

Problem Solving Styles as Predictor of Life Satisfaction Among University Students

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The present study investigated the role of problem solving styles as predictor of life satisfaction among university students. 150 students (young men = 75, young women = 75) with age ranging from 20 to 25 years ($M = 21.74$, $SD = 1.49$) were selected from different universities of Islamabad. Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985) and Problem Solving Style Questionnaire (Cassidy & Long, 1996) were used to measure four problem solving styles including, thinking, feeling, sensing, and intuitive problem solving styles. The findings revealed that all the instruments along with the subscales were reliable. Multiple regression analysis showed that Thinking problem solving style lead to more life satisfaction in university students rather than other problem solving styles. Independent sample *t*-test was done on gender on exploratory basis. Results indicated that female university students used more Intuitive problem solving style than male university students and male university student used more Thinking problem solving style than female university students. There were nonsignificant differences between male and female university students on other problem solving styles and life satisfaction. Implications, limitations, and suggestions for future research were also discussed.

Keywords. Problem solving styles, sensing style, intuitive style, feeling style, thinking style, satisfaction with life

Experiencing various problems in daily activities is inevitable for any individual. All problems arising from either daily activities or developmental stages require effective problem solving skills in order for individuals to maintain a life that they find satisfying. Effective problem solving has been correlated with positive psychological well-being, such as competence, productivity, and optimism (Carver & Scheier, 1999; Chang & D'Zurilla, 1996; Elliott, Henick, MacNair, &

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Harkins, 1994). A problem is defined as "any state or task (present or anticipated) that demands a reaction for adaptive functioning but no helpful reaction is immediately evident or available to the person or people confronted with the condition because of the presence of one or more barriers" (D'Zurilla, Nezu, & Maydeu-Olivares, 2002, p. 12). Such barriers might include innovation, uncertainty, impulsiveness, conflicting demands, performance abilities, or lack of possessions. Whereas, a solution is defined as a managing reaction designed to effect the circumstances perceived as a problem (Nezu, Palmatier, & Nezu, 2004). A solution is that which attain the suitable problem solving objectives while increasing positive consequences and decreasing negative consequences. "Problem-solving is a process by which people recognize and respond to problems in living by altering the problematic nature of the situation itself and the person's response to the situation, or both" (Nezu et al., 2004, p. 225).

Problem solving is a method in which we recognize and resolve a gap between a current situation and a preferred goal, with the course to the goal blocked by identified or unidentified obstacles (Ghodrati, Bavandian, Moghaddam, & Attaran, 2014). In general, the situation is one not previously encountered, or where at least a specific solution from past experiences is not known (Huitt, 1992). Problem solving refers to a goal directed sequence of cognitive operations (Terzioglu, 2006) and to a process by which the solver develops and implements plans within a range of constraints in the attempt to move from the current state towards the goal state (Simpson & Courtney, 2002). Bransford and Stein (1984) have given the model of problem solving that included four phases: 1) an Input phase, in which a problem is apparent and an effort is made to realize the problem; 2) a Dealing phase, in which different substitutes are produced and assessed and finally a best solution is chosen; 3) an Output phase, which includes arrangement for and application of solution; and 4) a Re-assessment phase, in which the solution is tested and adjustments are made.

Problem solving is a procedure that is starting with the observation of a gap and finalizing with the application and assessment of an explanation to fill that gap. Problem solving styles are considered as comparing individual differences with ways that people favor to sketch and focus on their actions in order to arrive at some understanding or awareness, to create thoughts and to plan for the tasks (Sutherland, 2002). Problem solving refers to an attempt of getting an effective explanation in dealing with the problem state (Arslan, 2010). The way an individual assesses and perceives the problem solving skills affects how he reaches the problems faced in life and how he manage them (Heppner & Krauskoph, 1987).

The first model of problem-solving styles was based on the concept of psychological functions (Jung, 1923; Moon, 2008; Taylor & Mackenny, 2008). This model consists of four psychological functions as thinking, feeling, sensation, and intuition (Ghodrati et al., 2014). Brief description of these styles is as follow:

Thinking Problem Solving Style

People using thinking problem solving style tend to use reasoning and investigation to solve the problem. They are also expected to worth objectivity and to be impersonal in making decisions. They want explanations in terms of the facts, models, and principles. All the time they try to make judgment by intellectual processes. These intellectual processes are based upon external data or generally accepted ideas and values. Thinking types frequently try to fit problems and solutions into standardized principles (Kim & Choi, 2014).

