



Academic Self-Efficacy Beliefs of Turkish and American Ph.D Students: A Comparative Study*

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ABSTRACT

The aim of the research is to comparatively investigate the opinions of students in doctoral education in the USA and Turkey about academic self-efficacy. The research used the basic qualitative research pattern from among qualitative research designs. The study group in the research comprised a total of 32 doctoral students with 16 from Turkey and 16 from the USA. Of these students, 25 were male (78%) and 7 were female (22%). With the aim of determining the participant group, criterion sampling was used from the targeted sampling methods. A semi-structured interview form was used to gather data in the research. For analysis of data, the content analysis technique was used. It has been determined by the results obtained from the study that Turkish and American students have similar goals to attend a Ph.D program in some respect and they have a high level of academic self-efficacy belief (ASEB) in using the relevant terminology and reaching the literature. In addition, it has been determined that Turkish students have a weaker academic self- efficacy belief than American students in respect of using scientific research methods and qualitative and quantitative data analysis techniques.

Keywords:

Academic self-efficacy, American and Turkish Ph.D students, doctorate, qualitative research

1. Introduction

There are several cognitive and affective factors which affect learning that is a complicated and multi-dimensional process. Affective factors considered much more important in recent years are related to personality traits of individuals such as interest, attitude, motivation, self-confidence and anticipation and they affect considerably success which an individual would reach in a particular subject. For Schunk (1991), self-efficacy emphasized frequently is one of the relevant motivational references which affect success of individuals and give shape to thoughts and behaviors of the individuals.

Self- efficacy, which was suggested by Bandura for the first time and is one of the key concepts for social learning theory (Pajares, 2002), is defined as self-belief of a person concerned with the trust in his/her own abilities to arrange necessary activities for the purpose of displaying a particular performance and to conduct it successfully (Bandura, 1986, 1997). Zimmerman (1995a) defined self-efficacy as "judgments of individuals in their abilities to carry out and achieve a work". Self-efficacy, as we understand from the definitions, is not a kind of ability (Donald, 2003; as cited in Acar, 2005). It is an internal belief of the individual in his personal answer to the question "what can I do" with his own abilities (Snyder & Lopez, 2002). Thus, Leithwood (2007) stated that self-efficacy perception is not real ability or competence of a person, but is a perceptual condition.

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For social learning theory, self-efficacy belief of the individuals develops depending on four references (Bandura, 1986, 1997) and people's belief in achievement may be strong or weak depending on these references. These references are (Bandura, 1994, 1997):

1. Personal experiences: These are direct experiences of the individuals concerning achievements and failures in the past (Hodges, 2005).
2. Social Models: Social models are indirect experiences that help individuals with improving self-confidence in their own capacity as a result of observing the people they took as a model (Bandura, 1994; Pajeras, 1996; Golightly, 2007).
3. Verbal persuasion: Verbal persuasion that may be positive or negative (Kiser, 2008) indicates statements of the people around an individual to back him up. Social support affects self-efficacy positively that is related to belief of the individual in his abilities (Pajeras, 1996; Stajkovic & Luthans, 1998).
4. Physiological and emotional condition: Feeling well in emotional manner affects positively self-efficacy belief of an individual and anxiety and stressful situations concerning his own ability affect negatively self-efficacy of the individual (Bandura, 1997).

There are various self-efficacy perceptions pertain to many behaviors arising from four references mentioned basically. "Academic self-efficacy" is one of the most important perceptions (Ekici, 2009). Academic self-efficacy that is a specific field of common self-efficacy perception is belief of a student in his abilities to complete an academic duty successfully (Zimmerman, 1995a). In other words, academic self-efficacy is belief of the individuals in their capabilities to fulfill academic duties in success, which are assigned at certain levels (Schunk, 1991; Bandura, 1997; Chun & Choi, 2005; Schunk, 2009).

The studies conducted indicate that students whose academic self-efficacy is high are disposed to overcome challenging duties (Bandura, 1994; Chemers, Hu & Garcia, 2001; Margolis & McCabe, 2004; Bassi, Stace, Fave & Caprara 2007), make more effort (Eggen & Kauchak, 1999) and they are more insistent and patient against the obstacles (Bandura, 1997). For Bandura (1997), individuals with high level of academic self-efficacy believe in themselves to plan, arrange and carry out their academic studies. It has been determined that students with high level of academic self-efficacy use more effective learning strategies (Bouffard-Bouchard, Parent & Larivee, 1991; Zimmerman 1995b; Schunk & Pajares, 2001; Zhang & Zhang 2003) and have abilities to choose and sustain superordinate goals (Zimmerman, Bandura & Martinez-Pons, 1992) and that they are consistent with their decisions and have more ordinary level of anxiety (Pajares, 1996). Moreover, ASEB have a critical role in improvement of critical thinking (Sang, Valcke, Van Braak & Tondeur, 2010) and problem solving abilities (Schunk & Pajares, 2001; Aurah, Cassady & McConnell, 2014). In conclusion, individuals with lower level of self-efficacy belief may feel more stressful, worried and anxious while the individuals with high level of ASEB feel more satisfaction and appreciation (Zimmerman, 1995b). Besides, they are more likely to fail as they give up quickly against challenging duties.

