



The Experiences of Ph.D. Drop-outs in Geography

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ABSTRACT

This study examines the experiences of four Ph.D. drop-out students in Geography programs in Turkey. Phone interviews were used to collect data. Narrative inquiry was used as a research design. Snowball sampling was used to reach the participants of the study. The study participants were two men and two women who started their Ph.D. programs in different universities in Turkey. The main reason that the participants had started their Ph.D. degrees was for getting academic jobs. The participants reported that they had positive experiences such as learning new skills and expanding knowledge but also negative experiences during their Ph.D. programs. All participants dropped out of their Ph.D. programs while they were writing their dissertations. Participants reported several personal (e.g., lack of skills) and circumstantial (e.g., social responsibilities, commuting) factors as reasons for quitting their Ph.D. programs. For educators, administrators, and policymakers, we recommended that setting higher criteria for Ph.D. students should be considered to attract and accept the best candidates for doctoral programs. During the doctorate, students should be able to select their supervisors or change their supervisors. In addition, doctoral students should be offered opportunities to socialize, share information, and learn from each other and should be encouraged to cooperate.

INTRODUCTION

Doctoral studies have many hardships for many students. For some students, it is so difficult that they choose to drop out. The attrition rate for Ph.D. ranges from 33% to 70% (Jones, 2013). Regulations in doctoral programs vary across countries, institutions, and disciplines. Even though some Ph.D. programs provide students flexibility in terms of their research and study topics and completion time requirements, there still is the problem of high attrition rates (Martinsuo and Turkulainen, 2011). Like many other Ph.D. programs, Geography Ph.D. programs are challenged with delays in degree completion and high attrition rates (Adams, 2015; Monk and Solem, 2015; Ramutsindela, 2015; Roberts, 2015).

In Turkey, Ph.D. programs in Geography are offered by Graduate Schools of Social Sciences and Graduate Schools of Educational Sciences in the following disciplines: Geography Education, Human and Economic Geography, Regional Geography, Physical Geography, Geography of Turkey, and Geography and Geopolitics of the Middle East. Five years ago, during the 2015-2016 academic year, 353 students (72% men and 28% women) were studying in Geography Ph.D. programs in Turkey. In that same year, only fifteen graduates held a Ph.D. in Geography (CHET, 2017).

In 2019, the most recent statistics available show that there were 35 Geography Ph.D. programs countrywide. The number of students registered in these programs was 420, but, in the same year, the number of Ph.D. graduates from Geography fields was only 32 (20 women and 12 men, CHET, 2021).

Research shows that the lack of support from and negative relationships with supervisors ([Hunter and Devine, 2016](#); [Peltonen, Vekkaïla, Rautio, Haverinen, and Pyhäältö, 2017](#)), high anxiety, emotional exhaustion ([Hunter and Devine, 2016](#); [Pyhäältö, Toom, Stubb, and Lonka, 2012](#)), and enrolment status - part-time/full time ([Gardner and Gopaul, 2012](#)) - are among the reasons students give for their intentions to leave their Ph.D. programs. These studies have been conducted with doctoral students and focused on their “intentions” to drop out; however, the experiences of students who “actually dropped out” have not been fully discovered, especially in the field of Geography.

In February 2021, searching studies published between 1975 and 2021 using the main databases (Social Sciences Citation Index-SSCI, Science Citation Index Expanded-SCI-Expanded, and Emerging Sources Citation Index-ESCI) with Geography and Ph.D. as keywords (title, keyword, abstract) resulted in 20 studies; using Geography and Ph.D. in the title revealed only two studies, and none of these studies focused on drop-outs. This study aims to examine the experiences of students who dropped out from Geography Ph.D. programs in Turkey. Based on this purpose, the study examined the following research question: How do geography Ph.D. drop-outs report their experiences of beginning a doctorate, studying at their doctoral program, and dropping out from their doctorate program?

METHODS

Participants

The participants of the study were invited to participate in this study using snowball sampling. The first author of the study, who has a Ph.D. degree in geography education, contacted her professors and colleagues and asked if they knew anyone who had dropped out of a Ph.D. program in geography or anyone who knew about drop-out Ph.D. students in Geography. The complete list of prospective participants involved nine individuals. Five of them declined to participate in the study. Two of them stated that they did not even want to remember their Ph.D. educations and did not want to talk about them. The current study was carried out with the four people (2 women and 2 men) who volunteered to participate in the study. At the time of data collection, all participants were working as Geography teachers; their ages ranged from 33 to 40. The participants had started their Geography Ph.D. programs in four different universities in Turkey and left their programs while writing their dissertations. In this study, the participants are given pseudonyms to protect their identity.

