

INQUIRY BASED LEARNING TO IMPROVE TEACHERS' SELF-CONFIDENCE FOR TEACHING AT BEIJING, CHINA

Fan Liu¹ and Sirikawin Krutkrongphan²

Article History

Received: 16-11-2022; Revised: 18-01-2024; Accepted: 19-01-2024

<https://doi.org/10.14456/jsmt.2024.6>

ABSTRACT

The purpose of this research was to examine the differences in demographic factors on Teachers' self-confidence for Teaching at Beijing Dongcheng District, China and to examine the relationship between Inquiry-based learning with Teachers' self-confidence for Teaching at Beijing Dongcheng District, China. The research subjects were teachers in Huashi Primary School at Beijing Dongcheng District China. 400 samples were used by systematic sampling. Data were collected by questionnaires. The descriptive data were analyzed including frequency, percentage, mean and standard deviation. and testing the hypothesis with t-test, F-test, and Pearson correlation.

The results showed that:

Different demographic factors in terms of Gender and educational level had a statistically significant correlation between teachers' self-confidence for Teaching at Beijing Dongcheng District, China at the .00 level and Inquiry-based learning in each aspect. With Teachers' self-confidence for Teaching at Beijing Dongcheng District, China, all aspects were statistically significant at the .00 level, which was positively correlated. Moderate to very high.

Keywords: Inquiry based learning; teachers' self-confidence

1. INTRODUCTION

This might seem surprising, but it actually makes sense. A teacher who lacks confidence is less likely to push students, try new methods or tackle difficulties. Teacher efficacy also plays a role in teacher retention, helping to keep educators motivated and stay in the profession. the confident teacher would have a positive

¹⁻²Faculty of Education, Thongsook College

E-mail: 121128571@qq.com *Corresponding author

impact on his or her students' achievement, attitude, affective, and even socio-emotional growth. To improve the schooling experience of low-progress learners, enhancing teachers' beliefs in their teaching competence may be a viable approach (Arsal, 2017). Husni (2020) states that teaching is a skill that must be learned and practiced. You already have what it takes to be a good teacher because you chose this career as your life's work. Sit down and make a list of your personal characteristics, skills, and abilities that contribute to your success as a teacher. For example, maybe your kind, approachable, dedicated, and so on.

Education is a field that requires honed skills in judgment. Research findings, manufactured programs, and sworn-by field recommendations abound, all seeking to inform, sway, or determine the educational professional's methodology. Administrators and teachers alike must sift through the mountains of available resources in order to consistently provide their students an education that is duly challenging, innovative, and life-preparatory. If one is too quick to adopt a specific program or approach for her school or classroom, she may find its outcomes to be unexpected, or even undesired. Service learning is one such approach (Titlebaum, Williamson, Daprano, Baer, & Brahler, 2018). School districts themselves are also increasingly likely to institute service learning as part of their graduation requirements, school focus, and curriculum (Titlebaum, 2016). It is precisely because of service learning's growing popularity that we must take a moment to question how it is used; for the more common an approach becomes, the easier it becomes for that approach to be understood in subtly different ways, or perhaps to be misconstrued altogether. To phrase this in another way, the process of disseminating the service-learning approach could resemble the childhood game Telephone: As service-learning spreads across the nation, the original message that is, the grounding aims and outcomes of service learning may over time evolve into something different from the original as the message is interpreted and passed along by each new receiver. Therefore, if service learning continues to spread nationally and within California alone, how can administrators and teachers continually and consistently ensure that the outcomes of service learning align with its intended goals, while contributing to a meaningful, challenging, and innovative education. Certainly, a first step involves understanding what, precisely, service learning is and what it seeks to accomplish. Vein and James (1906) states that the use of non-military service as a more constructive manifestation of man's innate "war spirit." A manifestation such as this would send young men into occupational environments like fishing fleets and skyscrapers, thus allowing them to "come back into society with healthier sympathies and soberer ideas," having "paid their blood-tax, done their own part in the immemorial human warfare against nature" (James, 1906) As stronger members of society, the young men would likewise become stronger fathers and teachers for future generations.

