Comparing the Skills and Attitudes of Descriptive and Quantitive Plan of Grade 3 Students in Dezful Elementary Schools

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ABSTRACT

Evaluation is no separable part of education process and development curriculum. Descriptive evaluation is a creative event in educational area in Iran that aims to make basic changes in several areas. The goal of this study was comparing the learning skills of experimental science and attitudes of third grade elementary students involved in the quantitive and descriptive evaluation plan in Dezful in 2010 -2011. The research way was casual – comparative. The statistic population was all third grade students in Dezful elementary schools including 5738. 200 students were involved in the descriptive evaluation and 200 students were in the quantitive one, which were selected with accidental multi – stages sampling way method. The tools used in this research were: 1) Seven performance tests evaluating learning skills in the experimental science (observation, communication, classifying, assessing, using tools, interpreting the findings and predicting), 2) Learning skills rank scale, 3) Rank scales evaluating individual, social and learning attitudes. For the analysis of data, in inferential analysis, Multivariate MANOVA and ANOVA test by the level of $\alpha = 0/01$ significant was used. Findings indicated in the learning skills of experimental science and attitude elements, the performance descriptive evaluation students was significantly more than those of quantitive ones.

Key words: Learning skill, Attitude, Descriptive evaluation, Quantitive evaluation

Introduction

Evaluation is an unseparable process of education and curriculum development. Beam and Field believe evaluation is "the process of identifying, getting and preparing descriptive data, judging about values and qualities of goals, designs, performance and conclusions, in order to lead deciding, services to the needs of replying and understanding more of the phenomenon under taken [45].

Andrewz, Chen et al and Turner emphasize that evaluation affects how we present something in the class [9]. Capper [18] believe a well-designed system of evaluation can help to improve the quality of education and a bad- designed system of evaluation can damage all done trials for getting educational quality. Black, Harison, Lee, Marshal and William ([13,17]) presented strong documents that evaluation can improve the bases of learning.

Changes in class evaluation system, that nowadays are seen in many countries of the world, is affected by two approaches: the first is new psychological learning approaches like cognitism and constructivism and the other is educational reforming revolution and curriculum changes and international comparisons in different texts subjects and necessity of increasing educational standards [74]. These evaluation approaches co-stem with own ancient philosophy (the philosophy of Kant, Soghrat …) and co-bias with cognitive psychology (Like the psychology of Piaget, Vigotski and Glemin) getting far from classic models of behaviorism [52].

Concentration of classic evaluation first is on cognitive abilities [67] and in pack evaluation systems; it makes students practically kept in low domains of thought, often conceptual knowledge [44]. From Black and William view [11]. Also this way of evaluation, encourage students to parrot learning and other training aspects like moral, connected with talent and … make vain and unconcept.

Quantitive classical evaluation is a branch of evaluation involved with data numbers and
Quantitative analysis [25]. In this model, the students' progression is determined by marks [8]. The tools and quantitative scales involving gust with insipid inflexible numbers have the lack of learning, reforming and growth of students especially in teaching-learning [56].

As a whole, valid evaluation, following new excellent ways searching for goals and effects of learning, qualitative techniques like careful class observation and using reliability records, being more important than quantitative techniques like standard tests [54].

Descriptive evaluation is an innovative event in Iran educational system. In this evaluation; necessary data, valid and documentive to recognize learners wholly in different learning dimensions, using tools and suitable ways are got along the teaching-learning process; according to that, necessary quantitative feedbacks to help better teaching-learning in suitable emotional atmosphere for students, teachers and parents [1].

Nowadays; according to usual training approaches in the world, the school is believed to be as a place that its basic task is learning. So in a school, different student dimensions are paid attention and attitude, skillful and knowledgeable goals are emphasized the same [35].

