Offering a Model for Assessing Impacts of Employing Divergence-Oriented, Convergence-Oriented, Constructivist and Criticism-Oriented Approaches on Perceived Elitist Curriculum
(*The Case of High School Teachers in Isfahan*)

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Abstract
This study attempts to assess the impacts of employing divergence-oriented, convergence-oriented, constructivist and criticism-oriented approaches on perceived elitist curriculum. The study is a descriptive-correlational research. The statistical population comprises all high school teachers in Isfahan in the academic year 2012-2013. The study employs multistage cluster random sampling to select the sample (200 teachers). The research tools comprise three questionnaires: 1) the researcher-made questionnaire of the four approaches influential in developing elitist curriculum (20 items), 2) the researcher-made questionnaire of developing learning up to the mastery level (10 items), and 3) the researcher-made questionnaire of components of the plan of development of an elitist curriculum. Data analysis in conducted by exploiting Pearson's correlation and structural equations modeling. Generally, the findings reveal that the direct impacts of realizing the objectives of curriculum on the development of perceived elitist curriculum is (0.152), the comprehensive activation in learning process (0.167), utilization of portfolio evaluation (0.195), separation of course objectives (0.117), separation of methods and learning activities (0.114), separation of evaluated answers for grading (0.262) , integration of course objectives (0.149), integration of methods and learning activities (0.237), integration of evaluated answers for grading (0.178), learning based on the investigation of beliefs and opinions (0.154), learning based on reasons and evidence (0.289), and learning based on the evaluation of results is (0.197). According to the findings resulted from the structural equations modeling, GFI=0.96 and AGFI=0.91 which indicate the model's fitness.

Key words: divergence-oriented approach, convergent-oriented approach, constructivist approach, criticism-oriented approach, perceived elitist curriculum

Introduction
Every country, in order to reach progress and development, requires fostering and paying attention to its elite. In so doing, there are many influential elements which require attention. An elite member is a person who can solve different problems, adopt a pragmatic reaction to remove obstacles, help improve the society in different scientific, social, cultural, economic and political levels by using what he/she has learnt. In fact an elite person is one who has reached high levels of analysis (Bev, 2001).

Afshar Nikan (2001) and rezvanshad (2005) indicate that considering characteristics such as a higher level of learning, better perception and a better understanding of their course subjects, innovative students pay more attention to education and have a better understanding of their educational subjects than non-innovative students. Nurturing elite people necessitates having a elite-producing curriculum. Adopting an appropriate approach, the curriculum could play a significant part in nurturing individuals who can work in different environments and realize their potential abilities. As one of the main pillars of the structure of the educational sciences, the curriculum plays a unique role in educational performances. It has even exceeded formality to include informal processes, too (Eskandari, 2008). Clearly we could adopt various approaches in educating elite students. Fathi & Ejargah (1998), Mehrmohammadi (1999), Mehrmohammadi (2001), Shafipoor Motlagh (2012), Facione (1995), House (2002), Halpem (1999), etc. indicate that use of the divergence-oriented, convergence oriented, constructivist and criticism oriented approaches in teaching-learning process could help nurturing students and developing their thoughts to higher levels of analysis. Considering the above-mentioned views and opinions, the main question of this research is how great the impacts of using the four approaches (divergence-oriented, convergence-oriented, constructivist, criticism-oriented) is on the development of elitist criticism.

