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# A Case Study of English Language Teacher Training during Emergencies: Critical Junctures

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**Abstract**

*Teacher training was carried onto the online platforms during the Covid-19 outbreak. Although it was a novel experience for the whole field, this period stands as a beneficial source for language teacher training in emergencies. This study, therefore, was conducted to document the experiences of pre-service language teachers, teacher mentors, and university lecturers. The study was conducted between February and June 2021 at a university in the Black Sea region of Turkey. Following the data analysis procedures of grounded theory and the inquiry traditions of the case study, semi-structured interviews with 22 pre-service language teachers during the 2020 – 2021 fall semester were conducted. Additionally, qualitative online surveys were conducted with six university lecturers and three teacher mentors. The data analysis indicated that the critical junctures, which are constituted of antecedents, impacts, and consequences, present implications for effective language teacher training on online platforms. Taking these junctures into account while designing online teacher training could help prevent potential problems.*

*Keywords*: Covid-19, critical junctures, emergency, online teacher training

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## Introduction

Covid-19 has immensely changed the practices in education, teacher education being one of these affected aspects. One significant change Covid-19 brought has been the virtualization of teacher training as well as almost all other educational practices, which raised questions on the quality and effectiveness of teacher training during the pandemic (la Velle et al., 2020). Therefore, examining how the pandemic has changed the practices in teacher education as well as what implications the procedure has for future teacher training is vital since the documentation of the experiences of all parties (i.e., teacher trainers, prospective teachers, educational administrators, students, mentor teachers) will increase the preparedness of education system for similarly unexpected and difficult circumstances. However, although education in an emergency is a firmly established

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field, how education, particularly teacher training, could be conducted in online settings during emergencies has not sufficiently been examined in the literature. It is of particular importance to examine how online teaching and learning in language teacher education during the pandemic was conducted and to understand the implications of the procedure (Carillo & Flores, 2020). Thus, this study focused on the prospective English language teachers' teaching practicum via emergency online teaching to present the reflections of prospective language teachers, teacher mentors and university lecturers at both universities and practicum schools. Through the presentation of these perspectives, the study contributes to the literature by revealing critical junctures that would be a guideline for similar situations in developing quality online teacher training and learning, which will be the novel contribution of this study.

## Literature Review

Studies on remote or online teacher training have examined how educational institutions adapted to the emergency online teacher training during Covid-19. One primary understanding of the findings of these studies is to "go beyond emergency online practices and develop quality online teaching and learning that result from careful instructional design and planning" (Hodges et al., 2020, p. 13). However, little attention has been paid to what factors need to be considered while developing quality online teaching and learning. Thus, further research is needed to evaluate factors affecting quality, significance, and responsiveness (Toquero & Talidong, 2020) in any form of distance teacher training.

One theme of the studies on teacher training during the pandemic has been the challenges teacher educators encountered during the pandemic. In their small-scale study, Kidd and Murray (2020) conducted an online questionnaire among twenty initial teacher educators in England. Following the online questionnaire, volunteer teacher educators were invited to participate in an interview. The findings indicated the teacher educators faced challenges in several areas. One particular issue was that it was a brand-new experience for all participants to conduct teacher training on online platforms, which resulted in concerns about inefficient student learning among teacher educators. Others also supported Kidd and Murray (2020). The survey study conducted by Terenko and Ogienko (2020) among the administrative and teaching staff and the students of teacher training programs showed that teacher trainers had concerns about the online tools they had to use for teacher training. These concerns covered issues such as the design of web-based platforms, course resources, software for platform management, tools for learning management, IT competence of teachers, and learning materials (Terenko & Ogienko, 2020). The study by Hassani (2021) conducted in the Iranian language teacher training context and Paudel (2021) in the Nepal online teaching contexts also presented meaningful findings for the current study. Supporting Terenko and Ogienko (2020), both Hassani (2021) and Paudel (2021) found that teachers in general and language teacher trainers specifically were challenged by the existing platforms, these platforms' inappropriacy and digital illiteracy during the pandemic. Additionally, it was found that teacher trainers were worried about access to high-speed Internet, poor connection, and

Internet prices. Adding to these findings, Almazova et al. (2020) underline the significant role of management-related issues when conducting online education.

Increased need for support for the experimental learning that teacher training required was another concern for teacher trainers during the pandemic (Kidd & Murray, 2020). Donitsa-Schmidt and Ramot (2020) indicated that since learner engagement was a vital component of teacher education, the lack of teacher trainee participation, together with the decreased opportunities to gain practical experience, was a challenge for teacher trainers. Hassani (2021) also presented similar findings indicating that Iranian teacher trainers were worried about the decreased learner motivation and participation during the pandemic. Since practical experience was a vital component of teacher education programs, emergency remote training "called into question the ability of teacher education programs to properly train and qualify teachers during this time" (Donitsa-Schmidt & Ramot, 2020, p. 589).

Other concerns for teacher trainers in remote education during the pandemic covered issues such as blurring of work-home boundaries, extended working hours, a sense of constant availability with students and colleagues, feelings of cognitive over-loading, and brain buzzing adrenaline and the removal of personal boundaries between teacher trainers and trainees (Kidd & Murray, 2020). Likewise, teacher trainers were also worried about presenting equal opportunities for their trainees during emergency remote teaching (Donitsa-Schmidt & Ramot, 2020).

From the perspective of the teacher trainees, the pandemic posed challenges as well. Donitsa-Schmidt and Ramot (2020) indicated that many pre-service teachers faced financial and mental problems after the pandemic. For example, pre-service teachers in Israel lost their jobs, lived with their parents, sat in front of the computer screens for long hours, and completed an overwhelming amount of assignments, which created concerns over their well-being and drop-out rates. Teacher trainees also experienced challenges with the online tools. They had an unstable internet access and used computers for extended hours, which led to visual impairments among pre-service teachers. Lack of face-to-face communication and self-study skills were also one of the significant challenges for pre-service teachers during the pandemic (Terenko & Ogienko, 2020). The same study also showed that the lack of face-to-face communication and self-study skills were the significant challenges for pre-service teachers during the pandemic. Hitkova (2021) who examined the pre-service teachers' experiences in Slovakia during the pandemic, also supported these findings and reported that teacher trainees experienced lack of social contact with fellow students and colleagues and needed live discussions with professors.

The procedure of assessment of practicum during the pandemic has also been examined. Moyo (2020), for instance, found that there was a conflict between universities and practicum schools regarding the conduct of the assessment. It was found that since practicum had to be conducted online, universities' proposals to create virtual assessment tools were rejected by schools, which was a clear indicator of the lack of trust between university lecturers and teacher mentors in the practicum schools (Moyo, 2020). Showing

that a new normal is likely to happen, Moyo (2020) suggested that the Covid-19 procedure showed the need to adjust while also securing the quality assurance mechanisms in teacher education, which have been developed over time.

Studies also showed that moving the teacher training to online platforms had positive effects. From the perspectives of teacher trainers, Kidd and Murray (2020) reported that the participants developed new technological skills, or reconfigured previous practices for the online environment as potential contributions of the distance training practices for their professions. Donitsa-Schmidt and Ramot (2020) reported that the pandemic turned teacher training programs into a community learning center where teacher trainers worked together. Likewise, the trainers developed suitable assessment tools including podcasts, writing blogs, producing interactive digital posters, collating portfolios, generating mind maps, and preparing presentations (Donitsa-Schmidt & Ramot, 2020). Finally, teacher trainers asked their students to conduct teaching for peers, family members, or the children in their neighborhood to gain practical experience. Similar innovative ways teacher trainers developed during the pandemic language teacher candidates benefited from critically examining and developing the existing system (Hassani, 2021) are using training strategies, innovative experiences (Ferdig et al., 2020), innovative teacher education (Ellis et al., 2020), good educational relationships (Murray et al., 2020), practicum online learning through pedagogic agility (Kidd & Murray, 2020, p. 542), virtual teaching placement (Sepulveda-Escolar & Morrison, 2020), and mentoring and assistance (Judd et al., 2020; O'Brien et al., 2020).

The design of teacher training programs to overcome the effects of Covid-19 and similar emergencies was also examined. Pozo-Rico et al. (2020) conducted an experimental study among 500 primary school teachers to reveal whether teacher training programs influenced teachers' coping with stress, prevented burnout, improved their information and communications technology (ICT) competency, and introduced emotional intelligence (EI) in the classroom. The findings indicated that "training teacher competencies are key in responding to the pandemic situation" (Pozo-Rico et al., 2020, p. 14). Likewise, Sullivan (2020, p. 303) stated a need for parallel change in teacher training since "the current pandemic has exposed existing equity challenges and surfaced new ones." Sullivan (2020), therefore, recommended the use of stimulation practices called teacher moments. Through these simulations, pre-service teachers are given the opportunities to think deeply about teaching practice especially when encountering challenges posed by Covid-19. In terms of the design of teacher training courses, Sánchez-Cruzado et al. (2021) also indicated that three variables need to be considered: a) the level of digital competence of teachers, b) the adjustment of the training to the platform being used, and c) considering the classroom methodologies and didactic strategies. Also, the study by Fuertes-Camacho et al. (2021) revealed the significance of incorporating reflective practice for teacher training programs as reflective practice enables pre-service and in-service teachers to acknowledge the influence of beliefs, personal thoughts and feelings, weaknesses and strengths, stress management, and the role of communication in the process of learning and teaching, which might be particularly important in times of remote education.

Findings from studies with a broader focus on online education are also meaningful for the current study. Bao (2020), for example, examined one online education case at Peking University. The findings showed that six instructional strategies could ensure a smooth transition to online education in emergencies, thus facilitating effective student learning. These strategies are a) emergency preparedness plans for unexpected problems, b) dividing the teaching content into smaller units to help students focus, c) emphasizing the use of voice effectively in online settings, d) working with teaching assistants and gaining online support from them, and e) strengthening students' active learning skills outside the class. In terms of assessment in online settings, Surahman and Wang (2021) found that conducting online assessments resulted in several forms of academic dishonesty: plagiarism, cheating, collusion, and using jockeys among students. Surahman and Wang (2021) suggested using plagiarism-checking software, multi-artificial intelligence, adaptive tests for computers, and online proctoring. More importantly, re-designing assessment forms were suggested by Surahman and Wang (2021). Studies on learner perceptions of online teaching and learning practices from various contexts also present contrasting findings. Akuratiya and Meddage (2020), Lei and So (2021), Muthuprasat et al. (2021) and other earlier studies (e.g., Arbaugh, 2000; Hay et al., 2004; Lim et al., 2007; Picciano, 2002; Swan et al., 2000; Trautwein et al., 2006) found that the success of online learning for students depended on several factors. These factors were internet mode (Akuratiya & Meddage, 2020; Muthuprasat et al., 2021), teacher performance (Lei & So, 2021), consistency in course design (Swan et al., 2000), the communication skills of course instructors (Hay et al., 2004; Picciano, 2002), the interactivity in the online settings (Arbaugh, 2000), and academic self-perceptions of learners (Lim et al., 2007; Trautwein et al., 2006).