The concept of service-learning dates back to over one hundred years ago; however, it was not actually until 1971 that the White House Conference on Youth issued calls for the linking of service and learning (Titlebaum, 2014). Since then, most states have responded by either encouraging or requiring service learning through policy, state education standards, and funding (Titlebaum, 2014). School districts themselves are also increasingly likely to institute service learning as part of their graduation requirements, school focus, and curriculum (Titlebaum, 2014). With consideration of these origins, one must recognize that service learning is hardly a fad born out of recent liberal or social reform. The United States, despite its being a relatively young country, has used a ser-

vice-learning approach for approximately as long as it has used a compulsory system of education. This history is noteworthy for at least two particular reasons: 1) It illustrates the notion that the need for service transcends space and time, and 2) it recognizes the eternal capacity of American youth to use their education in ways that allow them to connect with other human beings for the sake of bettering their communities. As the movement for service learning continues, propelled onward by each administrator and teacher who implements it, this need for service and the potential for American students' involvement continue as well. What, then, does service learning look like in schools today? Does its implementation reflect the elements of curriculum, community involvement, and student reflection, all for the purpose of bettering the community and the student's transformative learning experience? Given these potential outcomes, would the service-learning approach be more effectively served if encouraged, or required, by the school? And is it possible for service learning to be implemented incorrectly, yielding negative results? These questions and more require consideration when discussing, and certainly before implementing, service learning. In this study, the focus is on Inquiry based improve Teachers' self Confidence for teaching through interaction, clarification, questioning, and design.

2. OBJECTIVE

1. To study the differences in demographic factors on teachers' self-confidence for Teaching at Beijing Dongcheng District, China.
2. To study the relationship between Inquiry-based learning with Teachers' self-confidence for Teaching at Beijing Dongcheng District, China

3. HYPOTHESIS

1. Different demographic factors affect Teachers' self-confidence for Teaching at Beijing Dongcheng District, China.
2. Inquiry-based learning is related to Teachers' self-confidence for Teaching at Beijing Dongcheng District, China.

4. LITERATURE REVIEW

Inquiry-based learning (IBL) or inquiry-based instruction is based on the theory of constructivism (Bruner, 1990; Rooney, Bayley & Schindler 2012). Constructivism is concerned with the ways people construct knowledge, comprehend, and makes sense of things (Marvasti, Foley, & DeLammermore, 2019). The learning processes of IBL mainly start with motivating students' curiosity on the topic they are interested in students generate questions (hypotheses) then explore, observe, acquire knowledge to answer questions as a process of learning (Pedaste, Maeots, Leijen, & Sarapuu, 2012). According to Castronova (2002), students actively participate in classroom activities, which assists students' learning since the learning activities appease students' curiosity and support individual interests. Similar constructs such as discovery learning highlight the process of students' learning rather than solely emphasizing students' learning outputs (Castronova, 2002). According to Lee May (as cited in The Academy of Inquiry-Based Learning, n.d.), IBL is a pedagogical approach that fosters questions, opinions, and

investigation through the process of learning. During this process, students are active learners while engaging with IBL activities since the activities motivate students to explore, observe, analyze, and learn in a challenging environment (“The Academy of Inquiry-Based Learning”, n.d.). In other words, IBL encourages student-centered classrooms. While students are participating in IBL activities, they have the authority to determine processes and methods of acquiring knowledge to answers their questions. The process of IBL supports students’ investigatory skills in collaborative environments. To elaborate, the process of IBL instruction offers useful practical experiences for students when they participate in classroom activities. Furthermore, IBL can be implemented in classrooms in four levels; (1) Confirmation level, (2) Structured level, (3) Guided level, and (4) Open level (Rooney, 2012). The levels based on the degree of student autonomy in learning processes in classrooms. The following table proposes a description of each level of inquiry.

Teaching models are prescriptive teaching strategies that are designed to accomplish particular instructional goals (Eggen & Kauchak, 1996). Van der Horst and McDonald (2013) describe a teaching strategy as a broad plan of action for teaching activities with a view to achieving a particular outcome. The teaching methods are the tools or techniques that are used to carry out the strategy (Pandey & Pandey, 2021) and focus on the techniques, subject matter and teaching media used to reach the objectives. Once a teaching strategy has been decided upon, only then can a method be chosen.