Descriptive evaluation approach; having curable identity, by considering process and deleting weaknesses and learning barriers and removing them somehow, improve teaching-learning process [33]. 80th experiments of quantitative evaluation system in our country make the weaknesses to be appeared. Concerning range of unsucceeded students in elementary level along 1996-2002, the TIMSS and PIRLS results which are international tests, also the range of leaving education by students in 2000 shows the shortages and problems in elementary grade [22].

Elementary grade is the basis of all educational levels; so paying attention to its problems is very important and necessary. Being these problems in educational system especially in the field of educational evaluation, the lack of using and applying suitable norms and standards in evaluation by the teachers, extended emphasizing of teachers on the contents of books instead of skills and attitudes, encouraging the individuals involved with educational system in concerned with the importance of paying attention to the process of teaching-learning, helping to the planners related to evaluation to know the problems in two approaches of evaluation are the reasons for choosing the topic by the researcher.

The success in any educational system depends on the trail and paying attention to the modern evaluation methods and using process-based evaluation more than before. In process-based evaluation, the teacher is going to know how and what kind of quality the student has learned and emphasizes on process-based teaching [37]. Qualitative evaluation as a searching approach; in contrast with the usual models of evaluation, by paying attention to curriculum and development plan norms, considers the depth and quality of students' learning instead of quantitative view [79].

In this plan, instead of emphasizing on getting knowledge, the process of teaching-learning in skillful attitude domains is taken into account [7]. The ways of thinking scientifically are called learning skills, that in fact are the ways of learning. Learning skills as well as knowledge got by skills and also scientific values and the thinking habits are all include in knowledge [39].

The attitude is a positive or negative emotional gesture toward a topic and in fact is a concept that determines the way of behaving individuals [64]. Descriptive evaluation by emphasizing on learning process, training learning skills, learner activity, group activities, motivating internal motivations of learners and emphasizing on significant learning and cognitive strategies, have been leaded to valuable results [33].

Some observations have showed that the students in these classes have more ability in taking part in activities, participating and exchanging with their classmates and teachers [30,57,61]. The teacher's and parent's views show the decreasing of stress phenomenon [81,58,42].

O, considering the replacement of descriptive evaluation with quantitative evaluation in elementary grade and high energy and expenses spent for performing well of this plan, it's necessary to know whether the availability amount of the learning and attitude skills in the students involving the descriptive and quantitative evaluation are different.

2. Previous Research:

In Amiri's research, studying the amount of effectiveness of descriptive evaluation plan in 2005-2006, the study was leaded to these results: the quality of teaching-learning process of mentioned students in mental last-living elements, the amount of motivation toward doing home-works and the amount of availability toward physical goals were better than those in quantitative evaluation.

Rezaee and seif also in a research about the effect of descriptive evaluation on cognitive, emotional and psycho-activating characteristics of students 2006 stated the level of student' progress in descriptive evaluation plan in cognitive variables, the information amount metacognitive and also the variables of psycho-activity domain is significantly more than students in public schools that were the same level with them, but in emotional variables' domain no significant difference was seen. In other words, educational evaluation is getting so far from gathering data goals, for deciding about learner progress and is going to help the learners in learning process.
In Smith's view [77] this has caused all the teaching-learning process wholly in the field of important aspects like moral and behavioral be present and so active. For this reason most of the planners and scientists in education in west have concluded the most important domains of human is neglected and cognitive domain increasing is emphasized through its surface.

Mulford [59], showing positive picture of oneself, supportive atmosphere, preparing enjoyable work conditions and making them healthy for students named as classes with positive characteristics.

Kolvand [49], in a research believes in final classical tests just pay attention to the educational results quantitively dimensionally and it causes educational goals to be limited and most of them have processing aspect and also most of qualitative goals like thinking skills and creativity, training hometown, co-employee, responsibility and … not being evaluated in tests.

One of the descriptive evaluation tools is portfolio. Those who believe in using portfolio have reasons that using it causes the learners how to think and leads to problem-solving ways and creativity giving the teachers more data than the classic evaluation methods, making the students have more active and effective role in their improvement [51]. Bloom and Bacon [15] studying twenty cases about the effect of portfolio on the learning and behavior process concluded, using portfolio as paying attention to the learners positive characteristics growth, decreases their behavior problems.

