

## **Determining the meaning and impact of learning task in relation to teachers teaching method with (by) student's academic self- concept (study of the Delphi method)**

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### **Abstract**

In the field of academic learning, researches have shown that academic self-concept has been considered as one of the most important factors in the real if motivational and emotional factors affecting learning. Self-concept as a theoretical term has different definitions. According to Bern's model of Internal-external frame of arbitration (1996), academic self-concept is a multidimensional construct that include an Internal and external comparison. As affective factors on academic self-concept, it can be referred to individual factors such as age, gender, ability and attitude of the person, family factors such as the interpersonal relationship between the child and parents and educational factors such as teachers' training skills, and the students' learning methods. On the other hand in the present study, it has been sought to determine the meaning of the learning task position in the relationship between the teachers training method and the students ' academic self-concept based on the experts' viewpoints, that learning task plays what role in the relationship between the teachers training method and the students ' academic self-concept?

**Keywords:** impact of learning task; teachers teaching method; Delphi method

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## Introduction

In the field of academic learning, researches have shown that academic self-concept has been considered as one of the most important factors in the real if motivational and emotional factors affecting learning. Self-concept as a theoretical term has different definitions. Sometimes, it is defined as "self view", "self-image" and "self-esteem" (Kimiamesh, 2006). Part of the self-concept meaning is academic self-concept which is the individual's expression of their own ability in the academic conventions that expressed through the feedback of the self previous success and failure in this case (Biabangard, 2001). Academic self-concept includes description and assessment of the individual's perceived academic ability and fancy. Also, overall beliefs of valuation are correlated with the individual's perceived academic adequacy that forms via the individual's academic environment experience, interaction with people who have special significance for the individual, their behavioral characteristics (shaolson Uyayens, 1982; quoted from Raadee, 2011). According to Bern's model of Internal-external frame of arbitration (1996), academic self-concept is a multidimensional construct that include an Internal and external comparison. The students form their academic self-concept in each of the subject areas of the curriculum using the principle of arbitration. The internal arbitration principle is formed based on normative comparisons (how is my skills (individual) in this subject as compared to other students' skills?). The external arbitration principle occurs on the basis of the relative comparison (how is my skills in this subject as compared to my skills in other lesson topics?) (Bern, 1996; quoted from Forough Zadeh, 2011). Because of the relative internal components of this pattern, it can be anticipated that the correlation of academic self-concepts in different curriculum subjects is considerably less than the corresponding academic skill areas, especially; the high level of skill in each of curriculum subjects leads the other subjects to remain at lower level (E.g. high skills in Physics

conversely affects the literature related to the academic self-concept). As well , Marsh, Bern (1989) and shaolson, (1988) showed that high skills in mathematics is relevant with high academic self-concept of mathematics. However, this relationship is less with verbal communication self-concept while better verbal skills are correlated with better verbal self-concept.. But, this relationship is weaker with mathematic self-concept (Marsh, 1998; quoted from Forough Zadeh, 2011).

As affective factors on academic self-concept, it can be referred to individual factors such as age, gender, ability and attitude of the person, family factors such as the interpersonal relationship between the child and parents and educational factors such as teachers' training skills, and the students' learning methods. The studies have shown that applying experienced, skilful and interested teachers, efficient training facilities, programs, and educational resources increases the students' learning and success that they has been confident in their success and efforts. The more students owe their success to their efforts, the extent of their efforts will be higher, experience higher level of successes, and accordingly their interest, motivation, and academic self-concepts are increased. Educational skills are a set of teacher's abilities and skills in the field of teaching and training the students. In the educational process, there are certain reactions with respect to the learners properties, that is teaching impacts on the events occurring within the learners. The concept of teaching is the reciprocal behavior of teacher and learners, based on the purposive and regular design of teacher in order to involve the learners in learning to change their behavior and awareness (Maleki, 2008). Bruce Joyce (1997) has divided the learning patterns in the teaching process into four families based on learning, kind of looking to people, and their training method. The families include personal, and social (individual) information processing, and behaviora systems. In the family of personal teaching patterns (person), the pattern that specially can be considered for self-development and self-development is the self-

development learning model (Joyce et al.; quoted Mehr Mohammadi, 2012).