Two teaching strategies (McCown et al, 1996) that can be considered are the following: a) Teacher-centred instruction b) Learner-centred instruction 13 Teacher-centred instruction focuses on the teacher presenting key concepts of the subject matter in the form of a lecture. If learners need any elaboration or need to ask questions they ask the teacher directly. Learner-centred instruction focuses on the teacher organising the learners into groups and then providing them with resource material. This strategy spreads the responsibility for learning between the teacher and the learners (McCown et al, 1996). A learner-centred approach is also consistent with a constructive view of learning (McCown et al, 1996), with learning best done in real life environments, where learning concepts and ideas should be learned in diverse ways. There are, however, a variety of teaching methods that can be associated with each of the teaching strategies. This study will specifically focus on the lecture method, which is associated with a teacher-centred strategy, and cooperative learning, which is associated with the learner-centred strategy. The lecture method can be described as presenting information to a group for the purpose of instruction (McCown et al, 1996). This method assumes that all learners need the same information presented in the same way, at the same place and at the same time. The method is appropriate when presenting key information to learners who have the attention span, self discipline and motivation to benefit from this method (Westwood, 2018). The lecture method allows one to introduce a new topic or bring learners up to date on the most recent information, and this method is quick, concise and integrated (Westwood, 2018). When used in early education, the lecture method increases the opportunity for independent learning through less structured methods later on in the learners’ education (Westwood, 2018).

Learning is the means, through which not only skills and knowledge are acquired, but also values, attitudes and emotions (Ormrod, 1990). One can therefore suggest that using an interactive learning approach would

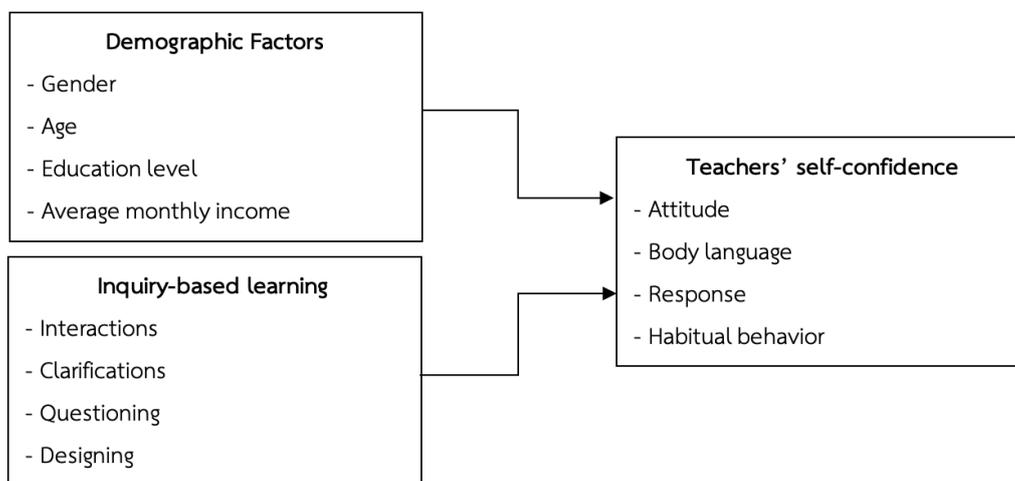
allow for a greater experience with environmental concepts and, through exposure to different stimuli, create a positive attitude towards environmental issues. Newhouse (1990) states that learning is a process of retaining new information or recalling previously learned information. This is often best done through direct experience, as an active approach to learning could increase environmental knowledge and create a positive attitude towards the environment (Newhouse, 1990).

Studies done by Aivazidis, Lazaridou, and Hellden (2016) showed that a direct experience of learning increased knowledge and caused a change in learners’ attitudes towards the environment. A direct experience results in a greater attitude-behaviour consistency than an indirect experience, and it makes more information available thus allowing for a more positive environmental attitude. A direct experience may cause one to focus on a particular behaviour and therefore may promote an attitude towards a more positive one. Through the repetition of the more positive behaviour, the associated attitude may be more easily or accurately remembered (Newhouse, 1990).

5. CONCEPTUAL FRAMEWORK

Figure 1

Conceptual framework



6. RESEARCH METHODOLOGY

1. Population and sample

The participants of this study were 400 teachers (Systematic Sampling) were Huashi Primary School at Beijing Dongcheng District, China.

2. Research Instrumental

Questionnaire on demographic teachers, which is a questionnaire to choose to answer (Check List) with questions about gender, age, education level. and average monthly income An opinion questionnaire on four essential inquiry based skill. Opinion of the respondents about the four essential Inquiry based improve Teachers' self Confidence for Teaching Province China or the rating scale which are Attitude, Body language, Response, Habitual Behavior. The nature of the question is a closed-ended scale. Inquiry based learning Teachers' self Confidence for Teaching. Beijing Dongcheng District East Flower City Street East flower market Beili West. Three major focus Interaction, Clarification, Questioning, Design. Using the Interval Scale or an approximation scale. Value (Rating Scale) The nature of the question is a closed-ended scale.