When examining the literature, it is seen that studies on self-efficacy are mostly in the field of academic performance, achievement and motivation. The studies conducted have demonstrated that ASEB increase motivation of the students and it is an important predictor for academic success, supports academic demands and that there is a positive relationship between academic self-efficacy and academic achievement (Bandura & Schunk, 1981; Betz & Hackett, 1981; Schunk, 1991; Multon, Brown & Lent, 1991; Zimmerman, Bandura & Martinez-Pons, 1992; Pajares & Miller, 1994; Bandura, Babaraneli, Caprara & Pastorelli, 1996; Pajares, 1996; Bandura, 1997; Pajares & Graham, 1999; Chemers, Hu & Garcia, 2001; Greene, Miller, Crowson, Duke & Akey, 2004; Robbins, Lauver, Le, Davis, Langley & Carlstrom, 2004; Sharm & Silbereisen, 2007; Caprara, Vecchione, Alessandri, Gerbino & Barbaranelli, 2011).

Academic self-efficacy, as a variable with predictive power for learning level and achievement in national and international literature, is a research subject in many grades from pre-school to the level of bachelor degree. However, it is seen that there is a limited number of studies in which academic self-efficacy of graduate, particularly Ph.D students are examined in terms of academic self-efficacy (Kahn & Scott, 1997; Bishop & Bieschke, 1998; Aslan, 2010; Overall, Deane & Peterson, 2011). Whereas, Ph.D program is the highest level of higher education system (Altbach, 2004) and it is usually considered as the farthest level which someone could achieve in academic discipline. Knowledge, skills and competences, which are asked to bring in students by Ph.D system in Turkey, are specified at 8th grade of National Qualifications

Framework for Higher Education in Turkey developed within Bologna. In general manner, it is tried through a Ph.D program to train individuals who are able to think in creative and critical manner, obtain original results, use the research methods, use his/her foreign language and who are researcher and respectful of ethical values, offer reasonable solutions to the problems, have a scientific point of view, attend team works and interdisciplinary studies, offer qualified studies and make a significant contribution to the society and mankind in this way (Aslan, 2010, The Council of Higher Education [TCHE], 2010). As for the USA, Council of Graduate Schools (CGS) of which mission is to enhance and improve graduate and Ph.D programs underlines similar abilities of the students in Turkey. CGS includes learning outcomes which attach importance mostly to concepts and skills, verbal and written communication, critical thinking, research methodology, research ethics, and contents pertain to study field of the students (Denecke, Kent & Wiener, 2011; Denecke, Kent & McCarthy, 2017). Therefore, Ph.D candidates predicted to gain these competences by their education play a pretty important role in establishing future of the countries by means of their field of specialization. For that reason, it is considered important to analyze academic self-efficacy levels of the students which it is closely related to their achievements.

Two studies have been found at the bachelor's degree in which efficacy beliefs of the undergraduates in science (Çakiroglu, Çakiroglu & Boone, 2005) and math teaching (Çakiroglu, 2008) are compared for Turkey and the USA. In addition, any other study including a comparison between Ph.D candidates in different countries in terms of academic self-efficacy hasn't been found. In addition, it is considered that studies on self-efficacy are quantitative studies in general and thus, results obtained from this study conducted by a qualitative approach would make a contribution to the literature. It is determined from this point that purpose of the study is to examine students' opinions on their academic self-efficacy who attend for a Ph.D program in the USA and Turkey.

It is tried to answer the following questions in direction of this purpose of the study:

1. What are purposes of Turkish and American students to attend a Ph.D program?
2. Concerning fields of Turkish and American students;
 - 2.1. How are academic self-efficacy beliefs in understanding and using the terminology,
 - 2.2. In scanning and reaching the relevant literature by using different databases,
 - 2.3. In using scientific research methods and techniques,
 - 2.4. In analyzing and interpreting qualitative and quantitative findings?

2. Method

Basic qualitative research of the qualitative research designs has been used in the study. Basic qualitative researches which are most frequently used research methods in the field of education examine how people interpret their life and establish their world (Merriam & Tisdell, 2016). In this context, the mentioned method has been preferred in the study in order to present in an interpretive approach how Ph.D candidates evaluate and interpret themselves in terms of academic subjects and how they create their worlds.

2.1. Participant Group

Study group of the research includes 32 Ph.D candidates: 16 from Turkey and 16 from the USA. 25 of these students are male (78%) and 7 of them are female (22%). Ph.D students attended the study from Turkey are students who attend a Ph.D program at the institutes affiliated to Ondokuz Mayıs University (n=10) and Atatürk University (n=6). As for the USA, Ph.D students attend a Ph.D program at Pennsylvania State University (n=14) and William & Mary University (n=2). Criterion sampling is to work with a group of participants who meet a series of criteria specified by the researcher (Büyüköztürk, Kılıç Çakmak, Akgün, Karadeniz & Demirel, 2015; Yıldırım & Şimşek, 2016). It is hence determined the first criterion is that participants would be only Ph.D candidates who are at the phase of thesis writing and the second criterion is that participants from Turkey would be Turkish citizens and participants from the USA would be American citizens. 12 of the American participants in the study were male as 4 of them were female. On the other hand, 13 of the Turkish participants were male and 3 of them were female. Instead of using the real names of the

participants, the code "A" for American participants and "T" for Turkish participants were used. For example, codes such as A-m1, A-f2, T-m4 and T-k3 were created. "e" and "f" in the codes represent gender.

