Choi, J. N. (2005). Rethinking procrastination: Positive effects of "active" procrastination behavior on attitudes and performance. *Journal of Social Psychology*, *145*, 245–264.

Day, V., Mensink, D., & O'Sullivan, M. (2000). Patterns of academic procrastination. *Journal of College Reading and Learning*, 30, 120-134.

Ellis, A., & Knaus, W. J. (1977). *Overcoming procrastination*. New York, NY: Institute for Rational Living.

Ferrari JR (2000). Procrastination and attention: Factor analysis of attention deficit, boredomness, intelligence, self-esteem, and task delay frequencies. *Journal of Social Behavior and Personality*, 15: 185- 196.

Fleet, G.L., Blankstein, K.K., Hewitt, P.L., Koledin, S.P. (1992). Components of perfectionism and personalities in university students. *Social Behavior & Personality*, 20(2), 85-94.

Fleet, G.L., Stainton, M., Hewitt, P.L., Sherry, S.B., & Lay, C. (2012). Procrastination automatic thoughts as a personality construct: an analysis of the procrastinatory cognitions inventory. Springer Science. *Journal of Rational-Emotive & Cognitive-Behavior Therapy*, Volume 30, Issue 4, pp 223-236.

Fritzsche, B. Rapp, B. Y., & Hickson, K. C. (2003). Individual differences in academic procrastination tendency and writing success. *Personality and Individual Differences*, 35, 1549-1558.

Haycock, L. A., McCarthy, P., & Skay, C. L. (1998). Procrastination in college students: The role of self-efficacy and anxiety. *Journal of Counseling & Development*, *76*, 317–324.

Howell, A. J., & Watson, D. C. (2007). Procrastination: Associations with achievement goal orientation and learning strategies. *Personality and Individual Differences, 43*, 167–178.

Jiao, Q. G., DaRos-Voseles, D. A., Collins, K. M. T., & Onwuegbuzie, A. J. (2011). Academic procrastination and the performance of graduate level cooperative groups in research methods courses. *Journal of the Scholarship of Teaching and Learning*, 11(1), 119 138.

Justin, D.(2011) *Finally , my thesis about procrastination* . Master of science in Psychology, The University of Texas.

Kachgal, M. M., Hansen, L. S., & Nutter, K. J. (2001). Academic procrastination prevention/intervention: Strategies and recommendations. *Journal of Developmental Education, 25,* 14–24.

Karatas, H.(2015). Correlation among Academic Procrastination, Personality Traits, and Academic Achievement. *Anthropologist*, 20(1,2): 243-255.

Katz I, Eilot K, Nevo N(2014). "I'll do it later": Type of motivation, self-efficacy and homework procrastination. *Motivation and Emotion*, 38(1): 111-119.

Klassen RM, Ang RP, Chong WH, Krawchuk LL, Huan VS, Wong IYF, Yeo LS(2010). Academic procrastination in two settings: Motivation correlates, behavioral patterns, and negative impact of procrastination in Canada and Singapore. *Applied Psychology: An International Review*, 59(3): 361–379.

Lee E (2005). The relationship of motivation and flow experience to academic procrastination in university students.*The Journal of Genetic Psychology: Research and Theory on Human Development*, 166(1): 5-15.

Milgram, N., Mey-Tal, G., & Levison, Y. (1998). Procrastination, generalized or specific, in college students and their parents. *Personality and Individual Differences, 25,* 297–316.

Onwuegbuzie, A. (2000). Academic procrastinators and perfectionistic tendencies among graduate students. *Journal of Social Behavior and Personality*, 15, 103-109.

Potts, T. J. (1987). *Predicting Procrastination on Academic Tasks with Self report Personality Measures.* Unpublished PhD Dissertation, Hofstra University, New York.

Rosario P, Costa M, Nunez JC, Gonzalez- Pienda J, Solono P, Valle A (2009). Academic procrastination: Associations with personal, school, and family variables. *The Spanish Journal of Psychology*, 12(1): 118-127.

Rothblum, E. D., Solomon, L. J., & Murakami, J. (1986). Affective, cognitive, and behavioral differences between high and low procrastinators. *Journal of Counseling Psychology*, 33(3), 387-394.

Solomon, L. J., & Rothblum, E. D. (1984). Academic procrastination: Frequency and cognitive behavioral correlates. *Journal of Counseling Psychology*, 31, 503-509.

Steel P (2007). The nature of procrastination: A metaanalytic and theoretical review of quinte essential self-regulatory failure. *Psychological Bulletin*, 133(1): 65-94.

Steel, P., Brothen, T., & Wambach, C. (2001). Procrastination and personality, performance, and mood. *Personality & Individual Differences, 30,* 95-106.

Van Eerde W (2000). Procrastination: Self-regulation in initiating aversive goals. *Applied Psychology: An International Review*, 49: 372-389.

Wesley JC (1994). Effects of ability, high school achievement, and procrastination behavior on college performance. *Educational and Psychological Measurement*, 54: 404-408.

Metacognition, Critical Thinking, Gender as predictors of Achievement of 10th Graders in Science, Technology, Engineering and Mathematic school (STEM)

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Abstract
The purpose of this study was to examine how gender , metacognition and critical thinking contributed to the achievement of 10th graders in Science, Technology, Engineering and Mathematic .school (STEM), Cairo. Achievement was measured in terms of overall grade point averages. A number of T-Tests were conducted to examine if gender significantly influenced academic achievement in Arabic Language, metacognitive skills, and critical thinking skills. The –values did not reach significance level. This indicates that there is no effect of gender on academic achievement in Science, metacognitive skills, and critical thinking skills. There was a significant positive relationship between metacognitive skills and academic achievement in Science ($r=.234$ $p < .01$), between critical thinking skills and academic achievement in Science ($r=.334$ $p < .01$), and between metacognitive skills critical thinking skills ($r=.502$ $p < .01$). A regression analysis was performed using achievement as the dependent variable and gender, metacognition, and critical thinking as the independent variables. The analysis indicated that students' critical thinking skills significantly account for differences in their academic achievement $ß = .355$, $p < .001$, metacognition significantly account for differences in their academic achievement $ß = .455$, $p < .001$, while gender $ß = .072$, $p > .05$ did not significantly account for students' achievement.

Keywords : *Think-Pair-Share Collaborative Inquiry, Reflective Thinking in Mathematics, 7th graders with Learning disabilities*

Introduction

Metacognition (Al Said Abdul Khalik,2014; Mourad Ali, 2010; Saada, 2013) refers to two aspects, namely the students' self-awareness of a knowledge base in which information is stored about how, when, and where to use various cognitive strategies and their self-awareness of and access to strategies that direct learning (e.g. monitoring difficulty level, a feeling of knowing). This awareness is developmental and lies on a continuum. Proficient readers use one or more metacognitive strategies to comprehend texts. There are three main aspects of metacognition: metacognitive knowledge, metacognitive monitoring, self regulation and control (Pintrich, Wolters and Baxter 2000). The first group consists of cognitive learning strategies which the learner uses to regulate the process of knowledge acquisition. These include, for example, elaboration strategies such as the building of links to prior knowledge, or memory strategies such as note taking. The second group consists of metacognitive control strategies. Central here are activities like the planning and monitoring of learning activities, the evaluation of learning outcomes and the adaptation to varying task demands and (unexpected) difficulties, for example, an increase in directed efforts.

The original model of Schraw and Dennison (1994) proposed metacognition composed of eight major components. These subprocesses are: (1) Declarative knowledge, (2) procedural knowledge, (3) conditional knowledge, (4) planning, (5) information management strategies, (6) monitoring, (7) debugging strategy, and (9) evaluation of learning. The initial factor analysis conducted by Schraw and Dennison where the items are rotated using oblique and orthogonal solutions extracted six factors of metacognition which largely explain a total variance of 78%. The first two factors in the original eight loaded under two factors but the fourth to eight original factors loaded separately. (Carlo Magno, 2010) .

Critical thinking is defined in numerous ways, but typically involves the ability to do some or all of the following: "identify central issues and assumptions in an argument, recognize important relationships, make correct inferences from data, deduce conclusions from information or data provided, interpret whether conclusions are warranted on the basis

of the data given, and evaluate evidence or authority" (Pascarella & Terenzini, 1991, p. 118). Critical thinking can be further broken into the following competencies (Possin, 2008):

> (a)identifying reasons or arguments, (b) dissecting arguments into premises, conclusions, and sub conclusions, (c) taxonomizing arguments as deductive or inductive, (d) assessing the cogency of arguments, (e) identifying formal and informal fallacies, (f) critically reviewing definitions and analyzing concepts, and (g) assembling these competencies so as to select and argue for positions on a diversity of issues and critically review competing positions and their arguments, all in a cogent and intellectually honest manner (p. 205).

