Attitude Scale for the Computer-Aided Geography Lesson

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Abstract: "Attitude scale for computer-aided geography lesson" was tried to be developed in this research. The research was performed in high school in Education year of 2007-2008 within the borders of Izmir. Total 200 high school students participated in the research. 25 persons were not included in the evaluation due to forms filled wrong. Research data were analyzed with the program of SPSS for Windows 16.0. According to the results, cronbach alpha confidence coefficient of the scale was found to be.94. The scale developed as 5 point likert type consists of total 38 items as 18 positive and 20 negative.

Key words: Attitude scale · Computer-aided · Geography lesson · High school

INTRODUCTION

Computer has not been used widely for teaching geography in our country yet. The purpose of geography is to introduce natural and economical environments and give them the thought and power of establishing a healthy harmony with their environment. In order to achieve this main purpose, it is achieved that students acquire durable background information and efficient knowledge so they are enabled to benefit from scientific approach for establishing harmony with the environment [1].

It has been stated by the media in recent years that information technologies will improve teaching environments in education and increase learning skills of student. Many researchers expressed that information Technologies would increase the school efficiencies and reduce Education expenses and improve the learning environment and students could learn better [2]. It became a requirement that current tools and equipment to increase the motivation of student are used to achieve the acquisition foreseen in lessons within changing curriculum in our country. Existence of materials in learning environments for geography are very important for the learners. Computer among these materials is an attractive learning material having many image and other storage possibilities. New geography teaching program supports the use of information-communication technologies in teaching geography subjects. In this regard, the most important innovation is about CBS (geographical information systems). CBS stated as a definition in course books prepared in accordance with

previous programs was introduced to the new program as a direct efficiency development. In this case, efficiency recommended by the program for obtaining some acquisitions are seen in the examples. The program suggests CBS program as the teacher can develop CBS applications depending on technical equipment and physical facilities in the schools and review the examples. Many geographers express that geography teachers have many problems in Turkey [24].

According to Allport [3], the term of attitude was used in art branch firstly as "preparation for the action mentally" relating to the skills. "Mental attitudes" and "motor attitudes" distinction was seen in modern psychology. Allport [3] identified 16 attitude definitions before him. Some of them are as follows:

- "The attitude is the preparation for a series of action or attention"".
- "The attitude is the mixture of emotions, desires, fairs, beliefs, prejudices or other tendencies in the form of preparation or installation of the person for an action due to various lives".
- "The attitude is the tendency of taking action towards or against something in the environment being of positive or negative value [4]".

Allport [3] concluded from these definitions that the attitude has three characteristics: 1) Being ready for appropriate or inappropriate response, 2) Organization via experiences and 3) Being activated in the presence of object or conditions relating to the attitude [5]. The definition of Allport for attitude is that "the mental or

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neural preparation status formed as experience and having a directive or dynamic effect on the response of the individual for relevant situation or objects [3]. The attitude is "the implicit response mediating explicit response pattern (as a result of previous learning), stimulating various stimulant patterns, thought as meaningful in social terms in the society where the individual lives according to Doob (1947). Chein [6] opposed to the characterization of attitude as a response by Doob. The attitude is a tendency for response. Thurstone [7] defined the attitude as a single-dimension (affective) in the form of "degree of positive or negative feelings relating to a psychological object" in accordance with the purposes of scaling although he defended that the attitude is multi-dimension. The one emphasizing that feelings are perception and thoughts are cognition is Smith [8]. According to him, attitudes have a sense/or direction, density or being organized, "time perspective" and "cognitive concept" cognitive components, "political orientation" constitute the behavioural element of the attitude. Fishbein and Ajzen [9] express the three main characteristics of the attitude as "it is learnt, tendency to the action and these actions conforming to attitude object directly consistent [9].

According to Anderson [5], the attitude is only emotion/excitation consistent or learnt and formed in the experience is not enough to differentiate it from other affective characteristics. For this reason, the last three characteristics (target, direction and intensity) are very important to differentiate it from other affective characteristic and structures. Most of the psychological variables are complex, composite variables [10]. Therefore, it is very difficult to measure such variables than measuring physical variables, but it is not impossible [11]. The attitude is defined as negative or positive attitude towards other objects and things individually, impressions gained via experiences. In addition to these, researchers discuss that attitudes are not enough only to estimate the behaviours and there are important inconsistencies between attitudes and behaviours [12]. The attitude is "The status of being ready emotionally or tendency to behave for accepting or rejecting a certain object, person, group, institution or an opinion as an individual" according to Ozguven. The attitudes of individuals arise from their beliefs in object being the subject matter of the attitude. Attitudes and beliefs are always together. The belief accompanying an attitude is called "An opinion". People tend to act in parallel with their feelings and opinions. The belief side and opinion side of an attitude affects each other. Attitudes can be predicted from observable behaviours being outward of the individuals.