Theoretical framework of research

Supporting the elite and providing opportunities for their progress are the responsibilities of social institutions especially the education system. This responsibility is sometimes viewed as the central responsibility in education systems. In other words, some education systems have a serious approach to nurturing elites. Thus, curriculum functions in its general sense as a plan to prepare a set of learning opportunities for learners (Khooyinejad, 2001). Curriculum is one of the principle tools and means which pave the way for realizing elitist approach in elitist education systems. By identifying potentially intelligent and talented students, and providing appropriate facilities, elitist education systems attempt to adopt a special curriculum to unlock the potential talents of these students and nurture individuals who can work in management and specialized posts and help develop their country. The Iranian education system is among those countries which have this elitist approach. Holding various seminars and Olympiads, constructing buildings and special courses for smart and talented students, giving numerous tests to prepare and motivate students for participating in Olympiads and measuring the quality of the performance of the education system based on the number of successful Olympiads are some of the signs showing the elitist tendency of Iran's education system (Majidi, 2007). Fathi and Ejargah (1998) show that the elite could be classified into two categories of divergence oriented and convergence oriented elite. The talents and skills of the divergence-oriented elite are focused on a definite scientific and theoretical area. In contrast, the convergence-oriented elite could apply their elite operational abilities in instable, variable and difficult conditions in multidisciplinary and interdisciplinary areas. We could divide curriculum approaches into two general categories: divergence-oriented curriculum and convergence-oriented curriculum. The divergence-oriented approach (or subject-oriented approach) aims at enhancing and developing students' cognitive abilities

and their knowledge and information in their specialized area. In this approach the course knowledge is divided into completely distinct subjects and each textbook attends to ad investigates a special subject. For example, when students is at geography class, the teacher attempts to teach them only subjects relating to geography and absolutely refrain from mentioning subjects irrelevant to geography. In this approach students do not have strong ability in linking subjects to each other and they will have problems in using their knowledge in real life situations. In this approach, in addition to lectures, other educational methods such as discussion, conference, (oral account), debate, etc. are used in the classroom (Miller, as cited in Mehrmohhamadi 2000). In contrast, in the convergence-oriented approach, the course contents are offered as packages comprising subjects in different areas relating to the students. This approach does not consider course subjects as issues completely distinct from each other (Mehrmohammadi, 1998). In integrated curriculums, students learn the relation of the curriculums to real life situations and they develop the ability to face life issues (Mehrmohhamadi, 2001). Shafipoor Motlagh (2012) shows that the constructivist approach enables students to master problem-solving at a level of innovation. In the constructivist approach, students' learning is tested by demonstration, offering the set of activities and performances (Seif, 2006). In response to the question of why in the recent years performance tests have increased and objective tests have lost their popularity, Seif (2005), as cited in Dembo, offers the following answers: 1) Cognitive theories of learning have affected education and thus complex intellectual talents have been emphasized. 2) New cognitive theories have also emphasized intellectual and self-disciplinary learning aspects. Therefore, today attention is mostly directed to how learners interpret and apply knowledge to solve complicated problems. Such skills are not measurable by objective tests such as multiple-choice test. 3). Recent research shows that learning and motivation have a substantial impact on each other. Learners might have vast knowledge but be unable to use it. Therefore, researchers believe that in the field of writing learners must be forced to think about their performance and evaluate it. This will help them choose high level criteria for themselves. Seif (2008), as cited in Voolghalk, considers the other cause of the emphasis on performance tests to be the severe objections made against objective tests (especially multiple-choice tests).

Merrill (1997) believes constructivist assumptions are as follows: 1) Knowledge is made from experience. 2) Learning is the process of distinctive interpretation of the world. 3) Learning is an active process. 4) Learning must take place in a real environment. 5) Tests must not be distinct activities; rather, they must be interconnected with assignments. The purpose of the constructivist approach is to allow learners to construct, develop and communicate their knowledge. Learners take the responsibility for their learning through interaction with the educational mood which covers various subjects of learning at different levels (Magliaro et al. 2006). Thus, according to constructivist approach, students' educational progress depends on skills which cause them to personally organize the content and experience a sort of totality and unity (Mehrmohammadi, 2004). In fact, the constructivist approach attempts to keep learners active, force them to perform meaningful activities, process high levels of information, acquire direct and immediate experience, perform group and cooperative activities and enjoy interactive learning (Mehrmohammadi, 2003). Andrew Hogue et al.

(2011) maintain that project-based learning and problem-solving learning approaches are influential in improving learners' skills and lead to their educational progress. Hase et al. (2002), Gilbert (2002), Lord (1999), Schacter (1999)and Kelin and Merritt (1994) indicate that the constructivist approach leads to the improvement of learners' educational progress by improving their critical thinking, analysis and interpretation skills. Regarding skills thet students need to have in the 21st century, North American Council on Education (2006) maintains that all students at all levels must enjoy communication, problem-solving, and analytical thinking skills to achieve success and work in technical-engineering fields (Facione et al., 1995). Halpern (1999) holds that in order to nurture elite students, teaching must be such that it fosters critical thinking in the students.