2.2. Data Collection Tool

Semi-structured interview form has been used as data collection tool in the study. Questions used by Aslan (2010), other studies in the relevant literature and knowledge, skills and competences specified in National Qualifications Framework for Higher Education in Turkey were used while creating open ended questions used in the form. Turkish format of the data collection tool was applied to two Ph.D candidates after asking opinion of the specialists in education and in social studies education, and the pilot study was carried out. After the pilot study, final format was created by making some simple changes after another evaluation with the same specialists. In this way, 11 questions have been created on the semi-structured interview form for the participants. As for the English format, first it was translated by the researcher and then it was proposed to an English linguist. A pilot study wasn't conducted in the USA. A specialist working at Pennsylvania State University was asked to evaluate the form before applying it to the American Ph.D students and then it was put into final form. In this article, answers to 5 questions mentioned have been analyzed and presented in the findings due to page limit.

2.3. Data Collection

For the Ph.D students who do not accept face to face interview for various reasons, some alternatives were suggested such as filling out the interview form by handwriting or on-line. Two methods were used to collect data from Turkish students within the scope of the study. One of the students was interviewed online and other nine students were interviewed face to face. Other six students preferred to answer the questionnaire individually instead of talking face to face and they sent their answers by e-mail. Before face to face interviews, participants were informed on necessary subjects that their personal information would be confidential and code names would be given to them. Participants were asked to give permission for recording and taking notes. Interviews conducted by the researcher in person were conducted in 3 different places by the circumstances as office of the researcher, office of the participants and seminar room of the faculty. Probing questions were also used during the interviews in order to obtain much more information. The interviews took about 18 to 31 minutes. Before involving American students into the study, necessary permissions were taken from the Institutional Review Board (IRB) of Pennsylvania State University after a strict period and approval forms signed by the participants were arranged. All American participants approved to fill the form and they preferred to send it online.

2.4. Data Analysis

First, face to face interviews conducted with Turkish students were written through academic transcript and then forms of the American students were translated into Turkish. Translations were approved by English linguist. After all data got ready for the analysis, all interview documents were read thoroughly in order to reach an overall idea to the researcher. After that, content analysis technique was used in data analysis. Content analysis that is a commonly used and qualitative research method is a research method for making repetitive and valid inferences depending on the context where it is used (Krippendorff, 2004). Analyses conducted by the researcher to enhance validity and reliability in data analysis were submitted to an examination of a specialist who had experience in qualitative studies together with all the documentation. After positive feedbacks, direct quotations were presented without any comment in order to enhance reliability of the emerging findings (Le Compte & Goetz, 1982). Code names starting with "A" letter for American students and code names starting with "T" letter for Turkish Ph.D candidates have been presented in the presented quotations by considering gender variable.

3. Findings

This section includes findings and comments regarding the questions suggested in the study. Simple tables are illustrated just before content analyses for a better understanding of the findings. According to these tables, ASEB arising from the answers of Turkish and American Ph.D candidates are categorized as "weak, slightly weak, moderately adequate, strong and very strong."

3.1. Goals of Turkish and American Ph.D Candidates to Attend a Ph.D Program

Before asking questions directly related to academic self-efficacy of the students, first “What was your goal to attend a Ph.D program?” question was addressed in order to understand American and Turkish Ph.D candidates better. As a result of the content analysis conducted, it has been determined that answers from either student groups are pretty close in terms of both content and number of the answers created, and the answers were gathered under 5 identical categories. It has been determined that Turkish Ph.D candidates have 38 and American Ph.D candidates have 31 expressions of purpose regarding the first question. More importantly, several differences have been observed in category sequence of both groups depending on number of the answers. Thus, categories formed by the answers of Turkish Ph.D candidates are career (f=14), personal development (f=9), social benefit (f=7), obligation (f=5) and personal interests and competences (f=3) by frequency, respectively. As for categories of American Ph.D candidates, it has been determined that they are career (f=18), personal interests and competences (f=5), personal development (f=3), obligation (f=3) and social benefit (f=2), respectively. As understood from the analyses, the most important ultimate goal of the students to attend a Ph.D program is career. Turkish students talked about mostly building an academic career, being an academician, going on, being a scientist, being a teacher at university, being a professor, etc. in this category (T-m1, T-f2, T-f3, T-m3, T-m4, T-m5, T-m8, T-m9, T-m10, T-m11, T-m12, & T-m13). In addition, according to their expressions, one student attended a Ph.D program in order to have a title of Doctor that is considerably creditable (T-m5), goal of another student is to become a specialist in the relevant sector and improve his/her career (T-m2). When examining answers of American students in career category, it has been observed that their expressions are mostly career-wise in general such as having a better career, finding an interactive career opportunity, enhancing the professional career, having a better job and salary, getting more professional opportunities (A-m1, A-f1, A-m2, A-f2, A-m4, A-f4, A-m5, A-m7, & A-m9). Again in the same category, expressions concerning academic career have been determined as being a teacher at university, being a lecturer, being an academician, being a professor, being a researcher and scientist (A-f2, A-f1, A-m8, A-m11, & A-m12). Besides, one student’s goal is to become a Doctor (A-m5) and another one’s is to become a better lecturer (A-m3) while two students’ goals were to reach a better grade (A-m4 & A-m7). Another important matter attracting importance in this category is that 14 Turkish students and 5 American students have goals in a Ph.D program especially for academic career and being an academician. However, 9 American students and only 1 Turkish student mentioned a common career goal such as improving in their current jobs or finding a better job. It is considered that the reason Turkish students emphasized on academic career so much is that most of the participants work as research assistant at the university where they attend a Ph.D program and also may be economic differences in either countries.