Benefiting from computers successfully in education depends mostly on attitudes of students and teachers [13]. In other words, it depends on using computer efficiently in Education of the students.

Beyerbach and his colleagues express that use of many computer-aided concept maps enriching the learning environment and making meaningful learning easy will increase learning at the top level [14]. Guven and Uzman [15] developed an attitude scale for the geography taught at secondary school previously. The confidence coefficient of the scale consisting of 39 items was found as 0.90 [15].

Study

Aim Of The Study: The aim of this study is to develop an attitude scale for the computer-aided geography lesson. It was aimed to measure attitudes of students towards both the computer and geography with this scale developed.

Design Stage for the Scale

Stage of Item Pool: While attitude scale items as a tool for data collection were created at the stage of collecting related information, students attending to grade 10. class of TED Aliaga College, Bornova Anatolian High School and Private Bornova College within the provincial border of Izmir were asked to write a composition to learn their opinions about computer-aided geography lesson relating to the subject. It was aimed to get information about attitudes of students towards computer-aided geography in the composition. It was determined whether the students had used computer or not before for this information. All of the students indicated that geography is mostly based on visuality. Item pool was created according to data obtained from students and branch teachers.

Stage of Learned Opinion: Validity is the degree of measuring the aim of a measuring device prepared for measuring. In questionnaires, "scope validity", the compliance of the questionnaire with the entire aim in terms of targets to be measured and contents of questions are important. Opinions of the one being specialist about this subject must be learnt relating to the questionnaire prepared. Amendments may be made in the questionnaire after reviewing according to the ones criticized relating to the structure of questionnaire. Questions of the questionnaire must be clear and comprehensible, the

persons should understand the same thing from the question [16]. While item pool was created for the scale, supports of geography teachers were taken and opinions of specialists were taken for the items created. Total 40 items were created for the scale to be performed as the pre-practice study. It was paid attention that positive and negative expressions were equal. Opinions of total 6 academicians as being 2 education programs field, 2 computer and instructional Technologies, 1 psychological counseling and guidance and 1 measure and evaluation field for the scope validity for learnt opinions.

Stage of Pretesting: The scale was applied to total 200 persons being the student at 10. class at TED Aliaga College, Bornova Anatolian High School and Private Bornova College in Izmir. These students are the ones learning computer-aided geography. Negative and positive expressions in the scale were created with close numbers. Since there was data loss for the empty items not filled, results of 175 persons were not included in the

assessment. Likert-type scale development processes are done based on many premises about attitude scale to be prepared and nature of stimulants. Total of graduation developed by Likert [17] many positive and negative expressions relating to the attitude to be measured with scaling approach are applied to the respondent. Respondents react as "I totally agree", "I agree", "I am indecisive," I don't agree", "I totally disagree". So each respondent indicate the degree of agreeing/disagreeing for the attitude item covered by each expression in the scale [18]. Expressions in the scale were scored as 1-5. Negative and positive expressions were formed consecutively.

Stage of Factor Analysis: Scale practice results were subject to Barlett's test in the research and value of KMO was found as.871.

As it can be understood from the table that approximate chi-square point is 6417, 421 and since significance level is lower than.05, data were significant for factor analysis.

Table 1: Attitude Scale Barlett's Test Results

Kaiser-Meyer-Olkin Measure of Sampling Adequacy	0.871
approximate chi-square point	6417.421
df	703
Sig.	0.000

Table 2: Factor Analysis Result Of Attitude Scale For Computer-Aided Geography Lesson