Main research hypotheses

There is a significant correlation between the use of the divergence-oriented approach (separation of course objectives, methods, learning activities, and answers evaluated for grading) and the perceived elitist curriculum.

There is a significant correlation between the use of the convergence-oriented approach (integrating course objectives, methods, learning activities, and answers evaluated for grading) and the perceived elitist curriculum.

There is a significant correlation between the use of the constructivist approach (realization of course objectives, learning based on reasons and evidence, learning based on the evaluation of results) and the perceived elitist curriculum.

There is a significant correlation between the use of the criticism-oriented approach (learning based on the investigation of perceived beliefs and opinions, learning based on reasons and evidence, and learning based upon the evaluation of results) and the perceived elitist curriculum.

Learning at the level of mastery mediates between the four effective approaches and the perceived elitist curriculum.

Methodology

This study is a descriptive-correlational research. The statistical population comprises all high school teachers in Isfahan in the academic year 2012-2013. The study employs multistage cluster random sampling to select the sample (200 teachers). The research tools comprise three questionnaires: 1) the researcher-made questionnaire of the four approaches influential in developing elitist curriculum (20 items), 2) the researcher-made questionnaire of developing learning up to the mastery level (10 items), and 3) the researcher-made questionnaire of components of the plan of development of an elitist curriculum. Data analysis in conducted by exploiting Pearson's correlation and structural equations modeling. Pearson Correlation Coefficient and Structural equations modeling were employed for data analysis.

Table 1. Reliability Coefficient of the research questionnaires

Item	questionnaires	Number of items	Cronbach Alpha Coefficient
1	The four approaches influential in the development of the perceived elitist curriculum	20	0.91
2	Learning at mastery level	10	0.85
3	Components of the perceived elitist curriculum	15	0.93

Table 2. Descriptive-correlational indexes between the research variables

Item	Research hypotheses	Mean	Standard deviation	Development of the perceived elitist curricula	Learning at mastery level	Realization of course objectives	Comprehensive activation in learning	Use of portfolio assessment	Segregation of course objectives	Segregation of learning methods and activities	Segregation of answers evaluated for grading	integration of course objectives	integration of learning methods and activities	integration of answers evaluated for grading	Learning based on beliefs and opinions	Learning based on reason and evidence	Learning based on the
1	Development of the perceived elitist curricula	33.74	13.25	-													
2	Learning at mastery level	21.28	10.52	** 0.788	-												
3	Realization of course objectives	31.36	8.48	** 0.547	** 0.738	-											
4	Comprehensive activation in learning process	29.52	16.24	** 0.657	** 0.235	** 0.398	-										
5	Use of portfolio assessment	35.29	7.32	** 0.564	** 0.832	** 0.275	** 0.347	-									
6	Segregation of course objectives	24.34	12.23	** 0.842	** 0.730	** 0.836	** 0.462	** 0.324	-								
7	Segregation of learning methods and activities	41.47	6.71	** 0.495	** 0.482	** 0.734	** 0.392	** 0.301	** 0.738	-							
8	Segregation of answers evaluated for grading	30.22	8.34	** 0.563	** 0.374	** 0.295	** 0.568	** 0.583	** 0.356	** 0.522	-						
9	integration of course objectives	23.29	18.29	** 0.626	** 0.471	** 0.487	** 0.385	** 0.326	** 0.326	** 0.783	** 0.631	-					
10	integration of learning methods and activities	32.25	8.36	** 0.837	** 0.473	** 0.463	** 0.693	** 0.473	** 0.954	** 0.384	** 0.382	** 0.646	-				
11	integration of answers evaluated for grading	46.27	14.25	** 0.845	** 0.372	** 0.625	** 0.294	** 0.394	** 0.359	** 0.234	** 0.376	** 0.784	** 0.456	-			