Metacognitive understanding is vital to critical thinking because of its focus on developing reflection of how we know what we know and why it is justified (Kuhn, 1999), as well as its ability to affect "acquisition, comprehension, retention, and application of what is learned" (Hartman, 1998, p.1). Metacognitive knowing begins around the age of three years, when youth realize assertions are representative of other's beliefs (Kuhn, 1999). This group is limited in its critical thinking applications if beliefs are seen as assertions known by the individual as certainties (Kuhn, 1999). However, if assertions can be seen as belief states open to evaluation, critical thinking can emerge (Kuhn, 1999). To evaluate these belief states, individuals must develop the metacognitive skill of information organization where previously acquired knowledge can be systematically merged with newly identified information (Tsai, 2001). The level of critical thinking associated with the evaluation of belief states will be minimal, though, if the evaluations can only be deemed true or false (Kuhn, 1999).

Some factors which are thought to influence achievement levels include gender role identification(Jozefowicz, Barber, & Eccles, 1993), metacognition (Slavin, 1997), and critical thinking skills (Gadzella, Ginther, & Bryant, 1997).

The present study seeks to give answers to the following questions:

1-Do males and females differ on achievement, metacognitive, and/or critical thinking measures?

2- Do metacognition and critical thinking influence achievement levels?

3- To what degree do gender, metacognition, and critical thinking affect achievement levels?

Methods

Participants

The participants in the study consisted of a total of one hundred and twenty grade ten students from Science, Technology, Engineering and Mathematics School (STEM), Cairo .The sample involved al1 of the ten students within the participating school who agreed to participate and were granted permission from their parents to take part in the study.

Instruments

The MAI is a 52-item self-report inventory that measures two major components of metacognition: Knowledge of Cognition and Regulation of Cognition. The Knowledge of Cognition component includes three subprocesses: Declarative Knowledge (self and learning strategy knowledge), Procedural Knowledge (how to use learning strategies), and Conditional Knowledge (when and why to use learning strategies). The Regulation of Cognition component includes fi ve subprocesses: Planning (setting learning goals), Information Management Strategies (implementing strategies), Monitoring (paying attention to strategy effectiveness), Debugging (being aware of and correcting errors), and Evaluation (reviewing

use of and effectiveness of strategy) (Schraw & Dennison 1994). Schraw and Dennison (1994) report that in a factor replication analysis, the coefficient alpha derived reached .88 and .90 in the final set of items.

The WGCTA is a 30-60 minute, multiple-choice formatted test designed to measure various interdependent aspects of critical thinking through different constructs identified as inferences, recognition of assumptions, deduction, interpretation, and evaluation of arguments (Mourad Ali Eissa, 2014). The WGCTA has been utilized to assess critical thinking skills of students ranging from high school freshmen through university graduate students and provides reference norms (Hassan & Madhum, 2007). The WGCTA also possesses adequate internal consistency and test reliability over time and between alternate forms (Rust, 2002). Further, the WGCTA demonstrates adequate face, content, criterion, and construct validity (Rust, 2002).

Data Analysis

Data was analyzed using the Statistical Package for the Social Sciences (SPSS). A series of Independent Samples T-Tests were used to determine if metacognition and critical thinking were related to student grade levels. A regression analysis using gender, metacognition, and critical thinking as the independent variables were used to determine the degree to which each contributed to overall achievement levels.

Results

Do males and females differ on achievement, metacognitive, and/or critical thinking measures?

A number of T-Tests were conducted to examine if gender significantly influenced academic achievement in Science, metacognitive skills, and critical thinking skills. The – values did not reach significance level. This indicates that there is no effect of gender on academic achievement in Science, metacognitive skills, and critical thinking skills.

Table *1. T- test results for the differences between boys and girls in academic achievement in Science*

Group	N	Mean	STD	t	Sig
Male	60	50.96	2.29	.841	-
Female	60	50.50	3.63		

Table 2. *T- test results for the differences between boys and girls critical thinking skills Scale*

Group	N	Mean	STD	t	Sig
Male	60	12.23	1.28	.822	-
Female	60	12.43	1.38		

Table 3. *T- test results for the differences between boys and girls in Metacognitive Assessment Inventory*

Group	N	Mean	STD	t	Sig
Male	60	38.96	8.07	.185	-
Female	60	38.71	6.64		

2- Do metacognition and critical thinking influence achievement levels?

There was a significant positive relationship between metacognitive skills and academic achievement in Science (r=.234 p < .01), between critical thinking skills and academic achievement in Arabic Language (r=.334 p < .01), and between metacognitive skills critical thinking skills (r=.502 p < .01).

Table.4 *Correlations between Variables*

Variables	**Academic Achievement**	**Metacognitive skills**	**Critical thinking skills**
Academic Achievement	1	.234	.334
Metacognitive skills	.234	1	.502
Critical thinking skills	.334	.502	1

3- To what degree do gender, metacognition, and critical thinking affect achievement levels?

A regression analysis was performed using achievement as the dependent variable and gender, metacognition, and critical thinking as the independent variables. The analysis indicated that students' critical thinking skills significantly account for differences in their academic achievement ß = .355, p < .001 , metacognition significantly account for differences in their academic achievement ß = .455, p < .001 , while gender ß = .072, p > .05 did not significantly account for students' achievement .

Table.5 Summary of Regression Analysis of Variables Predicting Academic Achievement

Variables	**B**	**SE B**	**ß**
Gender	1.98	1.93	.072
Metacognitive skills	0.40	0.04	.455
Critical thinking skills	0.43	0.07	.355

Discussion

The purpose of this study was to examine how gender, metacognition and critical thinking contributed to the achievement of 10th graders from Science, Technology, Engineering and Mathematics School (STEM), Cairo. Achievement was measured in terms of overall grade point averages. A number of T-Tests were conducted to examine if gender significantly influenced academic achievement in Science, metacognitive skills, and critical thinking skills. The –values did not reach significance level. This indicates that there is no effect of gender on academic achievement in Science , metacognitive skills, and critical thinking skills. There was a significant positive relationship between metacognitive skills and academic achievement in Science (r=.234 p < .01), between critical thinking skills and academic achievement in Science (r=.334 p < .01), and between metacognitive skills critical thinking skills (r=.502 p < .01). A regression analysis was performed using achievement as the dependent variable and gender, metacognition, and critical thinking as the independent variables. The analysis indicated that students' critical thinking skills significantly account for differences in their academic achievement ß = .355, p < .001 , metacognition significantly account for differences in their academic achievement ß = .455, p < .001, while gender ß = .072, p > .05 did not significantly account for students' achievement .

The ability to be meta-cognition to be able to monitor and regulate one’s own learning is an important aspect of the lifelong learning process. The important of meta-cognition in the learning process is illustrated by a series of experimental studies designed to assess the impact of meta-cognition skills an learning performance across many disciplines.

Critical thinking was found to have a stronger correlation than the students' metacognitive skills. Additionally, when controlling for the effect of the other variables, critical thinking was found to significantly predict achievement levels in this sample.

Students with higher metacognitive and critical thinking skills also had higher achievement levels. This information is informative in that it helps establish that those students who have acquired higher skill levels were more successful however, it is also important that continual attention be focused on the development of these skills.

Implications and Recommendations for Further Research

This study has several implications for future research. Firstly, further research investigating the relationships between metacognition, critical thinking skills , and academic achievement in other school subjects are needed in order to reinforce the findings of this study. Also, future studies can examine these relationships with structural equation modeling, establishing a mediating or latent variable. One suggestion for future research is to sample different age groups within the general population.

Due to the relatively small number of students in this study, it is recommended that this study be conducted using a larger sample size. More extensive data may help clarify some of the relationships and therefore improve the validity of the results.

References

Al Said Abdul Khalik (2014). The Effect of Metacognitive Strategy Training on Student Mathematical Problem Solving Process and Contemplative Thinking Skills in Primary School Children with Learning Disabilities. *International Journal of Psycho-Educational Sciences*, 6(3), 1-9.

Carlo Magno (2010). The role of metacognitive skills in developing critical thinking. M*etacognition Learning,* 5:137–156.

Gadzella, B. M., Ginther, D. W., *&* Bryant, G. W. (1997*).* Prediction *of* performance *in* academic course *by* scores *on* measures *of* learning style *and* critical thinking. *Psychological Reports*, 81, 595–602.

Hassan, K. A. & Madhum, G. (2007). Validating the Watson Glaser Critical Thinking Appraisal. *Higher Education, 54*(3), 361-383.