In self-development model, the education provider enters into the learner psychological space, and helps him to discover new opinions about their life and educational activities; the education provider and learner share their ideas freely which helps the learner to improve their self-command and self-development. In this pattern, the training provider reflects and accept the learner's thoughts and feelings like a mirror because the training provider belief that recognizing the learner's positive and negative feelings is essential for emotional growth and solving their problems. Thus, as the learner in educational environments be more confident in their skills, they will have more skills development and more developed problem-solving ability and self-conference. Others believe that the individuals self-development can also boost their negative aspects; lead to avoiding learning or minimizing the activities. It means that the individuals at the time of learning to avoid failure, they attribute their performances to external or non- helplessness that they will not success whatever attempt (Silver et al; translated by Khubee Nezad, 2003).

Maslow (1970) and Rogers (1983) have emphasized on the learners' self-actualization and self-development. They, during the process of education, focus on the individuals' perception of their own "self" and "self-concept" more than on their talent growth and subjective perceptions, and believe that the individuals merits in connection with their environment is strongly influenced by the individuals perception of their own abilities so that positive self-concept is constantly associated with self-actualization behaviors that leads to make effective communication with the environment which in turn can help in its own and others growth through transformative opportunities. Therefore, education should be based on human relations and education providers in order to grace the learning space need to attend their own development and others affairs rather than maintaining the arbitration

framework in the others mind , and will attend their own and the learner's self growth(Schultz, 2005; translated by Mohammadi, 2012).

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One of the factors that potentially can affect the academic progress and consequently the students' academic self-concept is learning task. A learning task is those targeted activities that aim to promote the students' attention to consolidate learning and get their inner talents flourished (Cooper and Valtin, 2001:369). It is also an activity that the students are doing in order to practice, strengthen, and apply the learned skills and knowledge to acquire independent study skills (Butler, 1995:43-45).

Up to date, the learning task position in relation to the teachers' training methods has not been taken into consideration, so, it was attempted to determine the status of the learning task in this regard based on the pedagogical specialists' idea in order for the position and quality of the learning task in the category of curriculum planning and design to be more clear in future as it can be used effectively to improve the students ' academic self-concept and their academic progress. On the other hand in the present study, it has been sought to determine the meaning of the learning task position in the relationship between the teachers training method and the students ' academic self-concept based on the experts' viewpoints, that learning task plays what role in the relationship between the teachers training method and the students ' academic self-concept?

### **Methodology**

This research was carried out in integrated method. Kranol, Blatow, and Clark (2007) have stated that combination of quantitative and qualitative information can provide more complete illusion and deeper knowledge of the participant's perspective. Due to the use of quantitative information (obtained through questionnaire) and qualitative information (obtained through interviews), integrated strategy was chosen for the present study. In the qualitative phase, the survey method of Delphi

type was used. Delphi method is based on the idea that: "a few thoughts are better than one thought" (Dalaki, 1972; quoted from the Jack and Basby, 2005: 238-253) in which a group of experts after expressing their opinions about a specific problem achieve a consensus. Linston and Trof (2002) believe Delphi research method can organize the data that in fact is a feedback from participants information and provides the opportunity for discussion between the participants to express their opinions and know others insights about their opinion and finally get a chance to correct their own perspectives. Theoretically, the Delphi process should be constantly reiterated in order to members of the Delphi group reach a consensus. The validity of a Delphi study is based on the referee's group selection that is selected based on expertise, not random (Oskolomsky and Hartman 2007:21-1).

The statistical population of the present research was all specialists and subset experts of pedagogical department from the universities of Tehran, Allameh Tabatabaei, Shahid Beheshti, Shahid Rajaei and Office of the Curriculum Development. In this study, to select the first person of the interviewee team, the theoretical sampling method was applied. "Theoretical sampling is the process of data collecting for the theorizing through which the tester at the same time collects, encodes, and analyzes the data, and in the next step decides to collect what data and where to find, and hereby, organizes his theory during forming. The formulating theory controls the data collection process"(Flick, 2012:232). In order to select other members of the interviewee team, network sampling method was used (snowball). Network sampling would be continued so that the introduced samples could be duplicated. The volume of the sample in this research included 17 experts of the universities of Tehran, Shahid Beheshti, Allameh Tabatabaei, Shahid Rajaei, and Office of the Curriculum Development.