Research Design and Data Analysis

This study uses narrative inquiry as a research design and narrative analysis for analyzing the data. Narrative inquiry is a “way of understanding experience” ([Clandinin and Connelly, 2000; p. 20](#)) that uses individuals’ stories to understand how they create the meaning in their lives ([Clandinin, 2006](#)). Narrative inquiry is based on the Deweyan theory of experience that “works from a view of experience as embodied, always in motion, and shaped and reshaped by continuous interaction among personal, social, institutional, and cultural environments” ([Clandinin, Huber, Steeves, and Li, 2011, p.33](#)). In this study, participants’ stories were gathered through interviews. Once the interviews were transcribed, there was an attempt to collect the narratives that reported how participants had started, lived, and ended their experiences of being Ph.D. students. These narratives are presented without interruption to preserve participants’ voices and create opportunities for readers to directly learn from participants’ stories, interpreted as they were reconstructed, retold (written), and presented by the authors of this study. During the reconstruction of narratives, two authors of this study revised the interpretations several times to ensure consistency between the participants’ narratives and our interpretations.

Data Collection

The participants were living in different cities. Phone interviews were conducted with the participants. A semi-structured interview form developed by the researchers was used as the data collection tool. It included 13 questions mainly examining participants’ experiences of starting their Ph.D. programs, their experiences during their Ph.D. studies, and their experiences when leaving their Ph.D. programs. Each interview took about 30 minutes.

RESULT

Participants of the study started their Ph.D. programs with high hopes of getting academic jobs after completing their degrees. During their studies, some of them had changed their jobs, marital status, or living places. They successfully finished their Ph.D. courses, passed the comprehensive exams, and submitted their dissertation proposals. But in the end, they all decided to leave from Ph.D. when they were at the last stage: the dissertation writing stage. Brief cameos of the participants are presented below.

Defne is 38 years old. She is working as a Geography teacher. She started her Ph.D. in 2005 and dropped out in 2010 while she was writing her dissertation. She lived in the same city where she was studying for her doctorate. For the first two years of her Ph.D., she was not working and she had a scholarship. After two years, she started to work, got married, and moved to another city.

Meryem is a 40-year-old woman and a Geography teacher. She started her Ph.D. program in 2007. Having a Ph.D. was her dream and she wanted to make it a reality. When she started her program, she was working as a Geography teacher, and she was married. In 2010, she gave up on her dream of having a Ph.D. degree and dropped out of her program while writing her dissertation.

Ali is a 36-year-old man, a Geography teacher. He loves his job and Geography. He would not want to do anything else. He did not have a job when he started his Ph.D. in 2009. He was not living in the same city where he was studying but it was close by. He got married one year after he started his Ph.D. program. For the first two years, he was not working. His wife was supporting him financially. In the third year of his Ph.D., he started to work as a Geography teacher and left the Ph.D. program in 2013, during the dissertation writing process.

Vedat is a 33-year-old man, and a Geography teacher who had always wanted to be a lawyer. He started his Ph.D. program in 2009 to get an academic job. He was living in the same city where he was attending his Ph.D. program. During his studies, he realized that the Ph.D. program did not meet his expectations, and his priorities in life had changed. He left his program in 2012 while writing the dissertation.

The Beginning: Starting Ph.D.

The participants started their Ph.D. programs because they wanted academic jobs at a university and they wanted to do research. They choose Geography as a field because, overall, they liked it, valued it, wanted to learn more about it, and wanted contribute to it.