		-	** 0.563	** 0.957	** 0.346	** 0.392	** 0.382	** 0.427	** 0.235	** 0.482	** 0.268	** 0.526	** 0.949	9.20	35.26	Learning based on beliefs and opinions	12
	-	** 0.532	** 0.346	** 0.748	** 0.734	** 0.394	** 0.370	** 0.232	** 0.484	** 0.582	** 0.328	** 0.236	** 0.277	17.53	38.04	Learning based on reason and evidence	13
-	** 0.451	** 0.459	** 0.857	** 0.745	** 0.379	** 0.635	** 0.549	** 0.945	** 0.613	** 0.382	** 0.932	** 0.839	** 0.826	8.74	34.62	Learning based on the evaluation of results	14

As shown in the above table, there is a significant correlation between the development of the perceived elitist plans and learning at mastery level (r=0.788), realization of course objectives (r=0.547), comprehensive activation of in learning process (r=0.564), use of portfolio methods (r=0.564), segregation of course objectives (r=0.842), segregation of learning methods and activities (r=0.495), segregation of answers evaluated for grading (r=0.563), integration of course objectives (r=0.626), integration of learning methods and activities (r=0.837), integration of answers evaluated for grading (r=0.845), learning based on the investigation of beliefs and opinions (r=0.949), learning based on reasons and evidence (r=0.277), and learning based on the evaluation of results (r=0.826). Also, there is a significant correlation between learning at mastery level and the realization of course objectives (r=0.738), comprehensive activation of in learning process (r=0.235), use of portfolio methods (r=0.832), segregation of course objectives (r=0.730), segregation of learning methods and activities (r=0.482), segregation of answers evaluated for grading (r=0.374), integration of course objectives (r=0.471), integration of learning methods and activities (r=0.473), integration of answers evaluated for grading (r=0.372), learning based on the investigation of beliefs and opinions (r=0.949), learning based on reasons and evidence (r=0.236), and learning based on the evaluation of results (r=0.839).

3. Tested routes in the Structural Equations Modeling

rank	Research hypotheses	Learning at mastery level			Development of the perceived elitist curricula		
		Direct impact	Indirect impact	Total impact	Direct impact	Indirect impact	Total impact
1	Learning at mastery level	0	0	0	0.253	0	0.253
2	Realization of course objectives	0.164	0	0.164	0.152	0.041	0.193
3	Comprehensive activation in learning process	0.258	0	0.258	0.168	0.042	0.21
4	Use of portfolio assessment	0.203	0	0.203	0.195	0.049	0.244
5	Segregation of course objectives	0.243	0	0.243	0.117	0.061	0.178
6	Segregation of learning methods and activities	0.365	0	0.365	0.114	0.092	0.206
7	Segregation of answers evaluated for grading	0.183	0	0.183	0.262	0.046	0.308
8	integration of course objectives	0.380	0	0.380	0.149	0.045	0.194
9	integration of learning methods and activities	0.239	0	0.239	0.237	0.060	0.297
10	integration of answers evaluated for	0.373	0	0.373	0.178	0.094	0.272

	grading						
11	Learning based on beliefs and opinions	0.354	0	0.354	0.154	0.089	0.243
12	Learning based on reason and evidence	0.346	0	0.346	0.289	0.087	0.376
13	Learning based on the evaluation of results	0.243	0	0.243	0.197	0.061	0.258

According to the above table, there is a significant correlation between the direct impacts of the realization of course objectives and the development of the perceived elitist curriculum (0.152), comprehensive activation of in learning process (0.168), use of portfolio methods (0.195), segregation of course objectives (0.117), segregation of learning methods and activities (0.114), segregation of answers evaluated for grading (0.262), integration of course objectives (0.149), integration of learning methods and activities (0.237), integration of answers evaluated for grading (0.178), learning based on the investigation of beliefs and opinions (0.154), learning based on reasons and evidence (0.289), and learning based on the evaluation of results (0.197).