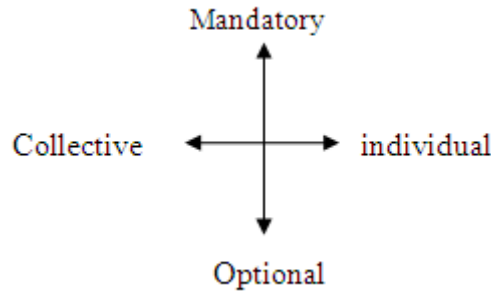
### **Measurement tools**

The measurement tool for qualitative data in this study was non-structured interview that was

taken from universities' professors as members of the Delphi Group. This interview did not include asking predetermined specific questions. Instead, the interviewer measured different aspect of the interviewee's idea. He presents the its topics as occur naturally in the conversation, follows the interesting titles, and let his initiative to intervene (Becker and Gozar, 1957; quoted from Delaware, 2013). The quantitative data were collected using the researcher's questionnaire. To set the questionnaire, the obtained data from the interview was firstly presented in purpose-content table, and then the questionnaire was set up based on the table. At first, the interviews content was contently analyzed (row by row) to identify its original meaning and concepts. Thus, an overall and descriptive picture was obtained of the interview text. Then, to encode the information obtained from the interviews content analysis, the open and axial encoding method was used. Open encoding is the analytical process through which concepts can be identifies, and its features and dimensions will be discovered in the data. In open encoding, first the task related concepts and subjects were chosen and sorted in to pieces that each piece (was the content segmentation basis, any meaning, content, and themes that represent the properties of the useful task) was considered as a code. The name of each code was chosen in such a way that objectively and accurately be the descriptions of the specified piece. The open encoding process continued until a theoretical saturation stage (where the new codes were not identified). During this process, the concepts of task were identified, and its features and dimensions were discovered in the data including the (optional ↔ mandatory) continuum, (collective ↔ individual) continuum, (teacher-oriented ↔ student-oriented) continuum. Here, a few words are needed to be explained: continuums are index on the properties of the task of self-determination type which among the interviewees was of high importance and agreement. Open encoding will be ended in axial encoding in the continuing of research. Axial encoding is a process that

connects the continuums with each other in order to get axial categories. The concept of category is the issue or event that is important to the respondents, and all are agreeing about that (Strauss and Korbin, 2012). Through connection and integration of the above-mentioned

continuums, the axial concept of self-determination was obtained after a few times of sift based on similarities, differences, and matches. Connecting and integrating was in the following form:



The term of coefficient of the importance indicates that the indexes of learning task enjoy a wide range and diversity. These indexes have been negotiable and discussion is going within them. As the range of self-determination task indexes is wider, the coefficient of importance will be higher. The coefficient of acceptance means that the indexes of self-determination concept enjoy a high frequency, and the majority of the interviewees pointed to this category which has a high rate of acceptance of the agreement.

interviewees) can be counted with respect to every respondent in frequency form. Then, the matrix of frequency table would be drawn that should be normal. Flowingly, the information load of each category would be calculated. At the end, the coefficient of acceptance and the importance of each category was calculated using the information load of the categories. And the category which has more information load will enjoy a higher degree of important (Adel Azar, 2001:6-18).