"I started my Ph.D. to go ahead with my education. When I was newly graduated with my bachelor's degree, I did not want to give a pause to my education and lose time but continue with it. I wanted to learn continuously and wanted to improve myself academically. At that time, we started Ph.D. with many friends, and we motivated each other. Before starting my Ph.D., I was thinking of Geography as a science of the natural environment that we live." (Defne)

"I started my Ph.D. to do research because I liked to research. I picked Geography as a field because I loved my field. I wanted to improve myself and I wanted to be an expert in my field. The meaning of Geography for me was that it was a science that is integrated into all other fields of science. I thought that you can come up with it at any moment of life." (Meryem)

"I started my Ph.D. to do research and to stay in academia. I chose a Geography Ph.D. because I love Geography and I also thought that if I had a Ph.D. in Geography, I could find a job both in the Faculty of Education and Faculty of Arts and Sciences. I also wanted to be an expert and contribute to the field. Geography was everything to me. It was a guide for me to understand my surroundings and to like my environment. I believe that people must know Geography to get to know the World and to love and protect it." (Ali)

"I started my Ph.D. to have an academic job. I wanted to have a Ph.D. degree in the field of Physical Geography but we did not have enough professors, so I picked Human Geography. I wanted to have a Ph.D. degree because I wanted to contribute. When I started my Ph.D. I thought that Geography is a science that connects the human and nature." (Vedat)

Experiences during Ph.D.

During their Ph.D., participants had some positive experiences. They were expanding their knowledge in the field, learning a foreign language, learning research methods, gaining analytical thinking skills, reading articles, and taking photographs. When they were asked about the biggest advantage of being in a Ph.D. program, Defne stated that it was *"doing what I love"*, for Meryem it was *"the dream that comes true"*, it was *"taking photographs"* for Ali and *"gaining analytical thinking skills"* for Vedat. Participants also had negative experiences during their Ph.D. studies. The most stated negative experiences were about their relationships with their supervisors. They stated that their negative experiences were also related to being unemployed, commuting from out of town, balancing work and study life, lack of knowledge on the publication process, lack of skills in using information and computer technologies, and not being recognized by other academics. Among these experiences, Defne stated that the biggest problem was *"not being able to select her supervisor"*; Meryem stated that *"commuting from another city, and working and studying at the same time"*; Ali stated *"not being able to reach supervisor when I needed"*; and Vedat stated that *"time constraints"* were the biggest problems.

"I gained deeper knowledge during the Ph.D. courses I took. I learned a foreign language even though it was a little and I realize that this process [Ph.D.] is not easy. I came to know about researching information. I think I gained inquiry skills. If I evaluate my skills, I had a good level of field knowledge and language skills; however, my technical skills and my motivation were intermediate, and my methods skills were very low. Ph.D. made me realize that people should do the work that they love. However, I was unemployed at the beginning, then I was commuting to work, it was hard. Besides, I was graduated from the Faculty of Education but I started my Ph.D. in the Faculty of Arts and Sciences, and this has not seen good by my professors. It was also a problem that we could not choose our supervisor. When I first met with my supervisor, we had a bad start because it was the last day of registration and he scolded me a little for being late. And second, I remember him belittling me because of my entrance exam scores. Although I had the highest score, he said that the criteria were low and that they asked easy questions. I wanted to read his thesis and I asked for it and he said that I should find it by myself. I still ask myself about what the duties of a supervisor are. I did not know any other students in my department. I felt very isolated. On the other hand, my family and my husband were supporting me and my friends who started my Ph.D. with me were the biggest support." (Defne)

"Studying for Ph.D. was a dream come true, and I got better in my field. I know more, I learned research methods. Overall, I was good at my field knowledge. My research methods skills and my motivation for my Ph.D. were intermediate, but my foreign language and technical skills were low. Commuting and studying and working at the same time were problems; my mentor was also too picky, he cared too much about the name of the authors and the format in publications. The physical environment in my department was okay. We had every opportunity. Everybody was busy with their work. I think there were not many academic relationships. We could only ask questions to our supervisors. My family and my husband were supporting me because they knew it was my dream. They did not mind that I spent less time with them. Especially my husband helped me with cooking. Now I look back, there was not anybody who put me back, but I wish my supervisor supported me more." (Meryem)

"During my Ph.D., I learned more; now, everything on the land, every settlement and culture interest me more. I read new articles occasionally. I had a negative and difficult experience. But I still love walking in the land with a camera. I did not know what to do and where to start from. I did not get any support about it. I could not find the maps; I could not draw maps. I had technical difficulties; my lack of knowledge put me back. Things were missing and I could not get much from the field trips.

