# A Comparative Study of Academic Self-Efficacy and Perceived Control in Bachelor's Female Students in Technical, Arts and Humanities Fields in Kerman

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**Abstract**
This research aims to compare the academic self-efficacy and perceived control in female bachelor's students in technical, arts, and humanities fields in Kerman. A comparative causal method was used in this research. The research statistical population includes all 1200 female students studying in arts, humanities, and technical fields of Azad University, who were separated in technical, arts and humanities fields of study and the sample size was considered to be 75 people (in three groups of 25 people from technical fields, arts, and humanities). The sampling method was available. Jynk and Morgan's (1999) academic self-efficacy tests and Wellborn, Connell, and Skinner's (1989) perceived control tests were used to collect data. One-way analysis of variance method was used to analyze the data. The results showed that academic self-efficacy is higher in technical students and perception of control is higher in art students.

**Keywords:** Academic Self-Efficacy, Perception of Control, Female Students, Technical Fields, Arts, and Humanities

## INTRODUCTION

The growth and training of students' intellectual skills have always been an important issue in education. The studies conducted in the world and our country show that experts consider thinking as one of the important educational expectations (Mehdizadeh, 2012). Students should be made to think freely, creatively, critically, and scientifically to train them properly. The educational center's programs should convey the intellectual order to the learners. These programs should organize them to engage in problems instead of storing scientific facts (Shamili, 2016).

Another factor related to students' critical thinking is perceived control. Positive or negative control beliefs originate from the source from which the control originates. This source is either internal or external. A person's perception of this source has a lot to do with his behavior and decisions. People who believe in an internal source of control believe in their ability to control life events, and those with an external source of control believe that life events occur as a result of external factors such as accidents or luck (Bahrami, 2015). A person's perception of his control has a strong relationship with his ability to interact with others, motivation, planning, problem-solving behaviors, homework, and academic progress. In other words, if this perception is more internal, it will positively affect the proper interaction with others and his purposefulness and lead to better motivation and planning on the part of the individual in the field of learning. Finally, these behaviors help to solve appropriate assignments, academic self-efficacy, and academic progress (Han et al., 2010).

People who have personality variables known as external locus of control think that receiving their reinforcement depends on other people, destiny, or luck. These people believe that they have no control over what happens to them and attribute events to external sources such as luck, fate, and those in power. These people find their reinforcement depends on others' grace or luck. People with an external source of control believe that other people control their reinforcement and they are powerless against these external forces (Suleiman, 2012). Our source of control will significantly affect our behavior. People with an external source of control believe that their behaviors or skills do not affect the reinforcements they receive, as a result, they find no benefit in trying to improve their situation. They do not believe in the source of control in their lives in the present or the future (Karimzadeh, 2016). People believe that external sources of control have little value for any effort to improve their conditions. These people find that life is like a game of chance and success depends on luck or others' favor (Golestani, 2014).

Educational psychologists and other education experts notice self-efficacy and the factors affecting it for many years. Among the different dimensions of self-efficacy, the dimension of academic self-efficacy is considered an important variable, which affects various aspects of people's lives with effort and persistence in completing assignments, using cognitive and metacognitive strategies, self-organization, persistence in facing difficulties, and choosing a field. People with strong self-efficacy

beliefs show more effort and persistence in doing tasks than people with weak self-efficacy. As a result, their performance is better in doing tasks (Salimi et al., 2015). Academic self-efficacy is also defined as a person's belief regarding how well he can successfully complete academic assignments at the designated levels (Han et al., 2010). Bandura (2001) defines self-efficacy as a concept through which people's experiences, abilities, and thinking are integrated in one direction (Kadivar, et al., 2011). Self-efficacy beliefs significantly affect people's growth and cognitive performance in various ways and through various processes. Bandura showed that learners' belief in their self-efficacy can significantly and directly affect learning and internal motivation and academic success (Etamidi and Saadat, 2015). The perception of self-efficacy possibly does not match with actual self-efficacy. A person may think that his sense of self-efficacy is low, while it is really high, and vice versa (Sultani, 2015). Self-efficacy beliefs regulate human performance through cognitive, emotional, and motivational processes (Faro, 2011) and are the main determinants of behavior because it affects behavior not only directly but also indirectly through other predictors. These predictors are perceived goals, desires, motivations, and obstacles (Han, 2010). Self-efficacy makes people feel, think and act differently (Ryan, 2010). People with low self-efficacy are easily convinced that their efforts are useless in dealing with problems. They quickly give up. In fact, these people feel unable to control life events (Milner, 2014). Low self-efficacy leads to negative evaluation and self-destructive review. These people constantly evaluate themselves negatively and these negative thoughts about themselves lead to destructive behaviors. When a person is not satisfied with his performance, it is impossible to focus on the current situation. Therefore, he cannot show a satisfactory reaction in that situation (Ryan, 2015).