Feeling Problem Solving Style

People using feeling problem solving style mostly consider ethics and feelings in the problem-solving process. They are subjective and biased in making decisions. They are responsive to other people's feelings. They are sympathetic towards others, and do not like to tell unpleasant things to others. They tend to make decisions that result in agreement from others, like from subordinates or peers, and keep away from decisions that result in disagreements. The establishment of friendly relations may even supersede and possibly hinder with success, effectiveness, and life satisfaction. A feeling type person emphasizes emotional and individual processes to approach life satisfaction (Altun, 2003).

Sensing Problem Solving Style

Sensing individuals are more likely to give consideration to particulars, details, and reality. They also tend to choose typical solutions that have worked in the past. They dislike new problems unless there are standardized ways to solve problems then they select any new problem. They prefer routine to non routine work. Usually these individuals dislike adjustment with unstructured problems that contain considerable environmental uncertainty. Sensation types are

mostly detail people. They gather specific and factual data from environment by using the five senses (Sutherland, 2002).

Intuitive Problem Solving Style

People using intuitive problem solving style are used to attend the meaningfulness of the information, the relationships among them, and the potential of future events that can be imagined from given information. They show a possibility to create new, novel solutions rather than to use what has done before. They like to resolve new problems and are intolerant with usual details. Intuitive individuals tend to recognize the environment as whole (Hedjazi, Shakiba, & Monavvarifard, 2012).

University life is a period in which major skills such as problem solving (Albert & Steinberg, 2011; Reyna et al., 2011) in trained areas and community interactions survive. In this phase, problem solving has a significant effect on life satisfaction of individuals. Researches show that problem solving (Cenkseven-Önder, 2012; Deniz, 2006) skills are efficiently leads to life satisfaction. Chang et al. (2007) investigated the correlation between problem solving styles, psychological adjustment, and life satisfaction. Problem solving styles were found to be linked with psychological adjustment. However, using latent variable analyses, thinking problem solving style had a link with life satisfaction. Overall, these results point to the significance of considering problem solving styles in researches of psychological adjustment.

Life satisfaction has been defined as the cognitive assessment that people make for the general quality of their lives or the quality of specific features within their lives (e.g., family, peers, institutional, experiences, etc.). People respond differently to the same life situations as a result of their individual cognitive schemas, thought patterns, and attitudes (Bradley & Corwyn, 2004; Diener, Suh, Lucas, & Smith, 1999; Gilman & Huebner, 2003). There are two broad components of life satisfaction such as positive affect and negative affect. Life satisfaction is presence of positive affect and absence of negative affect. Positive affect is enthusiasm, being vigorous, religious inspiration, and strength of mind; it shows a broad variety of pleasant affects, while negative affect exhibits feelings such as grief, nervousness, dread, rage, blame, and despise (Watson, 1988; Watson & Pennebaker, 1989). Children and adolescents' life satisfaction is also greatly affected by the extent to which they believe that they have the authority to direct their lives and the things that occur to them (Ash & Huebner, 2001; Dew & Huebner, 1994). It was observed that

the individuals who perceived themselves as efficient in problem solving had a low level of apprehension and better social skills (Heppner, Neal, & Larson, 1984). Zullig, Valois, Huebner, Oeltmann, and Drane (2001) pointed out that some individuals might react to low life satisfaction and connected feelings by selecting to get involve in various risk-taking behaviors (e.g., hostility, sexual action, substance use) in an attempt to improve the way that they feel about their lives. It was found that the individuals having effective problem solving skills were more convinced in making decisions (Deniz, 2004). D'Zurilla and Chang (1995) found that they had better skills of coping with stress also had a better social and personal adaptation. They also found that the students who perceived themselves as successful were more effective and had higher internal locus of control in their problem solving skills. Likewise, Cenkseven-Önder (2012) found that problem solving styles and self-esteem in decision making are related to life satisfaction. Moreover, DeNeve (1999) states that having an effective problem solving is an important factor for life satisfaction and subjective well-being. Bacanlı (2000) has argued that the individuals who utilize effective problem solving styles obtain more satisfaction from their lives.