How can I do the research and how to focus...I could not determine these. I could not reach my supervisor and sometimes I hesitated. And this made things take more time and this tired me physically and mentally. Everybody was supportive, except my supervisor. The physical, social, and academic environments in the department were okay. People were friendly, academic relationships were positive.” (Ali)

“During my Ph.D., I started to think critically about the knowledge we have learned in the undergraduate degree. I was more skeptical about the subject and the research studies. The biggest hardship for me was that I could not find enough time for research. My subject field knowledge, my methods knowledge, and my technical skills were good, my foreign language skills and motivation were adequate. My friends were supportive especially about finding sources. My Ph.D. peers were my friends from my undergraduate years. We also knew our professors from our Bachelor’s degrees. Academic relationships were okay, we could talk and exchange ideas.” (Vedat)

The End of the Ph.D. Journey

Meryem and Ali could not move forward with their dissertations and they had problems with their supervisors. Meryem stated that if her supervisor could provide her more support she would stay in academia. Ali also stated that he had financial problems, and he did not have enough knowledge on technical issues. He wished he had been provided more support from his professors. Defne lost her self-confidence and started to believe that she could not finish her Ph.D. She also had some problems at work so that her workload was too heavy to pursue her Ph.D. Vedat had started to see his Ph.D. program as a waste of time and that it was not what he wanted. Meryem, Ali, and Vedat realized that Geography was not given the credit it deserved and that it was not seen as valuable by other people. All of them quitted their Ph.D. programs while?when writing their dissertations. Ali and Defne felt sad but also felt relieved after they left their programs. Meryem felt regretful, but relieved, and Vedat felt only relieved after he quit his Ph.D. program.

“My Ph.D. program was like climbing on a steep rock, the uncertainty that you cannot see what is on top, you do not have enough support around you, and this makes everything even more tiresome. My problem was that I did not have good communication with my supervisor; I lacked self-confidence. If I had self-confidence, if my supervisor had thought that I worked hard, and if I could teach fewer courses in the school, I would not have quit my Ph.D. program. I felt sad but relieved after I left my Ph.D. I think research opportunities must be offered to students. Students could easily find the sources. They should be able to select their supervisors, they should be encouraged and guided, and academicians must be unprejudiced.” (Defne)

“In the end, the meaning and the value of Geography have not changed for me. But it is hard to learn and hard to be an expert on it. My Ph.D. program was like a boomerang. Because my biggest problem was that I could not proceed forward. Not moving forward but staying at the same place, my supervisor did not like anything I did, he was too picky. If I could talk to him about my feelings, and if he could help me, maybe my dream of finishing my Ph.D. could be real. I felt regretful but relieved after I dropped out of my Ph.D. program.” (Meryem)

“For me, the Ph.D. became like a nightmare that I could not escape from. I could not reach the sunlight; I scream but I am not being heard. Struggling yet staying at the same place, and my supervisor made me feel that I could not do it. I felt unsuccessful. I even used to hesitate to show my work to my supervisor. My courses were not productive. I did not get help from my instructors. I could not take courses on technical issues, of course, time and money needed for it. I felt sad but I felt relieved after I left my Ph.D. If I had known the problems I would have, and if I could solve them, I would not have quit my Ph.D. I think supervisors should support and encourage their students, if the students were not moving forward, they should not be left alone. About Geography...the meaning and the value of Geography have not changed for me. It is just that people do not find it valuable. Also, getting a Ph.D. in Geography is difficult financially.” (Ali)

“For me, my Ph.D. was like a cell phone. You carry it with you all the time, and you are busy with it all the time. In the end, I thought that my time and efforts would be for nothing. I realized that it [Geography Ph.D.] did not meet my expectations. I started to think that Geography is not accepted as valuable by the people in our country. Besides, if learning English were not necessary, I would not quit my Ph.D. I feel relieved that I quit my Ph.D. I think that people who start Ph.D.s must know themselves first and have a clear idea about their limits, what they can do and what they cannot do, and their priorities in life, before they start a Ph.D. program.” (Vedat)

DISCUSSION

The participants of our study started their Ph.D. programs with the hope of getting an academic job. More than a decade ago, in their report on the career aspirations of Geography Ph.D.s in the United States, [Babbit et al. \(2008\)](#) stated that most geographers entered graduate school with the career goal of becoming academics. In her study with Australian geography doctoral students, [Dufty-Jones \(2018\)](#) supports this finding and adds that these students are pessimistic about the prospect of finding academic jobs and that it is important that Ph.D. students are provided enough care and guidance once enrolled in Geography Ph.D. programs.