When examining answers of Turkish students for the category of personal development, it is observed that they are mostly in 2 groups. Hence, it is observed that Turkish students focus on certain goals such as personal improvement, reaching personal development, enhance the weaknesses and strengths (T-f2, T-f3, T-m4, T-m9, & T-m13) in the first group while they attach importance to the goals in dominating the field and enhancing intellectual knowledge of the field in the second group (T-f2, T-m2, T-m7, & T-m9). As for American students, they have similar goals in the category of personal development such as gaining more experience in the field, reaching a deeper level of knowledge (A-m4 & A-m5), improving himself/herself in professional manner and enhancing the study skills (A-m3).

When examining category of social benefit, it has been observed that goals of Turkish students in a Ph.D program indicate certain goals at national and universal level such as serving his country, raising successful generations, producing something useful for mankind, contributing to science (T-f3, T-m3, T-m5, T-m6, & T-m10). As for American students, they suggested some expressions in the category of social benefit such as creating useful things for the benefit of individuals and society (A-m10) and offering solutions by studying on application problems encountered in teaching (A-m6). Students’ answers in the category of social benefit demonstrate that Turkish students attach more importance to become useful in the society where they live in and whole mankind. This finding may derive from the fact that the western societies have a more individualistic and pragmatist understanding compared to the eastern societies.

In the obligation category, four Turkish students stated that they have obliged to attend a Ph.D program in order not to lose their job as they are research assistants (T-m6, T-m7, T-m12, & T-m13). Another student stated that he needs the title of Doctor in order to put some project ideas into practice and get some supports

and thus he is obliged to attend a Ph.D program (T-m6). As for American students, they stated that it is an obligatory to satisfy the conditions in order to have an advantage in applications for grant and financing of the projects (A-m5) and work at a university (A-f4) and therefore they attend a Ph.D program.

Finally, Turkish students mostly emphasize on certain views in the category of personal interests and competences such as having tendency to academic studies, having interest in academic issues and being pleased with conducting academic performances (T-f2 & T-m8). As for goals of American students in a Ph.D program within the scope of the mentioned category, it has been demonstrated that there are certain determinant factors such as being happy to work in a field of interest, having a demand in personal learning and development and also a desire for education and being a educator (A-f2, A-f3, A-m9, & A-m10). Answers of certain students are as the following:

“My goal is to make an academic career. I did a master’s degree after undergraduate study. During the graduate program, I figured out I have a tendency to academic studies and I love doing it. Then I decided to attend a Ph.D program.” T-m8

“Ph.D program is an important milestone in education life of an individual because anybody who completes this period will have proved that he attained his majority in academic manner and he could give education. Indeed, my purpose to attend a Ph.D program is to crown my education life continuing for long years with this important milestone and to make a contribution to my nation and country by making progress in my academic career and raise a successful and beneficial generation for the future.” T-m5

“I decided to pursue a Ph.D in education for two reasons: 1) To personally develop my skill as a researcher and scholar, and 2) To professionally develop myself so as to be a better teacher and educator. I chose Penn State’s College of Education since their ‘Language, Culture, and Society’ program allows lots of space for interdisciplinary work and research.” A-m3

“I desired to learn more and earn a PhD so that I could pursue a career in international conservation of rivers. Although I do not love research, I saw the need for gaining further expertise and that I would most likely be unsuccessful for applying for grants and funding if I did not have a PhD.” A-m5

3.2. ASEB of Turkish and American Ph.D Candidates in Understanding and Using the Terminology Related to Their Fields

Table 1 illustrates an overall situation arising from students’ answers in this respect:

Table 1. ASEB of the students in understanding and using the relevant terminology

Students	Weak	Slightly weak	Moderately adequate	Strong	Very strong
Turkish	2	-	2	11	1
American	3	-	2	8	3

When examining opinions of Turkish and American students on understanding and using the relevant terminology in general, it is found that ASEB of the students is adequate above average and they are similar in this manner.