3. Hypotheses:

Based on the research problem, the research has two main hypothesis and ten sub-hypothesis. The main hypotheses are as followed:

**H1:** The availability amount of skills in the experimental science course for the students involved in the descriptive evaluation is more than the quantitative evaluation. (This main hypothesis includes seven sub-hypothesis and for the learning element's skills in experimental science the items like observation, communication, classifying, assessing, using tools, interpreting the findings and predicting are investigated).

**H2:** The availability amount of attitudes of students involving in the descriptive evaluation plan is more than students involving in quantitative evaluation. (This main hypothesis includes three sub-hypothesis for the attitude elements including individual, social and learning attitudes which were investigated).

4. Research Method:

The research method was casual-comparative. The tools used in this research were eleven ones including: 1) Seven performance tests to assess seven
skills; six researcher-made tests and one standard test. The test's validity was determined by getting the expert's views in this field and the numbers for assessment of observation, communication, classifying, assessing, using tools, interpreting the findings and predicting skills in order were 0/97, 0/93, 1, 1, 0/90, 1, and 0/93. Also reliability of tests by test-retest method in order was determined 0/75, 0/70, 0/78, 0/85, 0/80, 0/85, and 0/70. 2) The researcher-made scale of ranking in learning skills of experimental science according to expert's views was 0/90 and agreement on sub-elements was calculated between 0/80 till 0/97. The scale reliability according to Chronbach alpha was 0/95. 3) Three ranking scales for assessing individual attitudes, social and learning ones, which its validity according to expert's views was 0/90 and the agreement of them on sub-elements was between 0/80 till 0/97. The reliability of the scales was determined by Chronbach alpha and the number was 0/91.

5. Sample:

The research society includes all third grade students in Dezfool elementary level in 2010-2011, by the ages between 9 and 10. The numbers were 5738 including 2776 girls and 2962 boys.

5. The Results of Hypotheses Testing:

5.1. Results of Testing H1:

The first theory of research: Level of achievement to skills in empirical science in descriptive evaluation students was more than quantitive evaluation students. (This theory is used for observation, communication, classifying, assessing, using tools, interpreting the findings and predicting skills). The results of variance analysis related to this theory are given in tables 1 and 2.

Table 1: Summary results of Variance analyzing for multivariate on Means of experimental science learning skills in two groups of descriptive and quantitative evaluation.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Test</th>
<th>Value</th>
<th>F-ratio</th>
<th>DF of hypothesis</th>
<th>DF of error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>group</td>
<td>Piillai's Trace</td>
<td>0/858</td>
<td>338/884</td>
<td>7</td>
<td>292</td>
<td>0/0001</td>
</tr>
<tr>
<td></td>
<td>Wilk's Lambda</td>
<td>0/142</td>
<td>338/884</td>
<td>7</td>
<td>292</td>
<td>0/0001</td>
</tr>
<tr>
<td></td>
<td>Hotelling's Trace</td>
<td>6/052</td>
<td>338/884</td>
<td>7</td>
<td>292</td>
<td>0/0001</td>
</tr>
<tr>
<td></td>
<td>Roy's largest root</td>
<td>6/052</td>
<td>338/884</td>
<td>7</td>
<td>292</td>
<td>0/0001</td>
</tr>
</tbody>
</table>

Content of table 1 show that among involved groups in research (descriptive and quantitive evaluation) of at least one of the dependent variables of learning (observation, communication, classifying, assessing, using tools, interpreting the findings and predicting skills) there is a certain difference. On the other hand, tetrapliod tests of multi variable variance analysis related to 7 theories of research are statistically meaningfull and mean that that the among group of students involved in descriptive evaluation and group of students involved in quantitative evaluation at least in one of the seven comparable variables. There is a meaningfull difference.