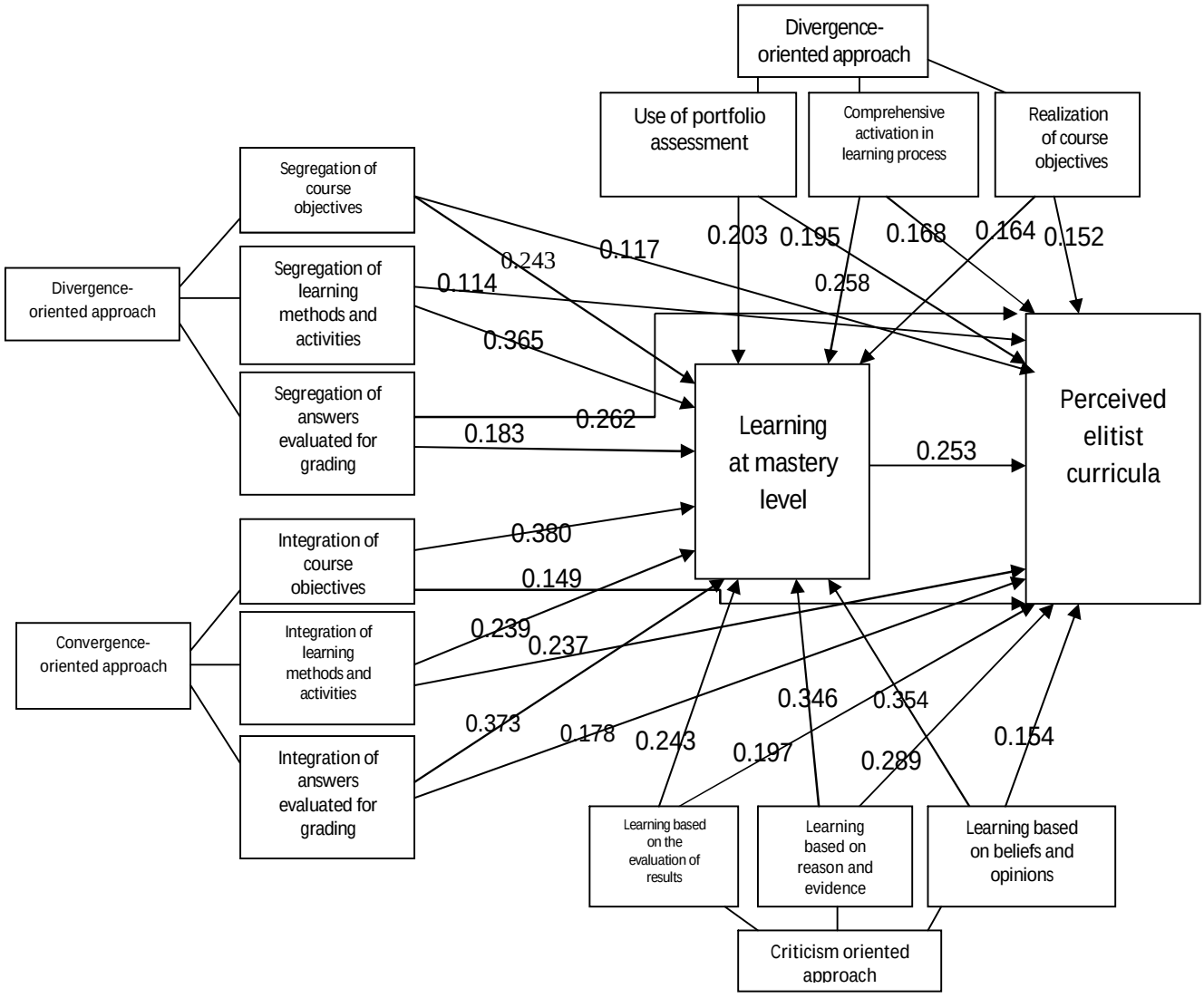

Figure 2. Empirical model of the relation between the four influential approaches (divergence-oriented, convergence-oriented, constructivist, criticism-oriented) and the development of the perceived elitist curriculum mediated by the development pf learning at mastery level.