Two of Turkish students evaluated in weak category for understanding and using the relevant terminology stated that they felt themselves weak and inadequate especially because of the fact that their field is multidisciplinary and wide in general. In addition, they stated they feel adequate directly in studying for Ph.D dissertation, namely their specific fields (T-m10 & T-m11). One Turkish student, who studies on history of Medieval Catholic Church, expressed that he could understand the relevant historical religious terminology of Greek and Latin origin but he had difficulties in putting them on paper because we can’t always find appropriate terms in Turkish (T-m9).

As for American students, it has been determined that some students who attend a Ph.D program especially in different fields from their field of undergraduate and graduate (A-m11) and who attend a Ph.D program in multidisciplinary fields (A-m12) could have some difficulties in understanding and using the terminology

related to their field of doctorate as a matter of course and they feel inadequate in this respect. One American student stated that he/she has no difficulty in reading and understanding the relevant terminology and feels adequate but he/she feels inadequate to use the relevant terminology in academic articles because of being inexperienced (A-m7). Similarly, another American student stated that his mates who study on the same field use terminology during the scientific conversations more than him and thus he should make some effort to improve himself more in this respect even though he is good at reading and understanding (A-f4). Some quotations from students' answers are as the following:

"I find myself adequate in understanding and using the terminology related to my field. However, I know I should read more and write more and I should research more." T-m1

"I think I have a full knowledge of the terminology used in history and medieval history. However, since historical religious terms and terminology for Catholic Church, my field of specialization, are of Christian (Greek and Latin) origin, this religious terminology can be transferred hardly into Turkish. Despite that fact that I can understand and comprehend meaning of this religious terminology in its original language, I have considerable difficulties in translating these terms into Turkish. Likewise, these religious concepts can't be translated into Turkish completely and unfortunately there is no study on a theological vocabulary regarding these terms..." T-m9

"I have learned many terms that are specific to the field of children's literature, as well as many that relate to qualitative research. I consider myself to be fairly proficient at using these terms. There are always new terms with which I am unfamiliar ... it took a while to be comfortable with asking when something new was used." A-f1

"I think I use and understand the terminology in my field very well. I would like to continue to learn to use and understand theoretical terminology...which is still growing for me and to understand and synthesize the subtleties of the various ways different scholars apply certain terms ... "visual culture" for example, or "teacher assessment"...both unpack large discourses in the field with overlapping and varied components, but overall I feel quite confident." A-f2

3.3. ASEB of Turkish and American Ph.D Candidates in Making a Literature Review and Reaching the Required References by Using Different Databases

Table 2 illustrates an overall situation arising from students' answers in this respect:

Table 2. ASEB beliefs of the students in a literature review and reaching the references

Students	Weak	Slightly weak	Moderately adequate	Strong	Very strong
Turkish	-	-	2	12	2
American	-	-	3	8	5

Findings obtained from the students' opinions demonstrate that self-efficacy beliefs of both Turkish and American Ph.D candidates are adequately strong in terms of making a literature reviews and reaching the relevant literature by using different databases. The vast majority of the students in either group expressed similar opinions and stated that they find themselves highly adequate. None of the students feel inadequate and weak for a literature review and reaching the required references. However, two Turkish and three American students evaluated themselves as moderately adequate since they have some inadequacies to be improved. Student's answers demonstrate in general that they feel competent to make a review at library and open archive resources and to use different international online databases (A-m6, A-m7, T-m1, T-m5, T-m7, T-m8, T-m9, & T-m10). Students expressed that dissertation of graduate study (T-f2), certain graduate lessons and experiences gained at educational meetings (A-m12 & T-m3,) are effective with regards to acquire this competence. Some Turkish and American students stated that opportunities provided by their universities to access libraries and databases have a significant contribution in this respect (A-m3, A-m12, T-m1, & T-m7). Finally, one Turkish student having a strong level of academic self-efficacy explained that he could reach some articles through pirated means without any fee (T-m7). We didn't talk over this interesting

explanation because it was a different subject from purpose of our study as well as being against the code of conduct. Here are opinions of some students on this matter:

“There are several databases I use in this respect. I think I have competence to access the resources I want. I could find the article I want to reach if it is opened to access; I know I could access it through different means if it is a paid service. Services provided by the university where I work and study are pretty useful in this respect.” T-m7

“... I can search on different databases. However, of course I think it could be searched within a broader scope. I always try to find a way to do it. Now I can say I’m at intermediate level. I have some inadequacies but I consider myself as intermediate level now.” T-m11

“I am a ‘master’ at finding things in general. Also, at Penn State we are very fortunate to have a fantastic library with committed staff, so even if I am unable to find something I can always rely on this option. I also scan literature really well for information that could be of use. It’s very rare that I read a book from cover to cover. Usually I scan the table of contents, the reference section, and the introduction, and then proceed to scan the rest of the book, chapter by chapter.” A-m3

“I’m very proficient at this. I know how to navigate multiple databases at a time and get almost any article or book I seek.” A-m6

3.4. ASEB of Turkish and American Ph.D Candidates in Scientific Research Methods and Techniques

Table 3 illustrates an overall situation arising from students’ answers in this respect:

Table 3. ASEB of the students in scientific methods and techniques

Students	Weak	Slightly weak	Moderately adequate	Strong	Very strong
Turkish	6	3	-	7	-
American	5	1	-	9	1