In order to investigating the difference of above mentioned dependent variables in groups. The one way variances in Manova test was done on each of the dependent variables. The results of this analysis are shown in table 2.

Table 2: Results of one way variances in Manova test for comparing dependent variables on learning skills in two groups of descriptive and quantitative evaluation.

<table>
<thead>
<tr>
<th>dependent variables (learning skills)</th>
<th>Sum of squares</th>
<th>DF of freedom</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Observation</td>
<td>10130/422</td>
<td>1</td>
<td>10130/422</td>
<td>624/613</td>
<td>0/0001</td>
</tr>
<tr>
<td>Communication</td>
<td>15813/063</td>
<td>1</td>
<td>15813/063</td>
<td>773/039</td>
<td>0/0001</td>
</tr>
<tr>
<td>Classifying</td>
<td>8235/563</td>
<td>1</td>
<td>8235/563</td>
<td>303/134</td>
<td>0/0001</td>
</tr>
<tr>
<td>Assessing</td>
<td>23870/250</td>
<td>1</td>
<td>23870/250</td>
<td>1707/718</td>
<td>0/0001</td>
</tr>
<tr>
<td>Using tools</td>
<td>8372/25</td>
<td>1</td>
<td>8372/25</td>
<td>1086/277</td>
<td>0/0001</td>
</tr>
<tr>
<td>Interpreting the findings</td>
<td>33948/063</td>
<td>1</td>
<td>33948/063</td>
<td>1147/253</td>
<td>0/0001</td>
</tr>
<tr>
<td>Predicting</td>
<td>3158/44</td>
<td>1</td>
<td>3158/44</td>
<td>318/275</td>
<td>0/0001</td>
</tr>
</tbody>
</table>

Content of table 2 show that, all acquired amounts of F for skill components, are statistically (p<0/001) meaningful. On the other hand, the results say that, students who took quantitative evaluation have meaningfull differences in observation, communication, classifying, assessing, using tools, interpreting the findings and predicting skills. Which this confirms the theory also according to means comparisons, means of skills of students took descriptive evaluation is more than mean of students who took quantitative evaluation.

5.2. The Results of Testing H2:

The second theory of research: theories of descriptive evaluation students are more than quantitive evaluation students. (This hypothesis was studied for individual, social and learning attitudes).
The results of variance analysis are given in tables 3 and 4. Content of table 3 shows that there is a meaningful difference among groups, participating in the research in at least one attitude dependent variables (individual, social and learning attitudes). On the other hand, tetraploid tests of multi variable variance analysis related to 3 variables of the research are statistically meaningful and it can be said that group of students who took descriptive evaluation and group of students who took quantitative evaluation are different in at least one of the three comparable variables.

In order to check the difference of groups in attitude dependent variables, analysis of one way variances in Manova test was done on each of the dependent variables. The results of this analysis are given in table 4.

Table 3: Summary results of Variance analyzing for multivariate on Means of attitudes in two groups of descriptive and quantitive evaluation.

<table>
<thead>
<tr>
<th>Effect</th>
<th>Test</th>
<th>Value</th>
<th>F-ratio</th>
<th>DF of hypothesis</th>
<th>DF of error</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>group</td>
<td>Piilla's Trace</td>
<td>0/180</td>
<td>29/048</td>
<td>3</td>
<td>296</td>
<td>0/0001</td>
</tr>
<tr>
<td></td>
<td>Wilk's Lambda</td>
<td>0/820</td>
<td>29/048</td>
<td>3</td>
<td>296</td>
<td>0/0001</td>
</tr>
<tr>
<td></td>
<td>Hotelling's Trace</td>
<td>0/220</td>
<td>29/048</td>
<td>3</td>
<td>296</td>
<td>0/0001</td>
</tr>
<tr>
<td></td>
<td>Roy's largest root</td>
<td>0/220</td>
<td>29/048</td>
<td>3</td>
<td>296</td>
<td>0/0001</td>
</tr>
</tbody>
</table>

Table 4: Results of one way variances in Manova test for comparing dependent variables on learning skills in two groups of descriptive and quantitive evaluation.