In Turkish higher education context, studies on online education have also been conducted. These studies also presented similar findings and focused on challenges of online education from the perspective of learners and teachers (Ateş, 2021; Özer, 2020; Sart, 2021; Tokuç & Varol, 2020; Valizadeh & Soltanpour, 2021). There are studies examining the teacher training practices in online settings, particularly during the pandemic, as well (Çobanoğlu & Çobanoğlu, 2021; Ersin et al., 2020; Fidan & Yıldırım, 2022; Kaya, 2021; Özüdoğru, 2021; Sungur-Gül & Ateş, 2021). These studies, however, focused solely on pre-service teachers' perspectives and found implementation, student, technicality, facility, and instructor-related challenges in online settings. The perspectives and experiences of teacher mentors and university lecturers during the teacher training procedure have not received attention, which this study aims to reveal together with the pre-service teachers' perspectives.

As stated earlier, all these studies are essential in presenting the emergency period from various perspectives. More importantly, these studies indicate the critical issues determining the effectiveness of remote teacher training during any emergency scenario. Understanding these dynamics "entails the necessity to provide an evidence-based perspective on what works and does not work, but most importantly, to understand the characteristics, the processes, the outcomes, and the implications of online practices" (Carillo & Flores, 2020, p. 467). In the Turkish higher education context, despite the existence of studies on online education, there is little research on the language teacher

education with all the parties involved and the Covid-19 remote education process. Therefore, this study aims to reveal the challenges and implications of these challenges for online language teacher education in emergencies by focusing on pre-service teachers, teacher mentors, and university lecturers. Although similar findings are expected, understanding the context-specific needs in Turkey in relation to teacher training during emergencies may contribute to teacher training in similar situations. Likewise, this study will provide an understanding of the experiences of teacher mentors and university lecturers. With these purposes in mind, the study developed four research questions:

1. What challenges did pre-service English language teachers face in the online practicum during the Covid-19 pandemic?
2. How did pre-service English language teachers cope with the challenges they encountered in the online practicum during the Covid-19 pandemic?
3. What challenges did teacher mentors face in the online practicum during the Covid-19 pandemic?
4. What challenges did university lecturers face in the online practicum during the Covid-19 pandemic?

## Method

### Research Design

In this exploratory qualitative study, the inquiry traditions of the case study were utilized to collect data from the university lecturers, teacher mentors, and pre-service language teachers. As a case study, the study aimed to reveal an understanding of a contextually bounded phenomenon through multiple perspectives (Creswell, 2002; Dörnyei, 2007; Johansson, 2003; Ritchie & Lewis, 2003; Yin, 2003). The data collection methods, interviews and qualitative surveys, facilitated accessing these perspectives. Also, the research findings are interpretive and essentially valid for the research site. However, these findings could contribute to understanding similar situations. Finally, since the research was conducted at one university, this is a single case study.

### Context

The study took place at one university in Turkey. In the 2020-2021 academic year, 70 students from the English Language and Literature department enrolled in the pedagogical training program to be able to work as language teachers in Turkey. As part of their pedagogical program, these students had to complete their teaching practicum. However, Covid-19 prevented face-to-face practicum, which was eventually completed via online platforms.

The teaching practicum had to be completed in 12 weeks, from September until January. All students were put into groups of eight and matched with different teacher mentors at different schools. Teacher candidates were asked to join the Zoom sessions where their teacher mentors carried their classes. The practicum lasted for 12 weeks. University lecturers joined these sessions for observation and assessment at least twice

during the 12 weeks. In the end, teacher mentors and university lecturers completed the assessment together using the traditional face-to-face evaluation tool developed by the Ministry of National Education.

## Data Collection: Instruments and Participants

### *Instruments*

The data was collected through two instruments: a) qualitative surveys with university lecturers and teacher mentors, and b) interviews with pre-service language teachers. During the procedure, interviews with pre-service language teachers were conducted and analyzed. Then, qualitative surveys were shared with university lecturers and teacher mentors. The details of data collection for each instrument are presented next.

### *Sampling and Participants in Interviews*

The sampling strategy for interviews was convenience sampling where participant selections were determined by accessibility (Dörnyei, 2007).

After the ethical permission was received, the researcher invited all the students enrolled in the pedagogical training program to participate in the interviews (Appendix 1 for Interview Protocol). Once a cohort of participants was determined, the researcher set dates with all participants. Students were interviewed individually via Zoom. Each interview lasted 40-60 minutes and was recorded with the permission of the participants. The interviews were conducted in Turkish. All interviews were immediately transcribed and translated into English by the researcher. The translations were later peer-reviewed by two established academics. The researcher used a semi-structured interview protocol with additional follow-up interviews when necessary.

All students who took the Teaching Practicum course online during the Covid-19 pandemic in the 2020-2021 fall semester were invited. Twenty-two students out of 72 agreed to participate in the study. Students were all third-year students from the English Language and Literature Department of the university. Nineteen of these students were female and three of them were male. Students took their Teaching Practicum course from different university lecturers and teacher mentors. More specifically, the university assigned each university lecturer, except two of them, eight students. As for teacher mentors, each was assigned four teacher candidates (Table 1). The practicum was also at different schools, including elementary schools or high schools.

### *Sampling and Participants in Qualitative Surveys*

As in the interviews, convenience sampling was used for qualitative surveys due to access issues. The surveys were semi-structured and conducted in English (Appendix 2). The questions were open-ended and asked participants about their experiences, opinions, and expectations of online practicum they were part of either as university lecturers or teacher mentors during the pandemic. The survey questions were prepared on Google Documents and sent out to all participants. The participants responded to these open-ended questions

via notes, which meant survey participants were given as much time as they needed to answer the questions.

At the university where this study was conducted, ten university lecturers acted as the trainers of language teacher candidates. All of them were invited to participate in the qualitative survey via e-mails. However, only six of them agreed to participate. Similarly, out of 18 teacher mentors, only three agreed to complete the qualitative surveys. The profiles of these participants are shown below:

**Table 1**

*Participants in Qualitative Surveys*

| University Lecturer | | | Teacher Mentors |
|---|---|---|---|
| Lecturer 1 | (F) | (8 students) | Mentor 1 (F) (4 students) |
| Lecturer 2 | (M) | (8 students) | Mentor 2 (F) (4 students) |
| Lecturer 3 | (F) | (8 students) | Mentor 3 (F) (4 students) |
| Lecturer 4 | (M) | (8 students) | - |
| Lecturer 5 | (M) | (8 students) | - |
| Lecturer 6 | (M) | (8 students) | - |

**Data Analysis**

This study adopted the data analysis traditions of Grounded Theory (GT). In terms of GT (Glaser & Strauss, 1967), the study focused on exploring the online practicum procedure for a group of pre-service language teachers at a specific institution during the pandemic. The data analysis followed a bottom-up protocol to generate codes, categories and themes. Also, the data analysis had three stages: open coding, selective coding, and theoretical coding to seek explanatory themes around the online practicum during the pandemic.

In the open coding stage, interviews with pre-service language teachers were handled. As has been recommended by GT, interview transcripts were first read to become familiar with the content. During this stage, codes were generated first, then reviewed, reorganized, and a set of more robust categories were generated (Charmaz, 2006). These categories were developed depending on the similarities and differences among the codes.

The second stage of the data coding was selective coding. During this stage, the researcher was engaged with the qualitative survey data. The findings from the open coding stage informed the selective coding stage.

The final stage was theoretical coding, where the researcher connected the analytic categories to establish relationships among them. The theoretical coding indicated that the online practicum during the pandemic had critical junctures, which must be examined closely when designing teacher training programs in emergencies.

Throughout the procedure, both manual and computer-assisted analysis were used. Only the early stages of data analysis consisted of manual coding, while as more

codes were generated, computer-assisted data coding was adopted. More details for each analysis stage with examples are presented next.

### *Open Coding: Student Interviews*

The initial coding followed an incident-to-incident approach, as has been recommended by other GT scholars (Charmaz, 2006; Strauss & Corbin, 2008). Interview transcriptions were put into excerpts before the analysis. These excerpts were created according to Strauss and Corbin's (2008, p. 163) recommendation of "using natural breaks in the data manuscript as cutting off points". In this research, natural breaks consisted of "changes in what is being talked about in the interviews" (Ünlü & Wharton, 2015, p. 32). While analyzing, the excerpts were placed on the left-hand column of a table. On the right-hand column, these excerpts were given labels to show what specific events students were talking about. Also, the researcher kept memos as the analysis continued to "keep track of the brainstorming taking place" (Ünlü & Wharton, 2015, p. 27) (Table 2).

**Table 2**

*Initial Excerpt-Based Coding*

| Excerpts | Excerpts Labels |
|---|---|
| *I think a classroom setting is always more advantageous because you cannot make eye contact with students* | Interactivity |
| *You cannot control what students are interested in.* | Classroom Management |
| *I mean, you cannot ensure complete control in the class* | Classroom Management |
| *Or it is very different in front of the screen. I think face-to-face is more advantageous for me. (Süheyla, Pre-service teacher)* | Preference for face-to-face practicum |

**Generation of Concept Labels.** After the generation of excerpt labels (i.e., codes), GT recommends comparing the excerpt labels (Charmaz, 2006; Glaser & Strauss, 1967). Therefore, the researcher in this study also compared the codes and the memos on them. At the end of this procedure, higher-level concepts were generated. These concepts contained more abstract ideas compared to the codes (Strauss & Corbin, 2008). An example of this procedure is shown in Table 3:

**Table 3**

*Generation of Concepts*

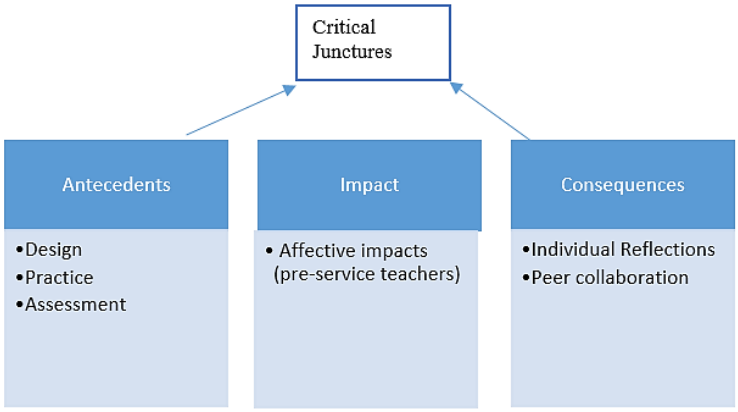
| Excerpts | Excerpts Labels | Concepts |
|---|---|---|
| *I think a classroom setting is always more advantageous because you cannot make eye contact with students* | Interactivity | Practice |
| *You cannot control what students are interested in.* | Classroom Management | Practice |
| *I mean, you cannot ensure complete control in the class* | Classroom Management | Practice |
| *Or it is very different in front of the screen. I think face-to-face is more advantageous for me. (Süheyla, Pre-service teacher)* | Preference for face-to-face practicum | Practice |

In the end, the concepts of *design, practice, assessment, affective impacts, individual reflections,* and *peer collaboration* were generated from the interviews.