As is known, to choose and use the methodology properly in a scientific study directly affect the findings to be obtained. It is thus pretty important if the researchers have full knowledge of scientific methods and techniques. It has been determined by the findings obtained from this study that Turkish students have weak ASEB in having full knowledge of scientific research methods and techniques and American students have intermediate knowledge in general. In other words, self-confidence of American Ph.D candidates in scientific research methods is slightly better than Turkish Ph.D candidates. Nine of Turkish students and six of American students stated that they are considerably lack of scientific research methods and techniques and have significant difficulties in this respect. The candidates in question have been evaluated in the category of “weak and moderately adequate”. Students especially who find themselves adequate in one of the qualitative and quantitative scientific research methods and inadequate in another one are included in “moderately adequate” category. Three Turkish students stated that they have full knowledge of research methods they have used in their only dissertations and articles but they are inexperienced in using any other important methods and techniques due to the fact that this field is pretty wide (T-m5, T-m6, & T-m7). Two students stated that one or several are used mostly in their field of study and so they don’t use any other research methods and techniques because they don’t need (T-m5 & T-m9). In this context, one student having a lower level of self-efficacy perception has attributed it that he didn’t take any lesson on methods during undergraduate and graduate periods and he criticized his supervisors owing to the fact that they didn’t provide any guidance in this respect (T-m9). Another student indicated that he took lessons on method during the graduate study, but especially lessons on quantitative research methods were not productive and thus he tried to correct my deficiencies through individual studies, but he didn’t succeed somehow (T-m12). Two Turkish students having a lower level of self-efficacy perception stated that they forget certain methods and techniques over the time since they are not reviewed or used for a long time (T-m6 & T-m7), another student indicated that he had theoretical knowledge of certain research methods, but he had confidence issues since he has never used them in practice in any academic study (T-m7). Three American students having deficiencies in this respect stated that they are inexperienced in several research

methods and so they need to be more experienced (A-f1, A-m6, & A-m7). One American student indicated that he has hesitations on methodology of his dissertation and needs some help. Another American student stated that he doesn't rely on quantitative methods in social studies even though he does well in qualitative methods; he hasn't improved himself in quantitative methods since he doesn't enjoy using them in his academic studies and thus he is weak in this respect (A-m3).

Three of Turkish and American students who have a high level of ASEB in research methods attribute it to contribution of graduate lessons (A-m12, T-m8, & T-m3), two of them attribute it to reading and searching more (T-m8) and one attributes it that the Ph.D program he attended was concerned with scientific research methods and statistics (A-m12), one attributes it to the experience gained during master's thesis (T-f2), one attributes it to positive feedbacks from the people around him and his personal interest in methodology (T-m13). Here are some opinions of Turkish and American Ph.D candidates:

"I sometimes think that I have deficiencies in this respect. We may forget what we learned previously over the time. For that reason, I try to correct my deficiencies by revising or asking for information from experienced ones. Of course I have comprehensive knowledge of certain parts. I have to know methods and techniques of the study I work on. I can thus say that I have full knowledge on these issues. However, I find myself inadequate in practice in several methods and techniques on which I have never make a study and I have only theoretical knowledge." T-m7

"I find myself highly inadequate in methods and techniques. We usually use document analysis (qualitative) since I work in the field of history. Despite the fact that I have had knowledge of document analysis on my own, I feel lack of having a method lesson during my academic education period (this lesson wasn't involved in any grade). I think my supervisors play a role in this deficiency since they didn't inform me on the idea that I would need this lesson one day, even it should not be an excuse for not learning from any other resources." T-m9

"I would say I'm an advanced student at using the qualitative, ethnographic methods of my research area/field. Though I think there is a much bigger gap/jump that has to happen for me to consider myself "expert"...the jump from intermediate/competent to advanced was much shorter." A-f2

"Again, as a qualitative researcher, hard science paradigms don't necessarily apply to the methods I use. I'm definitely still a novice at these methods, including narrative research, case study research, and using ethnographic methods. I would like to learn more about phenomenology and discourse analysis as I move forward as a researcher." A-m6

3.5. ASEB of Turkish and American Ph.D Candidates in Qualitative and Quantitative Data Analysis Techniques

Table 4 illustrates an overall situation arising from students' answers in this respect:

Table 4. ASEB of the students in qualitative and quantitative data analysis techniques

Students	Weak	Slightly weak	Moderately adequate	Strong	Very strong
Turkish	4	9	1	1	1
American	1	5	1	4	5