**Statistical method**

For results processing, Shanen method of entropy was used in this study which is based on the systems theory. Entropy is a basic concept in physics, social sciences, and systems. Entropy represents the uncertainty value of the message content. Entropy in information theory is the index to measure uncertainty that can be expressed through probability distribution. According to the method of Shanen entropy, the content of the interviews first in terms of the categories (the concepts mentioned by

**Findings**

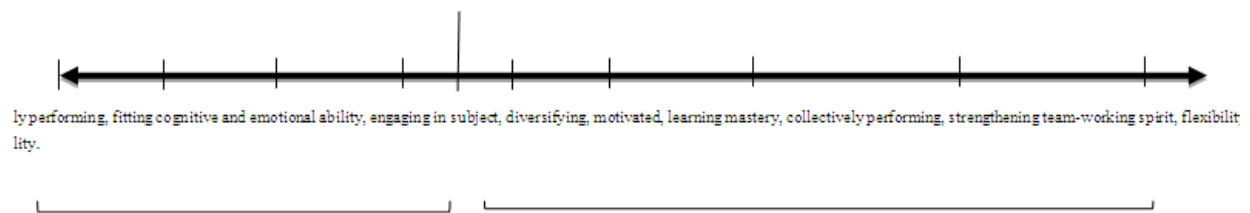
The first question) which the concepts and categories were of interest to the interviewees about the properties of the task? Using the categorizing techniques and the interviews content analysis by open encoding methods the mandatory-optional and collective-individual categories were obtained which their concepts were presented in table 1.

**Table 1: The obtained concepts and categories resulting from row by row analysis and open encoding**

Categories concepts	Categories
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Performing individually, fitting the student's cognitive and emotional ability, engaging with the subject, diversifying, motivated, learning mastery, performing collectively, to strengthen the spirit of team-working, flexibility, public responsibility.	Collective-individual
Performing voluntarily and creatively, students' participation in learning activities, enthusiastic learning and doing assignments, doing mandatorily, rehearsing only, incomplete performing, spending, bored with assignment.	Mandatory – optional

According to the information contained in table 1, the concepts of the collective-individual category are in the continuum form in the following order:



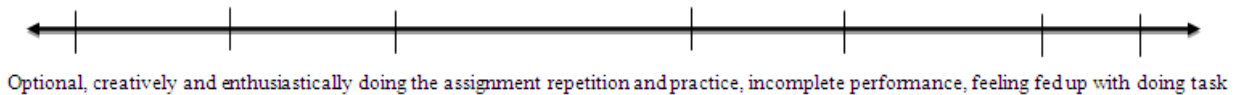
**Collective task dimension**

The individualized assignments were fitted to student's cognitive and emotional ability and in individual form that were different with respect to the individual differences and the student did it eagerly, was involved in the subject, and proficiency learning was likely to happen. Over

**Individual task dimension**

the continuum, the assignment was done collectively that enhanced the cooperative and team-working spirit and dividing responsibility occurred vulnerably.

Also, concepts of mandatory-optional category in continuum form are in the following order:



**Mandatory task dimension**

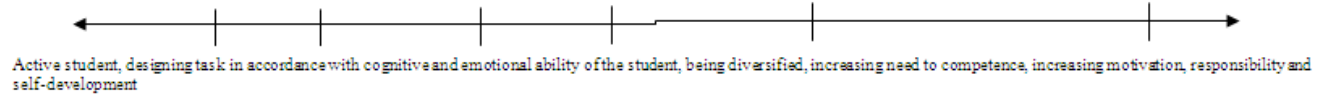
The students were motivated to do the optional assignment voluntarily and enthusiastically, and there was a good platform for creativity over the continuum. Mandatory assignment was done by the student with no motivation, they did it compulsorily and in the form of practice and repetition which led to superficial learning, their feeling of fed up and fatigue which ultimately resulted in doing it imperfectly.

Question 2) what are the interviewees' pivotal categories about the assignment features?

**Optional task dimension**

According to information obtained from the analysis of categories (continuum) respective (table 1), the pivotal categories were obtained taking into consideration the relationship between the derived categories that presented in the following drawn diagrams.