**Generation of Category Labels and Overall Theme.** Once the concepts were generated, the analysis continued with the generation of categories. Categories are defined as "higher level, broader structures" (p. 52) with "more explanatory power and greater abstraction than lower-level concepts they are constituted of" (Strauss & Corbin, 2008, p. 52). The constant comparative method was also utilized during the generation of categories. This means that the researcher compared the "similarities and differences of lower-level concepts" (Ünlü & Wharton, 2015, p. 29). This comparison and contrast procedure allowed the researcher to reach the categories of antecedents, impact, and consequences. This is shown in Figure 1.

**Figure 1**

*Critical Junctures in Online Teacher Training*



An earlier comparison and contrast of the categories also led the researcher to reach the theme of Critical Junctures in Online Language Teacher Education in Emergencies. The category labels on the diagram will be described next. Antecedents meant something that happened or existed before a situation. These antecedents had a causal relationship with the critical junctures.

Impact indicated what the antecedents led during the practicum procedure. Mostly, students experienced affective impacts, which resulted from the various challenges they encountered during the emergency remote training. The fact that the remote practicum procedure was introduced with its own uncertainties created a great amount of pressure on pre-service teachers, which shaped their participation in the procedure.

Consequences showed the resulting status of the pre-service teachers in the post-practicum procedure. More specifically, these meant that the pre-service teachers developed the skills of individual reflections and peer collaboration skills at the end although the emergency remote practicum period was challenging for them. In terms of individual reflections, pre-service teachers were able to analyze the difficulties of the period and see how best they could benefit from the procedure. Additionally, they were able to assess their practicum procedure in terms of its professional contributions in the long term.

As for peer collaboration, the interviews showed that the challenges encountered during the practicum turned the procedure into a more collaborative one during which students approached their peers for a variety of purposes (e.g., receiving feedback, asking for ideas, reviewing lesson plans, team teaching and preparation and so forth).

### *Selective Coding: Using Qualitative Surveys to Understand Consensus Around the Critical Junctures*

To better understand the antecedents, impacts, and consequences of the critical junctures, qualitative surveys that were conducted on teacher mentors and university lecturers were analyzed selectively. Selective coding started when core categories (i.e., the theme in this study) were established as Jones and Alony (2011) recommended earlier. During the selective coding, the researcher focused on only relevant information from the qualitative surveys. New data from qualitative surveys strengthened and refined the existence of antecedents, impacts, and consequences in the critical junctures by presenting supporting findings from the perspectives of university lecturers and teacher mentors.

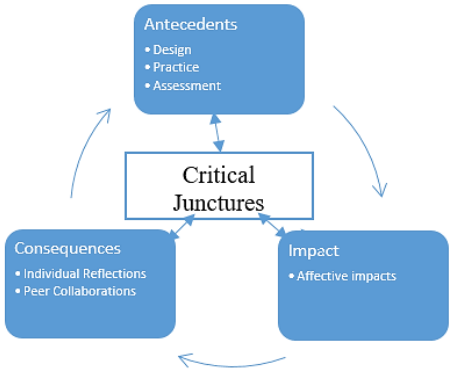
### *Theoretical Coding: Displaying Relationships Between Analytic Categories*

In the diagram below, the relationships which have emerged through data analysis are presented. This relationship shows that antecedent conditions created an impact on pre-service teachers, mostly as affective impacts. Both the antecedents and impact eventually led to the consequences of individual reflections and peer collaborations. All the components, namely antecedents, consequences, and impact, constructed the critical junctures of online teacher training in emergencies. The findings of the study posit that

the critical junctures in the online teaching practicum which were examined in the context of this study should be constantly evaluated during emergencies through a cyclic approach. This is because this cyclic approach would allow us to consider and well-establish the components in potential emergencies and increase the chances to better benefit from the procedure with the least negative effects.

**Figure 2**

*Critical Junctures in Online Language Teacher Training in Emergencies*




Now that how the theme emerged via analytical stages of GT has been detailed, findings in relation to research questions will be detailed and exemplified after detailing the credibility and trustworthiness of the study.

## Credibility and Trustworthiness

To ensure credibility and dependability, the strategies recommended by Lincoln and Guba (1985) were implemented. One strategy was prolonged engagement, which meant "spending sufficient time in the field to learn the culture, test for misinformation provided the distortions" (Lincoln & Guba, 1985, p. 301). This study achieved prolonged engagement as it continued between February-June 2021.

The prolonged engagement was achieved because the study was conducted in two phases: Phase I in February and Phase II in May. Prolonged engagement helped the researcher increase the range and number of the data, which led to the establishment of logical links between the data and the coding (Ünlü, 2015).

The second strategy to ensure credibility and dependability was peer debriefing. Peer debriefing is defined as "the process of exposing oneself to a disinterested peer in a manner paralleling an analytic session and to explore aspects of the inquiry that might otherwise remain only implicit within the inquirer's mind" (Lincoln & Guba, 1985, p. 308). In this study, sharing the analysis and the codes with colleagues, experts in qualitative research, "provided a check against biases within the analysis" (Barber & Walczak, 2009, p. 6).

## Results

In this section, the findings will be presented through a bottom-up approach to show how the themes inductively emerged via the coding procedure of the GT. After showing how the themes emerged, findings in relation to the research questions will be detailed.

### Challenges Pre-service English Language Teachers Faced in the Online Practicum During the Covid-19 Pandemic

In terms of the critical junctures, the challenges pre-service English language teachers faced emerged via the categories of antecedents, impact, and consequences. Under antecedents, pre-service teachers faced challenges in terms of design, practice, and assessment of the online practicum procedure.

Design-related challenges were mostly about how the online practicum procedure was organized. Pre-service English language teachers' interviews showed that design-related problems were mostly about the lack of sufficient observation, interactivity, and technical issues. Lack of adequate observation resulted from the limited amount of time that pre-service teachers could observe their mentors at the practicum schools. Several pre-service language teachers indicated that they could have benefited more from the practicum if they had had the option to spend more time with observations before teaching. In the extracts below, several pre-service teachers refer to this challenge:

> *Extract 1: Süheyla*
> We are pre-service teachers after all to gain an experience about… Like how teachers act. Actually, we could have learned more by observing teachers. But we were limited here, so we couldn't learn much.

> *Extract 2: Özlem*
> Actually, seeing someone else first is motivating. Like learning how they do it. But I thought the practicum teacher was going to show us a platform or a model, and then we were going to use that model while we were teaching. I never thought we were going to do it completely by ourselves. Because that was our first time, and we were going to do something like that for the first time.

Another design-related problem was interactivity. Comments from pre-service teachers highlighted the key role the interaction with mentor teachers and university lecturers had on their practicum.

> *Extract 3: Banu*
> Our mentor teacher at the practicum school was so helpful. But I can't say the same thing for the university lecturer. They didn't offer any guidance (…) But our mentor teacher was really there all the time and guided us.

*Extract 4: Semra*
We had to do everything on our own. I would expect my university lecturer to create a group meeting and tell us about the practicum procedure. This didn't happen, really, and that made me really upset.

Comments from pre-service teachers also indicated the necessity to better plan the coordination and interaction between the mentor teachers and the university lecturers before the practicum started:

*Extract 5: Selim*
I did teach twice during the practicum. In the first time, my advisor from the university was there too. And I was the first to teach in the group. My teacher mentor gave me a very easy topic, but the problem was that the group we were assigned to was a vocational school. And the language level of students there is usually very low. So they told me that the easier the content, the better my teaching would be. But, my university lecturer liked everything I did except she found it too easy for the students. But later my teacher mentor told the university lecturer that that was her decision because I was to teach vocational school students with a low language level.

Candidate teachers also encountered technical problems during the online practicum. These challenges were usually due to internet connection or the lack of necessary equipment to join the classes:

*Extract 6: Selim*
Some of my friends from the same group had problems. Some didn't have any laptops or computers. Some had to join the classes via their cell phones, then lost the connection and had to try to join the sessions again.

Other pre-service teachers indicated problems with the digital illiteracy, which complicated the practicum teaching for them:

*Extract 7: Hasan*
I think it could have been better in face-to-face education. For example, I wasn't familiar with Zoom. And when we brought an activity, I didn't know how to follow whether students did or did not do the activity. I was asking the teacher mentor to pick students. I think I had that challenge with the software we used.

*Extract 8: Atıf*
They told us that we would use Zoom. I'm good at using computers, but I had never used Zoom previously.

Pre-service teachers encountered challenges during the practice, which was the second component of the critical junctures. Practice-related challenges were mostly about learner engagement, which was usually difficult for pre-service language teachers to control.

*Extract 9: Banu*
That students didn't turn on their cameras upset us. We didn't know whether they were actually listening to us or not. My younger brother is at high school, and he just turns on Zoom and then either plays a video game there in the background or just goes to another room. He never listens. I was always thinking about that. If my brother is doing that, could my students also do that? I think probably yes. We were asking some students to do the task and never getting any response. They didn't turn on their microphones. The same 2-3 students always ran the classes.

*Extract 10: Hasan*
Some of them turned on their cameras, and some didn't. Normally, you can see their faces and understand what they feel or whether they understand or not. But on Zoom… That was difficult.

*Extract 11: Sima*
Language is learnt through practice. Here on online practicum, it gets difficult to give this practice to students. Other than that, we also didn't know what sources the students had when we were teaching. We wanted translation, but they could be doing that by using another source at the same time. We couldn't know that.

Pre-service language teachers indicated that face-to-face practicum could enable them to be better at controlling learner engagement, as is detailed below by Süheyla.

*Extract 12: Süheyla*
Classroom setting is always more advantageous because you can have eye contact with learners. (In online practicum) you can't see what students are doing. You can't control whether they have learnt or not. I mean you can't control the learners. On the screen, it gets very different.

