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EFL Students' Beliefs on Sociocultural-based TPACK Practices by Their Instructors

Yabancı Dil Olarak İngilizce Öğrenen Öğrencilerin Eğitmenlerinin Sosyokültürel Temelli TPACK Uygulamalarına İlişkin İnançları

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Abstract

Several components of students' technical pedagogical content knowledge (TPACK) have been extensively researched in English as a foreign language (EFL). However, there has been a dearth of TPACK research on EFL students' online development programs when viewed from a sociocultural perspective. During one semester, EFL students from various higher education institutions in Turkey were surveyed to assess their ideas on sociocultural-based TPACK in the current study. The data for the study was collected using an adopted questionnaire (Bostancıoğlu & Handley, 2018). The findings revealed that their instructors' technological skills are better suited to encourage more diverse cultural involvement, interaction, and adaptability in different teaching and learning activities, as well as assisting their students in overcoming cultural challenges through the use of digital technologies. Therefore, it can be asserted that their instructors are confident enough in terms of technological content knowledge.

Keywords: Sociocultural approach, EFL students, students' beliefs, TPACK, applied linguistics

Öz

Öğrencilerin teknik pedagojik içerik bilgisinin (TPACK) çeşitli bileşenleri, yabancı dil olarak İngilizce'de (EFL) kapsamlı bir şekilde araştırılmıştır. Ancak sosyokültürel açıdan bakıldığında yabancı dil öğrenen öğrencilerin çevrimiçi gelişim programlarına ilişkin TPACK araştırmalarında eksiklik bulunmaktadır. Bu çalışmada sosyokültürel temelli TPACK hakkındaki fikirlerini değerlendirmek için bir dönem boyunca Türkiye'deki çeşitli yükseköğretim kurumlarındaki İngilizceyi yabancı dil olarak öğrenen öğrencilere anket uygulanmıştır. Araştırmanın verileri, benzer çalışmalarda kullanılan bir anket aracılığıyla toplanmıştır (Bostancıoğlu ve Handley, 2018). Bulgular, eğitmenlerinin teknolojik becerilerinin, farklı öğretme ve öğrenme faaliyetlerinde daha çeşitli kültürel katılımı, etkileşimi ve uyarlanabilirliği teşvik etmek ve aynı zamanda öğrencilerine dijital teknolojilerin kullanımı yoluyla kültürel zorlukların üstesinden gelmelerinde yardımcı olmak için daha uygun olduğunu ortaya çıkarmıştır. Araştırmanın sonuçları, öğretim elemanlarının teknolojik içerik bilgisi konusunda kendilerine yeterince güvendiklerini ortaya koymaktadır.

Anahtar Kelimeler: Sosyokültürel yaklaşım, İngilizceyi yabancı dil olarak öğrenen öğrenciler, öğrencilerin inançları, TPACK, uygulamalı dilbilim

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Introduction

Several components of students' technical pedagogical content knowledge (TPACK) have been extensively researched in English as a foreign language (EFL). It has been observed that there is a scarcity of TPACK research on the online development programs for EFL students when considered from a sociocultural angle. Language proficiency, computer proficiency, and critical thinking skills have all been stressed in education around the world. The requirement for technology integration to support thinking skills has been addressed in research on Technological Pedagogical Content Knowledge (TPACK) (Wang, 2022). Researchers from all around the world have examined the usefulness of TPACK in EFL pedagogy because of its benefits (Novita et al., 2022). Those studies were mostly concerned with employing various theoretical approaches to construct various TPACK surveys (Bostancıoğlu & Handley, 2018) and using different TPACK measures to research teachers' or students' self-reported TPACK levels, as well as diverse quantitative, qualitative, and hybrid methodologies to investigate teachers' or students' TPACK beliefs and practices (Koh et al., 2010; Rasyidah et al., 2021; Sahin, 2011; Tafazoli et al., 2019 as cited in Novita et al., 2022). In the current study, EFL students from various higher education institutions in Turkey were surveyed during one semester to assess their ideas on sociocultural-based TPACK.