İtem	Mean	Std. Deviation	Component	CorrectedItem-TotalCorrelation
• I think that computer-aided geography lesson will increase my success.	4.0971	1.02090	0.715	0.684
• I forget subjects learning in computer-aided geography quickly	3.6571	0.88223	0.688	0.657
• I wish that all lessons will be taught as computer-aided geography	4.0114	1.29094	0.764	0.733
• I lose my attention in computer-aided geography lesson	3.7714	1.01951	0.734	0.702
• It is entertaining to learn lessons in computer-aided geography	4.4171	0.86619	0.761	0.729
• Computer-aided geography makes me sad	4.2457	0.78942	0.492	0.475
• My wish to participate in group work increase in computer-aided geography	4.0800	1.10610	0.737	0.701
• I prefer learning geography by books than computer	3.8400	1.18302	0.626	0.595
• My wish to research increases in computer-aided geography	3.8800	1.11024	0.626	0.591
• My learning is prevented in computer-aided geography since many things are performed in short time	3.8114	0.97314	0.771	0.744
• I try to attend to computer-aided geography lessons as much as possible	3.9371	1.10980	0.468	0.434
• I cannot get answers to my questions in computer-aided geography	3.8800	1.02967	0.677	0.654
• Computer-aided geography lesson increases my creativity	3.8914	1.19611	0.522	0.493
• I prefer my teacher teaching the lesson than computer-aided geography lesson	3.0971	1.28954	0.767	0.736
• I learn via movable figures in computer-aided geography more easily	4.2571	0.98093	0.739	0.714
• Use of computer in geography lesson is time-consuming activity	3.9371	0.99513	0.737	0.724
• Computer-aided geography contributes to improving myself	3.9657	1.03888	0.753	0.727
• I don't think computer-aided geography is interesting	3.4400	1.32855	0.515	0.499
• I will be more active in computer-aided geography	3.6629	1.34572	0.486	0.458
• The real images in computer-aided geography make me understand easier	4.1543	1.03622	0.573	0.553

Table 2: Continued

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• Computer-aided geography makes me passive	3.4514	1.18743	0.336	0.320
• My motivation increases in computer-aided geography	3.9257	1.16962	0.772	0.742
• I think I am more interested in computer-aided geography lesson	3.7029	1.30108	0.728	0.705
• I think computer-aided geography is not necessary	3.4571	1.41305	0.458	0.446
• Computer-aided geography is difficult for me	3.8229	1.09205	0.528	0.519
• My ability of problem solution improves in computer-aided geography	3.5314	1.26758	0.701	0.683
• I have to memorize the subjects in computer-aided geography.	3.4971	1.24971	0.481	0.458
• I learn more easily in computer-aided geography since there are many colorful figures	3.8686	1.18413	0.619	0.599
• I think my interest for geography lesson decreases with use of computer	3.6457	1.32186	0.535	0.512
• I repeat the learnt things in computer-aided geography lesson	3.4000	1.18419	0.612	0.579
• Use of computer in geography lessons makes me lazy	3.56000	1.191734	0.617	0.596
• I am happy in computer-aided geography	4.0114	1.08802	0.758	0.740
• I think computer-aided geography decreases social relations in the class	3.7143	1.12371	0.630	0.612
• Computer-aided geography is productive for me	3.9886	1.13961	0.760	0.735
• Use of computer in geography makes the lesson boring	3.7486	0.95574	0.657	0.642
• The things I have learnt in computer-aided geography are permanent	3.8457	1.09028	0.782	0.756
• I prefer use of another teaching method in geography than computer-aided teaching	3.5200	1.36390	0.715	0.692
• I am not successful at computer-aided geography lesson	3.7771	1.10980	0.752	0.741
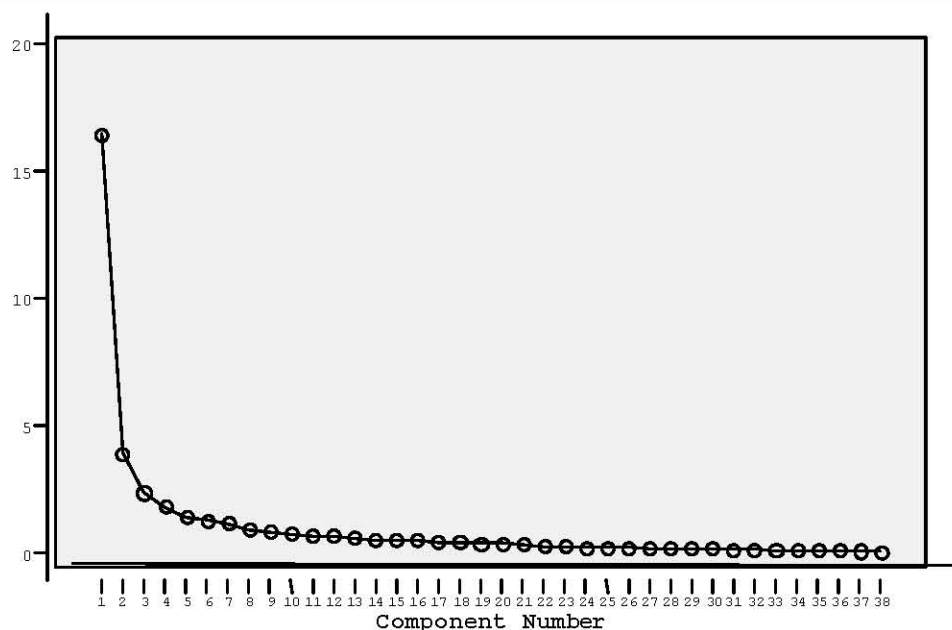
Fig. 1: Scree Plot of Scale

It was decided that the scale was single-dimension since total factor of item 1 was 16 in values in the total variance explanations in essential values and total variance percentage value is 43%. This dimension is relating to learning. The number of positive and negative expressions is very close to each other in the scale. There are total 18 positive and 20 negative items in the scale.

