

## Construction and validation of problem solving questionnaire

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**Abstract:** The goal of recent study is structure & validate of problem solving questionnaire. For the same reason, from Payam Noor University, 247 students (105 boys and 142 girls) were chosen in random form. For making questionnaire mentioned, we used of factorial analysis of discovery. Data is gotten by questionnaires of make-research. After, 3 time experimental rotation, results is gotten from factorial analysis of discovery and scree test, showed that questionnaire of problem-solving are established from 19 items and two factor as problem analysis & finding cause ( 11 items ) & confidence to ability of problem solving (8 items). The reliability of questionnaire took by Cronbach alpha 0.70, and test validity mentioned by correlate with questionnaire of problem-solving Shahandeh (1991) appointed, and its amount was about 0.442 which it partly is a signal from well validity of factorial analysis questionnaire. Above questionnaire can use for the distinction problem-solving as a valid equipment for researchers and educators experts.

[Karim, Sevari , Mitra Kandy. **Construction and validation of problem solving questionnaire.** Journal of American Science 2012; 8(4):1-5]. (ISSN: 1545-1003). <http://www.americanscience.org>. 1

**Key Words:** Problem solving; problem analysis & finding cause ,confidence to ability of problem solving.

### 1. Introduction

The life today human is not thing with the Exception of encounter with problems and try to understand and solving them, due to complicating it (Shabani, 2001). When , human can reach to own life problem solving from variety ways. In the same direction, interest in skills mind is of issues that it has root in education historic,& unfortunately Nowadays, education institutions advert their more attention to transfer information and scientific facts (Shabani, 2004).

In the world today using framed thinking and ordinary and traditional ways aren't beneficial. (Mayers, 1995). In life today, from solvent skills is use problem - solving skill. For first time, idiom of problem solving used by Jorge Polia(1945)in its book named,"What Does It Solve" ( cited Biechnerand, 2000) it neglected more that thing that was expect (Soylu & Soylu, 2006; Karata, & Güven 2003). In the same relation, Chan (2001) reminds us of problem solving and also, how can people solve their problems, as an important issue. Some researchers (Willcorn,1994; House, 2000) found that if pupils understanding of problem solving fully grew, they would be more successful. So in the same correlation, Twerski & Schwartz (2005) believe that if children without feeling more psychical pressure, would learn the correct way to encounter with daily difficulties.

In the definition of problem-solving, there are different views between thinkers. Some people believe that problem solving is perceptive process, that its usage for finding the proper solution is means to reach goals (Biyabangard, 2004),and it is essential

memory, that it can chose properly actives and so it regularly work and use (Toluk & Olkun, 2002). Some experts (Semminara,1996) believe that problem solving is a perceptive process that it grows by education and it count valued goal. From view of Altun (2001), problem solving is being said work that you don't know do it. Eggen & Kauchak (2004), believe that when a problem create that a person has a goal, but it is lack of light way of access to it and it create in uncertain position and it is appointer interval between current position with desirable position.

Problem solving and creativity are in the highest perceptive active level of a human and it's counted as one of the most valued educational goals. Safe(2003) believes that we can create preparedness in people for fighting with life changeable conditions and new positions by activating the ability of problem-solving skill.

According to view of Bjorklund (2000), problem solving include to have an aim, perception of barriers it, review of guidelines overcome on barriers and to assess results. Some thinkers (D'Zurilla & Nezu, 2007) know that problem -solving include process of directing to problem make alternates and make decision and improvement and change.

Problem-solving has a special importance for experts. In the same relation, Muneyoshi (2004) resulted that use of creative problem solving in class create increase motivation and self-confidence of students and they find positive attitude that learn problem solving, also it help that they be active in

learn. Peterson (1996) reminds that an increase of concentration on critical thinking education and problem solving has caused review in syllabus of schools, and these kinds of skills establish basic of all learns. And question "when I am thinking to solve a difficult I think to different process of solving it" whit to have factorial load 0.30 from second factor Questionnaire mentioned, has established from two factors with names problem analysis and finding because it and confidence to ability of questionnaire estimated by the way Cronbach alpha 0.70, First factor 0.65 & second factor 0.61 for indicating questionnaire validity used coefficient of correlation from questionnaire mentioned with Shahandeh questionnaire (1991) and it's among took 0.442 that it is meaningful in 0.05 levels.

## 2. Materials and methods

The students of Payam Nor University of Ahwaz were society that 247 (105 boys and 142 girls) were chosen in random form. In order to make preliminary questionnaire, at first, 50 students were selected randomly and the questionnaire was given to them. Then, in order to obtain the expected results related to the problem-solving 247 university students (105 boys and 142 girls) were selected randomly. In an introductory study and in order to correct the preliminary questions, 30 university students and 4 professors from psychological proup were selected and after studying preliminary articles, some of them were corrected. Preliminary questionnaire was designed so that the examinees should answer one of the options from 5)entirely agree .to 4 entirely disagree).In order to determine the final questionnaire, The results of data analysis showed that Cronbach alpha of whole questionnaire estimated 0.70 , first factors 0,65 and second factor 0.61. Test validity is mentioned, specified by to correlate with problem solving questionnaire of Shahandeh ( 1991 ) and estimated it's amount 0.442 which it is meaning in 0.025 level and it partly show good validity of questionnaire of factorial analysis.