3. Data analysis

The personal factors of the respondents Analyze the data by using the frequency (f) and find the percentage (%). Data Analysis Attitude, Body language, Response, Habitual Behavior opinion questionnaire on four essential inquiry-based skill. Opinion of the respondents about the four essential Inquiry based improve Teachers' self Confidence for Teaching Province China or the rating The researcher took the data obtained from the questionnaire and processed it to find the statistical value. The mean (X) and standard deviation (S.D.) were used by using the complete questionnaire to analyze the data. and interpreted from the average obtained by the criteria of Best, (1977). Opinion of the respondents about the four essential Inquiry based learning which Interactions, Clarifications, Questioning, Designing Testing the Hypothesis Assumption 1, Independent samples t-test and One-way ANOVA, and hypothesis 2, used pearson correlation statistic.

7. RESULT

The results of the general data analysis of the respondents Most of the respondents were female (52.0%), aged 41-50 (36.3%), had a bachelor's degree (99.0%) and had an average monthly income of 8,001-10,000 yuan (39.0%). have a comment The inquiry-based learning was at a high level ($\bar{x} = 4.06$, $SD = 0.71$). The mean in each aspect was as follows: Interactions ($\bar{x} = 4.08$, $SD = 0.72$), Clarifications ($\bar{x} = 4.03$, $SD = 0.73$), Questioning ($\bar{x} = 4.10$, $SD = 0.74$), and Designing ($\bar{x} = 4.03$, $SD = 0.73$) and their views on Teachers' self-confidence. At the same high level ($\bar{x} = 4.07$, $SD = 0.60$), the mean in each aspect were as follows: Attitude ($\bar{x} = 4.10$, $SD = 0.74$), Body language ($\bar{x} = 4.03$, $SD = 0.73$), Response. ($\bar{x} = 4.09$, $SD = 0.58$), and Habitual behavior ($\bar{x} = 4.07$, $SD = 0.65$)

1. Hypothesis test results

Table 1

shows the results of the hypothesis test 1

Teachers' self-confidence	Gender (t-test)	Age (F-test)	Education level (t-test)	Average monthly income (F-test)
Attitude	5.602*** (Sig. = .00)	3.281** (Sig. = .01)	4.021*** (Sig. = .00)	0.491 (Sig. = .62)
Body language	4.721*** (Sig. = .00)	1.769 (Sig. = .13)	7.548*** (Sig. = .00)	-0.134 (Sig. = .89)
Response	4.663*** (Sig. = .00)	1.807 (Sig. = .13)	7.078*** (Sig. = .00)	0.006 (Sig. = .99)
Habitual behavior	1.938* (Sig. = .05)	0.238 (Sig. = .92)	6.302*** (Sig. = .00)	-0.546 (Sig. = .56)
Overall	4.826*** (Sig. = .00)	1.487 (Sig. = .21)	7.425*** (Sig. = .00)	-0.037 (Sig. = .97)

* Statistically significant at the .05 level

** Statistically significant at the .01 level

*** Statistically significant at the .001 level

From Table 1, it was found that the different demographic factors in terms of Gender and educational level had a statistically significant effect on Teachers' self-confidence for Teaching at Beijing Dongcheng District, China overall and on individual aspects at the .00 level.

Table 2

shows the results of the hypothesis test 2

	Attitude (Y1)	Body language (Y2)	Response (Y3)	Habitual behavior (Y4)
Interactions (X1)	0.995***	0.924***	0.875***	0.429***
Clarifications (X2)	0.884***	0.980***	0.867***	0.542***
Questioning (X3)	0.981***	0.884***	0.856***	0.391***
Designing (X4)	0.850***	0.970***	0.854***	0.514***

* Statistically significant at the .05 level

** Statistically significant at the .01 level

*** Statistically significant at the .001 level

From Table 2, each aspect of Inquiry-based learning was statistically correlated with Teachers' self-confidence for Teaching at Beijing Dongcheng District, China in all aspects at a statistical significance of .00, which was positively correlated. It was moderate to very high ($r = 0.391 - 0.995$).