Relationships with supervisors and other academics are important factors related to staying in doctorate programs (e.g., [Bair and Haworth, 1999](#); [Golde, 2005](#); [Barnes and Austin, 2009](#); [McAlpine, Paulson, Gonsalves, and Jazvac-Martek, 2012](#); [O’Meara, Knusen, and Jones, 2013](#); [Ynalvez, Garza-Gongora, Ynalvez, and Hara, 2014](#), [Sinclair, Barnacle and Cuthbert, 2014](#)). In this study, the most commonly stated negative experience was lack of supervisor support. Sometimes students did not think they got the support they needed; they felt lonely, isolated, and confused. Students were also unclear about their supervisors’ expectations for them. They often found their supervisors too picky, hard to impress, or hard to reach. There were times when they hesitated to seek help or to share their feelings. However, these results may also indicate that the students might have an unrealistic idea about academia. Our results suggest that courses and orientation programs should be designed to present the norms and expectations of Geography Ph.D. programs. And students should be able to select their supervisors or change their supervisors. In addition, doctoral students should be offered opportunities to socialize, share information, and learn from each other, and should be encouraged to cooperate. When doctoral students are supported by their friends ([Sweitzer, 2009](#); [Wright, 2003](#)), family ([Gardner and Gopaul, 2012](#); [Wright, 2003](#)), academicians ([Author, McAlpine, and Amundsen, 2017](#)), institutional staff ([Di Pierro, 2007](#); [Dundar and Lewis, 1998](#); [McAlpine et al., 2012](#)) or by their motivation ([Gardner, 2009](#); [Gardner and Holley, 2011](#)), they are more likely to stay in academia.

Consistent with the current literature, participants in this study reported problems balancing their work and studies with their personal lives ([Alkan, 2018](#); [Gardner and Gopaul, 2012](#); [McAlpine et al., 2012](#)). Some participants also experienced financial problems that negatively influenced their academic life ([McAlpine et al., 2012](#); [Bair and Haworth, 1999](#); [Dundar and Lewis, 1998](#); [Gardner and Holley, 2011](#)). As land is the lab of a geographer and fieldwork is an important part of geographic investigations ([Doğanay, 2002](#)), geographical research may be expensive. Our study also showed that Geography Ph.D. students should be provided financial support for fieldwork and informed about funding opportunities.

As [Merga and Mason \(2020\)](#) state, producing research outputs during a doctorate is shaped by supervision, self-direction, and experience. Our study participants left their doctorates while producing a research output -their dissertations- and reported that they had academic problems with supervision, self-direction, and experience. These students felt unsuccessful and insecure, had low self-confidence, and felt left out. They lacked some important study habits and had problems with time management. They had unclear ideas and mixed feelings about the publication and dissertation writing process. When they finally quit their Ph.D.s, they felt relieved.

CONCLUSION

Some studies conducted in Turkey with Ph.D. students also showed that lack of subject matter knowledge, lack of research methods, statistics, and foreign language skills are among the problems of Turkish doctorate students ([Büyüköztürk and Köklü, 1999](#); [Keskinılıç and Ertürk, 2009](#); [Tortumluoğlu and Özyazıcıoğlu, 2004](#)). We believe that some students aren’t prepared to start the doctoral journey.

Participants in our study mentioned that they learned skills such as foreign language or reading articles during their Ph.D. programs. However, Ph.D. students are expected to excel in these skills at the beginning of their programs. One reason that some students require more supervisor or external support could be that they might need more support than normally expected. In Turkey, the criteria for the selection of students to Ph.D. programs vary across programs and universities. Generally, it involves evaluating grade point averages, scores on English language tests, and scores from a nationwide centralized graduate-school entrance exam (CHET, 2016). For educators, administrators, and policymakers, we recommended that setting higher criteria for Ph.D. students should be considered to attract and accept the best candidates for admittance to doctoral programs.