It is determined by the findings obtained from this study that Turkish students have a lower level of ASEB in having a full knowledge of qualitative and quantitative data analysis methods, but it is moderately adequate for American students in general. In other words, American Ph.D candidates have a higher level of self-confidence in having a comprehensive knowledge of qualitative and quantitative data analysis methods compared to Turkish candidates. Thirteen of Turkish students and six of American students stated that they have considerable deficiencies in this respect and important difficulties in this sense. Nine of Turkish students stated they feel adequate only in qualitative or quantitative data analyses (T-f2, T-m3, T-m4, T-m5, T-m6, T-m9, T-m10, T-m11, & T-m12) while four of them find themselves inadequate in both qualitative and quantitative data analyses (T-f1, T-m2, T-f3, & T-m9). In the study, those who are regarded as adequate in one approach of two essential analysis approach and as inadequate in another approach are involved in the

group of moderately adequate. Hence, seven of nine Turkish students evaluated in the group of moderately adequate (T-m3, T-m4, T-m5, T-m6, T-m8, T-m11, & T-m12) stated that they are adequate in qualitative analyses and two of them (T-f2 & T-m10) are adequate in quantitative analyses. Five of American students are evaluated in the group of moderately adequate and it is determined that four of these students are adequate in qualitative analyses but inadequate in quantitative analyses; another one is adequate in quantitative analyses but inadequate in qualitative analyses. Therefore, findings demonstrate that American and particularly Turkish Ph.D candidates have much more significant deficiencies in qualitative analyses and statistics than the quantitative ones. Turkish students attribute the reason why they are inadequate that some statistical and SPSS lessons they took especially during graduate period were not productive (T-m3) and quantitative statistics could be forgotten if not used for a long time (T-m7). Two each Turkish and American student stated they are inadequate in analyzing quantitative data because of the field of study (A-m1, A-m8, T-m5, & T-m9). In addition, two Turkish students and one American student stated that they got help with statistical analyses or felt to need to be approved by a specialist (A-m6, T-m11, & T-m12) and three different students stated that they need to improve themselves immediately in this respect (A-m2, T-f3, & T-m7). One Turkish student stated he knows how he can use the values obtained when he conducts some quantitative analyses, but he is not able to comprehend the statistical model underlying the analysis conducted or how the emerging values are created (T-m8). Another American student working in the educational field stated that training should be qualitative as it is concerned with people; numbers not count for much at all for him and thus he is inadequate in quantitative analyses which he couldn't adopt at all (A-m3).

Number of American students who stated a higher level of academic self-efficacy in terms of data analyses is higher compared to the number of Turkish students. Only one Turkish student regards himself as highly adequate in this sense compared to five American students. Two of American students in this group attributed their advanced level in data analysis to their field of doctorate. One of these students stated field of doctorate is closely associated with developing and interpreting statistical models (A-m5) and another one attributed it to assessment and statistics in education (A-m12). In addition, another American student indicated that she worked as data analyst previously and thus she has been pretty experienced in practice in statistical data analysis (A-f1). Only one student indicated that he feels highly adequate in both of the qualitative and quantitative analyses and even he always helps other people (T-m1). Some students' opinions on this subject are in the following:

"I can't say I have much difficulty in analyzing qualitative data. I can reach what I look for by hand and also via PC. On the other hand, I may have difficulty in quantitative analysis. I don't know the underlying statistical model even though I could conduct an analysis via PC. I know for what purpose anything is used, but I don't know how it is created." T-m8

"I can say I'm doing well in interpreting the qualitative data, but I guess I'm a bit inadequate in interpreting quantitative data. The reason is that lesson about SPSS I took during the graduate study was very useless and insufficient. Moreover, I think I couldn't improve myself in analyzing quantitative data since my studies have been qualitative studies so far." T-m3

"Most of my PhD has involved developing statistical models and interpreting results, and I am confident that I can do this very well now. Before my PhD, I was nowhere near as skilled at analyzing data as I am now." A-m5

"For quantitative, I'd say I need a lot of help. I know how to run regressions and do basic t-value and p-value analyses, but not much else. I know how to use quantitative soft wares to input data and run regressions. For qualitative, I feel far more confident, particularly in using grounded theory analysis, open coding, emergent coding, and narrative forms of analysis." A-m6

4. Result and Discussion

Here are the results obtained from this study in which ASEB of Turkish and American Ph.D candidates are compared in some respects:

Goals of both Turkish and American Ph.D candidates are similar in general and they are mostly career-wise. Phillips & Russell (1994) revealed that there is a strong relationship between self-efficacy and research

efficiency and setting career goals as a result of their experimental study with psychology graduate students. This means that self-efficacy affects career prospects (Khan & Scott, 1997). From this point of view, it can be concluded that the self-efficacy beliefs of both participant groups are generally high. However, it has been determined that Turkish students focus on mostly academic career while American students want to extend range of job and take an opportunity of a better job and salary as well as academic career. It is considered it may result from the fact that most of Turkish participants have become research assistant at the university where they have attended a Ph.D program and that economic conditions are different in two countries. It was conducted by Fitzgerald & Osipow (1988) in a research that supports the low level of academic career goals of American students. According to this research, only one of the four students in the field of psychological counseling is considering an academic career. In addition, it is observed that students in both groups have certain goals such as personal development, interests and competences, several obligations and being beneficial to the society even though order of their preferences is not the same. These statements of the students encourage the findings obtained by Aslan (2010) in his study conducted with graduate students in Turkey. Similarly, it is demonstrated in the study conducted by Solem, Kollasch & Lee (2012) that undergraduate and graduate students in the USA mostly focus on a career development, and students' concerns about employment, efforts to find academic opportunities and desire to acquire a reputation are several effective factors on graduate study.