A final challenge for pre-service teachers was related with assessment. Regarding assessment, inappropriate assessment tools for the online practicum platforms was the major challenge. This meant that the assessment tool utilized to evaluate the performance of the pre-service teachers was not suitable for online platforms. The answers received from several participants showed that they could not perform the assessment tool items during the online practicum. The assessment items that could not be performed during the practicum were mostly consisted of other professional abilities (e.g., being aware of professional laws and regulations, being open to criticism and suggestions, participating school events), assessment and recording (e.g., preparing suitable assessment and evaluation tools, recording the results of the assessments, assessing student products in a short time), classroom management at the end of the sessions (e.g., wrapping up, informing about the next session, preparing students to leave the class, using an effective body language), classroom management during the sessions (e.g., establishing a democratic atmosphere, being ready for interruptions), and classroom management at the beginning of the session (e.g., utilizing special teaching approaches, methods and techniques, bringing activities to increase learner engagement). All pre-service language teachers stated that it was either too difficult or impossible to perform these items on Zoom.

*Extract 16: Yasemin*
Researcher: Bringing activities to increase learner engagement?
Yasemin: If we were in the class. We didn't know the students.
Our mentor teacher helped us, she was telling the names of the students.
Usually, only the students who already knew the topic participated. Others did not.
Researcher: How about using a variety of teaching methods and techniques?
Yasemin: It was limited, honestly. In the real classroom settings, we could do that more effectively. But, in the online practicum, we couldn't.

**Pre-service English Language Teachers' Coping with the Challenges They Encountered in the Online Practicum during the Covid-19 Pandemic**

Pre-service English language teachers utilized two mechanisms to cope with the challenges they encountered. One was individual reflections, which was observed through pre-service teachers' conscious attempts to improve their teaching skills based on the problems they encountered or foresaw.

*Extract 17: Ezgi*
I didn't have any problems with the time management. Mainly because I had practiced earlier. I recorded myself two-three times to see how long my teaching would last. So, in the practicum teaching, I managed the time very well on Zoom.

*Extract 18: Tuğçe*

I think I was affected by many things in my practicum. Some of the students' levels were too low. So, I sometimes had a great deal of difficulty. One student understood it very well while the others did not. So, that student with a better level didn't want to listen to me, I could see that. But the other couldn't even read a simple word. So, I tried to help those students. I matched the higher-level students with the lower-level ones so that the one with the higher level could help his friend.

*Extract 19: Atıf*
I didn't know anything about Zoom, but there were videos on YouTube on how to use Zoom. These videos showed how to set up a session and various settings on Zoom. I learnt Zoom through these videos.

Pre-service language teachers also attempted to solve the problems they encountered via *peer collaboration.* Since pre-service teachers were put into pairs in each practicum group, partners were most of the time the most important source of knowledge for pre-service teachers.

*Extract 20: Süheyla*
We were in touch with my peers. About what we needed to do. My only advantage was to be in the same group with one of my classmates. I was already friends with her when the practicum started.

*Extract 21: Özlem*
My groupmates learnt about how to contact with our mentor at the practicum school. We then created a WhatsApp group but didn't add our mentor there. We first met with each other as the pre-service teachers. We added the mentor later.

**Design-related Challenges for Teacher Mentors in the Online Practicum during the Covid-19 Pandemic**

One challenge for teacher mentors during the online practicum was resulting from design-related issues. In the qualitative surveys, all teacher mentors stated that conducting an online practicum was a novel experience for them, which required time for teachers to adapt to the new setting. This indicated the need for the *training of teacher mentors.*

> It was a sudden and new experience for all of us (Teacher Mentor 3).

> Online practicum influenced the English language teachers in that teachers weren't experienced in online teaching (Teacher Mentor 1)

Another challenge was related to the practice. Teacher mentors stated that ensuring the interaction between the pre-service teachers and their students during the practicum was difficult:

> It was hard for the pre-service teacher to bring interactive materials (Teacher Mentor 1)

> My students didn't attend sufficiently, and they didn't turn on their cameras and microphones (Teacher Mentor 4)

> It was not easy to catch each student's attention. Their attention span is short. It was hard to keep young learners and teenagers engaged throughout the class.

**Challenges University Lecturers Faced in the Online Practicum during the Covid-19 Pandemic**

The data analysis indicated that the challenges of university lecturers concentrated around the *Antecedents* and the *Impacts.* In terms of the antecedents, university lecturers encountered design-related challenges. One particular design-related challenge was *the lack of a monitoring mechanism.* For example, the university lecturers indicated that it was impossible to follow how much pre-service language teachers participated in their online practicum sessions.

> There wasn't enough attendance of the students; on the other hand, we couldn't see them because of turned-off cameras. (University Lecturer 4)

> Lack of attendance was one particular difficulty (University Lecturer 1)

University lecturers also encountered practice-related challenges. More specifically, classroom management skills of pre-service teachers, according to the university

lecturers, were left undeveloped as the online practicum made it impossible to provide necessary feedback on these skills:

> The difficulties I experienced during the online practicum were to give feedback about pre-service teachers' practice (University lecturer 6)

Likewise, the assessment was also a challenge for university lecturers. Some lecturers indicated that it was impossible to conduct a practical assessment during the online practicum since it was a novel setting for all participants. This resulted in higher grades, which mostly did not reflect the actual performance of pre-service language teachers.

> The assessment during the online practicum was not done as it was supposed to be because of the extraordinary situations resulting in higher grades for pre-service teachers. (University Lecturer 6)

In terms of the *impact*, which emerged due to the antecedents, *loss of motivation* and *increased stress* were what university lecturers often encountered, which was also supported by pre-service student interviews:

> Online practicum influenced the training of the English language teachers in that pre-service teachers were a little bit stressed. (University Lecturer 4)

> The difficulties I experienced during the online practicum was the lower motivation of students (University Lecturer 1)

## Discussion and Conclusion

Covid-19 has shown that online education will substitute traditional education, when necessary, thus requiring commitment to a high-quality investment. In the context of language teacher training, this study has revealed that increasing the quality and efficiency of online language teacher training will be possible via due attention to critical junctures in emergencies. Remote teacher training was unavoidable during Covid-19; however, the findings of the study revealed that simply moving the training onto online platforms was not enough to make language teacher training a fruitful experience for future teachers. The critical junctures in language teacher training in emergencies show the areas that require immediate attention in emergencies. Also, these junctures present a road map for those who develop training programs.

The study findings highlighted the critical role of antecedents in the components of design, practice, and assessment. Design-related challenges indicated that the organization of online practicum required close examination, especially in terms of sufficient observation, interactivity, and technical issues, which were in line with what Donitsa-Schmidt and Ramot (2020) and Terenko and Ogienko (2020) earlier found. In the case of this study, pre-service teachers' lack of sufficient observation and interaction together with technical problems created anxiety, thus leading to decreased engagement with the practicum as is needed.

Similarly, teacher mentors' need for *training* and the university lecturers' *lack of a monitoring mechanism* were parallel to the challenges pre-service teachers experienced. This study, therefore, demonstrated findings in line with what Kidd and Murray (2020) highlighted as inefficient student learning. Likewise, the teacher mentors or the university lecturers in this study did not experience difficulties with the online tools they used in terms of digital illiteracy as Hassani (2021) indicated. However, the findings implied that teacher trainers and university lecturers needed time and training to adapt to the online platforms as that was a new experience for all of them. This finding also supports Pozo-Rico et al. (2020) who have shown that "training teacher competencies are key in responding to the pandemic situation" (p. 14). Also, teacher trainers' practice-related challenge of not being able to provide feedback supports Hassani (2021) as the online platforms utilized were either not appropriate or not carefully planned beforehand for teaching practicum. Regarding the assessment component of the antecedents, teacher trainers stated that the tools they utilized were not sufficient to conduct a fair assessment of the pre-service teachers' performances, which expands the literature in that presenting equal opportunities in terms of assessment to pre-service language teachers was also a point that needed close examination. Additionally, the use of unsuitable assessment tools as was shown in the interviews foregrounds the fact that the traditional assessment tools need to be adopted first during emergencies for a fairer and more realistic assessment.

The critical junctures finding of this study can also be evaluated in relation with the instructional strategies presented earlier by Bao (2020). Knowing the components of the junctures support Bao (2020) and show the significance of the instructional strategies for an efficient online education in emergencies. However, the findings on the junctures expand Bao (2020) by showing implications to consider when conducting online education and teacher training: a) ensuring the existence of affective support to all those who are involved in the online education, b) developing strategies to monitor practice better during the practicum, c) developing suitable assessment tools for online practicum, as earlier stated by Surahman and Wang (2021), d) encouraging constant reflection from all participants to improve the online practicum, and e) explicitly encouraging peer collaboration among the pre-service language teachers.

This study has several limitations. One of them is that the study consisted of only one interview with participants due to restrictions on the access to the participants. Furthermore, the lack of interviews with university lecturers and teacher mentors also limits the depth of the findings. Still, qualitative surveys with university lecturers and teacher mentors are significant because these solidify and refine the results from interview data. Additionally, the study shows "what happened in a particular context when the practicum was forcibly removed due to (g)local circumstances, and how with this 'practical space of practice' gone, the online informal spaces became the new sites of learning." (Kidd & Murray, 2020, p. 554). Therefore, the study presents a meaningful and genuine understanding of improving language teacher education practices in emergencies (Kidd & Murray, 2020).

To overcome the limitations of the study, further studies are needed across different contexts with different groups of participants. Similarly, studies focusing on

discipline-specific needs of the pre-service language teachers in emergencies might be conducted to reveal better the components of the critical junctures in remote teacher training in emergencies. Further studies might also be conducted on each component of the critical junctures. For example, in terms of the practice component, other studies might examine how to incorporate strategies such as teacher moments (Sullivan, 2020) and reflective practice in teacher training in emergencies. Further studies will certainly provide a deeper "evidence-based perspective on the characteristics, the processes, the outcomes and the implications of online practices" (Carillo & Flores, 2020, p. 467).

## Code of Ethics

The ethics approval of this study was granted by the Social and Humanities Research Division of Tokat Gaziosmanpaşa University on February 26, 2021, during the fourth session with the approval decision numbered 01-18.