In Pakistan, there are many researches conducted on life satisfaction and its relationship with other variables like gender, age, culture (Bibi, Chaudhry, & Awan, 2015), religiosity (Jamal & Zahra, 2014), psychological well-being (Mehmood & Shaukat, 2014), and job satisfaction (Naz, 2015). Same is the case with problem solving styles, researches are available on problem solving skills and PTSD symptoms (Ferdos & Seyed-Hosseini, 2007), mathematics problem solving (Akhter, Akhtar, & Abaidullah, 2015), and problems of primary education (Ahmad, Rauf, Rashid, Rehman, & Salam, 2013). However, there is lack of research in the area of how different problem solving skills are related to life satisfaction. Youth is a significant period in which problem solving abilities are developed and important decisions require to be made (Çolakkadıoğlu & Güçray, 2007). Preferences made during this time may have lifetime significance for the individual's organic and religious health, as well as his professional and social recognition (Albert & Steinberg, 2011; Galotti, 2001; Klaczynski, Byrnes, & Jacobs, 2001; Kuhn, 2009). If the individual can solve the problems efficiently then he may enhance the contentment he gets from life and feel better; while if the individual cannot solve the problems successfully, his life may get harder and he may feel inferior. For that reason, researchers are trying to educate problem solving abilities and develop plans to enhance the life satisfaction of university students (Çolakkadıoğlu & Güçray, 2012).

The main object of the study is to predict life satisfaction among university students by problem solving styles, and to explore the effect of some demographic variable like gender. It is hypothesized that problem solving styles predict satisfaction with life among university students.

Method

Instruments

Problem Solving Style Questionnaire (PSSQ). This was developed by Cassidy and Long (1996) to measure different problem solving styles. It consisted of 20 items based on four subscales including Sensing (Item no. 4, 5, 10, 16, & 19), Intuitive (item no. 3, 8, 11, 13, & 18), Feeling (item no. 2, 6, 9, 14, and 17) and Thinking (item no. 1, 7, 12, 15, and 20) problem solving styles of individuals. The responses were rated on 5-point rating scale ranging from 1 = *strongly disagree* to 5 = *strongly agree*. Score for each subscale ranged from 1 to 25. Problem Solving Styles Questionnaire showed adequate reliability and strong internal consistencies ranging from .83 to .96 (Stead, Shanahan, & Neufeld, 2010).

Satisfaction with Life Scale (SWLS). This was developed by Diener, Emmons, Larsen, and Griffin (1985) to measure the life satisfaction and contentment. It consisted of five items. Respondents were asked to rate the extent of their agreement to the items across a 7-point Likert type scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The higher scores on this scale show that individual is satisfied while low scores represent dissatisfaction with life. Test-retest reliability (8 weeks) for the SWLS has been reported to be .82 (Diener et al., 1985).

Sample

A convenience sample of 150 university students, selected from different universities of Islamabad and Wah Cantt. The sample comprises 75 male students and 75 female students studying in different universities. Their age ranged from 20 to 25 years ($M = 21.74$, $SD = 1.49$) and having fourteen and sixteen years of education.

Procedure

The data was collected after taking permission from the authorities of different universities. Scales were administered on

university students. The respondents were instructed to complete the scales by giving response to every item of each scale. Informed consent was taken and all the respondents were assured that the data will be kept confidential. After getting data, scoring and analyses were done.

Results

The present research was aimed to explore the relationship between problem solving styles and life satisfaction among university students. Appropriate statistical procedures were used to analyze the data. The results have been show in the tabulated form below.

Table 1
Cronbach Alpha Reliability Coefficient of Research Instruments (N=150)

Scales	No. of items	Alpha Coefficient
SWLS	5	.73
SPSS	5	.96
IPSS	5	.63
FPSS	5	.78
TPSS	5	.64

Note. SWLS = Satisfaction with Life Scale; SPSS= Sensing Problem Solving Style; IPSS= Intuitive Problem Solving Style; FPSS= Feeling Problem Solving Style; TPSS= Thinking Problem Solving Style.

Table 1 indicates the alpha coefficients for SWLS and subscales of Problem Solving Style Questionnaire. These all values are quite satisfactory.

Table 2
Multiple Regression Analysis of Predictor Variables of Life Satisfaction Among University Students (N=150)

Predictor Variables	B	SE	β	t	p
SPSS	.12	.09	.11	1.33	.18
IPSS	.11	.09	.09	1.12	.26
FPSS	.04	.09	.04	.47	.63
TPSS	.16	.08	.16	1.87	.04

Note. SPSS = Sensing Problem Solving Style; IPSS = Intuitive Problem Solving Style; FPSS = Feeling Problem Solving Style; TPSS = Thinking Problem Solving Style.