The educational theory called TPACK (Technological Pedagogical Content Knowledge) describes how teachers might integrate technology into the curriculum (Bostancıoğlu & Handley, 2018). Technology pedagogical and content knowledge (TPACK), a crucial teacher skill in this technological age, has been viewed as the key to effective teaching. It is claimed that a teacher's level of efficacy is determined by their Technology Knowledge (TK), Pedagogy Knowledge (PK), and Content Knowledge (CK), as well as their ability to integrate all of these areas of knowledge (Mishra & Koehler, 2006, p.1026-1031). There has been several studies investigating TPACK to enhance competencies of teachers in this digital era. For example, Schmidt et al. (2009) described the methods involved in creating and validating an instrument to assess pre-service teachers' TPACK development. Additionally, Mishra et al. (2011) outlined a set of cognitive tools that can be used to integrate technology into the development of higher-order cognitive capacities. In order to better understand the nature and development of TPACK-in-action, Harris & Hofer (2011) investigated the planning processes of teachers. They came to the conclusion that a content-based, activity-types-based approach to instructional planning is compatible with the practices already employed in classrooms. A different study (Kim, 2018) discovered that pre-service secondary mathematics teachers had higher levels of mathematical knowledge, pedagogical content knowledge, and technological content knowledge, respectively, if they held constructivist or student-centered beliefs about the nature of mathematics, learning mathematics, and technology use. The levels of each of these knowledge categories were lower in pre-service teachers who did not hold constructivist or student-centered views about the nature of mathematics, learning mathematics, or the use of technology. Another study (Kartal & Dilek, 2021) examined the way how pre-service elementary science teachers developed their TPACK throughout the course of a scientific teaching technique course and it was evident that the group who learned about TPACK activities had positive outcomes in terms of how to incorporate technology into scientific education. In EFL context, several studies have examined the effectiveness of TPACK from different views (Lund, 2008; Mishara & Koehler, 2006; Koh et al., 2010; Baser et al., 2015; Wilson et al., 2017; Rasyidah et al., 2021). There is, however, a dearth of TPACK research on the online development courses for EFL students as seen through a sociocultural perspective. Social constructivism is a type of cognitive constructivism that stresses how much learning is done in groups and (Vygotsky, 1979). As According to Novita et al. (2022), the traditional paradigm employs face-to-face interaction with peers who come from different target cultures to carry out social and cultural exchanges. When the learners' learning environment does not support the aforementioned parameters, this situation becomes extremely troublesome. Teachers can help their students communicate and engage in many cultural circumstances to maximize their learning in the age of technology. Learners' language acquisition cannot be maximized through social and cultural interactions utilizing technology since sociocultural themes are missing from existing TPACK studies in the EFL context. As a result, the current study's TPACK research on the online development programs for EFL students adopted a sociocultural perspective.

Methods

The current study is a descriptive one, examining the EFL students' beliefs on sociocultural-based TPACK practices by their instructors at tertiary level.

Participants

For the ultimate purpose of the study 50 EFL students at tertiary level in Turkey has participated in the study. Of 50 participants, 33 are females and the rest 17 are males. They range in age from 23 to 31 and over. 31 are in the department

of English Language Teaching, 13 are in the department of English Literature and Language, and the rest 4 are in the department of German Language and Literature.

The Instrument

For the purpose of the current study, the socioculturally based TPACK questionnaire created and verified by Bostancolu & Handley (2018), who also benefited from Tour (2020) and Wilson et al. (2017), has been used. This questionnaire drew on the self-reported beliefs of in-service teachers. The last version of the questionnaire adopted for this study includes a total of 18 items (TPK:6 items, TCK:6 items, and TPCK:6 items). These items reflect sociocultural frameworks such as social interaction, community engagement, and adaptability. Participants are asked to answer each item with five intervals from “low" to "high" in a Likert type (1. No level; 2. Low level; 3. Average level; 4. Moderately high level; 5. High level of sociocultural-based competence). The Cronbach's alpha score of, 971 indicated a high level of reliability.

Findings and Discussion

At the outset of data analysis, the distribution of the questionnaire items was tested by using skewness Kurtosis (- / + 1.5). It can be said that there is a normal distribution in terms of the items. In order to understand the mean and standard deviation for each questionnaire item, the researchers preferred to apply parametric tests.

EFL students’ beliefs of sociocultural-based TPCK Practices by Their Instructors

The ultimate aim of this study was to examine the EFL students’ beliefs of sociocultural-based TPCK practices by their instructors during their preparatory studies at tertiary level. Table 1 indicates the results of beliefs on EFL students’ level of beliefs for their instructors’ sociocultural-based TPK practices in terms of the mean and standard deviation. Relying on the findings it can be said that the students perceived to have a moderate level of sociocultural-based TPK (M=3,56) with a highest mean (M=3,62) for TPK (Table 1), which It indicates that the students think their professors' technological prowess is more suited to encourage greater cross-cultural participation, interaction, and adaptation.