In the following axis, the self-determination task coordinates are from point A to point B that its related concepts can be found on a continuum:



optional, individualized, and student-oriented, and the self-determination task in the B area is mandatory,

collective, and teacher-oriented that its related concepts can be presented on one continuum:

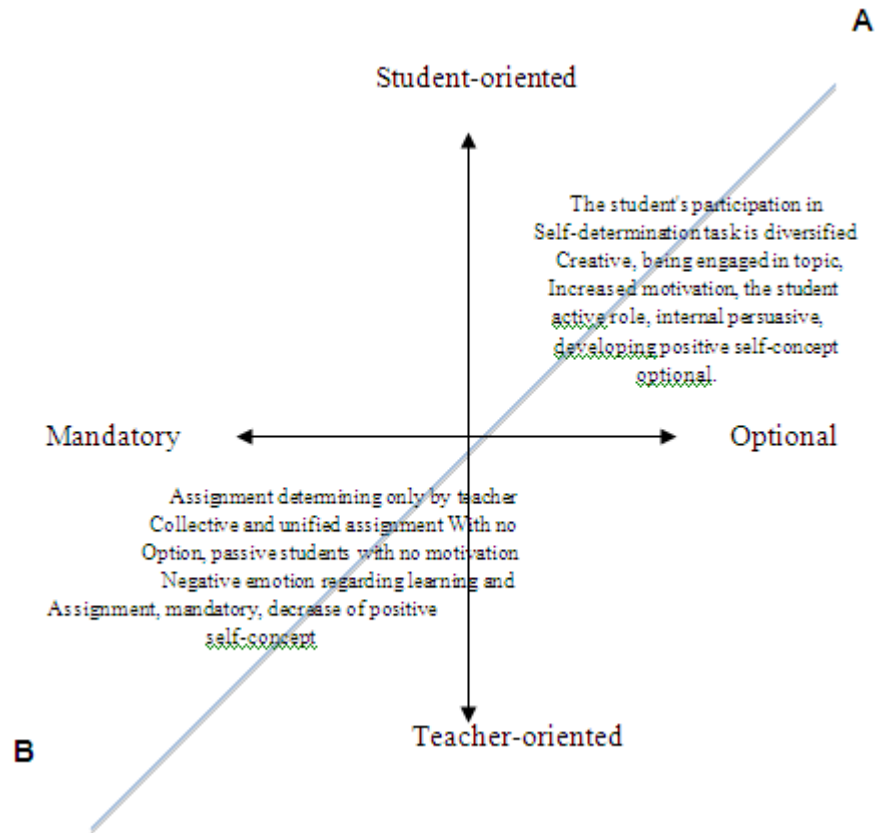


Figure 2 – the axial category of self-determination task

The concepts in A area are related to student-oriented assignments that include: the student participation in task designing, its diversity and creativity, freedom of action and choice, commensurate with the student learning abilities and style, motivated and voluntary performance, positive emotion and attitude regarding learning. On the other hand, the concepts in B area are related to teacher-oriented assignments which include: task determining merely by the teacher, compulsory and universal, no freedom

of action and choice, doing without any motivation, the student being passive, negative emotion, possibly negative emotion regarding doing the task.

Question 3) how much is the extent of the agreement and challenge among experts in each of the axial categories?

Following studying the frequency of self-determination assignment category indexes, the coefficient of acceptability will be determined:

Table 2- frequency distribution of the self-determination task category

Percentage frequency $P_{ij} \times 100$	Coefficient of acceptability $P_{ij}$	Absolute frequency F	name of learning assignment category
14.4	0.1441	49	task self-determination

Table data indicated that the majority of interviewees pointed to this task indexes, they have admitted them and have high rate of agreement about task self-determination

indexes. Following studying the frequency of self-determination assignment category indexes, the coefficient of importance will be determined:

**Table 3- coefficient of importance of the self-determination task category**

Coefficient of Importance $W_j$	Category information load $E_j$	Coefficient of Acceptability $P_{ij}$	Name of learning assignment category
0.1312	0.0984	0.1441	task self-determination

The information contained in table 3 indicates that the self-determination task indexes enjoyed a wide range of diversity. These indexes have been negotiable and can be discussed. As the self-determination task indexes range will be wider, the coefficient of importance will be higher. Coefficient of acceptance means that the self-determination task indexes enjoy a high frequency, and the majority of the interviewees has pointed to the indexes of this category and has accepted them and had high rate of agreement about them. And the high coefficients of importance and acceptability refers to the fact that more interviewees stressed on students-oriented and individual assignments which should be given to the students, but, the given assignments in the current situation is more teacher-oriented. This leads the learners to feel fed up or unmotivated, but the favorable situation in the view of the experts is to emphasize on the learner and individual position which is based on the theory of Decy and Ryan:

Decy and Ryan (1980) in their motivational theory stated that the intrinsic motivation seeks to satisfy the three essential needs that are the foundation of behavior. These needs include the need for competence, autonomy, and communication with others. The need to competence is similar to the need to dominate the environment. People require that in their interactions with others, with assignments and activities to feel competent. The need to

autonomy points to the need to perceive the sense of control and the feeling of being factor of operating in interactions with the environment. Communication with others refers to the need to belong to a group.