8. DISCUSSION

1. The study's first objective unveiled significant insights into the relationship between demographic factors and teachers' self-confidence in teaching in Beijing Dongcheng District, China. Specifically, gender and educational level emerged as influential variables, demonstrating a statistically significant effect on teachers' self-confidence across all aspects studied. This finding underscores the importance of considering diverse factors when examining teacher confidence, as it permeates every facet of their teaching. Piedade (2021) sheds light on the significance of teachers' confidence, emphasizing that it directly influences their approach to pedagogy. A confident teacher is more likely to take risks, experiment with innovative methods, and effectively navigate challenges in the educational landscape. Furthermore, the study recognizes the broader implications, linking teacher efficacy with retention rates, reinforcing the idea that confident educators are better equipped to remain motivated and committed to their profession.

2. The second objective develop into the correlation between Inquiry-Based Learning (IBL) and teachers' self-confidence in Beijing Dongcheng District, China. The results unveiled a noteworthy positive relationship between the two variables across all aspects studied, with statistical significance observed at the .00 level. This implies that as teachers engage more with inquiry-based learning approaches, their self-confidence for teaching experiences a moderate to very high positive correlation. Rahayu & Osman (2019) offer valuable insights into the benefits of inquiry-based learning, particularly its impact on student engagement. The study echoes these sentiments, emphasizing that increased engagement among students is a key outcome of implementing IBL in teaching practices. When students are empowered to guide their learning, the overall classroom dynamics witness positive transformations, fostering a more vibrant and effective learning environment.

In summary, the study reveals two key insights: first, the importance of considering demographic factors in addressing teachers' confidence, and second, a positive correlation between inquiry-based learning and teachers' self-confidence, impacting student engagement and overall classroom dynamics. These findings have significant implications for policymakers, school administrators, and teachers aiming to improve teaching practices and student outcomes in Beijing Dongcheng District, China.

9. ORIGINALITY AND BODY OF KNOWLEDGE

This study extends its relevance by acknowledging the broader implications of teacher efficacy on retention rates. This connection reinforces the idea that confident educators are not only more effective in their teaching methods but are also more likely to remain motivated and committed to their profession. This holistic perspective contributes a valuable dimension to the existing body of knowledge, emphasizing the interconnectedness of teacher confidence with broader educational outcomes. Furthermore, the study emphasizes the

broader implications of IBL on classroom dynamics. Empowering students to guide their learning, as facilitated by IBL, leads to positive transformations in the overall learning environment. This contributes to a more vibrant and effective educational setting. The integration of these dynamics into the study's findings enhances its relevance and provides actionable insights for educators and administrators looking to implement effective teaching methodologies.

10. RESEARCH RECOMMENDATIONS

1. Implication of the Study

1. The study suggests the improve teachers' confidence while teaching in the classrooms.
2. The study suggests that inquiry-based learning as a example for increases teachers confidence teaching in the classrooms.

2. Recommendations for Future Research

1. Promoting Student Confidence in Learning Investigate effective strategies to boost student confidence in learning and Practical recommendations for educators and policymakers to create a confidence-enhancing learning environment.
2. Improving Teachers' Motivational Skills which is explore ways to enhance and sustain teachers' motivational skills. The Development of teacher training programs focused on motivational strategies for a more dynamic educational environment.
3. Assisting Students with Low Self-Esteem in Writing explores tailored approaches to support students with low self-esteem in developing writing skills.

REFERENCE

- Abes, E. S., Jackson, G., & Jones, S. R. (2002). Factors that motivate and deter faculty use of service-learning. *Michigan Journal of Community Service Learning*, 9(1), 20- 35.
- Aguayo, J. B., & Munsch, J. (2009). Program theory: A framework for collaborative measurement of service-learning outcomes. In T. Kelshaw, F. Lazarus & J. Minier (Eds.), *Partnerships for service-learning: Impacts on communities and students* (pp. 267-287). Jossey-Bass.
- Arsal, Z. (2017). The impact of inquiry-based learning on the critical thinking dispositions of pre-service science teachers. *International Journal of Science Education*, 39(10), 1326-1338.
- Astin, A. W., Sax, L. J., & Avalos, J. (1999). Long-term effects of volunteerism during the undergraduate years. *The Review of Higher Education*, 22(2), 187-202.
- Billig, S. H. (2008). *Introduction*. In S. H. Billig & A. S. Waterman (Eds.), *Studying service-learning: Innovations in education research methodology*. Lawrence Erlbaum Associates, Inc.