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## Acil Durumlarda İngilizce Öğretmeni Eğitimi: Kritik Bağlantı Modeli

**Öz**

*Covid-19 salgını sırasında öğretmen eğitimleri çevrimiçi platformlarda gerçekleştirildi. Bu durum tüm alan için yeni bir deneyim olmasına rağmen, bu dönem acil durumlarda dil öğretmeni eğitimi için faydalı bir kaynak olarak ön plana çıkmaktadır. Bu nedenle bu çalışma, dil öğretmeni adaylarının, uygulama öğretmenlerinin ve öğretim üyelerinin deneyimlerini ortaya koymak amacıyla yürütülmüştür. Çalışma, Karadeniz Bölgesi'nde bir üniversitede Şubat-Haziran 2021'de yürütülmüştür. Temellendirilmiş kuramın veri analiz süreçleri ve vaka çalışması araştırma tekniklerini takip eden bu çalışmada, 2020-2021 güz döneminde 22 aday dil öğretmeni ile yarı-yapılandırılmış görüşmeler yapılmıştır. Ayrıca, altı öğretim üyesi ve üç uygulama öğretmeni ile nitel çevrimiçi anketler yapılmıştır. Veri analizi, öncüller, etki ve sonuçlardan oluşan kritik bağlantıların, dil öğretmeni eğitiminin çevrimiçi platformlarda etkin bir şekilde uygulanması için belirleyici çıkarımlar sunduğunu göstermiştir. Bu kritik bağlantıların çevrimiçi dil öğretmeni eğitiminde dikkate alınması olası problemlerin öngörülmesi ve önlenmesini yardımcı olabilir.*

*Anahtar Kelimeler:* Covid-19, kritik bağlantılar, acil durumlar, çevrimiçi öğretmen eğitimi,

## Appendix 1

### SEMI-STRUCTURED INTERVIEW QUESTIONS

1. Can you tell me about your experiences during the online practicum?
2. What were the difficulties for you?
3. What aspects of the online practicum could have been different?
4. What was the best aspect of online teacher training?
5. How would you describe your interaction with the university lecturers?
6. How would you describe your interaction with the teacher trainers?
7. Would you like to add anything else?
8. How did this procedure help your teaching?

## Appendix 2

## Qualitative Online Survey Questions

### Online Language Teacher Training during the Pandemic: Reflections from Prospective English Language Teachers

Teacher Trainers, and Mentor Teachers

Dear Participants,

We would like to learn your experiences and perceptions of the online practicum that was conducted during the Covid-19 pandemic. Your personal details will not be shared with any third parties. The information you share will ONLY be used for academic purposes. If you would like to receive more information about this study, you may reach me via zuleyha.unlu@gop.edu.tr

Thank you for your participation.

---

* Necessary

1. What was your role during the practicum? *

   *Please select only one option.*

   ◯ University Lecturer

   ◯ Teacher Mentor at the Practicum School

**Perceptions about the Online Practicum**

2. Online practicum influenced the training of the English language teachers in that...
3. The online practicum was challenging because.... *
4. The online practicum should be part of conventional teacher training because....
5. There are no differences/ a lot of differences between online and face-to-face practicum because... *
6. The difficulties I experienced during the online practicum were.... *
7. The assessment during the online practicum was...because.... *

**Any additional comments**

8. Please share any other issues that were important and meaningful to you during the online practicum in the pandemic: *

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# Self-Regulation in Children Attending Preschool Institutions That Implement Different Educational Approaches

**Müşerref Turgut[a] and Aylin Sop[b]**

**Abstract**

*In recent years, there has been a rise in preschools adopting alternative educational approaches due to increased interest. Researchers have focused on how these approaches affect children's development. This study compares self-regulation in Montessori Preschool and preschools implementing the Ministry of National Education curriculum using a casual comparative research model. The sample includes 140 children aged 48-72 months from Montessori, private, and state preschools. Data was collected with a Personal Information Form and Preschool Self-Regulation Assessment measuring attention, emotion, and behaviour regulation. Montessori students exhibited higher self-regulation and positive emotion regulation. Six-year-olds scored higher in attention/impulse control. Young parents' children had higher self-regulation levels. Overall, self-regulation in the study group was high. The study discusses these findings in the context of existing literature and offers practical recommendations for future research.*

*Keywords*: preschool period, self-regulation, Montessori school, state school

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## Introduction

In recent years, researchers have begun to consider the effects of differences in kindergarten experiences on children's development (Ansari et al., 2020; Friedman-Karus et al.,2019; Vitiello et al., 2022). Studies have shown that children's academic achievement is higher when they receive preschool education compared to children who do not (Erkan & Kırca, 2010; Gayret & Çiçekler-Yıldız, 2021; Schweinhart et al., 2005; Yaşar & Aral, 2010). However, studies on the differences in the development of children by the programs implemented in preschool education institutions were limited to academic success. On the other hand, one of the essential skills that children acquire with

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preschool education is self-regulation. Self-regulation is a skill that develops the child's ability to work independently in personal and social contexts and affects her/his behaviors (Oktay, 1990; Shonkoff & Phillips, 2000). Self-regulation skills in the preschool period refer to managing cognitive, affective, and behavioral expressions to reach a designated target (Ertürk-Kara et al., 2018). Despite the differences in the definition of self-regulation in the literature, there is an agreement that it is essentially a broad concept that includes voluntary processes (Zauza et al., 2022). Self-regulation is defined as individuals' directing themselves (Zimmerman, 2002), setting a goal to regulate themselves, and having sufficient motivation to maintain this goal (Howard et al., 2018). According to Berger (2011), self-regulation involves such skills as attention, inhibiting reflexive actions, and delaying gratification.

Children's self-regulation predicts many positive outcomes like the quality of their social interactions, learning capacity, and school readiness in preschool (Blair, 2002; Eisenberg, 2012; Erkan & Sop, 2018). Once children step into preschool, they need to use their self-regulation skills frequently during the day to join activities in small and large groups. Children lacking self-regulation skills struggle to establish and maintain positive relationships with their teachers and peers, control undesired behaviors, pay attention, and follow instructions (Blair & Diamond, 2008; McClelland & Tominey, 2014). Poor self-regulation is reflected as impulsive and careless behaviors in children and youth (Piehler et al., 2020; Portilla et al., 2014). If a preschooler has failed to build sufficient social interaction and her/his impulse control is underdeveloped, s/he may have great difficulty when s/he gets into different circles with a new environment and may face socially challenging situations (Ertürk, 2013).

Creating rich, stimulating settings for children's self-regulation supports successive periods, including critical times (McClelland & Cameron, 2012). The classroom environment required for self-regulative learning, social events experienced, and the physical features of one's context play a critical role in self-regulation (Zimmerman, 1990). Among the components of self-regulation, effort control, self-control, and willingness are considered essential skills for children to achieve in-class academic skills and fulfill tasks (Çiltaş, 2011). Thus, they need to be evaluated individually to support their self-regulation in learning, development, and adaptation to social life. Findings to be obtained from the evaluation would set the fundamental basis for the support given to the child (Fındık-Tanrıbuyurdu & Güler-Yıldız, 2014). Therefore, developing and promoting self-regulation in early childhood is an effective way of reaching long-term school achievement (McClelland & Cameron, 2012).

Early childhood education programs are critically important for children's school achievement in terms of the child's self-awareness and external support (Bowne et al., 2017). Contemporary preschool education approaches adopt an educational perspective that puts the child in the center, understanding her/him and supporting her/him according to her/him needs. In this regard, constructivist and multi-cultural approaches can improve preschool education programs. Early childhood programs vary according to time, environment, and culture (Kargı, 2011). One of these programs is the Montessori Approach. Montessori education is a system developed by Dr. Maria

Montessori and integrated the world for children progressing to this end (Williams & Keith, 2000). Montessori's theories on child development are considerably different and historically strong, usually referred to as a framework to inform other views of education (Aljabreen, 2020). In addition, Montessori approached education as a scientist, observed children carefully, developed intuitive hypotheses over their behaviors, and used the classroom as a laboratory setting (Thayer-Bacon, 2011). Montessori education relies on the philosophy that a child's creativity comes out in a natural environment. Teaching takes place thanks to the child's independence (Aljabreen, 2017). This approach encourages active learning and participation through approaches that support the child's independence (Holmes, 2018). In an environment where the child's creativity is at the forefront, the child can take responsibility for learning on her/his own, discover the learning paths, acquire self-regulation skills and establish inner discipline by building internal control without adult interference (Güral, 2015). Children in Montessori schools work individually or in small groups with specially designed materials and display their natural tendencies in stable environments (Edwards, 2003; Efe & Ulutaş, 2022). Children determine and act in their space concerning their peers and classroom rules in such classrooms. They speak as they wish in their communication, and their self-expression skills are improved. Thus, respect and communication with other children allow internalization when setting the main classroom rules (Castellanos, 2002).

Tasks and responsibilities are given to children in the Montessori approach to help them cope with any possible problem and increase their independence. Thus, scaffolding is ensured for self-regulation in children in such classes (Breiman & Coe, 2016). A child has to be free to be able to learn self-regulation, take her/his learning responsibility, discover the paths to learning and build inner discipline (Güral, 2015). This freedom is vital for the self-regulated learning and self-efficacy levels of children's perceptions of working in groups in the Montessori approach to education. In the related literature, children's self-regulation has been studied in such terms as its socio-cultural, socioeconomic, academic, emotional, behavioral, and cognitive aspects and motivation (Berhenke, 2013; Graziano et al., 2007; Jahromi & Stifter, 2008; Raver, 2004). Many studies have concluded that children who received Montessori education have higher academic achievement levels than their peers attending preschool education with a centralized curriculum (Denervaud et al., 2019; Ervin et al., 2010; Lillard, 2012; Lopata et al., 2005; Manner, 2007; Toran & Temel, 2014; Üstündağ, 2019). Studies emphasize that the Montessori approach is an educational approach that affects children's self-regulation skills (Ervin et al., 2010; İman et al., 2017; Kuşçu et al., 2014). In this approach, teachers prepare activities that match children's interests and make them attractive. As a result, children select their activities independently and acquire the skills to regulate their behaviors at a young age. In addition, children feel more comfortable asking for help from their peers in the class. For learning to take place, it is ensured that children learn by focusing their attention on each other rather than the teacher. Montessori materials are didactic and are thought to teach children to focus their attention on a task at an early age. Therefore, the structure of Montessori classrooms is considered to provide settings that enable self-regulated learning in various ways (Castellanos, 2002).

In Montessori education, children develop their understanding and approach of a given event and realize their learning process. The fact that children control themselves and realize their learning process with the error control included in the approach is seen to be parallel with the idea that children take responsibility for their learning process and make plans in line with their goals, which is central to self-regulation (Tiryaki et al., 2021). This educational approach also has many aspects in common with the sub-dimensions of self-regulation. For example, attention regulation sub-dimensions include maintaining attention, managing attention, and displaying goal-specific behaviors. Emotion regulation processes involve correctly expressing emotions, planning, self-monitoring, recalling, problem-solving, and organizing (Ervin et al., 2010).

On the other hand, behavior regulation refers to processes like self-evaluation, impulse control, patience, and waiting for turns (Kıyaker, 2017). In this respect, despite the child's learning process, the physical order of the classroom, individualist objectives, and the teacher's readiness, the child has to be socially and emotionally ready to work with others in the class. Therefore, to promote young children's social and emotional development, opportunities should be provided to learn and practice these skills. Furthermore, in addition to learning these skills, self-regulation skills need the same opportunities for peer relationships (D'Apolito, 2016).