<table>
<thead>
<tr>
<th>dependent variables (Attitudes)</th>
<th>Sum of squares</th>
<th>DF of freedom</th>
<th>Mean Square</th>
<th>F-ratio</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>individual</td>
<td>14592/64</td>
<td>1</td>
<td>14592/64</td>
<td>84/107</td>
<td>0/0001</td>
</tr>
<tr>
<td>social</td>
<td>12600/063</td>
<td>1</td>
<td>12600/063</td>
<td>50/234</td>
<td>0/0001</td>
</tr>
<tr>
<td>learning</td>
<td>7030/822</td>
<td>1</td>
<td>7030/822</td>
<td>5/85</td>
<td>0/0001</td>
</tr>
</tbody>
</table>

As observed in table 4, the entire F amount calculated for theatrical dependent variables in (p<0.001) level are meaningful. These results show that descriptive evaluation students and quantitative evaluation students have meaningful differences in individual, social and learning attitudes. Above result confirms the hypothesis of research. Comparison of means of course show that mean of attitudes of students who took descriptive evaluation is more than mean of students who took quantitative evaluation.

6. Summary and Concluding Remarks:

With attention to acquired results it's obvious that level of achievement to learning skills in empirical science for students who are evaluated with descriptive evaluation is more than students who are evaluated with quantitative evaluation. So, the first hypothesis of research is confirmed and it can be concluded that evaluation guidelines used in descriptive evaluation method have prepared needed conditions for growing learning skills. The results gained from this theory are in accordance with views and results researches of Amiri [3], Rezaee & Seif [70], Norouzi [63], Reihani & Hoseini [69], Mahdavi Far [53], Sadeghi Motlagh [73], Hasani [34], Nabavi & Rezaee Rad [60], Denis & Kluger [20], Fuchs et al [26], Black & William [12], Romberg [71], Olina [65], Black [13], Arthur [5], Van Evers [84], Wu & Tsai [86], Shavelson, [72], Huebner [38], Green Stein [29], Buldu & Buldu [17], but they are not in accordance with Kalhor [44], Mir Hoseini [37], Nick Far et al [61] and Waddle [85] researches. In specification of these results, which are on the basis of constructivism theory? We deal with some characteristics of descriptive evaluation Feedback: Different researches have confirmed the usefulness of genetic evaluation and giving feedback in students' performances [75,84,50,11]. In this design, the result of tests in the form of learning feedbacks is returned to students to understand their errors and its distance from their performance. These cases are of principals which are emphasized in "constructivism theory" . Paying attention to recognition and self-adjusted learning: For Hacker, metacognition not only involves awareness of many of his knowledge, processes and his cognition and emotional conditions, but also is related to conscious abilities of supervision and adjusting knowledge and cognitive and emotional conditions [47]. In descriptive evaluation method, students are directed to manage their learning process and they themselves with being active in learning process and evaluation become aware of their learning, because procreators challenge students in field of reasoning, asking questions, communication, views evaluation, framing problems, acquiring and implementation of clues, knowledge creation and creating new products. Use of performance evaluation: Experience has showed that such evaluations are attractive and meaningful for students [16]. Eisner quoted from Talkhabi [82] that in order to testing student's abilities, for knowledge application and application in real and different situations, evaluation of operation is very useful. According to Wiggins, we must retrack our evaluations on the basis of valid performance problems, assessments and worthwhile researches.
Using different instruments: Teachers in addition to evaluating knowledge, skills and attitudes of students with using different tools can reinforce these goals. In comparison with traditional tests, descriptive evaluation prepares more useful information's. Since these information's came from various resources and teacher for evaluating students satisfied with only written tests. In this approach teachers with using of objective observations while building something, doing research and cooperation with others, utilization of checklists and etc can acquire exact information about students. Emphasize on self-evaluation: This concept have close connection with metacognition. Task of education system is confront of mind with world and acquiring experience and data process and students himself is pivot of learning and with self-evaluation and self-direction he can establish his basis of knowledge. Studies carried out by Moohen and Stalling and Arthur et al [5] have shown positive effect of self-assessment on students performance specially in difficult paper works and self-assessment is known as a powerful and acceptable method in student evaluating because of a positive effect that it has on students performance through increasing inner impetus and increasing self-confident [28]. A research has shown that compound of self-assessment with teacher's testing has a positive effect on learner's performance [65].