$R = .24$, $R^2 = .06$, $F(4, 145) = 2.21$, $p > .05$

Table 2 shows the prediction of life satisfaction by different problem solving styles among university students. Thinking problem solving style significantly predicts life satisfaction and positively correlated with life satisfaction among university students ($\beta=.16$, $p<.05$).

Table 3

Difference between Male and Female University Students on Study Variables (N = 150)

Variables	Men	Women	<i>t</i>	<i>p</i>	<i>LL</i>	<i>UL</i>	Cohen's <i>d</i>
	(<i>n</i> = 75)	(<i>n</i> = 75)					
	<i>M</i> (<i>SD</i>)	<i>M</i> (<i>SD</i>)					
SPSS	12.83 (2.55)	13.13 (2.92)	0.69	0.49	-.58	1.19	0.11
IPSS	11.56 (2.46)	12.52 (2.83)	2.21	0.02	.10	1.82	0.36
FPSS	11.88 (2.77)	11.67 (2.45)	.50	0.61	-1.06	.63	0.08
TPSS	13.79 (3.10)	12.21 (2.81)	3.26	0.00	.62	2.53	0.53
SWLS	12.88 (2.80)	12.31(3.17)	1.17	0.24	-1.54	.39	0.19

Note. SPSS = Sensing Problem Solving Style; IPSS = Intuitive Problem Solving Style; FPSS = Feeling Problem Solving Style; TPSS = Thinking Problem Solving Style; SWLS = Satisfaction with Life Satisfaction.

df = 148

Table 3 indicates the nonsignificant differences between male and female university students on life satisfaction and problem solving styles except for the Intuitive and Thinking problem solving style. Female university students use more Intuitive problem solving style ($M = 12.52$, $SD = 2.83$) than male university students ($M = 11.56$, $SD = 2.46$) and male students use more Thinking problem solving style ($M = 13.79$, $SD = 3.10$) than female university students ($M = 12.21$, $SD = 2.81$) consecutively.

Discussion

The present study examined the role of problem solving styles as predictor of life satisfaction among university students. 150 students from different universities of Islamabad were taken. PSSQ (Cassidy & Long, 1996) was used to measure four problem solving styles (i.e., Sensing, Intuitive, Feeling and Thinking) and life satisfaction was measured through SWLS (Diener et al., 1985).

It was hypothesized that problem solving styles predict satisfaction with life among university students. Results indicated that among all problem solving styles, only Thinking problem solving style lead to life satisfaction. This is consistent with the previous literature as a research by Jung, Youn, and Kim (2007) revealed that

positive thinking significantly affected life satisfaction. They also showed that that younger respondents and persons with high incomes or higher education degrees were more likely to have higher thinking problem solving scores and thus higher life satisfaction. People who are using Thinking problem solving style, utilize logic and objectivity to solve their problems and it leads to more life satisfaction than other problem solving styles. They use intellectual processes to make decisions (Eskin, Akyol, Çelik, & Gültekin, 2013).

Differences between problem solving styles used by men and women were analyzed by *t*-test and the results revealed that female university students use more Intuitive problem solving style than male university students and male university students use more Thinking problem solving style than female university students. Burkey and Miller (2005) also found that women use Intuition problem solving in work settings, the possible reason could be that women may invoke intuition in workplace decision making, and men may negate their intuition at work. Conner (2000) found that women tend to be Intuitive global thinkers. They consider multiple sources of information within a process that can be described as simultaneous, global in perspective and will view elements in the task in terms of their interconnectedness. According to Wang, Heppner, and Berry (2007), masculinity was significantly associated with rational problem solving. These findings added support to the existing empirical evidence (Brems & Johnson, 1989; Nezu & Nezu, 1987; Wang et al., 2007) and were consistent with the masculinity model (Whitley, 1984). The masculinity model proposed that masculinity had a moderately strong relationship to well-being and adjustment, such as self-esteem and general adjustment, and that femininity had small relationship to thinking style of problem-solving and adjustment.