Table 1 EFL students’ beliefs on sociocultural-based TPCK practices by their instructors

	N	Mean	Std. Deviation
TPK Mean	50	3,6267	1,01439
TCK Mean	50	3,5300	,97048
TPCK Mean	50	3,5467	,88515
Valid N (listwise)	50		
TOTAL		**3,5678**	**,87101**

EFL students’ beliefs on sociocultural-based TPK Practices by Their Instructors

A further analysis was conducted to see the EFL students’ beliefs on sociocultural-based TPK practices by their instructors. Table 2 simply indicates the highest mean of score (M=3,62) in this category. Students reported that a teacher can use technology to create effective teaching strategies that encourage social connection, participation, and cultural adaptation among students (M=3,72), adapt the use of technology to various teaching activities (M=3,66), choose technologies that enhance students' learning (M=3,64) and teaching strategies (M=3,62), and engage students to use digital tools to resolve various cultural concerns (M=3,72). Relying on these findings it can be speculated that the participants view their teachers confident enough in terms of technological content knowledge by using effective teaching strategies for students’ learning via different teaching activities and help solve cultural issues that take place during their instructions.

Table 2 EFL students' beliefs on sociocultural-based TPK Practices by Their Instructors

	N	Mean	Std. Deviation
Item 1	50	3,6200	1,02798
Item 2	50	3,6400	1,15635
Item 3	50	3,6600	1,15370
Item 4	50	3,7200	1,22957
Item 5	50	3,5000	1,12938
Item 6	50	3,6200	1,08590
Valid N (listwise)	50		
TOTAL		**3,6267**	**1,01439**

EFL students' beliefs on sociocultural-based TCK Practices by Their Instructors

A careful analysis of Table 3 implies a moderate level of the participants' beliefs on sociocultural-based TCK practices by their instructors (M=3,53). The participants reported that teachers know about technology and rich-cultural content that they may employ to teach students how to communicate with, participate in, and adjust to a range of cultural events and circumstances, as well as teach reading (M=3,62), listening (M=3,52), and speaking (M=3,50). They reported a low level of beliefs regarding teaching writing and vocabulary and grammar (M=3,46). At this vein, it can be said that their teachers lack their skills in teaching writing, vocabulary, and grammar, while they perform better in other skills such as listening, speaking, and reading.

Table 3 EFL students' beliefs on sociocultural-based TCK Practices by Their Instructors

	N	Mean	Std. Deviation
Item 7	50	3,5200	1,03490
Item 8	50	3,5000	,95298
Item 9	50	3,6200	1,02798
Item 10	50	3,4600	1,05386
Item 11	50	3,4600	1,18166
Item 12	50	3,6200	1,12286
Valid N (listwise)	50		
TOTAL		**3,5300**	**,97048**

EFL students' beliefs on sociocultural-based TPCK Practices by Their Instructors

The third part the questionnaire investigates EFL students' views on their teachers' practices to promote their sociocultural-based TPCK. Table 4 shows another moderate level of the students' beliefs on this issue (M=3,54). Participants reported that their teachers can use relevant technologies to assist students in pursuing their interests (M=3,62), utilize technology to encourage active participation from students in their language learning by allowing them to interact, engage, and adapt to various cultural environments (M=3,58), and to establish connections between students and peers, stakeholders, professionals, or individuals from various cultures (M=3,56). They did, however, exhibit negative feelings regarding ineffective classroom teaching approaches and relevant content knowledge, which included exposure to rich-English culture from a larger community (M=3,46).

Table 4 EFL students' beliefs on sociocultural-based TPCK Practices by Their Instructors

	N	Mean	Std. Deviation
Item 13	50	3,5000	,95298
Item 14	50	3,4600	,95212
Item 15	50	3,5600	1,01338
Item 16	50	3,6200	,92339
Item 17	50	3,5800	1,14446
Item 18	50	3,5600	,99304
Valid N (listwise)			
TOTAL	50	**3,5467**	**,88515**

Difference in Beliefs on sociocultural-based TPCK practices

In this study the difference in Beliefs on EFL instructors' sociocultural-based TPCK practices in terms of age were examined. The total mean scores for TPK, TCK, and TPCK are given in Table 5 below. However, Table 6 shows no statistically difference for the total age scale (Sig. (2-tailed) ,144) except for Item 4 in TPK (Sig. (2-tailed), 009; t=1,785) (Table 7). According to this finding instructors at the age of 31-and-over, by using technology better than the first 23-30 age group (M=3,63), can create practical educational activities that encourage student learning through social interaction, engagement, and cultural adaption (M=4,75), which means that the 31-and-over age group are in the high level as opposed to their counterparts at moderate level (Table 8).