Academic self-efficacy beliefs express a person's confidence in their ability to successfully complete academic assignments at a certain level (Yang, 2004). In some tools to measure this concept, academic self-efficacy is measured in a specific course or a special course content. Therefore, some researchers believe that academic self-efficacy measures a person's confidence in his ability (Zimmerman, 2008). Advanced geometry and algebra self-efficacy scales (Lopez, Lent, Brown, and Gary, 1997) are among those scales that measure knowledge related to the content of a specific course.

According to these definitions, researchers believe that certain jobs and fields of study have special abilities, for example, jobs and fields of study related to reasoning and numerical relationships (philosophy, mathematics, physics) require more intelligence, and jobs and fields of study related to imagination and divergence (art, architecture) require the perceived control (Sultani and Pirvi, 2015). The studies also show that university students should have an acceptable level in each of the variables to succeed in the courses to help the excellence and flourishing of students. Therefore, this study aims to compare academic self-efficacy, perceived control, and perception of self and critical thinking of bachelor’s female students in technical, arts, and humanities fields in Kerman.

**Research Methodology**

The current research was applied in terms of purpose and comparative causal in terms of research method. The statistical population included 1200 female students studying in arts, humanities, and technical fields at Azad University in 2017-2018 in Kerman. The sampling method was available and based on separation in technical study fields, arts, and humanities. The sample size was also 75 people (in three groups of 25 people from technical study fields, arts, and humanities).

**Research tool**

**Jynk and Morgan's academic self-efficacy questionnaire**

This questionnaire was designed by Jynk and Morgan (1999) with 21 questions. This questionnaire questions with a Likert scale have 4 options. The maximum score is 84 and the minimum is 21. This questionnaire has three subscales of talent, effort, and context. The makers of the test have calculated its reliability using Cronbach's alpha and reported the reliability of the whole test as 0.82. In addition, the reliability of the subscales of talent was 0.78, the context was 0.66, and the effort was 0.66 (Thamnai, 2015).

**Student Perception of Control Questionnaire (SPOCQ)**

The Student Perception of Control Questionnaire (SPOCQ) was first created by Wellborn, Connell, and Skinner (1989) with 20 items, the answers of which are on a 4-point Likert scale. This questionnaire has 2 components: perception of internal control (10 items) and perception of external control (10 items). Al-Borzi (2009) used Cronbach's alpha method to determine the reliability, which is 0.83 and 0.5 for the perception of internal and external control, respectively. He also reported the validity through the correlation coefficient method between 0.59 and 0.89. Golestaninia et al conducted research (2013), in which Cronbach's alpha and bisection methods were used to calculate reliability, which was 0.85 and 0.80 for the perception of internal control, and 0.61 and 0.58 for the perception of external control, respectively. In addition, its validity was used through the correlation method of each item with its total score in the relevant factor, and the correlation coefficients were between 0.50 and 0.90 for the perception of internal control and between 0.60 and 0.80 for the perception of external control. No item was deleted (Golestaninia et al., 2014).

The method of work was in the form of direct face-to-face referring and filling out the questionnaire.

In this regard, they first referred to the Islamic Azad University of Kerman and obtained permission and cooperation from the university. Then, 25 people were selected by determining the list of female students studying in arts, humanities, and technical fields at Azad University in 2017-2018 as available from each of the fields of study (arts, humanities, and technical sciences). Data analysis was performed at two descriptive and inferential levels using SPSS ver: 21 software.
After some explanations about the research, the questionnaires were given to the subjects. The students then answered the related questionnaires and the data was tested by analyzing them using spss ver: 21 software.

**Findings**
The descriptive indices related to the dimensions of the studied variables are shown in Table (1).

Table 1: Descriptive indices of the investigated variables

| variable | Group | Mean | Standard deviation |
|---|---|---|---|
| Academic self-efficacy | Arts | 47.52 | 4.36 |
| | Technical | 59.16 | 4.69 |
| | Humanities | 48.69 | 4.73 |
| Perceived control | Arts | 29.36 | 3.21 |
| | Technical | 23.74 | 3.41 |
| | Humanities | 19.77 | 3.39 |

A one-way analysis of variance statistical method was used to compare the groups. Kolmogorov Smirnov test was used to check the normality of data distribution.

Table 2: The result of the Kolmogorov-Smirnov test for the normality of academic self-efficacy and perceived control

| | Group | Kolmogorov Smirnov's z statistic | Significance level |
|---|---|---|---|
| | Humanities | 0.58 | 0.24 |
| Academic self-efficacy | Technical | 0.63 | 0.16 |
| | Arts | 0.71 | 0.19 |
| | Humanities | 0.541 | 0.22 |
| Perceived control | Technical | 0.557 | 0.25 |
| | Arts | 0.613 | 0.27 |

The values of significance levels in all three societies are more than 0.05. Therefore, the distribution of data in all three societies is normal. Levine's test was used to check the variance of the three societies (Table 2).