Jozefowicz, D. M., Barber, B. L., & Eccles, J. S. (1993). *Adolescents' work-related values and beliefs: Gender differences and relation to occupational aspirations.* Paper presented at Biennial Meeting of the Society for Research on child Development. New Orleans.

Kuhn, D. (1999). A developmental model of critical thinking. *American Educational Research Association, 28*(2), 16-25.

Mourad Ali Eissa (2010). The effect of metacognitive strategy training on the self – regulation of test anxiety and the associated low self – efficacy of high aspiration level- first year secondary School students. *The Scandinavian Journal for Human and Applied Sciences* , Vo 1(1), pp. 107-134.

Mourad Ali Eissa (2014). *Scale for critical thinking skills* . Arees University.

Pascarella, E., & Terenzini, P. (1991). *How college affects students*. San Francisco: Jossey-Bass.

Pintrich, P. R., Wolters, C. A., & Baxter, G. P. (2000). Assessing metacognition and self regulated learning. In: G. Schraw & J. C. Impara (Eds.), *Issues in the measurement of metacognition* (43-97). Lincoln NE: Buros Institute of Mental Measurements.

Possin, K. (2008). A field guide to critical-thinking assessment. *Teaching Philosophy,31*(3), 221-228.

Saada Abdul Fatah(2013). *The Effectiveness of Metacognitive Strategy Training on Improving Academic Motivation, Academic Self – Efficacy, and Relieving Text Anxiety of Preparatory School Gifted Underachievers*. Master Thesis.

Schraw, G., & Dennison, R. S. (1994). Assessing metacognitive awareness. *Contemporary Educational Psychology*, 19(4), 460-475.

Slavin, R. E. *(*1997). *Educational psychology*: *Theory and practice*. Boston*:* Allyn *and* Bacon. *Chicago*

Tsai, C. C. (2001). A review and discussion of epistemological commitments, metacognition, and critical thinking with suggestions on their enhancement in Internet-assisted chemistry classrooms. *Journal of Chemical Education*, *78*(7), 970-975.

The Effectiveness of a Self Regulated Learning-Based Training Program on Improving Cognitive and Metacognitive EFL Reading Comprehension of 9th Graders with Reading Disabilities

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Abstract
The Purpose of this study was to explore the effectiveness of a self-regulated learning intervention program on cognitive and metacognitive EFL reading comprehension of 9th graders with reading disabilities. The participants in this study were 40 9th Graders with Reading Disabilities, elected from two schools located in Baltim Educational Edara. A pre-post design was used to examine the effectiveness of the phonological awareness intervention program on cognitive and metacognitive EFL reading comprehension of the target students. Findings from this study indicated the effectiveness of the a self-regulated learning intervention program on cognitive and metacognitive EFL reading comprehension of 9th graders with reading disabilities On the basis of the findings, the study advocated for the effectiveness of a self-regulated learning intervention program on cognitive and metacognitive EFL reading comprehension of 9th graders with reading disabilities.

Keywords: *Self-regulated learning, cognitive reading comprehension metacognitive reading comprehension, 9th graders with reading disabilities*

Introduction

Reading comprehension is defined as the active process of ‘‘simultaneously extracting and constructing meaning through interaction and involvement with written language’’ (Oliver, 2009, p.402). There are too many students who struggle to read and have difficulty completing literacy assignments (Mohammed, M. Fatah Allah, 2014). Research has shown that good readers use various meta-cognitive strategies to monitor and overcome reading problems (Mayer, 1996). If readers know when and how to apply the meta-cognitive strategies, they can easily construct meanings from the text. That is, the students should ask themselves why, how, when, where, and with whom they will learn these skills. The answers for these questions depend on their motivational beliefs (Eccles & Wigfield, 2002) or broadly on their self-regulation practices (Abiy & Adelahu, 2013).

Self-regulation refers to “...the self-generated thoughts, feelings and actions that are planned and cyclically adapted to attain personal goals” (Zimmerman, 2000, p.14). It can also be said that self-regulation is a self-directive process of transformation in which students change their mental ability to acquire academic skills (Zimmerman, 2002,p.65).

SRL implies learning regulated by the students themselves, and is not motivated and regulated by external factors and people. The students’ management of their own learning, the steering and directing of cognitive activities and motivation to the attainment of learning goals, are the main features of SRL (Woolfolk, 2010). Thus, SRL refers to the high involvement of the individuals themselves in their learning, and is characterized by the meta-cognitive, motivational and behavioral processes that enhance learning (McCaslin, Bozack, Napolean, Thomas, Vasquez, Wayman & Zhang, 2006). Meta-cognitively, self-regulated students are students who plan, set goals, organise, self-monitor and self-evaluate their learning at different points in the process of the acquisition of knowledge. Motivationally, self-regulated students report high self-efficacy, self-attribution and intrinsic interest, while behaviorally they select structure and create an environment which contributes to optimum learning (Zimmerman, 1990).

There are a number of different models offering alternative perspectives about how learning is self-regulated (e.g., Boekaerts, 1997, 1999; McCaslin & Hickey, 2001; Pintrich, 2000; Winne & Hadwin, 1998; Zimmerman, 1989). Although each model puts emphasis on different constructs about regulation and learning, they possess several features in common. In this study, the authors selected Pintrich’s model mainly because it synthesizes the common

frameworks of previous studies and offers a comprehensive model of SRL. The Pintrich's model of self-regulation includes 3 general categories of strategies: (a) cognitive learning strategies, (b) metacognitive or self-regulatory strategies to control cognition, and (c) resource management strategies. The model includes such cognitive strategies as rehearsal and elaboration and organizational strategies connected with academic performance. Rehearsal strategies cover repeating the learned knowledge or words and underlining important parts in a text. Rehearsal strategies help students select the important knowledge and keep them in short-term memory. Elaborative strategies include paraphrasing or summarizing the learned knowledge, correlating, asking and answering questions himself. Organizational strategies include selecting and underlining important information in a text, and using techniques to select and organize ideas in a material (Zeki Arsal, 2009). According to Boekaerts (1999), cognitive strategies include the strategies necessary for data processing such as attention, coding, elaboration and organization.

Pintrich (2000) proposed a theoretical framework based on a socio-cognitive perspective; its objective is to classify and analyze the different processes which play a part in self-regulated learning, as asserted by scientific literature. In this model, regulatory processes are organized according to four phases: a) planning; b) self-monitoring; c) control; and d) evaluation. Within each of these phases, self-regulation activities are in turn structured into four areas: cognitive, motivational/affective, behavioral and contextual.

For Pintrich, these four phases represent a general sequence which the student steps through as he or she carries out the task, but they are not hierarchically or linearly structured. The phases can occur simultaneously and dynamically, producing multiple interactions among the different processes and components included therein. Furthermore, Pintrich indicates that not all academic tasks explicitly involve self-regulation: sometimes, the performance of certain tasks does not require the student to strategically plan, control and evaluate what he or she is going to do; rather, the execution can be performed more or less automatically (or implicitly), as a function of the students' prior experience with the same.

Self-regulating processes begin in the planning phase, where we find such important activities as: setting of desired goals or the specific objective being sought after with the task (target goal setting), activation of prior knowledge about the material and of metacognitive knowledge (recognizing the difficulties involved in the different tasks, identifying knowledge and skills needed for addressing them, knowledge about resources and strategies that can be helpful in addressing the task, etc.) (cognitive area); the activation of motivational beliefs (self-efficacy, goals, value given to the task, personal interest) and of emotions (motivational/affective area); planning the time and effort to be used in the tasks (behavioral area) and the activation of perceptions regarding the task and the class context (contextual area).(Fermín and María ,2010).

Within the self-monitoring phase, we find activities that help the student become aware of his or her state of cognition, motivation, emotions, use of time and effort, as well as conditions of the task and of the context. For example, those activities related to self-observation of comprehension (mecognitive awareness) are included here. These activities are manifest when students are aware that they have not understood something they have just read or heard, when they are aware that they are reading too quickly for the type of text involved or for the goals they have set (e.g, understanding the main ideas), or when they actively observe their own reading comprehension, asking themselves questions to see whether they have understood. (Fermín and María, 2010). Likewise, this phase encompasses processes the students put into play in order to be aware of their motivational pattern (whether they feel competent for performing tasks, whether they value them, or what goals guide and

direct their academic behavior), aware of their own behavior ("I have to put in more time and effort in order to understand this chapter", "I need to get help"), as well as characteristics of the tasks and the classroom context (what class rules exist, how performance will be evaluated, task requirements, reward and punishment systems, teacher behavior, etc.).