Table 5 Group Statistics for the difference in beliefs on EFL sociocultural-based TPCK practices : age variable

	Age	N	Mean	Std. Deviation	Std. Error Mean
TPKMean	23-30	46	3,5725	1,03199	,15216
	31 and over	4	4,2500	,51819	,25909
TCKMean	23-30	46	3,4710	,96180	,14181
	31 and over	4	4,2083	,91667	,45833
TPCKMean	23-30	46	3,5109	,89401	,13182
	31 and over	4	3,9583	,75000	,37500
ScaleMean	23-30	46	3,5181	,87615	,12918
	31 and over	4	4,1389	,63586	,31793

Table 6 Difference in beliefs on EFL instructors' sociocultural-based TPK practices: age variable

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TPKMean	Equal variances assumed	2,761	,103	-1,290	48	,203	-,67754	,52524	-1,73360	,37853
	Equal variances not assumed			-2,255	5,383	,070	-,67754	,30047	-1,43366	,07859
TCKMean	Equal variances assumed	,091	,765	-1,475	48	,147	-,73732	,49994	-1,74251	,26787
	Equal variances not assumed			-1,537	3,600	,207	-,73732	,47977	-2,12988	,65524
TPCKMean	Equal variances assumed	2,036	,160	-,969	48	,337	-,44746	,46170	-1,37578	,48085
	Equal variances not assumed			-1,126	3,783	,327	-,44746	,39749	-1,57646	,68154
ScaleMean	Equal variances assumed	2,034	,160	-1,380	48	,174	-,62077	,44992	-1,52539	,28385
	Equal variances not assumed			-1,809	4,065	,144	-,62077	,34317	-1,56760	,32606

Table 7 Difference in beliefs on EFL instructors' sociocultural-based TPK practices: age variable for Item 4

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
Item 4	Equal variances assumed	5,036	,029	-1,785	48	,081	-1,11957	,62711	-2,38046	,14133
	Equal variances not assumed			-3,619	6,903	,009	-1,11957	,30935	-1,85314	-,38599

Table 8 Group statistics for the difference in beliefs on EFL instructors' sociocultural-based TPK practices: age variable

	Age	N	Mean	Std. Deviation	Std. Error Mean
Item 4	23-30	46	3,6304	1,23574	,18220
	31 and over	4	4,7500	,50000	,25000

As to the difference in beliefs on EFL sociocultural-based TPCK practices in terms of gender and departments, t-test was used again and no statistically difference was obtained. The total mean scores for TPK, TCK, and TPCK are given in Table 9 below. In addition, according to Table 10 the Sig. (2-tailed) value for the total gender scale is, 237, for TPK it is, 646, for TCK it is, 087, and for TPCK it is, 324.

Table 9 Group Statistics for the difference in beliefs on EFL sociocultural-based TPCK practices: gender variable

	Gender	N	Mean	Std. Deviation	Std. Error Mean
TPKMean	Male	17	3,5294	1,10277	,26746
	Female	33	3,6768	,97978	,17056
TCKMean	Male	17	3,1961	,97046	,23537
	Female	33	3,7020	,93889	,16344
TPCKMean	Male	17	3,3725	,88099	,21367
	Female	33	3,6364	,88727	,15445
ScaleMean	Male	17	3,3660	,83265	,20195
	Female	33	3,6717	,88447	,15397

Table 10 Difference in beliefs on EFL instructors' sociocultural-based TPK practices: gender variable

		Levene's Test for Equality of Variances		t-test for Equality of Means						
									95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
TPK Mean	Equal variances assumed	,533	,469	-,483	48	,631	-,14736	,30523	-,76107	,46636
	Equal variances not assumed			-,465	29,241	,646	-,14736	,31721	-,79590	,50119
TCK Mean	Equal variances assumed	,090	,766	-1,785	48	,081	-,50594	,28347	-1,07590	,06402
	Equal variances not assumed			-1,766	31,489	,087	-,50594	,28655	-1,09000	,07812
TPCK Mean	Equal variances assumed	,007	,933	-,998	48	,323	-,26381	,26426	-,79515	,26752
	Equal variances not assumed			-1,001	32,634	,324	-,26381	,26365	-,80044	,27281
ScaleMean	Equal variances assumed	,204	,654	-1,180	48	,244	-,30570	,25900	-,82645	,21504
	Equal variances not assumed			-1,204	34,225	,237	-,30570	,25395	-,82166	,21025

As for the difference in beliefs on EFL instructors' sociocultural-based TPK practices: department variable, One-way Anova was run and it was observed that there was no statistically significant difference (sig. ,265). The sig. value for TPK is ,301, for TCK ,092, and for TPCK ,705 (Table 11).