When women try to resolve a problem, mostly they rely on the help of closer one's like family members or friends. Women used to talk about their problem, discuss the circumstances in depth, and process through which they can solve it. While the solution and the process through which the problem can be solved is important. The process of discussion provides an opportunity to women to make stronger the connection with the person they are talking to. As a result, a woman may consider a relationship to get weak if the person they are talking to be looking like uninterested or not helpful. On the other hand, men use to solve his problem without discussing with anyone. Instead, they use to solve it by demonstrating their knowledge and ability. It is important for men to solve the problem most efficiently and effectively but for women the process of problem solving is important than to solve a problem (Bradley, 2012).

Limitations and Suggestions

Few limitations were encountered while conducting this study. The sample was taken from limited number of universities; in future the sample should be expanded to increase the generalizability. Secondly, convenient sampling was done to collect the data; sample was not accurate representative of the study. In future, random sampling is suggested. Thirdly, the time was too short for this study. A research based on an extensive time design would show more reliable and valid results.

Implications

Results of the present study had both theoretical and applied nature in terms of implications. From a theoretical perspective, it providing further insight into problem solving styles used by university students and their level of life satisfaction. From an applied perspective, future studies can be planned to gain an understanding about the strategies and techniques which can be used by the students to improve their problem solving styles and life satisfaction.

Conclusion

Study revealed that thinking problem solving style among all the styles is positively correlated with life satisfaction. Results indicated that among all styles, thinking problem solving style is the most significant predictor of life satisfaction. It is also concluded that female university students use more intuitive problem solving style than male university students. On the other hand, male university students use more thinking problem solving style than female university students. There are nonsignificant differences between male and female university students on the other problem solving styles.

References

- Ahmad, I., Rauf, M., Rashid, A., Rehman, S., & Salam, M. (2013). Analysis of the problems of primary education system in Pakistan: Critical review of literature. *Academic Research International*, 4(2), 324-331.
- Akhter, N., Akhtar, M., & Abaidullah, M. (2015). The perceptions of high school mathematics problem solving teaching methods in mathematics education. *Bulletin of Education and Research*, 37(1), 1-23.
- Albert, D., & Steinberg, L. (2011). Judgment and decision making in adolescence. *Journal of Research on Adolescence*, 21(1), 211-224.

- Altun, I. (2003). The perceived problem solving ability and values of student nurses and midwives. *Nurse Education Today*, 23, 575-584.
- Arslan, C. (2010). An investigation of anger and anger expression in terms of coping with stress and interpersonal problem solving. *Educational Sciences: Theory and Practice*, 10(1), 7-43.
- Ash, C., & Huebner, E. S. (2001). Environmental events and life satisfaction reports of adolescents: A test of cognitive mediation. *School Psychology International*, 22, 320-336.
- Bacanli, F. (2000). The development of Indecivness Scale. *Psychological Counseling and Guidance Journal*, 2(14), 7-16.
- Bibi, F., Chaudhry, A. G., & Awan, E. A. (2015). Impact of gender, age, and culture on life satisfaction. *Science International*, 27(2), 1649-1652,
- Bradley, M. (2012). *Problem solving differences between men and women*. Retrieved from <http://www.healthguidance.org/entry/13967/1/Problem-Solving--Differences-Between-Men-and-Women.html>
- Bradley, R. H., & Corwyn, R. F. (2004). Life satisfaction among European American, African American, Chinese American, Mexican American, and Dominican American adolescents. *International Journal of Behavioral Development*, 28, 385-400.
- Bransford, J., & Stein, B. (1984). *The IDEAL problem solver: A guide for improving thinking, learning, and creativity*. New York: W.H. Freeman.
- Brems, C., & Johnson, M. E. (1989). Problem-solving appraisal and coping style: The influence of sex-role orientation and gender. *The Journal of Psychology*, 123, 187-194.
- Burkey, L. A., & Miller, M. K. (2005). Examining gender differences in intuitive decision making in the workplace. *Gender and Behavior*, 3, 252-268.
- Carver, C. S., & Scheier, M. F. (1999). Optimism. In C. R. Snyder (Ed.), *Coping: The psychology of what works* (pp. 182-204). New York: Oxford University Press.
- Cassidy, T., & Long, C. (1996). Problem-solving style, stress, and psychology illness: Development of multi-factorial measure. *British Journal of Clinical Psychology*, 35, 265-277.
- Cenkseven-Önder, F. (2012). The influence of decision-making styles on early adolescents' life satisfaction. *Social Behavior and Personality*, 40(9), 1523-1536
- Chang, E. C., & D'Zurilla, T. I. (1996). Relations between problem orientation and optimism, pessimism, and trait affectivity: A construct validation study. *Behavior Research and Therapy*, 34(2), 185-194.
- Chang, E. C., Sanna, L. J., Riley, M. M., Thornburg, A. M., Zumberg, K. M., & Edwards, M. C. (2007). Relations between problem-solving styles and psychological adjustment in young adults: Is stress a mediating variable? *Personality and Individual Differences*, 42(1), 135-144.