On the other hand, in light of results from the previous phase, control activities are put into play, encompassing the selection and utilization of thought control strategies (use of cognitive and metacognitive strategies), motivation and emotions (motivational strategies and strategies of emotional control), as well as those related to regulating time and effort and to control of diverse academic tasks, and control of the atmosphere and structure of the class. (Fermín and María ,2010)

At this point we wish to point out that it is very difficult to differentiate the phase of self-observation from that of cognitive control, as it appears in some self-regulation models, where both aspects are conceived of as separate processes. Although at a conceptual level it is possible to differentiate processes involved in self-observation and in cognition control, empirical studies in this area do not support such a separation, since most of the time both processes occur simultaneously . (Fermín and María ,2010)

Finally, the reflection or evaluation phase includes judgments and evaluations that the student makes regarding his task execution, comparing it to previously established criteria (his or her own, or the teacher's); attributions made regarding the causes of successes or failures; affective reactions experienced due to the results, as a consequence of attributions made; choice of behavior to be followed in the future, as well as general assessments about the task and the class environment. (Fermín and María ,2010).

Metacognitive Reading Strategies

Strategies specific to reading can be classified in the following three clusters of metacognition: planning, monitoring, and evaluating strategies (Israel, 2007). Planning strategies are used before reading; activating learners' background knowledge to get prepared for reading is an example of planning strategies (Almasi, 2003). Also, previewing a title, picture, illustration, heading, or subheading can help readers grasp the overview of the text. Readers may also preview the general information in the text and its structure (Paris, Wasik, & Turner, 1991). Learners may check whether their reading material has a certain text structure, such as cause and effect, question and answer, and compare and contrast. Further, setting the purpose for reading can also be categorized as a planning strategy (Pressley, 2002).

Monitoring strategies occur during reading. Some examples of monitoring strategies are comprehension of vocabulary, self-questioning (reflecting on whether they understood what they have read so far), summarizing, and inferring the main idea of each paragraph (Pressley, 2002). Readers may also identify and focus on key information or key words, including but, however, on the other hand, in addition, also, and in conclusion. Determining which part of the passage can be emphasized or ignored based on the purpose of the task is another monitoring strategy (Hudson, 2007). Evaluating strategies are employed after reading. For example, after reading a text, learners may think about how to apply what they have read to other situations. They may identify with the author, a narrative, or main character, and may have a better perspective of the situation in the book than they did at first. (Yuko Iwai, 2011).

Research has depicted that self-regulation facilitates reading ability (Nash-Ditzel, 2010; Swalander & Taube, 2007). Nash-Ditzel's (2010) study showed that teaching techniques based on self-regulation and reading strategies could significantly promote improved reading abilities in college students. Using interviews, think-aloud protocols, informal observations, and document analysis, Nash-Ditzel found that the knowledge and

ability to use reading strategies contributed to the students' ability to self-regulate while reading. Swalander and Taube (2007) investigated the effect of self-regulated learning on reading ability. The results showed that family-based prerequisites, academic self-concept, and reading attitude significantly influenced reading ability. Academic self-concept showed a direct and strong influence on goal-oriented strategies and on reading ability in the eighth grade Swedish students.

Parviz and Mahshad(2014) investigated the effect of self-regulation on EFL learners' reading comprehension. To fulfill the purpose of this study, 149 Iranian EFL language learners studying at Islamic Azad Universities of Qazvin and Tehran (North, and Science and Research branches) were selected from a total number of 200 based on their performance on TOEFL PBT test and randomly put into two experimental and control groups. The experimental group received direct teaching along with task-based instruction on self-regulation in reading in ten sessions. The tasks/activities were designed based on self-regulation strategies proposed by Zimmerman (1989). The results showed the rejection of the null hypothesis, thus concluding that self-regulation has a significant effect on reading comprehension of Iranian EFL learners

Further research is necessary to build on the vast amount of research into self-regulated learning with learning disabled students. This will allow researchers to determine how self-regulated learning can be best used as an intervention with learning disabled students as there is a dearth of research with this population. . Thus the present study seeks to give answers to the following questions.

1- Are there differences in post-test scores between control and experimental groups on Cognitive Reading Comprehension Test ?

2- Are there differences in post-test scores between control and experimental groups on Metacognitive Reading Comprehension Test ?

Methods

Participants

40 students participated in the present study. Each student participant met the following established criteria to be included in the study: (a) a diagnosis of RD by teacher's referral. Neurological scanning results indicated that those individuals were neurologically deficient (b) an IQ score on the Mental Abilities Test (Mosa, 1989) between 90 and 118 (c) reading performance scores at least 2 years below grade level (d) absence of any other disabling condition. Students were randomly classified into two groups: experimental (n= 20 boys) and control (n= 20 boys).

The two groups were matched on age, IQ, cognitive reading comprehension and metacognitive reading comprehension. Table 1.shows means, standard deviations, t- value, and significance level for experimental and control groups on age (by month), IQ, cognitive reading comprehension, and metacognitive reading comprehension (pre-test).

Table 1. shows that al t- values did not reach significance level. This indicated that the two groups did not differ in age (by month),IQ, cognitive reading comprehension ,and metacognitive reading comprehension. (pre-test).

Table 1. *means, standard deviations, t- value , and significance level for experimental and control groups on age (by month),IQ, cognitive reading comprehension ,and metacognitive reading comprehension (pre-test).*

Variable	Group	N	M	SD	T	Sig.
Age	Experimental	20	118.35	3.169	0.494	Not sig.
	Control	20	117.90	4.124		
IQ	Experimental	20	178.80	1.00	0.267	Not sig.
	Control	20	178.70	1.34		
cognitive reading comprehension	Experimental	20	20.55	1.93	0.743	Not sig.
	Control	20	21.15	2.01		
metacognitive reading comprehension	Experimental	20	18.50	3.77	0.433	Not sig.
	Control	20	18.00	3.52		

Instruments

Cognitive Reading Comprehension Test. The test was developed to assess reading disabled children 's skills in reading comprehension . It was based on the features of comprehension skills recognized by Mourad Ali (2005). The test consists of (60) items assessing word recognition , and comprehension ,30 items each , with score ranging from 0-1 on each item and a total score of 60. The test has demonstrated high internal consistency with Cronbach's α ranging from 0.86 to 0.89.

Metacognitive Reading Comprehension Test. (Mourad Ali, 2005). The test was developed to assess reading disabled children 's skills in metacognitive reading comprehension .It consists of three subcsales; namely Self- Monitoring, planning of task parameters and Assessment of Strategy with score ranging from 1-4 on each item and a total score of 64. The test has demonstrated high internal consistency with Cronbach's α ranging from 0.80 to 0.82.

Procedures

Screening: Third year prep students who participated met the following established criteria to be included in the study: (a) (a) a diagnosis of RD by teacher's referral. Neurological scanning results indicated that those individuals were neurologically deficient (b) an IQ score on the Mental Abilities Test (Mosa, 1989) between 90 and 118 (c) reading performance scores at least 2 years below grade level (d) absence of any other disabling condition.

Pre-intervention testing: All the forty students in grade three prep completed Cognitive Reading Comprehension Test, which assesses reading disabled children 's skills in reading comprehension ; Metacognitive Reading Comprehension Test, which assesses reading disabled children 's skills in metacognitive reading comprehension. Thus data was reported for the students who completed the study .

General Instructional Procedures: In this phase, the experimental group received direct teaching of self-regulation strategies in reading, along with task-supported instruction, in 21 sessions. To implement the treatment, each session, the researcher first introduced the topic of the reading text to activate the students' schemata. Then, he gave the students a sense of purpose for reading by informing them that self-regulation process would help them to be an active reader, and that they would be able to control the reading process, their behavior, and their environment better by applying self-regulation strategies while reading. Eight strategies had to be applied in the form of the designed tasks/activities. The tasks/activities in the environmental structuring category required the students to pay attention to the

environment and find the distractions, such as their classmates' whispering and noise from outside the room. Then they had to write if they could have adjusted the situation for the better results, or they should have tolerated the distractions. Organizing and transforming tasks/activities, however, helped the students to take a quick look at the text before reading to see how the text is organized in terms of title, heading, sub-heading, and paragraphs. The tasks/activities in goal setting and planning category got students to guess how much time they needed to read the text and do the activities. Therefore, they learned to budget their time in advance.

The tasks/activities in the next category focused on keeping records and monitoring, as well as organizing and transforming strategies. Here, the students were required to read the text paragraph by paragraph, draw an outline, and highlight the ambiguous words, phrases, or sentences for further investigation. The tasks/activities in the fifth category assisted the readers to seek information and social assistance. To do so, they specified which ways they would like to use to remove the ambiguities they had encountered in the previous phase. Rehearsing and memorizing tasks/activities drew students' attention to the strategies that helped them to memorize unfamiliar words. So, they were required to check the strategies that seemed most useful to them. Tasks/activities related to reviewing record strategy asked students to go back to the previous phases and check if they had taken all the steps, and they had to remove any unclear points before going to the next phase.