Table 4. Fitness of the proposed research model of the relation between the four influential approaches and the development of the perceived elitist curriculum

Fitness indexes	estimate
(GFI)Goodness of Fit Index	0.96
(AGFI)Adjusted Goodness of Fit Index	0.91
(RMSEA) Root Mean Square Residual	0.384
(X^2) Chi Square	275.62
(df) Degree od Freedom	32

According to the above table, GFI=0.96 and AGFI=0.91 which indicate the model's fitness.

Discussion and conclusions

Curriculum is one of the principle underlying factors for the realization of elitist approach in the education system. Adopting an appropriate approach, the curriculum could play a significant part in educating elite who can work in various environments and realize their potential abilities. This study investigates the impacts of the use of divergence-oriented, convergence-oriented, criticism-oriented and constructivist approaches on the perceived elitist curriculum. The findings reveal that the correlation between the constructivist approach and the development of the perceived elitist curriculum is significant. In this regard, the correlation between the realization of course objectives and the development of the perceived elitist curriculum (r=0.547), the comprehensive activation in learning process (r=0.564), and the use of portfolio assessment (r=0.564) has been significant. The findings of the studies conducted by House (2002), Gilbert (2002), Lord (1999), Schwactor (1999) and Kelin and Merritt (1994) indicate that the constructivist approach lead to students' educational progress because it improves their critical thinking and analysis skills. Magliaro et al. (2006) maintain that the constructivist approach helps the progress of elite students and individuals who have the ability to analyze problems at various levels. The research findings indicate that the correlation between divergence-oriented approach and the development of the perceived elitist curriculum is significant. In this regard, the correlation of the segregation of course objectives (r=0.842), the segregation of learning methods and activities (r=0.495), and the segregation of answers evaluated for grading (r=0.563) is significant. Divergence-oriented approach, also called subject-oriented approach, aims at achieving cognitive growth and development as well as information in the course subject (Fathi and Ejargah, 1998). In this approach, the course knowledge is divided into separate units and each textbook attends to one specific subject and investigates that subject. Besides, the findings also show that the correlation between the divergence-oriented approach and the development if the perceived elitist curriculum is significant. In this regard, the correlation of the integration of course objective(r=0.262), integration of learning methods and activities (r=0.837), integration of answers evaluated for grading (r=0.845) is significant. In the convergence-oriented approach, course subjects are offered as packages comprising subjects in different areas related to the student. Actually, in this approach curse subjects are not considered as issues completely distinct from each other (Mehrmohammadi, 1999). In integrated curricula, students learn the relation of the curriculum to the real life and they develop the ability to face life problems (Mehrmohammadi, 2001). Convergence-oriented elite have the ability to use their elite operational abilities in unstable, changing and difficult conditions in multidisciplinary and interdisciplinary areas. Finally, the research findings also reveal that

the correlation between the criticism-oriented approach and the development of the perceived elitist curriculum is significant. In this regard, the correlation between learning based on beliefs and opinions (r=0.949), learning based on reasons and evidence (r=0.277), and learning based on the evaluation of results (r=0.826) is significant. About the skills the students are required to have in the 21 century, North American Council on Electronic Education (2006) maintains that all students at all levels must enjoy communication, problem-solving and analytic thinking skills to achieve success and work in technical-enjineering fields (Facione et al., 1995). According to Halpern (1999), in order to educate elite students, education must be able to foster critical thinking in the students. The research findings also indicate that learning at mastery level mediates between the relation between the four approaches and the development of the perceived elitist curriculum. In this regard, there is a significant relation between the impacts of the realization of course objective and the development of the perceived elitist curriculum (r=0.041), comprehensive activation of in learning process (0.042), use of portfolio methods (0.049), segregation of course objectives (0.061), segregation of learning methods and activities (0.092), segregation of answers evaluated for grading (0.046), integration of course objectives (0.045), integration of learning methods and activities (0.060), integration of answers evaluated for grading (0.094), learning based on the investigation of beliefs and opinions (0.089), learning based on reasons and evidence (0.087), and learning based on the evaluation of results (0.061). According to the results achieved through Structural Equations Modeling, , GFI=0.96 and AGFI=0.91 which indicate the model's fitness.

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