## 3.Results

Due to analyzing data used computer software SPSS, copy 19. Results of index tests with enough sampling KMO=0.765 & measurement Bartlett test of spherity $X^2=816/457$  ( $P < 0.0001$ ) show that data are appropriate for factorial analysis. In first used method of main compilations analysis, for scale factorial analysis of problem solving, then, for recognizing basic factors used method of Varimax rotation.

Factorial analysis exploratory show that special value of first till second factors is higher from number 1 that they generally reveal 20/87 variance of

scale materials. In factorial loads just over 0.36. In table 1 are show mean, standard deviations special value of variance is revealed, summative variance is revealed and number of questionnaire questions of problem solving.

**Table 1.** mean, standard deviation, special value of variance is revealed, summative variance and number of questions problem solving

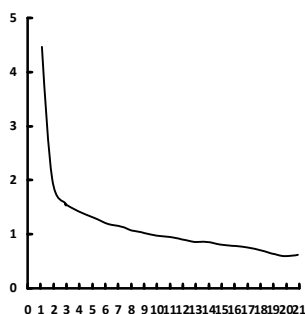
	Special value				
factors	mean	S	Variance is revealed	Summative variance is revealed	Number of questions
first	43/47	4/49	17/09	17/09	11
second	29/53	3/49	11/59	28/68	8
plus					19

Table 1 shows that descriptive information are first factor mean 43/47, standard deviation 4/49, special value of variance is revealed 17/09 and summative variance is revealed 17/09. Second factor mean 29/53, standard deviation 3/49. Special value of variance is revealed 11/59 and summative variance is revealed 28/68.

After, to analysis data in whole number of materials this scare reduced to 19 materials. Results is produced from factorial analysis exploratory showed after experimental turn rotation 3 time which they extracted from among 19 materials that 11 materials were on first factor and 8 materials on second factor. Since where that more materials of first factor turn them around analysis and to find causes of difficult and problems, therefore this factor is called problem analysis and finding cause. On the other hand, to think in materials of second factor showed takings of ability person from problem solving, also for the same reason, factor is mentioned, called confidence to ability of problem solving.

In the mean time, question, "when I encounter with difficult, at first I make decision and then I enter next process" with to have factorial load 0.31 from first factor and question "when I am thinking to solving a difficult, I think to different process of solving it" whit to have factorial load 0.30 from second factor was deleted. Scree test showed that questionnaire of problem solving has established from two factor (refer to graph1). Results of analysis from this finding conform to result of factorial analysis exploratory.

### Scree Plot



### Component Number

The result is connected with factors, is came in table 2 with materials and factorial load of them

**Table 2.** factors, materials and each of factorials load.

Title	Statements	Factorial Load
Problem analysis and finding cause	1. When I can't solve a difficult, I look for cause it.	0.634
	2. When I encounter with failure in first my struggle, I analysis correct ways	0.573
	3. After difficult solving, I analysis correct and mistake way	0.572
	4. For difficult solving, most of the time I review property and creative solutions	0.560
	5. I try to solve problem in a correct way	0.550
	6. When I encounter with difficulty, some time I feel confusion( - )	0.537
	7. I spend time for difficult solving	0.517
	8. When happen a difficulty, I think to possible solution it.	0.507
	9. When I encounter difficulty, at first I try to find solution it.	0.480
	10. When make decision for difficult solving, I review all of process that is necessary.	0.363
	11. When difficult don't solve, I try the other possible fortunes.	0.356
Confidence to ability of problem solving	12. When encounter with complex difficult, I don't have sure to my ability for solving it(-)	0.685
	13. I have ability of difficult solving, even if I don't have solution for immediate solving them.	0.614
	14. When I encounter difficulty, I am sure that I can find difficult solving condition.	0.586
	15. I believe that I have ability difficult solving that I encounter them.	0.547
	16. For solving a difficult, I make decision and then I satisfy due to my decision.	0.503
	17. I have ability new problem solving and hard difficult.	0.382
	18. The most difficult that I encounter it, are too there are difficult for solving. (-)	0.360
	19. When I am cheerful, I don't think to other difficult solution (-)	0.352
Total	19	