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REFERENCES

- Emmioglu, E., McAlpine, L., & Amundsen, C. (2017). Doctoral students' experiences of feeling (or not) like an academic. *International Journal of Doctoral Studies*, 12, 73-9.
- Adams, J. S. (2015). Reality therapy for geography Ph.D. programs. *GeoJournal* 80, 169.
- Alkan, Z. (2018). Doktora öğrencilerinin katıldıkları çeşitli akademik etkinliklerin doktora tezi yazma sürecine yansımaları [The Roles of Different Academic Activities in Dissertation Writing Process]. (Master's Thesis) Tokat: Gaziosmanpaşa University, Graduate School of Educational Sciences.
- Babbitt, V., Rudd, E., Morrison, E., Picciano, J., & Nerad, M. (2008). *Careers of Geography PhDs*. Washington: Center for Innovation and Research in Graduate Education. Retrieved from <http://www.education.uw.edu/cirge/wp-content/uploads/2008/04/ss5-geography-report.pdf>
- Bair, C. R., & Haworth, J. G. (1999, 18-20 November). *Doctoral student attrition and persistence: A meta-synthesis of research*. Association for the Study of Higher Education Annual Meeting Paper, San Antonio, Texas.
- Barnes, B. J., & Austin, A. E. (2009). The role of doctoral advisors: A look at advising from the advisor's perspective. *Innovative Higher Education*, 33(5), 297-315. Retrieved from <https://link.springer.com/article/10.1007/s10755-008-9084-x>
- Büyüköztürk, Ş., & Köklü, N. (1999). Advisors' opinions about the research competencies of Master's and doctorate students in educational sciences. *Education and Science*, 23(112), 18-28.
- CHET, Council of Higher Education, Turkey. (2016). *Regulations for Graduate Education and Instruction*. Retrieved from <https://www.mevzuat.gov.tr/File/GeneratePdf?mevzuatNo=21510&mevzuatTur=KurumVeKurulYonetmeligi&mevzuatTertip=5>
- CHET, Council of Higher Education, Turkey. (2017). *Higher Education Information Management System*, Accessed 1 February 2021. Retrieved from <https://istatistik.yok.gov.tr>
- CHET, Council of Higher Education, Turkey. 2021. *Higher Education Information Management System*, Accessed 1 February 2021. Retrieved from <https://istatistik.yok.gov.tr>
- Clandinin, D.J. (2006). Narrative inquiry: A methodology for studying lived experience. *Research Studies in Music Education*, 27, 44-54.
- Clandinin, D. J., & Connelly, F. M. (2000). *Narrative inquiry: Experience and story in qualitative research*. San Francisco: Jossey-Bass.

- Clandinin, D. J., Huber, J., Steeves, P., & Li, Y. (2011). Becoming a narrative inquirer: learning to attend within the three-dimensional narrative inquiry space. In *Learning and Teaching Narrative Inquiry: Travelling in the Borderlands*, S. Trahar (ed.), 33–51. Amsterdam, Netherlands: John Benjamins
- Di Pierro, M. (2007). Excellence in doctoral education: Defining best practices. *College Student Journal*, 41(2), 368-375. Retrieved from <http://search.ebscohost.com/login.aspx?direct=true&db=asn&AN=25093211&lang=tr&site=ehost-live>
- Doğanay, H. (2002). *Coğrafya Öğretim Yöntemleri: Orta Öğretimde Coğrafya Öğretiminin Esasları [Instructional Methods In Geography: The Fundamentals Of Geography Instruction In Middle School]*. Erzurum: Aktif Yayınevi.
- Dufty-Jones, R. (2018). The career aspirations and expectations of geography doctoral students: establishing academic subjectivities within a shifting landscape. *Geographical Research*, 56: 126-138. Retrieved from <https://doi.org/10.1111/1745-5871.12270>
- Dundar, H., & Lewis, D. R. (1998). Determinants of research productivity in higher education. *Research in Higher Education*, 39, 607-631. Retrieved from <https://link.springer.com/content/pdf/10.1023/A:1018705823763.pdf>
- Gardner, S. K. (2009). Conceptualizing success in doctoral education: Perspectives of faculty in seven disciplines. *The Review of Higher Education*, 32(3), 383-406. Retrieved from <https://muse.jhu.edu/article/259666/summary>
- Gardner, S. K., & Gopaul, B. (2012) The part-time doctoral student experience. *International Journal of Doctoral Studies*, 7(2012), 63-78.
- Gardner, S. K., & Holley, K. A. (2011). “Those invisible barriers are real”: The progression of first-generation students through doctoral education. *Equity and Excellence in Education*, 44(1), 77–92. Retrieved from <https://doi.org/10.1080/10665684.2011.529791>
- Golde, C. M. (2005). The role of the department and discipline in doctoral student attrition: Lessons from four departments. *Journal of Higher Education*, 76(6), 669-700. Retrieved from <https://doi.org/10.1080/00221546.2005.11772304>
- Hunter, K. H., & Devine, K. (2016). Doctoral students' emotional exhaustion and intentions to leave academia. *International Journal of Doctoral Studies*, 11, 35-61. Retrieved from <http://www.informingscience.com/ijds/Volume11/IJDSv11p035-061Hunter2198.pdf>
- Jones, M. (2013). Issues in doctoral studies- forty years of journal discussion: Where have we been and where are we going? *International Journal of Doctoral Studies*, 8(2013), 83 – 104.
- Keskinkılıç, S. B., & Ertürk, A. (2009). Eğitim bilimleri doktora öğrencilerinin istatistiksel bilgi yeterlilikleri.[Statistical knowledge competency of the educational sciences doctoral students] *Ahi Evran Üniversitesi Kırşehir Eğitim Fakültesi Dergisi*, 10(1). 141-151. Retrieved from <https://dergipark.org.tr/en/download/article-file/1494915>
- Martinsuo, M., & Turkulainen, V. (2011). Personal commitment, support and progress in doctoral studies. *Studies in Higher Education*, 36(1), 103-120. Retrieved from <https://doi.org/10.1080/03075070903469598>
- McAlpine, L., Paulson, J., Gonsalves, A., & Jazvac-Martek, M. (2012). ‘Untold’ doctoral stories: can we move beyond cultural narratives of neglect? *Higher Education Research and Development*, 31(4), 511-523. Retrieved from <https://doi.org/10.1080/07294360.2011.559199>
- Merga, M. K., & Mason, S. (2020). Doctoral education and early career researcher preparedness for diverse research output production. *Journal of Further and Higher Education* 1-16. Retrieved from <https://doi.org/10.1080/0309877X.2020.1807477>