As it can be seen from the table above (Table 2), factor loads of attitude items of scale are higher than.30 in total. The factor load, standard deviation and corrected item correlation values are shown in 40-item table. This table was created by deleting item 20 and 26 from the table. The factor load of item 22 among attitude items was not deleted from the scale not to deteriorate the integrity since it was close to.30. According to screen test of scale, as it can be seen in the figure above (Figure 1) items being based on right, values concentrating on 4 and 5 are the indicators that the scale is one-factor. The parallel
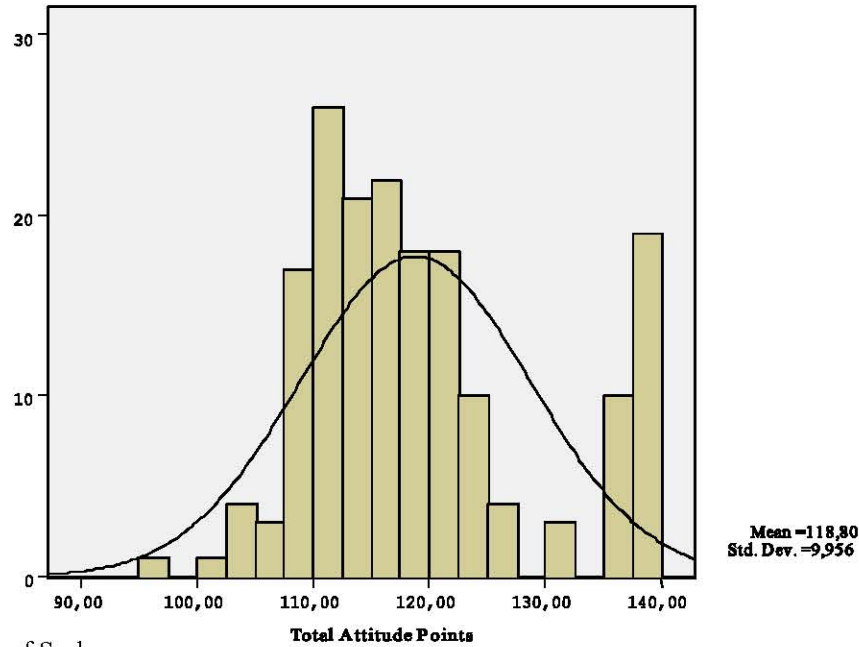
Fig. 2: Histogram of Scale

distribution of attitude items is seen. The point where graphic curve showed a fast scale-down is item 1 and 2. Fort his reason, it was determined that the scale was single-factor.

According to total attitude scores (Figure 2), scale graphic is within normal distribution limits. On the other hand, the curve is irregular to right and shows flat characteristics. Average attitude scores were calculated as 118 and standard deviation average was calculated as 9, 956 in this graphic.

Stage of Confidence Calculation: Cronbach Alpha confidence coefficient of the scale was found as 0.94 for item 38. This value is a high figure for the confidence of the scale. Since total factor loads of items 20 and 26 are lower than 0.30, these items were deleted from the scale.

Attitude Expressions of the Scale:
Item 20: I feel tired myself after the computer-aided geography.

Item 26: I learn according to my individual speed in computer-aided geography.

CONCLUSION

Attitude scale for computer-aided geography lesson was developed with this study. The items in the scale (Table 2) cover all behaviours at the affective level. The attitude scale consists of total 38 items as 18 positive and 20 negative. The total lowest score is 38 and the highest score is 190 in the final form of the scale. When the scale was examined for sub-dimensions, it was determined that 43% of total variance was accumulated at one dimension. This dimension is the attitude towards use of computer in geography teaching. Cronbach alpha confidence coefficient being the confidence level of the scale was determined as .94.

Technological innovations are becoming a part of our daily life quickly every day. Affects of these improvements in Education field are felt after a long time. The use of computer in geography lesson will be mandatory even if it is not now but in the future in our country. In the event of use of computers in geography, learning-teaching efficiencies in lessons can be enriched. It is deemed appropriate to use this scale developed for the process of researching attitudes of students towards computer-aided geography lessons.

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