Table 3: The result of Levin's test for the same variance of academic self-efficacy and perceived control in three societies

| | Levin's statistic | Significance level |
|---|---|---|
| Academic self-efficacy | 0.215 | 0.624 |
| Perceived control | 0.81 | 0.19 |

The significance level is greater than 0.05. Therefore, the variance distribution of the three societies in the academic self-efficacy variable is equal. The values of significance levels in Table (3) are greater than 0.05. Therefore, the distribution of perceived control in the three communities is normal. Considering that the significance level of Levin's test is also greater than 0.05, this assumption is also accepted that the control perception variance is the same in the three societies. Therefore, both assumptions are necessary to perform variance analysis.

Table 4: One-way analysis of variance for academic self-efficacy

| Source of changes | sum of squares | degree of freedom | mean square | F statistic | significance level |
|---|---|---|---|---|---|
| Between groups | 2130.35 | 2 | 1065.18 | 17.10 | 0.001 |
| Within groups | 4491.34 | 72 | 62.38 | | |
| Total | 6621.69 | 74 | | | |

The significance level of the test is less than 0.05. Therefore, there is a difference between academic self-efficacy in female students in technical, arts, and humanities fields. Tukey's multiple comparison

tests were used to determine where the difference was (Table 4).

Table 5: Tukey's multiple comparison test

| variable | First | Second | Means difference | Significance level |
|---|---|---|---|---|
| Academic self-efficacy | Technical | Art<br>Human | 6.69<br>10.47 | 0.006<br>0.002 |

The values of significance levels in Table (5) are less than 0.05. Therefore, academic self-efficacy in technical fields is higher than in arts and humanities.

Table 6: One-way analysis of variance for perceived control

| Source of changes | Sum of squares | Degree of freedom | mean square | F statistic | Significance level |
|---|---|---|---|---|---|
| Between groups<br>within groups<br>Total | 3122.60<br>4976.81<br>8099.41 | 2<br>72<br>74 | 1561.30<br>69.12 | 22.59 | 0.003 |

The value of the significance level of the one-way analysis of variance test in Table (6) is more than 0.05. Therefore, this assumption is confirmed that there is a difference between the perceived control of female students in technical, arts, and humanities fields. Turkey’s multiple comparison tests were used to determine where the differences are.

Table 7: Tukey's multiple comparison test

| Variable | First | Second | Means difference | Significance level |
|---|---|---|---|---|
| Perceived control | Art | Technical<br>Human | 5.62<br>3.97 | 0.004<br>0.007 |

The values of the significance levels in Table (7) are less than 0.05. Therefore, it is concluded that the degree of perceived control in art fields is higher than in technical and humanities fields.

**Conclusion**

The results showed a difference in academic self-efficacy in female students in technical, arts, and humanities fields. Based on Tukey's test, it is concluded that the academic self-efficacy of technical fields is higher than art and humanities. This finding is consistent with the results of Soltani and Peyravi (2014), Abdul Mutalib (2015), and Greenberg (2012). Self-efficacy is defined as a person's belief or judgment about his ability to perform a specific activity. In other words, how well we have met the standards of our behaviors determines our sense of self-efficacy. In Bandura's system, personal efficacy means feelings of competence, sufficiency, and ability to cope with life. People with high self-efficacy follow valuable situations, consider higher goals, have a greater commitment to realizing action, overcome obstacles with self-management skills and hard work, and solve problems. Academic self-efficacy beliefs express a person's confidence in their ability to successfully complete academic tasks at a certain level. In some tools to measure this concept, academic self-efficacy is measured in a specific course or a special course content. Some researchers believe that academic self-efficacy expresses a person's confidence in his ability. This research showed that academic self-efficacy in technical fields is higher than in arts and humanities because in technical fields students have probably a sense of competence and academic sufficiency and a better career future than in other fields.

The findings showed a difference between the perceived control in female students in technical fields, arts, and humanities. Based on Tukey's test, it is concluded that the perceived control in art fields is higher than in technical and humanities fields. The results of Shamili's research (2015) are consistent with the present research. Positive or negative control beliefs originate from the source from which the control originates. This source is either internal or external. A person's perception of this source has a lot to do with his behavior and decisions. People who believe in an internal source of control believe in their ability to control life events, and those who with an external source of control believe that life events occur as a result of external factors such as accidents or luck. This research showed that the perceived control in art fields is higher than technical and human. Accordingly, the concept of control is probably easier to understand for art students who are concerned with more abstract concepts.

This research was carried out on the students of Islamic Azad University, Kerman branch. Therefore, it should be careful in generalizing the results. The field of study was based on the statement of the students and may not be true.

Due to the higher academic self-efficacy of technical students, it considers more training and

strengthening the academic self-efficacy of students in other fields. In addition, the teaching method of art fields should be extended to other fields because art students' perceived control is higher.

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