Finally, there were self-evaluation and self-consequating tasks/activities that required students to self-evaluate themselves by answering some questions about their performance, such as how they scored themselves and how they did the activities. Students received 3 training sessions a week, lasting between 40 and 45 min . Instruction took place in the regular classroom in order to naturalize the situation.

Post-intervention testing: Having practiced twenty-one sessions of reading, the participants in both groups took the Cognitive Reading Comprehension Test and Metacognitive Reading Comprehension Test as post-test.

Design and Analysis

The effects of implementing self regulated learning- based training program on improving cognitive and metacognitive EFL reading comprehension of 9th graders with reading disabilities were assessed using pre- post testing.

Results

Table 2. shows T. test results for the differences in post- test mean scores between experimental and control groups in cognitive reading comprehension test.

Table 2. *T-test results for the differences in post- test mean scores between experimental and control groups in cognitive reading comprehension test*

Variables	**Groups**	**N**	**Mean**	**Std. deviation**	**t**	**Sig.**
Comprehension	Ex	20	21.75	1.40	21.03	0.01
	Cont.	20	12.65	1.44		
Word Recognition	Ex	20	24.55	2.06	22.11	0.01
	Cont.	20	12.70	1.21		
Composite	Ex	20	46.30	1.17	33.20	0.01
	Cont.	20	24.95	2.62		

The table 2 shows that (t) values were (21.03) for comprehension, (22.11) for word recognition , and(33.20) for the composite score. These values were significant at the level (0.01) in the favor of experimental group. The table also shows that there are differences in post- test mean scores between experimental and control groups in cognitive reading comprehension test in the favor of experimental group.

Table 3. shows T. test results for the differences in post- test mean scores between experimental and control groups in metacognitive reading comprehension test. The table shows that (t) values were (9.92) for Self- Monitoring (10.85) for planning of task parameters, (6.91) for Assessment of Strategy and(9.32) for the composite score. These values were significant at the level (0.01) in the favor of experimental group .The table also shows that there are differences in post- test mean scores between experimental and control groups in metacognitive reading comprehension test in the favor of experimental group .

Table 3. *T- test results for the differences in post- test mean scores between experimental and control groups in* metacognitive reading comprehension *test*

Variables	**Groups**	**N**	**Mean**	**Std. deviation**	**t**	**Sig.**
Self- Monitoring	Ex	20	12.80	1.10	9.92	0.01
	Cont.	20	7.25	2.24		
Planning of task parameters	Ex	20	13.15	1.03	10.85	0.01
	Cont.	20	7.25	2.12		
Assessment of Strategy	Ex	20	11.00	1.07	6.91	0.01
	Cont.	20	6.75	2.25		
Composite	Ex	20	36.95	2.66	9.32	0.01
	Cont.	20	21.25	6.79		

Discussion

The Purpose of this study is to explore the effectiveness of implementing self-regulated learning- based training program on improving cognitive and metacognitive EFL reading comprehension of 9th graders with reading disabilities .Participants were selected, then all the forty students in grade three prep completed Cognitive Reading Comprehension Test, which assesses reading disabled children 's skills in reading comprehension; Metacognitive Reading Comprehension Test, which assesses reading disabled children 's skills in metacognitive reading comprehension.

The results of this study as revealed in tables 2 and 3, show that the self-regulated learning-based training program was effective in improving cognitive and metacognitive EFL reading comprehension of 9th graders with reading disabilities in experimental group, compared to the control group whose individuals were left to be taught in a conventional way.

Participants of this study fall into IQ of 115 or more, nevertheless, they are at -risk for learning disability in reading. Thus IQ score cannot account for learning disabilities. The results of the present study support that conclusion with evidence that students who participated in the study do not fall into the low IQ range, however they are at reading disability. When designing a program based on self-regulated learning-, they had statistical increase in cognitive and metacognitive EFL reading comprehension of 9th graders with reading disabilities. This goes in line with what Mourad Ali et al (2006) notes that there is one problem " students who are identified as learning disabled often cover any special abilities and talents, so their weakness becomes the focus of their teachers and peers , ignoring their abilities. Mourad Ali (2007), however , notes that " learning disabled , as well as gifted

students can master the same contents and school subjects ", but they need to do that in a way that is different from that used in our schools .

Experimental group gained better scores in cognitive and metacognitive EFL reading comprehension tests than did control groups in post-tests though there were no statistical differences between the two groups in pre- test. This is due to the program which met the experimental group's needs and interests. On the contrary, the control group was left to be taught in a conventional way. This goes in line with our adopted perspective which indicates that traditional methods used in our schools do not direct students as individual toward tasks and materials and do not challenge their abilities. This may lead students to hate all subjects and the school in general. On the contrary, when teachers adopt a strategy (such as self-regulated learning intervention) that suits students interests and challenge their abilities with its various modalities .

This indicates that " as we learn more about the scope and complexity of individual differences and how they affect academic progress, we become increasingly convinced that many individuals who do not do well at school do not because the instructional methods used to teach them does not complement preferred styles to learn, thus ,we should seek strategies that help these students and match their strengths.

Future Research Recommendations

Further research is still required to explore the potential benefits of self-regulated learning intervention for children with reading disabilities .Such research may include large scale studies, and a further exploration of the exact influence of student attendance, teacher training, classroom conditions and treatment duration and intensity.

References

Abiy ,Y. & Adelahu ,F.(2013). The impact of students' self-regulated language learning on their reading achievement in Ethiopian high schools: Grade 9 in focus. *Journal of Media and Communication Studies*, Vol. 5(5), pp. 44-51.

Almasi, J. F. (2003). *Teaching strategic process in reading*. New York, NY: The Guilford Press.

Arsal Z. (2009).The effects of diaries on self-regulation strategies of preservice science teachers. *International Journal of Environmental & Science Education*,. 5(1), , 85-103.

Boekaerts, M. (1997). Self-regulated learning: A new concept embraced by researchers, policy makers, educators, teachers, and students. *Learning and Instruction*, 7(2), 161-186.

Boekaerts, M. E. (1999). Self-regulated learning: Where we are today. *International Journal of Educational Research*, 31(6), 445-551.

Eccles J.S, & Wigfield A (2002).Motivational beliefs, values, and goals. *Annual Review of Psychology* , 53(1):109-132.

Fermín ,T. & María ,C. (2010). Self-Regulated Learning:Current and Future Directions. In J. de la Fuente Arias, Mourad Ali Eissa (Eds.), International Handbook on Applying Self-Regulated Learning in Different Settings (PP.27-50). Diseño Portada: José Manuel Martínez Vicente.

Hudson, T. (2007). *Teaching second language reading*. Oxford: Oxford University Press.

Israel, S. E. (2007).*Using metacognitive assessments to create individualized reading instruction.* Newark, DE: International Reading Association.

Mayer RE (1996). Learning strategies for making sense out of expository text: The SOI model for guiding three cognitive processes in knowledge construction. *Educational Psychology Review*, 8(4):357-371.

McCaslin, M. & Hickey, DT. (2001). Self-regulated learning and academic achievement: a Vygotskian view. In: *Self-regulated learning and academic achievement: theoretical perspectives. (*2nd ed.). Edited by BJ. Zimmerman & DH. Schunk. Mahwah, NJ: Lawrence Erlbaum Associates**:** 227-252.

McCaslin, M., Bozack, AR., Napolean, L., Thomas, A., Vasquez, V., Wayman, V. & Zhang, J. (2006). Self-regulated learning and classroom management: theory, research and considerations for classroom practice. In: *Handbook of classroom management: Research, practice and contemporary issues.* Edited by CM. Evertson & CS. Weinstein. Mahwah, New Jersey: Lawrence Erlbaum Associates: 223-252.

Mohammed , M. Fatah Allah Said Ahmed (2014). The Effect of Differentiating Instruction using Multiple Intelligences on Improving Reading Comprehension of 5th Graders with Learning Disabilities. *International Journal of Psycho-Educational Sciences ,* Issue 6(3), PP.10-17.

Mosa, Farouk. A.(1989) *Mental Ability Test*, Cairo, El Nahda Al Masrya

Mourad Ali Eisaa (2005*). The Effectiveness of a Program Based on the Dunn Learning Styles Model on Improving Reading Comprehension of Preparatory School Poor Readers*. Doctoral thesis.