- Çolakkađıođlu, O., & Guray, S. S. (2007). The adaptation of Adolescent Decision Making Questionnaire into Turkish population. *Eurasian Journal of Educational Research*, 26, 61-71.
- Çolakkađıođlu, O., & Guray, S. S. (2012). The effect of conflict theory based decision-making skill training psycho-educational group experience on decision making styles of adolescents. *Educational Sciences: Theory and Practice*, 12(2), 655-676.
- Conner, M. G. (2000). Understanding the difference between men and women. *Family Relations*, 32, 567-573.
- D'Zurilla, T. J., & Chang, E. C. (1995). The relations between social problem solving and coping. *Cognitive Therapy and Research*, 19(5), 547-562.
- DeNeve, K. M. (1999). Happy as an extraverted clam? The role of personality for subjective well-being. *Current Directions in Psychological Science*, 8(5), 141-144.
- Deniz, M. E. (2004). Investigation of the relation between decision making self-esteem decision making style, and problem solving skills of university students. *Eurasian Journal of Educational Research*, 15, 23-35.
- Deniz, M. E. (2006). The relationships among coping with stress, life satisfaction, decision-making styles and decision self esteem: An investigation with Turkish university students. *Social Behavior and Personality*, 34, 1161-1170.
- Dew, T., & Huebner, E. S. (1994). Adolescents' perceived quality of life: An exploratory investigation. *Journal of School Psychology*, 33, 185-199.
- Diener, E., Emmons, R., Larsen, J., & Griffin, S. (1985). The Satisfaction with Life Scale. *Journal of Personality Assessment*, 49(1), 71-75.
- Diener, E., Suh, E., Lucas, R. E., & Smith, H. L. (1999). Subjective well-being: Three decades of progress. *Psychological Bulletin*, 125, 276-302.
- D'Zurilla, T. J., Nezu, A. M., & Maydeu-Olivares, A. (2002). *Social Problem-solving Inventory-Revised (SPSI-R)*. New York: Multi-Health Systems.
- Elliott, T. R., Henick, S., MacNair, R., & Harkins, S. (1994). Personality correlates of self-appraised problem-solving ability: Problem orientation and trait affectivity. *Journal of Personality Assessment*, 63, 489-505.
- Eskin, M., Akyol, A., elik, E. Y., & Gltekin, B. K. (2013). Social problem-solving, perceived stress, depression and life-satisfaction in patients suffering from tension type and migraine headaches. *Scandinavian Journal of Psychology*, 54(4), 337-343.
- Ferdos, G., & Seyed-Hosseini, S. (2007). The effectiveness of problem solving skills in decreasing PTSD symptoms in survivors of bam earthquake. *Pakistan Journal of Medical Sciences*, 23(5), 736-740.
- Galotti, K. M. (2001). Helps and hindrances for adolescents making important real-life decisions. *Applied Developmental Psychology*, 22, 275-287.