According to second theory of the research and results amount of achievement to insights in students with descriptive evaluation is more than students who are evaluated with quantitative method. Therefore we can conclude that evaluating guidelines used in this research prepare needed conditions for growth of desired attitudes in students. The results gained from this theory are accordance with views and results researches of Karimi [43], Behravi [8], Alizade [2], Hasani [35], Hamedi [31], Hasani [32], Zari [87], Farzan Pour [23], Heidari et al [36], Arambani [4], Slavin [80], Friedman [25], Kocavski & Endler [48], Bassey [7] and Bloom & Bacon [15] but they are not in accordance with Amir [3], Khosh Kholgh & Shir Mohammadi [46], Rezaee & Seif [70], Fath Abadi [24] and Shir Mohammadi [78] researches. In specifying these results we refer to some features of descriptive evaluation: Fading the role of exam and teacher's conclusion with respect to various fields: Traditional evaluation focus on individual performance of student and students often perform on a competitive situation. While competing, students not only don't observe the function of their process but also they just pay attention to result of their performance Johnston [40]. Gay [27] believe that norm tests increases educational competition among students, but at elementary or even middle school creating educational competition among students is not necessary nor is acceptable. Descriptive evaluation through paying attention to learning process and using continuum assessments can fade the role of exams and increase mental hygienic of teaching-learning environment. This caused students to learn better and behave more accurately. Mohammadi [57] showed that students in descriptive evaluation benefit from a higher self-confident than common school's students. Using ordinal scale, reducing stress and improving behavior: For Ball [6] stress is factor of stimulation if it was normal and is a necessary condition for any sensitive and exact activity, but as these stresses increases the improvement of learning decreases. Some researchers have shown that there is a negative and meaningful relationship between stress and educational progress [41,76]. Biabangard while confirming above mentioned effect refers to results of researches of Saramon and Mendly, Pall and Erickson and Saramon that they achieved to the same results and showed that stress affect educational progress. In descriptive evaluation method, used ordinal scales have flexible characteristics and decrease competition among students and their stress. Using portfolio: The use of student's works in continuum evaluation is a crucial case and using them according to this belief that one thing that has most importance in instructional situations. Therefore continuum evaluation emphasizes on individual instructional plan [54]. Portfolios in descriptive evaluation do not compare students with each other, so unsound competitions that damage communication network of students cannot be create. Kathy believes that the process of student is decision in selecting portfolio's material, positively affect attitude's students in the field of their activities and schools.

Observation: In this project also observation is one the most useful methods in a data collecting from class and process of student's learning. Because in descriptive evaluation emphasis on evaluation is normal and natural. Costa [66] says: "characteristics of conscious behavior like assiduity, listening, flexibility in thinking, metacognition and accuracy in performance can be reinforced through observing student's performance. Doing project: students through doing projects walk in the direction of reinforcing their attitudes. Project method is systematic methods which through a wide research process develop cognitive skills including analysis, compound and evaluation. Also it instructs students the basic processes of live such as programming, communion, decision making and cooperation and it persuades self-motivated learning [83].

7. Research suggestions:

- Giving continuum instructions in order to familiarize teachers with new methods of evaluating and trying toward changing teacher's attitudes about the importance of new methods of evaluation.
- Familiarize teachers with learning skills and way of instructing skills to the students.
• Familiarize teachers with necessary attitudes and how to developing them in students.
• Holding congress, meeting and workshop sessions in order to familiarize teachers with good of each lesson.

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