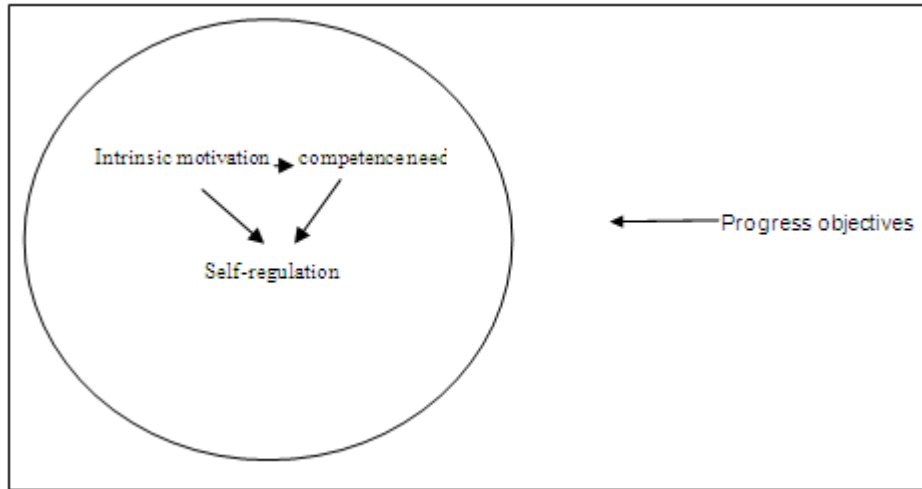
The intrinsic motivation is the human need for autonomous competence in a relationship with the environment, the need for intrinsic motivation strengthen the people will, and the individuals will uses the intrinsic motivation to satisfy their needs, solve the conflicts between the rival needs, and control them.

In the self-determination task, the apprentice is active in the designing organizing, and carrying out the task actively in a way that they select the task according to their emotional and cognitive ability. The apprentice because of their participation will accept the responsibility for their acts of learning and is targeted. However, according to the theory by Decy and Ryan, it seems that when the apprentice considers a goal for themselves and regarding that goal actively selects an assignment in the form of a scientific activity, if the selected task be associated with the correct feedback of the teacher, the need for competence grows in them, and along with upgrading their need for competence, their intrinsic motivation increases and following that their self-development increases their need to competence. In other words, the progress objectives affects on the need for competence and the need to be competent affects on the



intrinsic motivation, and intrinsic motivation in its own turn influences on self-development and finally self-development influences on the need to be competent. This process is introducing a concept that shows itself in the form of cycle which leads to creation of a concept called

behavioral self-determination. During the self-development process, the learner can take advantage of cognitive and Meta-cognitive strategies for better performance. According to the provided description, the following figure is deducted:



**Figure 3- the cycle of self-determination**

On the other hand, the assignments that lead to creation of behavior self-determination in low level within are the assignments that are presented in the form of mandatory and memory-driven and because it does not satisfy the need to be in the competence of the learner, so doesn't cause the intrinsic motivation to grows, reduces self-development , and finally drops the cycle of behavior self-determination, and behavior self-determination does not happen within the learner though there are still progress objectives in the mind of the learner.

**Conclusion**

The research findings all have showed that success in learning and upgrading academic self-concept either in terms of quality of teacher trainings or the students' assignment must be organized in a way that each learner can engage in learning based on their cognitive and emotional ability. To achieve this goal, the teacher should be aware of the learner back ground knowledge and interest rate to the subject matter and design task on this basis. It seems that in the self-development educational method of which the self-determination task is one of its parts, progress based on individual

ability, learning at the mastery level, independence development in practice and learning, the habit of continuous study, self-development and self-assessment, positive attitude regarding learning and doing homework and upgrading academic self-concept are provided. Individual training does not necessarily mean educating a student by a teacher or through a particular program, but means educating based on the apprentice properties.