Mourad Ali, E. Waleed El sayed,& Ahmed Gomaa (2006). *Computer and learning disabilities, theory and practice,* Alexandria, Dar El Wafaa.

Nash-Ditzel, S. (2010). Metacognitive reading strategies can improve self-regulation. *Journal of College Reading and Learning.* 40(2), 45–63.

Oliver, K. (2009). An investigation of concept mapping to improve the reading comprehension of science texts. *Journal of Science Education and Technology, 18,* 402-414.

Paris, S. G., Wasik, B. A., & Turner, J. C. (1991). The development of strategies readers. In R. Barr, M. Kamil, P. Mosenthal, & P. D. Pearson (Eds.), *Handbook of reading research* (Vol. 2, pp. 609-640). Mahwah, NJ: Lawrence Erlbaum Associates.

Parviz ,M. & Mahshad,T. (2014).Using Self-regulation to Enhance EFL Learners' Reading Comprehension . *Journal of Language Teaching and Research*, 5(4), pp. 844-855,

Pintrich, P.R. (2000). The role of goal-orientation in self-regulated learning. In*: Handbook of self-regulation*. Edited by M. Boekaerts, PR. Pintrich, & M. Zeidner. San Diego, CA: Academic Press: 451-502.

Pressley, M. (2002). Metacognition and self-regulated comprehension. In A. E. Farstrup & S. J. Samuels (Eds.), *What research has to say about reading instruction* (pp. 291-309). Newark, DE: International Reading Association.

Swalander, L., & Taube, K. (2007). Influences of family based prerequisites, reading attitude, and self-regulation on reading ability. *Contemporary Educational Psychology, 32, 206*–230.

Winne, P. H. & Hadwin, A. F. (1998). Studying as self-regulated learning. In: Hacker, D. J., Dunlosky, J. & Graesser, A. C. (Eds.). *Metacognition in educational theory and practice*. Mahwah, NJ: Lawrence Erlbaum Associates, 277-304.

Woolfolk, A. (2010). *Educational Psychology*. (11th ed.). Upper Saddle River: Pearson.

Yuko,I.(2012).The Effects of Metacognitive Reading Strategies: Pedagogical Implications for EFL/ESL Teachers. *The Reading Matrix* , 11(2),150-159.

Zimmerman, B. J. (1989). Models of self-regulated learning and academic achievement. In: Zimmerman, B. J. & Schunk, D. H. (Eds.). *Self-regulated learning and academic achievement: Theory, research, and practice*. New York: Springer-Verlag, 1-25.

Zimmerman, BJ. (1990). Self-regulated learning and academic achievement: An overview. *Educational Psychologist*, 25(1):3-17.

Zimmerman, B.J. (2000). Attainment of self-regulation: A social cognitive perspective. In M. Boekaerts, P. Pintrich, & M. Zeidner (Eds.), *Handbook of self-regulation* (pp. 13-39). Orlando, FL: Academic Press.

Zimmerman, B.J.(2002). Becoming a Self-Regulated Learner: An Overview. *Theory into Practice*, 41(2), 64-72.

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Research Trends in Computer Education Technologies in Turkey[8]

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Abstract
The purpose of this study is to find out research trends in the field of "Computer Education Technologies" in Turkey by exploring the articles that were published between 2005 and 2013. For the purpose, articles were evaluated in terms of their publishing dates, number of authors, methods, data collection procedures, sample characteristics, data analysis techniques, subject areas and their topics. The articles were explored by investigating the documents within the framework of descriptive approach and research trends in the field of Computer Education Technologies were attempted to be described. In the study, 35 journals that are published in the field of Computer Education Technologies, which are all included in the ULAKBIM Database, were covered in the study. According to results it was determined that the majority of the articles were written either by a single author or two authors, used quantitative research method, descriptive studies, used questionnaires and likert type scale, studied with graduate students and used frequency, mean, t-test and variance analysis. Also it was determined that more than half of the articles subject areas were educational technology, student-teacher characteristics and teaching.

Key Words: Information technology, computer, research, trends, meta-analysis, scientific research, education, technology

Introduction

Increase in technological developments in informatics has affected the field of education as well as all other fields. The adaptation of a development in technology to education and how the technologic development will be used in educational planning, managing, training or other fields have been explored. Technology is defined as systematic application of concepts and information of behavioral and physical sciences for the solution of problems (Gentry, 1995). In this context, educational technologies can be defined as application of information and concepts produced by behavioral and physical sciences and technology occurring in consequence of that on problems in education and as creation of better learning environment and design (Erdoğmuş & Çağıltay, 2009). Integration of the technological developments to academic fields and developments of academic fields are closely related with the wealth of literature review about these fields. Computer Education Technologies as well as all academic fields has increased in recent years. Cross-sectional studies for revealing developments in any fields in literature review are common. A general assessment of the literature of Turkish education not only gives information about a specific period but also sheds light on future research (Erdem 2011). While examination and analysis of dissertations about a subject, on the one hand, give information about the depth and extent of the subject, they, on the other hand, deliver overall appearance of the area surveyed (Göktaş & Erdem, 2006). When the literature is reviewed, it is seen that there are studies in which theses in several fields and articles in academic journals have been analyzed by using specific criteria. For example, trends in information technologies and educational technologies have been subject studied by many researchers (Caffarella,1999; Costa, 2007, Şimşek et al., 2008; Şimşek et al., 2009; Erdoğmuş & Çağıltay, 2009; Akça & Üstündağ, 2009; Sert, 2010; Göktaş et al., 2012; Kurtoğlu & Seferoğlu, 2012).

Especially, Caffarella analyzed trends in PhD theses completed about educational technologies in USA since 1977. Costa (2007) analyzed master's theses in his study. Researchers tried to reveal the current trends by analyzing which methods had been used in the researches, which tools the data had been collected, of whom the sample had consisted and how the analysis had been carried out (Kurtoğlu ve Seferoğlu, 2012).

There are a number of researches made in Turkey in the field of educational technology. Şimşek et al. (2008) analyzed doctoral dissertations in educational technologies in our country for the last decades. According to researchers, doctoral theses in educational technologies focused on learning-teaching approaches, online learning and multimedia topics.

There are a number of researches in educational technologies in Turkey. Akça-Üstündağ (2009) analyzed 133 theses carried out by the end of the 2007 in her master's thesis. As a result of the thesis, it is emphasized that there is an increasing interest in distance education and there is a decreasing interest in computer-managed instruction. Şimşek et al. (2009) analyzed 259 master's theses between the years 2000-2007 in educational technologies in our country in their other study. When Erdoğmuş and Çağıltay (2009) analyzed master's and doctoral theses in Computer Education Technologies, they concluded that the three most common topics discussed are the media, media comparisons and student variables.

There have been only a few studies to determine research trends in Computer Education Technologies, and these studies generally analyzed master's and doctoral theses. However, when the literature is reviewed, any study analyzing articles in "Information Technology Training" in Turkey and determining the research trends hasn't been found. Also, scientific researches to determine the research trends set light to identification of on which subjects there is deficiency and selection of subjects needing to be searched. In this sense, this study is expected to meet a need in the literature and thought to be important to determine the research trends in "Information Technology Training". In this respect, the aim of this study is to determine the research trends in "Information Technology Training" by analyzing the articles published in the years between 2005-2013 in that field in Turkey. Thus, the articles have been evaluated in terms of publication year, the number of the authors, method, data collection tools, characteristics of the sample, data analysis techniques, fields of subjects and topics.

Method

Research Model

This research is a descriptive study. Articles were analyzed with document analysis within the framework of the descriptive approach, and we tried to describe the research trends in " Computer Education Technologies ".

Sample

35 journals in “Computer Education Technologies” reviewed in ULAKBİM National Database were included in the scope of the analysis, and the research was limited to the years between 2005-2013. Totally 225 articles published in the field of " Computer Education Technologies " in those 35 journals were sampled and analyzed. The journals reviewed and the number of articles have been given in Appendix 1.

Data Collection Tool

Content analysis method was applied on each article by using “Article Classification Form”. “Article Classification Form” was developed by Sözbilir and Kutu (2008) and used in his study. The form consists of 5 basic charters: article tag, research pattern/method, data collection tools, sample and data analysis methods. Data collection tool has been given in Appendix 2.

Data Analysis

Content analysis method was used to analyze the collected data. The procedure in content analysis is to put together the similar data within the framework of specific concepts and themes and to comment it in a way the reader can understand (Yıldırım & Şimşek, 2011). The results of the analysis are expressed with the frequency and percent values.

Findings

Content analysis method was applied to totally 225 articles in 35 journals in order to determine the research trends in " Computer Education Technologies" by analyzing articles published in that field in the years between 2005-2013. Frequency and percent values about publication year of the articles have been given in Table 1.