- Ghodrati, M., Bavandian, L., Moghaddam, M. M., & Attaran, A. (2014). On the relationship between problem-solving trait and the performance on C-test. *Theory and Practice in Language Studies*, 4(5), 1093-1100.
- Gilman, R., & Huebner, S. (2003). A review of life satisfaction research with children and adolescents. *School Psychology Quarterly*, 18, 192-205.
- Hedjazi, S. Y., Shakiba, H., & Monavvarifard, F. (2012). Effect of problem-solving styles on academic achievement of agricultural students in the University of Tehran. *Annals of Biological Research*, 3(8), 4154-4158.
- Heppner, P. P., & Krauskoph, C. J. (1987). The integration of personal problem solving processes within counseling. *The Counseling Psychologist*, 15, 371-447.
- Heppner, P. P., Neal, G. W., & Larson, L. M. (1984). Problem-solving training as prevention with college students. *The Personnel and Guidance Journal*, 62, 514-519.
- Huitt, W. (1992). Problem solving and decision making: Consideration of individual differences using the Myers-Briggs Type Indicator. *Journal of Psychological Type*, 24, 33-44.
- Jamal, Y., & Zahra, S. T. (2014). Life satisfaction and religiosity among college teachers. *Journal of Education and Vocational Research*, 5(4), 186-190.
- Jung, C. (1923). *Psychological types*. London: Rutledge & Kegan Paul, Ltd.
- Jung, J. Y., Youn, H. O., & Kim, H. J. (2007). Positive-thinking and life satisfaction amongst Koreans. *Yonsei Medical Journal*, 48(3), 371-378.
- Kim, K. S., & Choi, J. H. (2014). A study on problem solving ability of nursing students. *Advanced Science and Technology Letters*, 47, 357-361.
- Klaczynski, P. A., Byrnes, J. P., & Jacobs, J. E. (2001). Introduction to the special issue: The development of decision making. *Applied Developmental Psychology*, 22, 225-236.
- Kuhn, D. (2009). Adolescent thinking. In R. M. Lerner & L. Steinberg (Eds), *Handbook of adolescent psychology* (3rd ed.) (pp. 152-186) New York: Wiley.
- Mehmood, T., & Shaukat, M. (2014). Life satisfaction and psychological well-being among young adult female university students. *International Journal of Liberal Arts and Social Science*, 2(5), 143-153.
- Moon, J. (2008). *Critical thinking: An exploration of theory and practice*. New York: Routledge.
- Naz, S. (2015). Relationship of life satisfaction and job satisfaction among Pakistani army soldiers. *Journal of business research*, 7(1), 7-25.
- Nezu, A. M., & Nezu, C. M. (1987). Psychological distress, problem solving, and coping reactions: Sex role differences. *Sex Roles*, 16, 205-214.
- Nezu, C. M., Palmatier, A. D., & Nezu, A. N. (2004). Problem-solving therapy for caregivers. In E. C. Chang, T. J. D'Zurilla, & L. J. Sanna

- (Eds.), *Social problem solving: Theory, research, and training* (pp. 223-238). New York: American Psychological Association.
- Reyna, V. F., Estrada, S. M., DeMarinis, J. A., Myers, R. M., Stanisz, J. M., & Mills, B. A. (2011). Neurobiological and memory models of risky decision making in adolescents versus young adults. *Journal of Experimental Psychology: Learning, Memory, and Cognition*, *37*(5), 1125-1142.
- Simpson, E., & Courtney, M. (2002). Critical thinking in nursing education: A literature review. *International Journal of Nursing Practice*, *8*(2), 89-98.
- Stead, R., Shanahan, M. J., & Neufeld, R. W. J. (2010). I'll go to therapy, eventually: Procrastination, stress, and mental health. *Personality and Individual Differences*, *49*, 175-180.
- Sutherland, L. (2002). Developing problem solving expertise: The impact of instruction in a question analysis strategy. *Learning and Instruction*, *12*, 155-187.
- Terzioglu, F. (2006). The perceived problem-solving ability of nursing managers. *Journal of Nursing Management*, *14*(5), 340-347.
- Taylor, G. R., & Mackenny, L. (2008). *Improving human learning in the classroom: Theories and teaching practices*. New York: Rowman & Littlefield Education
- Wang, L., Heppner, P. P., & Berry, R. B. (2007). Role of gender-related personality traits, problem-solving appraisal, and perceived social support in developing a mediational model of psychological adjustment. *Journal of Consulting Psychology*, *44*, 245-255.
- Watson, D. (1988). Intra-individual and inter-individual analyses of positive and negative affect: Their relation to health complaints, perceived stress, and daily activities. *Journal of Personality and Social Psychology*, *54*(6), 1020-1030.
- Watson, D., & Pennebaker, J.W. (1989). Health compliments, stress, and distress: Exploring the central role of negative affectivity. *Psychological Review*, *96*(2), 234-254.
- Whitley, B. E. (1984). Sex-role orientation and psychological well-being: Two meta-analyses. *Sex Roles*, *12*, 207-225.
- Zullig, K. J., Valois, R. F., Huebner, E. S., Oeltmann, J. E., & Drane, J. W. (2001). Relationship between perceived life satisfaction and adolescents' substance abuse. *Journal of Adolescent Health*, *29*, 279-288.

Received October 9th, 2014

Revision received July 11th, 2016