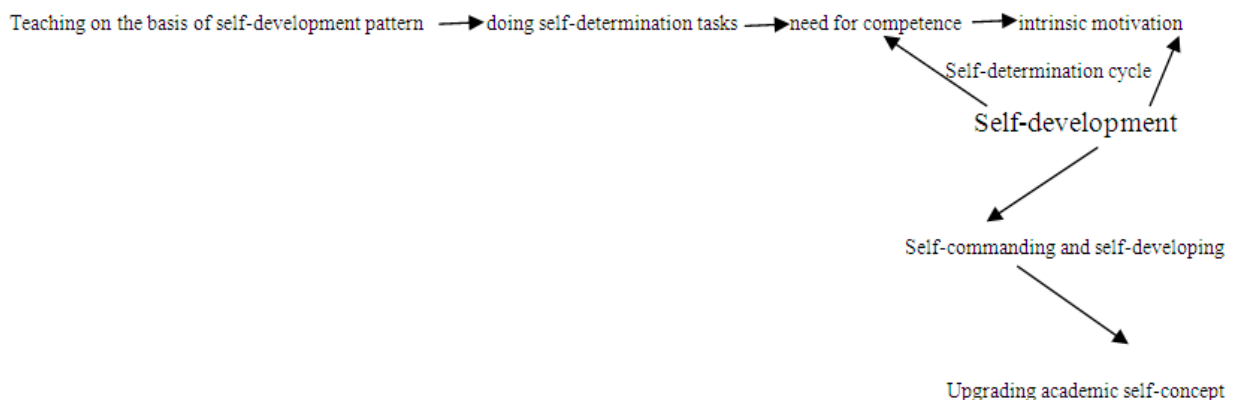
Training also may be performed collectively that the students work together in small groups to do the task and achieve educational goals and divide responsibilities between them.

Because the in the self-determination task the student participate actively in designing, organizing, conducting, and evaluating of the task and select the assignment based on their emotional and cognitive ability, thus the self-determination task is so varied and flexible. The students due to partnership accept their responsibility of their own activities and control them.

On the other hand, in the self-development training pattern students actively take part, and wide opportunities of selecting, organizing, and doing assignment are provided for the learner at different levels. The percipients will be allowed to select, organize, and design their own exercises and projects personally for different purposes, in the face of challenges act wisely and actively monitor their engagement and the way to achieve their goals, explore their ideas, and be more creative than others. The percipients here assess their success rate in learning experiences using self-questioning method and progress with monitoring, controlling, and regulating the activities. The self-development training pattern grows free and independent, mastermind, self-controlled, and confident human who select, design, and implement their educational activities (assignments) personally, and if necessary, modify and strengthen their educational experiences through choosing new strategies. Taking into consideration that in the self-determination task the student has the right to take part in assignment issues and educational task, it seems the teaching practices commensurate with self-determination task is a

self-development training pattern. In this category of task, the apprentice is target-oriented, and it seems that when the learner has a goal in mind, his internal need for competence increases, his intrinsic motivation goes up, following that, the learner's self-development increases and this leads the learner to actively choose some assignment in the form of scientific activity according to their aims. If this self-development is accompanied with the teacher correct feedback and his information control and review, his need for competence as well grows. In other words, doing the self-determination task affects on the individual's need for competence, the need for competence affects on his intrinsic motivation, intrinsic motivation effects on self-development, and ultimately self-development affects on competence. It seems this cycle results in creation of a concept called behavior self-determination within the learner, accordingly, doing assignment self-determination helps the learner to be self-commanding, self-regulating, and self-developing and upgrade their self-concept in order to be able to synchronize with the rapid transformations and developments and be able to modernize themselves.

**Figure 4- theoretical profile of determining the role of self-determination task in the process of teaching method impact on academic self-concept**



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