Table 1: *Publication Year of the Articles*

Category	f	%	Category	f	%
2005	13	5.7	2010	34	15.1
2006	15	6.6	2011	29	12.9
2007	33	14.7	2012	43	19.1
2008	18	8.0	2013	21	9.3
2009	19	8.4			
Total	225	100			

43 articles (19.1%) were published in 2012, 34 articles (15.1%) were published in 2010, 33 articles (14.7%) were published in 2007, 29 articles (12.9%) were published in 2011 and 21 articles (9.3%) were published in 2013. If it is taken into the consideration that this study was carried out in the first half of the 2013, a year by year increase in the number of the articles in the field of "Computer Education Technologies" has been observed. Frequency and percent values about the number of authors of the articles have been given in Table 2.

Table 2*: the Number of Authors of the Articles*

Category	f	%	Category	f	%
1 author	70	31.1	5 authors	0	0
2 authors	104	46.2	6 authors	0	0
3 authors	35	15.6	7 authors	1	0.4
4 authors	15	6.7			
Total	225	100			

When it is analyzed in terms of the number of authors of the articles, it is seen that 70 articles (31.1%) were written by one author, 104 articles (46.2%) were written by two authors, 35 articles (15.6%) were written by three authors, 15 articles (6.7%) were written by four authors and 1 article (0.4%) was written by seven authors. The frequency and percent values about research type of the articles have been given in Table 3.

Table 3: *Type of the Articles*

Category	f	%
Research-review	197	87.6
Theoretical (Compilation)	28	12.4
Total	225	100

+

197 articles (87.6%) are in research-review type and 28 articles (12.4%) are in theoretical (compilation) type. Frequency and percent values about research methods of the articles have been given in Table 4.

Table 4: *Pattern/Method in the Articles*

	Research Pattern	**Research Method**	**f**	**%**
Quantitative	Experimental	True experimental	3	1.3
		Quasi experimental	28	12.4
		Poor experimental	0	0
		Single subject	3	1.3
		Sub total	34	15.10
	Non-experimental	Descriptive survey	123	54.70
		Correlational	3	1.3
		Comparative	2	0.9
		Structural equation model	0	0
		Sub total	128	56.90
Qualitative	Interactive	Cultural analysis	7	3.1
		Phenomenology	3	1.3
		Grounded theory	1	0.4
		Case study	8	3.6
		Critical study	0	0
		Activity research	1	0.4
		Other	0	0
		Sub total	20	8.90
	Non-interactive	Concept analysis	26	11.6
		Historical analysis	4	1.8
		Meta analysis	0	0
		Other	0	0
		Sub total	30	13.30
Mixed	Mixed	Explanatory	12	5.3
		Exploratory	1	0.4
		Triangulation	0	0
		Sub total	13	5.80
		Total	225	100

162 articles (72%) has quantitative method, 50 articles (22.2%) has qualitative method and 13 articles (5.8%) has mixed method. 28 quantitative articles (12.4%) in experimental pattern are semi-experimental. 123 quantitative articles (%54.7) in non-experimental pattern are descriptive. 8 qualitative articles (3.6%) in interactive pattern are in case study type, 26 qualitative articles (7.2%) in non-interactive pattern are in concept analysis type. 12 studies (5.3%) in mixed type are in explanatory type. There isn't any research in poor experimental model, structural equation model, critical study or triangulation type. Frequency values about data collection tools of the articles based on research-review type have been given in Table-5.

Table 5: *Data Collection Tools in the Articles*

Category	Sub category	f	Category	Sub category	f
Observation	Participant	5	Questionnaire/Scale	Open-ended	8
	Non-participant	0		Likert	148
	Unstated	0		Other	0
	Total	5		**Total**	156
Interview	Structured	0	Documents		30
	Semi-structured	28			
	Unstructured	0			
	Focus group	3			
	Unstated	0			
	Total	31			
Achievement test	Open-ended	4	Complementary (Alternative) evaluation		1
	Likert	29			
	Other	0			
	Total	33			
Ability/personality test	Open-ended	0	Other		1
	Multiple choices	0			
	Other	0			
	Total	0			

Considering the research-review based articles, it was found that questionnaire/scale (f=156) and achievement test (f=33) were used in the articles. Most of the questionnaires/scales were in likert type (f=148). Most of the achievement tests consisted of multiple choice questions. Most of the interviews were carried out with semi-structured forms (f=10). Most of the observations were in participant observation type (f=5). Frequency values about sample groups can be seen in the Table 6.

Table 6: *Samples in the Articles*

Category	f	Category	f
Pre-school	0	Teachers	31
Elementary (1-5)	3	Administors	7
Elementary (6-8)	26	Parents	0
Secondary	17	Instructors	1
Undergraduate	98	Inspectors	0
Post-graduate	2	Other	17

From the Table 6, it was seen that mostly undergraduate students (f=98) and teachers (f=31) were included in the articles. Frequency and percent values about the sample sizes of the articles are given in Table 7.

Table 7: *Sample Sizes in the Articles*

Category	f	%	Category	f	%
between 1-10	13	5.8	between 101-300	71	31.6
between 11-30	15	6.7	between 301-1000	28	12.4
between 31-100	65	28.9	between 1000	6	2.7
Total	198	100			

72.9% of the articles have sample between 30 and 1000. Frequency values about data analysis techniques of the articles have been given in Table 8.

Table 8: *Data Analysis Techniques in the Articles*

Category	Sub category		f
Descriptive	Frequence/percent		82
	Mean/Standard Deviation		56
	Graphs		0
		Total	138
Inferential	Correlation		12
	t-test		86
	ANOVA		51
	ANCOVA		6
	MANOVA		41
	MANCOVA		1
	Factor Analysis		12
	Regression		2
	Non-Parametric Tests		5
	Structural Equity Models		0
	Other		0
		Total	216
Qualitative	Content Analysis		28
	Descriptive Analysis		34
	Other		0
		Total	62

Regarding data analysis techniques, it is clearly seen that descriptive analysis techniques were used in 138 articles, inferential analysis techniques were used in 216 articles and qualitative analysis techniques are used in 62 articles. Frequency/percent values were calculated in 82 articles with descriptive analysis, and mean/standard deviation values were calculated in 56 articles with descriptive analysis. Mostly t-test (f=86), ANOVA (f=51), MANOVA (F=41), correlation and factor analysis (f=12), ANCOVA (f=6) and non-parametric tests (f=5) were used in articles with inferential analysis. When qualitative analysis techniques are analyzed, it is seen that content analysis was used in 28 articles and descriptive analysis techniques were used in 34 articles. Frequency values about subjects of the articles have been given in Table 9.

Table 9: *Subjects of the Articles*

Category	f	Category	f
Instruction	47	Assessment and evaluation	1
Teacher-student characteristics	70	Training technologies	96
Learning	2	Philosophy of education	1
Teacher training	0	Classroom management	0
Curriculum evaluation	3	History of education	0
Education system	0	Scale development/adaptation/testing	4
Values education	0		

Most of the articles (215) were carried out in the subjects; training technologies, instruction and student-teacher characteristics. Also, 4 articles were carried out in scale development/adaptation/testing, 3 articles were carried out in curriculum evaluation and 2 articles were carried out in learning. Frequency values about instruction have been given in Table 10.

Table 10: *Instruction*

Instruction			
Category	**f**	**Category**	**f**
Computer assisted instruction	40	Constructivism	1
Project based learning	3	Concept caricatures	1
Cooperative learning	1	Teaching Learning Strategies	1

When articles with the subject "instruction" are analyzed, it is seen that most of the articles were carried out in the subject "computer assisted instruction" (f=40). Frequency values about the subject "student-teacher characteristics" have been given in Table 11.

Table 11: *Student-Teacher Characteristics*

Category	**f**	**Category**	**f**
Attitudes/preferences towards teaching profession	13	Critical thinking skill	2
Self-efficacy perception/belief	23	Computer/technology literacy	11
Teacher competencies	7	Media literacy	1
Attitude toward the lesson	8	Other	2
Problem solving skill	3		

Mostly, subjects; self-efficacy perception (f=23), attitude/preference towards teaching profession (f=13), computer/technology literacy (f=11), attitude towards the lesson (f=8), teacher competencies (f=7) and problem solving skill (f=3) were studied in the subject "student-teacher characteristics". Frequency values about the subject "training technologies" have been given in Table 12.