- Monk, J., & Solem, M. (2015). Changing doctoral education: The case of US geography *GeoJournal*, 80, 187. Retrieved from <https://link.springer.com/content/pdf/10.1007/s10708-014-9586-2.pdf>
- O'Meara, K., Knudsen, K., & Jones, J. (2013). The role of emotional competencies in faculty-doctoral student relationships. *The Review of Higher Education*, 36(3), 315-347. Retrieved from <https://muse.jhu.edu/article/502332>
- Pyhäntö, K., Toom, A., Stubb, J., & Lonka, K. (2012). Challenges of becoming a scholar: A study of doctoral students' problems and well-being. *International Scholarly Research Network Education*, 12, 1-12. Retrieved from <https://downloads.hindawi.com/archive/2012/934941.pdf>
- Ramutsindela, M. (2015). Geography PhDs and the changing environment in South Africa. *GeoJournal*, 80, 251-255 Retrieved from <https://doi.org/10.1007/s10708-014-9571-9>
- Roberts, S. M. (2015). Doctoral programs in geography in the United States. *GeoJournal*, 80, 247-250. Retrieved from <https://link.springer.com/content/pdf/10.1007/s10708-014-9581-7.pdf>
- Sinclair, J., Barnacle, R., & Cuthbert, D. (2014). How the doctorate contributes to the formation of active researchers: What the research tells us. *Studies in Higher Education*, 39(10), 1972-1986. Retrieved from <https://doi.org/10.1080/03075079.2013.806460>
- Sweitzer, V. (2009). Towards a theory of doctoral student professional identity development: A developmental Networks approach. *The Journal of Higher Education*, 80(1), 2-33. Retrieved from <https://www.tandfonline.com/doi/abs/10.1080/00221546.2009.11772>
- Tortumluoğlu, G., & Özyazıcıoğlu, N. (2004). Akademisyenlerin araştırma yaparken ve yayınlatırken karşılaştıkları güçlükler ve bunun üzerinde doktora eğitiminin etkisi.[Research and publication challenges of academicians' and the impact of doctoral education] *Journal of Human Sciences*, 1(1), 1-11. Retrieved from <https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/169/169>
- Wright, T. (2003). Post graduate research students: People in context? *British Journal of Guidance and Counselling*, 31(2), 209-227. Retrieved from <https://doi.org/10.1080/0306988031000102379>
- Ynalvez, R., Garza-Gongora, C., Ynalvez, M. A., & Hara, N. (2014). Research experiences and mentoring practices in selected east Asian graduate programs: Predictors of research productivity among doctoral students in molecular biology. *Biochemistry and Molecular Biology Education*, 42(4), 305-322. Retrieved from <https://iubmb.onlinelibrary.wiley.com/doi/pdf/10.1002/bmb.20794>