The Montessori approach expresses that children's self-efficacy levels and self-regulation skills are connected with their self-esteem in their academic achievement. This expression reflects the importance attached by Montessori to intrinsic motivation in learning. Thus, children target intrinsic achievement instead of extrinsic rewards (Castellanos, 2002). A Montessori teacher prepares the child for inner change by internalizing the value of respect for children and the developmental importance of the activities performed during childhood (Rathunde, 2001). In this approach, the teacher helps and encourages children. S/he allows children to develop confidence and inner discipline, ensuring less interference with the child's development (Edwards, 2003). The Montessori approach in education focuses on children's differences. It mentions the significance of self-regulation in life as individuals who regulate themselves in cognitive and social areas, determine their learning strategies, act according to their goals, and maintain this behavior. While children learn to be controllable with traditional education, the Montessori approach teaches children to be capable and committed to each other (Williams & Keith, 2000).

## Aim of the Study

The present study aimed to compare the self-regulation levels of children attending a Montessori preschool, a state preschool implementing the centralized curriculum, and a private preschool. Unlike the studies in the related literature (Aral et al., 2019; Ervin et al., 2010; Gündoğdu, 2021; Kayılı, 2015; Mercan, 2019; Shiu et al., 2018; Tiryaki et al., 2021) investigating the effect of the Montessori approach on self-regulation, the present study aimed to compare the self-regulation of children attending schools that implement three different educational approaches. By comparing self-regulation levels of preschool children attending institutions that implement different educational approaches, the study

will highlight the importance of curricular practices that will evaluate children's self-regulation skills and determine and support their needs concerning self-regulation development.

This study seeks answers to the following questions:

1. How are preschool children's levels of self-regulation skills?
2. Do preschool children's self-regulation skills vary by educational approach?
3. Do preschool children's self-regulation skills significantly vary by gender?
4. Do preschool children's self-regulation skills significantly vary by age?
5. Do preschool children's self-regulation skills significantly vary by the mother's and father's age?
6. Do preschool children's self-regulation skills significantly vary by the mother's and father's level of education?

## Method

### Research Design

The present study was designed in the casual-comparative research model to compare the self-regulation levels of 4-6-year-old children attending a Montessori preschool, a state preschool, and a private preschool affiliated with the Ministry of National Education (MoNE). Studies that aim to determine the reasons and results of the differences between groups without any manipulation are casual-comparative studies (Büyüköztürk et al., 2018; Şahin, 2021).

### Participants

The participants consisted of children attending a Montessori preschool in a city center, a private preschool that implements a particular curriculum supplemented by the MoNE curriculum, and a state preschool in a city affiliated with the MoNE. In Turkey, private preschools are affiliated to the Ministry of Family, Labor and Social Services (MoFLSS). Within the scope of this study, Montessori preschool is a preschool affiliated to the MoFLSS, while private preschool is affiliated to the Ministry of National Education. Montessori preschool applies a curriculum in accordance with this approach. The private preschool uses practices such as early literacy and second language education in addition to the MoNE curriculum. Using criterion sampling, the inclusion criteria were accepted as maintaining school criteria for the purpose of the research and going to state-run kindergartens with children aged 4-6. The study sample consisted of children attending kindergartens in schools implementing three different curricula. The demographic characteristics of the study group are shown in Table 1.

**Table 1**

*Distribution of the Demographic Characteristics of the Study Group*

| Variable | Categories | *n* | % |
|---|---|---|---|
| Gender | Girls | 59 | 42.1 |
| | Boys | 81 | 57.9 |
| | Total | 140 | 100 |
| Age Group | 4 Years | 25 | 17.9 |
| | 5 Years | 53 | 37.9 |
| | 6 Years | 62 | 44.3 |
| | Total | 140 | 100 |
| Mother's Age | 26-30 | 32 | 22.9 |
| | 31-35 | 54 | 38.6 |
| | 36-40 | 41 | 29.3 |
| | 41 and over | 13 | 9.3 |
| | Total | 140 | 100 |
| Mother's Level of Education | Middle school | 10 | 7.1 |
| | High-school | 24 | 17.1 |
| | Associate Bachelor's/Master's | 14 | 10.0 |
| | Total | 92 | 65.7 |
| Father's Age | 26-30 | 16 | 11.4 |
| | 31-35 | 40 | 28.6 |
| | 36-40 | 47 | 33.6 |
| | 41 and over | 37 | 26.4 |
| | Total | 140 | 100 |
| Father's Level of Education | Primary/Secondary | 10 | 7.1 |
| | High-school | 20 | 14.3 |
| | Associate Bachelor's/Master's | 19 | 13.6 |
| | Total | 91 | 65 |
| Educational Approach | Private Preschool | 50 | 35.7 |
| | Montessori Preschool | 47 | 33.6 |
| | State Preschool | 43 | 30.7 |
| | Total | 140 | 100 |

As seen in Table 1, 57.9% of the children in the study group are boys. 44.3% are six-year-olds. 38.6% of the mothers are aged 31-35, and 65.7% have a Bachelor's/Master's degree. 33.6% of the fathers are aged 36-40, and 65% have a Bachelor's/ Master's degree. 35.7% of the children attend a private school, 33.6% Montessori, and 30.7% attend state preschool.

## Data Collection Tools

Data was collected using the personal information form and Preschool Self-Regulation Assessment (PSRA).

### *Personal Information Form*

The 5-item personal information form was developed by the researcher to obtain information about children's demographic characteristics: children's gender and age, parents' age, and level of education.

### *Preschool Self-Regulation Assessment (PSRA)*

Data concerning the children's self-regulation were collected using the Preschool Self-Regulation Assessment (PSRA). The scale was developed by Smith-Donald, Raver, Hayes, and Richardson (2007) and was adapted to Turkish by Fındık-Tanrıbuyurdu in 2012. In the study by Fındık-Tanrıbuyurdu (2012), which focused on the adaptation of the PSRA into Turkish, the self-regulation sub-scales of the scale were found to comprise two sub-scales: attention/behavior regulation and emotion regulation. This scale is a measurement tool that enables performance-based assessment. The PSRA includes two main sections: The Assessor Report for the tasks the child is expected to perform and the PSRA Assessor Report Examiner Rating Scale.

**Assessor Report.** It includes codes for nine tasks to assess children's self-regulation performance. Toy Wrap, Candy Hide, and Tongue Task tasks determine children's delayed gratification levels. Balance Beam, Tower Task, and Pencil Tap tasks are performed to evaluate children's executive control indicating their ability to follow instructions. Tower Cleanup, Toy Sorting, and Toy return tasks are carried out to evaluate children's social adaptation skills (Fındık-Tanrıbuyurdu & Güler Yıldız, 2014). In this part of the scale, coding is conducted for children's performance. For example, in the Balance Beam task, seconds for each child are recorded on the code sheet in line with the instructions given. In the Pencil Tap task, children are instructed to tap the pencil a number of times that is the opposite number of the assessor's tap. For instance, if the assessor taps once, the child is asked to tap twice. When the evaluator taps the pencil twice, the child has to tap once. This act is repeated 16 times. The results are marked as correct/incorrect, and the correct responses are added with 1 point for each.

**Assessor Report Examiner Rating Scale.** This form is the second part of the scale. It enables the assessor to evaluate the child's emotion, attention level, and behavior based on assessor-child interaction. The scale is scored as 0, 1, 2, and 3. The items include behavioral indicators with 0 for the lowest and 3 for the highest. The scale comprises 16 items in total, with ten items on attention-impulse control and six items on positive emotion. The maximum possible score to be obtained on the scale is 48. Some items on the scale are reverse-coded. The scale has a two-factor construct. Cronbach's Alpha internal consistency coefficient was calculated as 0.83 for the overall scale. It was calculated as 0.88 for Attention/Impulse Control (AIC) and 0.80 for Positive Emotion (PE) (Fındık-Tanrıbuyurdu & Güler Yıldız, 2014). Cronbach's Alpha internal consistency coefficient was calculated as 0.76 for the overall scale. It was found as 0.83 for AIC and 0.70 for PE within the scope of this research.

### Data Collection and Analysis

A brief training was received on the materials and application process of the scale used to assess children's self-regulation levels. In addition, the researcher made contact with the scale's researcher, who provided the necessary materials.

Prior to commencing the data collection process, parental consent forms and voluntary personal information forms were sent to parents through school authorities. The

children were informed that the researcher in the classroom environment would perform a short individual activity. After informing the children, the children who wanted to participate in the performance test were determined by the researcher. The activities were performed in 30-40 minutes on average, with each child sitting face-to-face at tables and chairs suitable for children. The data were collected during the 2020-2021 academic year.

In the analysis stage, skewness and kurtosis values were examined to see whether the variables were distributed normally. The Shapiro-Wilk test was conducted for normal distribution. Non-parametric tests were used for the mean score comparisons of the data that were not distributed normally. In addition, the Levene test was carried out to determine whether the variance was distributed equally or not prior to variance analysis. The level of significance was accepted as 0.05. Effect size indices were calculated and reported to identify the effect size of the independent variable on the dependent variable in the tests that showed significant differences. The importance of effect size study findings in practice is to evaluate Type I and Type II errors and make accurate deductions concerning the significance of the findings. Eta2 representing the effect size can be defined as the proportion of variance accounted for by the main effects, interactions, and errors in a study comparing group means (Tabachnick & Fidell, 2001). Eta2 values of .01, .06, and .14 indicate small, medium, and large effect sizes, respectively (Green & Salkind, 2012). Bonferroni correction was made to control Type I error during the tests. Participants' self-regulation was evaluated separately for each group, and mean standard deviation and variance values were calculated for the scores obtained from the tests. The results of the normality test are shown in Table 2. It is seen in Table 2 that the total self-regulation score from the Shapiro-Wilk test, AIC, and PE values and the data from a normal distribution are statistically significantly different: *p* values are .000, .000, .001, respectively.

**Table 2**

*Normality Test Results of Preschoolers' Self-Regulation Scores*

| Sub-dimensions | Kolmogorov-Smirnov[a] | | | Shapiro-Wilk | | |
|---|---|---|---|---|---|---|
| | Statistics | *df* | *p* | Statistics | *df* | *p* |
| AIC | .164 | 140 | <.001 | .853 | 140 | <.001 |
| PE | .122 | 140 | <.001 | .962 | 140 | .001 |
| Self-regulation | .104 | 140 | .001 | .933 | 140 | <.001 |

## Results

Total self-regulation scores of the preschoolers and the descriptive statistics for the sub-scales are presented in Table 3. The maximum score that children can obtain on the PSRA is 48. Table 3 shows the children's mean AIC scores ($\bar{X}$ = 26.01), mean PE scores ($\bar{X}$ = 13.43), and total self-regulation scores ($\bar{X}$ = 39.44). Kruskal-Wallis test results of the preschoolers' total self-regulation scores, AIC scores, and PE scores according to educational approach groups are shown in Table 4. It is seen in Table 4 that means there is no statistically significant difference in AIC scores according to educational approach groups [$\chi^2(2, N = 140) = 3.422, p = .181$].