Table 12: *Training Technologies*

Category	**f**	**Category**	**f**
ICT	23	Material development	8
Virtual education	18	Course book evaluation	4
Training technologies	16	Use of equipment	3
Internet	15	PowerPoint presentations	1
Educational software	8		

Considering the Table 12, it is seen that mostly, subjects; information and communication technology (f=23), virtual education (f=18), training technologies (f=16), internet (f=15), education software and material development (f=8), course book evaluation (f=4) and use of equipment (f=3) were studied within the framework of the subject "training technologies".

Discussion and Conclusion

In this research, it is aimed to evaluate the articles published in the field of "Computer Education Technologies" in the years between 2005-2013 in Turkey in terms of publication year, the number of authors, method, data collection tool, characteristics of the samples, data analysis techniques, fields of the subjects and subjects and to determine the research trends in the field of "Computer Education Technologies". For this purpose, the following conclusions have been drawn:

The articles published in the years between 2005-2013 have pursued a graph showing an increase year by year. Thus, it can be said that the developments in Computer Education

Technologies increase day by day, that the increase affects the field of education and that there is a need for further researches. Most of the articles (77.3%) have one author or two authors. There is a trend that articles have no more than three authors. Most of the articles (87.6%) are in research-review type, and the vast majority of these articles (72%) are based on quantitative method. Most of the theses (70.7%) in the study that Şimşek et al. (2008) evaluated 82 master's theses are based on quantitative method. Erdem (2011) suggested that the vast majority of scientific researches in the field of education in Turkey had been based on quantitative method. Erdoğmuş and Çağıltay (2009) determined in their study on master's and doctoral theses that quantitative research type had been used in theses. That quantitative method has been preferred in the vast of researches shows that the researches haven't gone beyond the existing condition, that mixed methods haven't been used, and thus that the limitations occurring due to use of only quantitative or qualitative research method still continue.

When the patterns of the articles were analyzed, it was determined that mostly, non-experimental quantitative patterns had been used. The vast majority of the experimental articles (82.35%) are quasi-experimental. The vast majority of the non-experimental articles (96%) are descriptive survey type. It is determined that while 8 articles having interactive qualitative pattern are case study and 7 articles having interactive qualitative pattern are cultural analysis, there are only a few interactive studies such as phenomenology, grounded theory and action research and no study with cultural analysis. There are 30 non-interactive qualitative studies. 26 non-interactive qualitative studies (86.6%) are with concept analysis, and 4 non-interactive qualitative studies (13.4%) are with historical analysis. Hence, it can be said that there is a need for meta-analysis. 12 articles having mixed pattern are in explanatory type, and one article is in exploratory type.

In terms of data collection tools, mostly surveys or scales were used. Şimşek et al. (2008) suggested that mostly "rating scales" and secondly surveys were used in theses they analyzed. Erdoğmuş and Çağıltay (2009) similarly came to the conclusion that respectively survey, scale and achievement test had been mostly used. Thus, it can be concluded that articles in the field of Computer Education Technologies are superficial studies for due diligence rather than in-depth research. In terms of sample, mostly respectively undergraduate students (98 articles), teachers (31 articles), elementary (6-8) students (26 articles), secondary students (17 articles) and administers (7 articles) were included in studies. There is no study about preschool students, parents and inspectors. Also, the number of studies that post-graduate students, elementary (1-5) students and instructors were included are relatively less. The reason why there have been so many studies undergraduate students were included is that these students can be easily reached; the reason why there have been so few studies with other samples is that the permissions for scientific researches require long and difficult processes or that instructors prefer to lessen the time they spare for scientific studies as they have too many course loads. In addition, it can be commented that researchers in Computer Education Technologies don't show tendency to study with preschool and elementary (1-5) students as the students don't have enough physical competence to use technology. Şimşek et al. (2008) stated that mostly undergraduate students were included in the studies as it was easy to reach them.

In terms of sample size, mostly 101-300 people (71 articles) and 31-100 people (65 articles) comprise the research sample. When it is thought that quantitative studies constitute the majority of the studies, it can be said that the sample sizes in the studies are generally sufficient. In terms of data analysis techniques, respectively, t-test (86 articles), frequency/percent value (82 articles), mean/standard deviation values (56 articles), ANOVA (51 articles), MANOVA (41 articles), factor analysis (12 articles), correlation (12 articles) and

ANCOVA (6 articles) have been used most. In terms of qualitative analysis techniques, descriptive analysis (34 articles) and content analysis (28 articles) have been mostly used. Non-parametric tests, regression analysis, MANCOVA and structural equitation model are the least used analyzes. It can be interpreted that statistical analyzes such as ANCOVA and MANOVA are rarely used in the field where quantitative research rate is very high because researchers don't have enough knowledge about those techniques. Şimşek et al. (2008) determined that respectively frequency and percent values, mean, variance analysis and t-test were most frequently used.

When articles are analyzed in terms of subject, it is determined that articles have been published mostly about respectively education technologies (96 articles), student-teacher characteristics (70 articles) and teaching (47 articles). When features and scopes of the field of Computer Education Technologies are considered, it can be said that distribution in terms of the field of subjects is at the expected level. Respectively ICT (Information and Communication Technologies), virtual education, education technologies, internet, educational software, material development, course book evaluation, use of equipment and powerpoint presentations have been mostly studied; in terms of the field of subject of student-teacher characteristics, self-sufficiency perception/belief, attitude/preference towards teaching profession, problem solving skill, critical thinking skill, computer/technology literacy and media literacy have been studied; and in terms of the field of subject of teaching, computer based teaching, project based teaching, cooperative teaching, constructivism, concept caricatures and learning strategies have been studied.

Consequently, it is determined that in the articles published in the field of Computer Education Technologies in the years between 2005-2013, fewer authors, single method (quantitative or qualitative), scales in survey or likert type, easily reachable samples are chosen, and relatively easier statistical techniques are carried out, and specific sub-fields of Computer Technologies are preferred. Thus, it indicates that researchers haven't chosen in-depth research topics having different dimensions and preferred mixed methods, multiple techniques and samples from which they will able to obtain more reliable data, and hence, they have used easy statistical techniques. Thus, it can be said that researchers struggle to meet the conditions to advance in their academic career rather than to contribute to science.

References

Erdem, D. (2011). Türkiye'de 2005–2006 yılları arasında yayımlanan eğitim bilimleri dergilerindeki makalelerin bazı özellikler açısından incelenmesi: Betimsel bir analiz.(Investigation of the studies in educational sciences journals) *Journal of Measurement and Evaluation in Education and Psychology, 2*(1), 140-147.

Erdoğmuş & Çağıltay. (2009). Türkiye'de Eğitim Teknolojileri Alanında Yapılan Master ve Doktora Tezlerinde Genel Eğilimler (Master and doctoral studies within the field of educational technologies in Turkey), Paper presented at *Academic Informatics'09 - 11th Academic Informatics Conference Proceedings,* 11-13 Feb., Harran University, Şanlıurfa.

Gentry, C.G. (1995). "*Educational Technology: A question of Meaning. Part 1 in Instructional Technology: Past, Present, and Future*, G. J. Anglin (Ed.), (2nd ed.), Englewood, CO, Libraries Unlimited.

Göktaş, Y., Küçük, S., Aydemir, M., Telli, E., Arpacık, Ö., & Yıldırım, G. et al. (2012). *Educational technology research trends in Turkey: A content analysis of the 2000-2009 decade. Educational Sciences: Theory & Practice, 12*(1), 191-199.

Ozan, C & Köse, E. (2012). Eğitim Programları ve Öğretim Alanındaki Araştırma Eğilimleri: Bir İçerik Analizi (A content analysis on curriculum and instruction related studies) *2th National Curriculum and Instruction Congress*, Ataturk University, Erzurum.

Seferoğlu & Kurtoğlu (2009). BÖTE Alanında Yapılmış Olan Tezlerin Yöntem ve İçerik Açısından İncelenmesi,(Investigation of the theses on computer technologies education in terms of methods and content) *Educational Surveys Congress* (EAB-2012) 4-7 May 2012, Yıldız Technical University, İSTANBUL.

Sözbilir, M. & Kutu, H. (2008). Development and current status of science education research in Turkey. *Essays in Education* [Special issue], 1-22.

Şimşek, A., Becit, G., Kılıçer, K., Özdamar, N., Akbulut, Y., & Yıldırım, Y. (2008). Türkiye'deki Eğitim Teknolojisi Araştırmalarında Güncel Eğilimler.(Contemporary tendencies in educational technologies in Turkey) *Selçuk University Journal of Social Sciences,* 19, 439-458.

Yıldırım, A. & Şimşek, H.(2011). *Sosyal Bilimlerde Nitel Araştırma Yöntemleri (Qualitative research in social sciences),* Ankara: Seçkin Publications.

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