It is determined that both Turkish and American students are similar in terms of ASEB in understanding and using the relevant terminology and they show similarities in this respect. It has been determined in both student groups that ASEB of the students especially who study for multidisciplinary fields are relatively weak. According to the findings obtained from this study, students have a higher level of self-efficacy belief in understanding and using the relevant terminology compared to the findings from Aslan (2010).

It is determined that both Turkish and American Ph.D candidates have similar opinions on making a literature review and accessing the relevant literature by using different databases and that they have a high level of ASEB in this respect. It is found that process of master's thesis and experience gained in certain graduate lessons has influence on this competence and that they take the advantage of certain opportunities provided by the universities they study in, for example access to the library and databases. These results comply with the findings obtained by Aslan (2010). The library syllabuses provided for the students at academic institutions in North America may have a positive influence on American students who have a high level of self-efficacy in this sense. Blummer (2009) conducted a study on the library education offered to the graduate students who study in various universities in North America, and he suggested that library skill training, information literacy and efforts to give a bibliographical education have been presented systematically from late 1950's to present day.

It has been determined that level of ASEB varies by either groups of the students concerning a full knowledge of scientific research methods and techniques. It has been determined by the results obtained that ASEB of Turkish students are weak and of American students are not very strong, but it is moderately adequate in general. It is demonstrated that Turkish students have a lower level of ASEB in this respect for the reason that they use certain methods by their field, there are many scientific methods they have never used in their studies and method lessons have not been effective during the Ph.D program. The results obtained on scientific research methods and techniques comply with the findings obtained by Aslan (2010). It was also demonstrated by Aslan (2010) that graduate students in Turkey have a rather lower level of academic self-efficacy perception in this sense. It is considerable because of the fact that no significant change has been observed in this respect in Turkey in the course of time.

It is determined that level of ASEB is different in both student groups in terms of having full knowledge of qualitative and quantitative data analysis techniques. Such in scientific research methods and techniques, ASEB of Turkish students are weak in qualitative and quantitative data analysis and of American students are not very strong, but it is moderately adequate in general. Another important result obtained in this respect is that both American and especially Turkish students are inadequate in quantitative analyses and statistics compared to qualitative ones. According to students' opinions, it is likely to result from the fact that lessons associated with statistics and SPSS are not productive at graduate education and that it is hard to remember quantitative statistics when they haven't been used for a while. Some findings obtained by Aslan (2010) that undergraduate students in Turkey find themselves inadequate and they have a lack of self-

confidence comply with also results obtained by this study. In fact, Turkey falls behind OECD countries regarding some competences such as ability to read illustrations such as tables and graphics in the exams like PISA and TIMSS, and to conduct several statistical processes and interpret them. Thus, it is suggested it is required to figure out at earlier ages why Turkish students have difficulty in the mentioned quantitative and qualitative analyses and why they have a weak self-efficacy belief.

In short, it has been determined by the results obtained in general that Turkish and American Ph.D candidates have a high level of ASEB in understanding the relevant terminology and making a literature review. In addition, it is determined that ASEB of Turkish Ph.D candidates is weaker in modeling an academic study by scientific methods and techniques and using statistical analyses compared to American Ph.D candidates.

ASEB of Ph.D candidates in two different cultures (Turkey and the USA) are compared in this study and some similar and some different results are obtained from two participant groups in general. It is observed that self-efficacy beliefs of Turkish students are rather weaker in some respects. This result complies with some results of the studies in which participants from different cultures are compared. It is emphasized by several studies in the literature that self-efficacy may have a different meaning between the cultures. Scholz, Doña, Sud & Schwarzer (2002), for example, examined the obtained results for 19.120 participants from 25 countries and demonstrated that participants from eastern countries where a collective culture rules over in general have relatively weak self-efficacy. Kim & Park (2006) suggested that American students grown in an individualist environment sense their competences as stronger although they show lower success in math and science compared to the students in Eastern Asia where collectivism is emphasized. Lee (2009) determined as a result of his study that participants from collective cultures such as Japan and Korea have a lower self-efficacy in math although they get high marks in math exams. Even though there are several findings in the literature which support results of the study, it is quite difficult to say if cultural understanding has a direct effect in the study. Hence, we need further comprehensive studies.

It may be considered as positive, especially for Turkish students that ASEB of both Ph.D candidates who attend a Ph.D program at prominent universities in the USA and the world such as Pennsylvania State University and William & Marry University and of Ph.D candidates in Turkey is strong and shows similarity in general. However, Turkish students in particular and higher education institutions and organizations have to take necessary measures in this respect due to the deficiencies detected in research methodology and data analysis. It is found from this point that it is a considerably appropriate decision to teach scientific research methods and techniques as a compulsory subject for graduate study at institutes of the universities in Turkey. However, it is clear that quality of the education should be enhanced for the lesson in question. Statistics, research methods, qualitative and quantitative analysis techniques should be taught in particular as more productive and free courses for undergraduate and graduate students in order to correct the current deficiencies which are extant according to the results of study. For Unrau & Beck (2004), however, research methods class may be effective in terms of teaching the research process and enhancing their comprehension ability and self-confidence.

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