**Table 3**

*Descriptive Statistics Concerning the Preschoolers' Self-Regulation Scores*

| Sub-dimensions | *n* | Min | Max | $\bar{X}$ | *SD* | Skewness | Kurtosis |
|---|---|---|---|---|---|---|---|
| AIC | 140 | 14 | 30 | 26.01 | 3.41 | -1.49 | 2.32 |
| PE | 140 | 7 | 18 | 13.43 | 2.66 | -0.28 | -0.77 |
| Self-Regulation | 140 | 23 | 48 | 39.44 | 4.84 | -1.04 | 1.56 |

**Table 4**

*Kruskal Wallis H Test Results by Educational Approach*

| Sub-dimensions | Educational Approach | *N* | MR | df | $\chi^2$ | *p* |
|---|---|---|---|---|---|---|
| AIC | Private School | 50 | 63.69 | 2 | 3.422 | .181 |
| | Montessori School | 47 | 69.86 | | | |
| | State School | 43 | 79.12 | | | |
| PE | Private School | 50 | 62.65 | 2 | 33.238 | <.001* |
| | Montessori School | 47 | 97.22 | | | |
| | State School | 43 | 50.42 | | | |
| Self-Regulation | Private School | 50 | 62.26 | 2 | 13.791 | .001* |
| | Montessori School | 47 | 88.33 | | | |
| | State School | 43 | 60.59 | | | |

A statistically significant difference was observed in children's self-regulation PE scores in school-type groups [$\chi^2(2, N = 140) = 33.238$, $p = .000$, $\eta^2 = 0.24$]. Mann-Whitney U test was performed to evaluate the differences between each pair among the three groups classified according to educational approach. According to the Bonferroni correction to control Type I error during the tests, a significant difference exists between the private school and Montessori school ($p < .0167$) and between the Montessori school and state school ($p < .025$).

It is seen that self-regulation total mean scores significantly vary by educational approach [$\chi^2(2, N = 140) = 13.791$, $p = .001$, $\eta^2 = 0.10$]. According to the Bonferroni correction, there is a significant difference between the private school and Montessori school ($p < .0167$) and between the Montessori school and state school ($p < .025$).

Table 5 shows the Mann-Whitney U test results concerning the statistical difference in self-regulation mean scores in gender groups. According to Table 5, $U = 2137.000$, $Z = -1.069$, $p = .285$. The mean rank is 67.38 in boys, while 74.78 in girls. There is no statistically significant difference between mean AIC scores in gender groups ($U = 2072{,}500$, $Z = -1.350$, $p = .177$). Similarly, no statistically significant difference was observed between mean PE scores according to gender groups ($U = 2317{,}500$, $Z = -.306$, $p = .760$).

**Table 5**

*Mann-Whitney U Results by Gender Variable in Preschoolers*

| Sub- dimensions | Gender | *N* | MR | MT | U | Z | *p* |
|---|---|---|---|---|---|---|---|
| AIC | Boy | 81 | 66.59 | 5393.50 | 2072.50 | -1.350 | .285 |
| | Girl | 59 | 75.87 | 4476.50 | | | |
| PE | Boy | 81 | 69.61 | 5638.50 | 2317.50 | -.306 | .177 |
| | Girl | 59 | 71.72 | 4231.50 | | | |
| Self-Regulation | Boy | 81 | 67.38 | 5458.00 | 2137.00 | -1.069 | .760 |
| | Girl | 59 | 74.78 | 4412.00 | | | |

Table 6 shows the Kruskal-Wallis test results of preschoolers' total self-regulation scores and their AIC and PE subscales scores according to age groups. When Table 6 is examined, it is seen that there is a statistically significant difference between the mean scores of the self-regulation AIC sub-scale by age groups according to the test results [$\chi^2(2, N = 140) = 10.875$, $p = .004$, $\eta^2 = 0.08$].

**Table 6**

*Kruskal Wallis H Test Results of Preschoolers According to Age Groups*

| Sub-dimensions | Age Group | *N* | MR | *df* | $\chi^2$ | *p* |
|---|---|---|---|---|---|---|
| AIC | 4 Years | 25 | 47.62 | 2 | 10.875 | .004* |
| | 5 Years | 53 | 71.39 | | | |
| | 6 Years | 62 | 78.97 | | | |
| PE | 4 Years | 25 | 66.66 | 2 | .961 | .619 |
| | 5 Years | 53 | 67.97 | | | |
| | 6 Years | 62 | 74.21 | | | |
| Self-Regulation | 4 Years | 25 | 53.84 | 2 | 7.128 | .028* |
| | 5 Years | 53 | 68.41 | | | |
| | 6 Years | 62 | 79.01 | | | |

Mann-Whitney U test was performed to evaluate the differences between each pair in the three groups created according to age. Three Mann-Whitney U tests were conducted in total for the paired comparisons of the three groups. With the Bonferroni correction, testing was conducted by dividing the number of comparisons at the alpha level ($\alpha = .05$) for each comparison, and three paired comparisons were made in total. Alpha levels were found as $.05 / 3 = .0167$, $.05 / 2 = .025$ and .05 for these tests respectively. Later, putting the *p* values into ascending order, the smallest was compared with .0167, the second with .025, and the last with .05. The results of these tests showed a significant difference only between the four-year-old ($\bar{X} = 36.92$) and six-year-old ($\bar{X} = 40.55$) groups ($p < .0167$).

Statistically significant differences between age groups in self-regulation mean scores were found [$\chi^2(2, N = 140) = 7.128$, $p = .028$, $\eta^2 = 0.05$]. In addition, 3 Mann-Whitney U tests were conducted in total for the paired comparisons of the three groups. According to the Bonferroni correction results, a significant difference was found between the mean scores of four-year-olds ($\bar{X} = 53.84$) and six-year-olds ($\bar{X} = 79.01$).

Total self-regulation scores and the scores obtained on preschool children's AIC and PE sub-scales were tested with Kruskal Wallis considering mothers' age. Test results are presented in Table 7. As seen in Table 7, there is no significant difference in mean scores on the AIC sub-scale regarding mothers' age [$\chi^2(3, N = 140) = 2.371, p = .499$]. Furthermore, according to the test results, there is no significant difference in mean PE scores among mothers' age groups [$\chi^2$ $(3, N = 140) = 13.927, p = .003, \eta^2 = 0.10$]. Six Mann-Whitney U tests were conducted to compare the four different groups. Bonferroni correction showed significant differences between the 21-30 age group and 41 and over age group ($p < .0083$), between the 21-30 age group and 36-40 age group ($p < .010$) and between the 36-40 age group and 41 and over age group ($p < .0125$).

**Table 7**

*Kruskal Wallis H Test Results According to Mothers' Age*

| Sub-dimensions | Mother's Age | *N* | *MR* | *df* | $\chi^2$ | *p* |
|---|---|---|---|---|---|---|
| AIC | 21-30 | 32 | 71.33 | 3 | 2.371 | .499 |
| | 31-35 | 54 | 67.21 | | | |
| | 36-40 | 41 | 77.35 | | | |
| | 41 and over | 13 | 60.50 | | | |
| PE | 21-30 | 32 | 91.97 | 3 | 13.927 | .003* |
| | 31-35 | 54 | 66.53 | | | |
| | 36-40 | 41 | 65.87 | | | |
| | 41 and over | 13 | 48.77 | | | |
| Self-Regulation | 21-30 | 32 | 84.67 | 3 | 8.667 | .034* |
| | 31-35 | 54 | 65.85 | | | |
| | 36-40 | 41 | 72.60 | | | |
| | 41 and over | 13 | 48.31 | | | |

Total self-regulation scores were observed to vary significantly by mothers' age [$\chi^2$ $(3, N = 140) = 8.667, p = .034, \eta^2 = 0.06$]. Six Mann-Whitney U tests were conducted to compare the four different groups. According to Bonferroni correction, a significant difference exists only between the 21-30 age group ($\bar{X} = 41.25$) and the 41 and over age group ($\bar{X} = 36.85$) ($p < .0083$).

Total self-regulation scores and the scores obtained on preschool children's AIC and PE sub-scales were tested with Kruskal Wallis considering fathers' age. Test results are presented in Table 8. Table 8 shows the results of the Kruskal Wallis test to see if there was a significant difference between AIC sub-scale mean scores in terms of the father's age. The results indicated no statistically significant difference among fathers' age groups [$\chi^2(3, N = 140) = .340, p = .952$]. On the other hand, significant differences were seen in the PE sub-scale mean scores in the father's age [$\chi^2(3, N = 140) = 14.939, p = .002, \eta^2 = .11$]. Six Mann-Whitney U tests were conducted to compare the four different groups. According to the Bonferroni correction, there are significant differences between the 21–30-year-old ($\bar{X} = 41.56$) and 41 and over ($\bar{X} = 38.05$) age groups ($p < .0083$), between the 21-30-year-old ($\bar{X} = 41.56$) and 36-40-year-old ($\bar{X} = 39.51$) age groups ($p < .010$) and between the 36-40-year-old ($\bar{X} = 39.51$) and 41 and over ($\bar{X} = 38.05$) age groups ($p < .0125$).

**Table 8**

*Kruskal Wallis H Test Results According to Fathers' Age*

| Sub-dimensions | Father's Age | *N* | *MR* | *df* | $\chi^2$ | *p* |
|---|---|---|---|---|---|---|
| AIC | 21-30 3 | 16 | 68.50 | 3 | .340 | .952 |
| | 31-35 | 40 | 68.98 | | | |
| | 36-40 | 47 | 73.26 | | | |
| | 41 and over | 37 | 69.51 | | | |
| PE | 21-30 | 16 | 94.81 | 3 | 14.939 | .002* |
| | 31-35 | 40 | 81.64 | | | |
| | 36-40 | 47 | 64.38 | | | |
| | 41 and over | 37 | 55.72 | | | |
| Self-Regulation | 21-30 | 16 | 87.84 | 3 | 6.960 | .073 |
| | 31-35 | 40 | 77.00 | | | |
| | 36-40 | 47 | 67.78 | | | |
| | 41 and over | 37 | 59.43 | | | |

Total self-regulation scores and the scores obtained on the AIC and PE sub-scales of preschool children were tested for significant differences with Kruskal Wallis according to mothers' level of education. Test results are presented in Table 9. When Table 9 is examined, it is seen that there is no significant difference between mothers' level of education groups in terms of total self-regulation scores [$\chi^2(3, N = 140) = 3.105$, $p = .376$]. In addition, no statistically significant difference was seen between the mothers' level of education groups' mean scores of AIC and PE sub-scales in the mothers' level of education groups [$\chi^2(3, N = 140) = 1.942$, $p = .584$; $\chi^2(3, N = 140) = 2.456$, $p = .483$].