Top table contents show that the question "When I can't solve the difficulty, I look for its cause". With factorial load 0.634 and the question "When didn't solve difficult, I try other possible

fortunes" with factorial load 0.356 from first factor and the question "When I encounter complex difficult, I am unsure to my ability for solving it" with factorial load 0.685 and the question "When I am cheerful, I don't think to other difficult solution" with factorial load 0.352 from second factor, they had the highest and lowest of factorial load. By the way question 6 from first factor, questions 12, 18, 19, from factor second is marking in the form inversion and negative. Since questionnaire factorial analysis of problem solving is established from two factor in the name of problem analysis and finding cause and confidence to ability of problem solving, also for reviewing stability of questionnaire used Cronbach alpha way. The results of data analysis showed that Cronbach alpha whole questionnaire estimated factorial analysis 0.70, first factors 0.65 and second factor 0.61. Test validity is mentioned, specified by to correlate with questionnaire of problem solving of Shahandeh (1991) and estimated it's amount 0.442 which it is meaning in 0.025 level and it partly show good validity of questionnaire of factorial analysis.

### 4. Discussion and Conclusion

Just as it pointed, it recent research reviewed structure and finding validity of questionnaire of problem solving students of Ahwaz Payam Noor University established statistic population that 247 people of them chose in the form of multi process random. To analysis data showed that questionnaire of problem solving is established from question 19 and two factors (analysis problem and finding cause and confidence to ability of problem solving). The results data showed that the Cronbach alpha of whole questionnaire is became factorials analysis established 0.70, first factor 0.65 and second factor 0.61. The validity test is mentioned by the way to correlate with questionnaire of problem - solving Shahandeh(1991) specific and it's amount estimate 0.442, that it is meaningful in 0.025 level and this partly show good validity from questionnaire of factorial analysis.

To solve that imagine the most complex section of thinking operation, it is definitely as a important process perceptive that it is request to combine and hardness a series ordinary and fundamental skills. To solve, when propound that creation of a artificial intelligence system don't know that for going from a position to other position, what way it must go. This is section from process a bigger problem, which finding problem and formation problem is section of it. In human life, there is bitter and sweet realities that what we want and what we don't want, we are obligation encounter it. But, this confronting wasn't correct and rational. Individuals which for encountering problem's and own difficult

life take refuge to addiction and suicide, violence, harshness and or isolation are who that day did not had correct and property contacts with problems.

The quality contact with problems and life realities it's essential is to have skill with title: Problem Solving Skill only with to have ability we can protect from probable damages is rose from encounter difficult routine life, and so, we say problem solving process to expensive activities that for finding and solution performance is fulfilling for improving a undesirable position. In fact, means of problem solving is to find answer or answers for a question.

All of human encounter several problem and difficult in their personal and social life. In reality, life is not thing except sequential process of encountering problems and difficulties and to struggle for solving them. Thus, difficulties in the life is a natural affair, and willy-nilly we encounter several difficulties in our life. Then, it is better that we learn how we can solve our difficulties, then be inactive and wish, that oh! To please don't let anything difficult happen in our life. If life's important problems remain, and aren't solved, they create stress, fear and intention that in the end they lead to bodily processors.

Difficult solution skill is one of life's basic skills that we give this possible until we solve our difficult with recognition planning this skill isn't special difficult and it can usage in solution of kinds of problems and difficult. This is the most important beneficial learn of problem solving skill that is help to person till she/ he look for several solutions and review them and after analyzing choose the best solution, when a person encounter difficult on the other word, to learn problem solving skill make able the people that they encounter as much as existence difficult and difference till thing don't remain the name difficult and person can slowly eliminate barriers and with planning toward reaching to goals, and can protect and stable the own life, mainly, existence difficult of individuals in clued personality problems, daily affairs, educational, professional social, relation with friends, family and society, environment work and other positions which people are obligation that proportionately life and portrayal of social that it must encounter them.

Some people don't able in their daily soul their easy problem, and they become distressed, embarrassed and disturbed against the smallest difficult and problem. Thus people are vulnerable against the smallest undesirable and there is more possible that they become suffering from different diseases of psychology and bodily. Other people are that they spend the most difficult and the most disturbed problems and not only they don't

become suffering from harm, but also they reach to higher power and ability after enduring difficult it.

We can say that it is success reasons of people which when, they encounter difficult, they use rational and regular ways, and they promote the own individual readiness level with exercise and repetition and encountering of rational with problems, contrary to previous groups that they were lack of this ability. These people are able to do their life problem due to earn this ability.

Psychologists believe that when a person encounter position or task, and he can't reply to position and task it by usage of information and skills that he has in control, it is said that he is encountering problem. Therefore, this is important special problem which it reach to memory with first reply that can't solve it, but solving is essential use of knowledge and previous principles learned in new combination. On the other word, problem solving is skill that individual follow a rational and regular thinking process over it. This rational and regular thinking help to individual till when he encounter difficult, he look for several ways, and then he choose the best solution. Generally, we can say that problem is a conflict or difference between current position and position that we want to create.

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