Table 11 ANOVA results for the difference in beliefs on EFL instructors' sociocultural-based TPK practices: department variable

		Sum of Squares	df	Mean Square	F	Sig.
TPKMean	Between Groups	3,817	3	1,272	1,256	,301
	Within Groups	46,603	46	1,013		
	Total	50,420	49			
TCKMean	Between Groups	5,974	3	1,991	2,280	,092
	Within Groups	40,175	46	,873		
	Total	46,149	49			
TPCKMean	Between Groups	1,140	3	,380	,469	,705
	Within Groups	37,251	46	,810		
	Total	38,391	49			
ScaleMean	Between Groups	3,039	3	1,013	1,365	,265
	Within Groups	34,136	46	,742		
	Total	37,175	49			

Conclusion

In this study the EFL students' beliefs on sociocultural-based TPACK practices by their instructors at tertiary level was scrutinized. For this main purpose of the study the sociocultural-based TPACK questionnaire developed and validated by Bostancıoğlu & Handley (2018) who also benefitted from Tour (2020) and Wilson et al. (2017) to draw the in-service teachers' self-reported beliefs in their questionnaire was administered to a total of EFL preparatory class students ranging in age 23 to 31-and-over studying for their B.A. degrees in different language departments. This study was concerned about the scarcity of a sociocultural approach in TPACK research towards on EFL students' online development programs although several studies have focused on the effectiveness of TPACK from different views in EFL context (Lund, 2008; Mishara & Koehler, 2006; Koh et al., 2010; Baser et al., 2015; Wilson et al., 2017; Rasyidah et al., 2021). At the end of the study it was determined that these participants have a moderate level of beliefs regarding their EFL instructors' sociocultural-based TPACK practices. According to the findings their instructors have higher levels of TPK than TCK and TPCK. Relying on these findings it can be concluded that their instructors' technological skills are better to encourage broader cultural involvement, adaptability, and interaction in different teaching and learning activities and help their students to solve various cultural challenges in using digital technologies as well. Therefore, it can be asserted that their instructors are confident enough in terms of technological content knowledge. However, in this study it has surprisingly noticed that the instructors are believed to have a low level of teaching skills in writing, vocabulary, and grammar whereas they are better in listening, speaking, and reading. Therefore, it is recommended that the EFL instructors focus on these skills via a bit more activities and engage their students in these activities.

The participants did not show any significant difference in their beliefs on EFL instructors' sociocultural-based TPACK practices in terms of their ages, gender, and departments. However, the only difference has been observed in TPK in terms of age. At this vein the older group is believed to have higher levels than their counter part in using technology better and are able to create practical instructional activities that encourage student learning through social interaction, engagement, and cultural adaptability.

To conclude it is suggested that a similar study should be conducted in different settings with more participants and different departments at different levels.

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Appendix

Likert scales description: 1. No level; 2. Low level; 3. Average level; 4. Moderately high level; 5. High level

Students' beliefs on sociocultural-based TPK

1. The teacher can choose technologies that enhance teaching strategies.
2. The teacher can choose technologies that enhance students' learning.
3. The teacher can adapt the use of the technologies to different teaching activities.
4. Using technology, the teacher can design practical teaching activities to promote student learning through social interaction, engagement, and adaptation from different cultures.
5. The teacher can choose relevant technologies to be used in assessment involving peers, stakeholders, and professionals from broader cultural contexts.
6. The teacher can engage students in solving various cultural issues using digital technologies and resources.

Students' beliefs on sociocultural-based TCK

7. The teacher knows about technologies that he/she can use to teach listening in English.
8. The teacher knows about technologies that he/she can use to teach speaking in English.
9. The teacher knows about technologies that he/she can use to teach reading in English.
10. The teacher knows about technologies that he/she can use to teach writing in English.
11. The teacher knows about technologies that he/she can use to teach English vocabulary and grammar.
12. The teacher knows about technologies and rich-cultural content that he/she can use to teach to interact, engage, and adapt to various cultural events and environments.

Students' beliefs on sociocultural-based TPCK

13. The teacher can select appropriate technologies, teaching strategies, and relevant content knowledge containing rich- English culture exposures from wider communities.
14. The teacher can select technologies that use ineffective classroom teaching strategies and relevant content knowledge containing rich- English culture exposure from wider communities.
15. The teacher can use technology effectively to connect students to peers, stakeholders, professionals or other people from different cultures.
16. The teacher can use relevant technologies to help students pursue their curiosities.
17. The teacher can use technologies that enable students to become active participants to interact, engage, and adapt to the various cultural environments to support their language learning.
18. The teacher can provide equitable access to their students to interact and engage in various cultural situations using digital tools and resources.