- Billig, S. H., Root, S., & Jesse, D. (2005). *The impact of participation in service learning on high school students' civic engagement*. (Working Paper 33). College Park, MD: Center for Information and Research on Civic Learning and Engagement.
- Birdsall, A. T. (2005). Community voice: Community partners reflect on service learning. *Journal for Civic Commitment*, 5(2), 30-44.
- Borgatti, S. (n.d.) *Introduction to grounded theory*. <http://www.analytictech.com/mb870/introtoGT.htm>
- Boyle, M-E. (2007). Learning to neighbor?: Service-learning in context. *Journal of Academic Ethics*, 5(1), 85-104.
- Bingle, R. G. (2003). Enhancing theory-based research on service-learning. *Deconstructing service-learning: Research exploring context, participation, and impacts*, 3, (2), 3-21.
- Bingle, R., & Hatcher, J. (1995). A service learning curriculum for faculty. *Michigan Journal of Community Service Learning*, 2, (3), 112-122.
- Bruner, J. (1990). *Acts of meaning*. Harvard university press.
- Castronova, J. A. (2002). Discovery learning for the 21st century: What is it and how does it compare to traditional learning in effectiveness in the 21st century. *Action research exchange*, 1(1), 1-12.
- Cornelissen, M., den Ottelander, B., Rizopoulos, D., van der Hulst, R., van der Molen, A. M., van der Horst, C., ... & Mathijssen, I. (2016). Increase of prevalence of craniosynostosis. *Journal of Cranio-Maxillofacial Surgery*, 44(9), 1273-1279.
- dos Santos, A. (2021). *Fostering Critical Thinking and Ethical Awareness in English through Historical Consciousness*. [Unpublished Master's thesis]. UiT Norges arktiske universitet.
- Eggen, P. D. (1996). *Kauchak. Strategies for Teacher; Teacher Content and Thinking Skills*, 1998.
- Husni, H. (2020). Character education in Indonesia: a historical outlook. *Educational Review: International Journal*, 17(1), 147-162.
- Husni, H. (2020). The Effect of Inquiry-based Learning on Religious Subjects Learning Activities: An Experimental Study in High Schools. *Jurnal Penelitian Pendidikan Islam*, 8(1), 43-54.
- James, W. (1906). G. Papini and the pragmatist movement in Italy. *The Journal of Philosophy, Psychology and Scientific Methods*, 3(13), 337-341.
- Marvasti, A., Foley, L., & DeLammermore, A. (2019). *Narrative inquiry: Stories and storytellers of social problems*. In *Researching social problems* (pp. 65-82). Routledge.
- McCown, T. J., Xiao, X., Li, J., Breese, G. R., & Samulski, R. J. (1996). Differential and persistent expression patterns of CNS gene transfer by an adeno-associated virus (AAV) vector. *Brain research*, 13(1-2), 99-107.
- Newhouse, N. (1990). Implications of attitude and behavior research for environmental conservation. *The Journal of Environmental Education*, 22(1), 26-32.
- Pandey, P., & Pandey, M. M. (2021). *Research methodology tools and techniques*. Bridge Center.
- Piedade, J. M. N. (2021). Pre-service and in-service teachers' interest, knowledge, and self-confidence in using educational robotics in learning activities. *Educacao & Formacao*, 6(1), 2.

- Rahayu, T., & Osman, K. (2019). Knowledge level and self-confidence on the computational thinking skills among science teacher candidates. *Jurna Ilm. Pendidik. Fis. Al-Biruni*, 8(1), 117-126.
- Rooney, E. (2015). *Teachers' Work in Trying Times: Policy, Practice, and Professional Identity*. [Unpublished doctoral dissertation]. Temple University.
- Rooney, R. C., Bayley, S. E., & Schindler, D. W. (2012). Oil sands mining and reclamation cause massive loss of peatland and stored carbon. *Proceedings of the National Academy of Sciences*, 109(13), 4933-4937.
- Topkaya, Y., Tangülü, Z., & Coskun, K. (2018). Social Studies Prospective Teachers' Views on Community Service Practicum Course. *Educational Policy Analysis and Strategic Research*, 13(1), 81-91.
- Westwood, P. (2018). *Inclusive and adaptive teaching: Meeting the challenge of diversity in the classroom*. Routledge.