**Table 9**

*Kruskal Wallis H Test Results According to Mothers' Level of Education*

| Sub-dimensions | Mother's Level of Education | *N* | *MR* | *df* | $X^2$ | *p* |
|---|---|---|---|---|---|---|
| AIC | Primary/Secondary | 10 | 59.30 | 3 | 1.942 | .584 |
| | High School | 24 | 79.02 | | | |
| | Associate | 14 | 67.68 | | | |
| | Bachelor's/Master's | 92 | 69.92 | | | |
| PE | Primary/Secondary | 10 | 52.70 | 3 | 2.456 | .483 |
| | High School | 24 | 73.58 | | | |
| | Associate | 14 | 65.96 | | | |
| | Bachelor's/Master's | 92 | 72.32 | | | |
| Self-Regulation | Primary/Secondary | 10 | 50.45 | 3 | 3.105 | .376 |
| | High School | 24 | 75.69 | | | |
| | Associate | 14 | 66.50 | | | |
| | Bachelor's/Master's | 92 | 71.93 | | | |

Kruskal Wallis test results for the total self-regulation scores and the scores obtained on the AIC and PE sub-scales of preschool children according to fathers' level of education are presented in Table 10. It is seen in Table 10 that the Kruskal Wallis test was performed to determine whether significant differences existed between the AIC mean scores and total self-regulation scores in the fathers' level of education groups. Test

results show no statistically significant difference between fathers' level of education groups [$\chi^2(3, N = 140) = 3.560, p = .313$; $\chi^2 (3, N = 140) = 7.786, p = .051$].

**Table 10**

*Kruskal Wallis H Test Results According to Fathers' Level of Education*

| Sub-dimensions | Father's Level of Education | *N* | MR | *df* | $X^2$ | *p* |
|---|---|---|---|---|---|---|
| AIC | Primary/Secondary | 10 | 83.30 | 3 | 3.560 | .313 |
| | High School | 20 | 62.20 | | | |
| | Associate | 19 | 81.74 | | | |
| | Bachelor's/Master's | 91 | 68.57 | | | |
| PE | Primary/Secondary | 10 | 46.15 | 3 | 9.499 | .023* |
| | High School | 20 | 54.50 | | | |
| | Associate | 19 | 83.68 | | | |
| | Bachelor's/Master's | 91 | 73.94 | | | |
| Self-Regulation | Primary/Secondary | 10 | 60.45 | 3 | 7.786 | .051 |
| | High School | 20 | 53.18 | | | |
| | Associate | 19 | 87.61 | | | |
| | Bachelor's/Master's | 91 | 71.84 | | | |

On the other hand, statistically, a significant difference was found between the PE mean scores in fathers' level of education groups [$\chi^2(3, N = 140) = 9.499, p = .023, \eta^2 = .05$]. To adjust for alpha inflation with multiple tests, a Bonferroni correction factor was applied to six Mann-Whitney U tests conducted, comparisons were only significant if they reached the $p < .008$ level of significance (i.e., .05/6 = .008). The three paired group comparisons (p = .012, p = .016, and p = .044) were not statistically significant.

## Discussion and Conclusion

The present study compared the self-regulation levels of children receiving Montessori education and those attending schools implementing the MoNE curriculum. The results of the study indicate that children have high self-regulation skills. In the attention/impulse control sub-scale, the children had a quite high mean score. Thus, it can be suggested that children show a high level of attention/impulse control. It was found that the children displayed high performance in the positive emotion sub-scale, as well. Children may have difficulties regulating their behavior and emotions, such as following directions, taking turns, or expressing feelings. Through preschool education, children acquire many social skills, such as internalizing the rules, playing cooperatively, and sharing items. These skills are essential in the development of children's self-regulation. The fact that the children participating in the research receive preschool education is thought to be effective in their high self-regulation skills. Similarly, Fındık-Tanrıbuyurdu and Güler-Yıldız (2014) found that children who had preschool education performed high self-regulation performances in their study. Self-regulation is a critical skill to be successful in social and learning environments. Graziano et al. (2007) report that emotion regulation plays a vital role in children's academic achievement and productivity in the classroom. Studies show that behavior regulation and attention regulation development are highly critical for other development areas of children. For example, Montroy (2014) and

Alarcón-Rubio, et al. (2014) found that behavior and attention regulation during the preschool period influences early mathematical skills, early literacy skills, and speech forms. Denham et al. (2012) stated that the developmental changes in preschoolers' positive emotions and self-regulation are correlated with their future academic achievement. The study has come up with consistent results with the related literature

The study results show a significant difference between the private school and Montessori school and between the Montessori school and state school in terms of children's self-regulation skills and positive emotion sub-scales. This difference appears to be in favor of the Montessori school. Children's self-regulation development in the early childhood period can be achieved through early childhood education programs that focus on children's all developmental domains and involve rich environmental conditions in this respect. The related literature includes studies that highlight the importance of effective education programs and classroom practices in developing children's self-regulation skills (Aral et al., 2019; Yurteri-Tiryaki et al., 2021; Rimm-Kaufmann et al., 2009; Mashburn et al., 2008; Vasseleu et al. 2021; Vitiello et al., 2022). In addition, in such countries as the United States of America, it is seen that self-regulation is supported through curriculum or curriculum extension approaches as well (e.g., Tools of The Mind (Bodrova & Leong, 2007), Chicago School Readiness Project (Raver et al., 2008)). However, although the Montessori approach does not explicitly define self-regulation, it aims to raise children who have self-control, problem-solving skills, high self-confidence, and who can make decisions on their own and implement them. Studies have proven that children have high self-regulation in schools that implement different educational curricula. For instance, Mercan and Özbey (2020) reports that 5-6 year-old children attending private schools have higher self-regulation skills, academic self-concept and self-esteem, and interpersonal problem-solving skills. However, Kayılı (2015) states that children in Montessori schools have higher social problem-solving and emotional understanding levels than their peers in the MoNE. Similarly, Aral et al. (2019) found that children in Montessori schools have higher self-regulation. This significant evidence, once again, reveals the importance of high-quality educational practices that children receive in the early childhood period.

Development and promotion of self-regulation in early childhood can change depending on several factors. Such factors as the child's gender, age, parents' level of education, and parents' age, which also determine the family dynamics, can be considered an essential part of self-regulation development. When the results obtained from the present study concerning children's self-regulation by gender were examined, no difference was found in their attention/impulse control and positive emotion regulations regarding gender. Similarly, Jahromi and Stifter (2008), Fındık-Tanrıbuyurdu (2012); Ertürk-Kara and Gönen (2015); Alejandro et al. (2016); Şamlı (2019); Yılmaz (2020) conducted studies reporting that gender does not change self-regulation performance in children during the preschool period. The results obtained from the study also revealed that gender alone is not a determining factor in children's self-regulation performance.

Another child-related factor is the children's age. It was found in the present study that six-year-old children have higher positive emotions and self-regulation than

four-year-old children. When the related literature is reviewed, it is seen that Astarlar (2019), Eke (2018), and Kurt (2020) report higher self-regulation in children in the six-year-old age group. In addition, they looked into executive function and self-regulation in children. Alarcón-Rubio et al. (2014) mention significant differences between four and seven-year-olds. Self-regulation, which evolves in a developing way from infancy to childhood, is a process of change in which children turn to their interests and regulate their emotional states (Raffaelli et al., 2005). Depending on age, children develop specific skills and abilities necessary for self-regulation, such as expressive and receptive language, motor control, working memory, and cognitive flexibility (Shonkoff & Phillips, 2000). No matter the age level's importance, the duration and degree of change in self-regulation in this period are considered essential for children's short-term and long-term outcomes (Montroy et al., 2016). This result of the research shows the importance of skill development in the early childhood years and emphasizes the support of self-regulation from an early age.

In the mother's and father's age groups, children's mean scores on the positive emotions sub-scale varied between the 21-30-year-old and 41 and over age group, between 21-30-year-old and 36-40-year-old age groups and between 36-40-year-old and 41 and over age group; and this difference is in favor of parents aged 21-30. Family factors serve as antecedents of early childhood experiences and children's self-regulation skills (Xie & Li, 2022). Parents' interaction with children, children's self-care, and family routines influence children's self-regulation development. Since family-related factors help young children regulate their emotions and behaviors better, the finding that young parents' children have higher positive emotions than the other groups is a significant result.

In addition to the child's characteristics, previous studies reveal that children's environment affects their self-regulation development (Blair, 2010; Miech et al., 2001). A particularly remarkable aspect of children's environment that may affect their self-regulation is their mother's level of education. The mother's education level is expected to indicate the differences in children's developing self-regulation (Montroy et al., 2016). The present study found that children's self-regulation did not vary by their mother's and father's level of education. The related literature includes similar study results (Bayındır, 2016; Özbek, 2021). On the other hand, Zeytinoğlu et al. (2017) found that a mother's education was indirectly correlated with children's executive functioning and behavior regulations through its contributions to mothers' emotional support. This finding parallels the idea that mothers' emotional support can be a mechanism that explains the role of a mother's education in the child's self-regulation (Zeytinoğlu et al., 2017). The present study did not deal with any factor that may indirectly affect children's self-regulation. Therefore, it is thought necessary that environmental effects that could have indirect effects are included in future studies evaluating children's self-regulation and family factors.

## Implications

Some suggestions could be made based on the results of the study. First, differentiation in children's self-regulation by schools adopting different approaches is the focus of the present study, and expected results have been obtained in this respect. It is recommended that activities that enhance children's self-regulation are actively included in schools where the national curriculum is implemented. To this end, understanding how self-regulation development occurs as well as expected and delayed development (e.g., discovering children's needs concerning their self-regulation mechanisms) would provide teachers with the tools they need for appropriate curriculum arrangements. Thus, early intervention studies can be planned to support children when needed. The development of children's skills and abilities, including their self-regulation in the early period, is possible through high-quality early childhood education and care. Curriculum extension studies must comply with the national curriculum to promote self-regulation development in children. Moreover, the self-regulation development of young children can be examined in the program characteristics aspects expanding the field of study. The study was conducted with three different educational approaches may be a limitation. Comparative studies could be carried out in schools implementing different educational approaches. Thus, curricular practices that are effective in self-regulation development can contribute to the literature. Finally, a more comprehensive study on more than one indicator of a child's environment is seen as the next step to thoroughly understand the characteristics affecting children's self-regulation development within a context.

## Code of Ethics

Ethical approval and written permission were obtained from the Ethics Committee of Burdur Mehmet Akif Ersoy University (dated 03.06.2020 and numbered 2020/144).

**Authors' Note:** This study was produced from the master's thesis of the first author under the supervision of the second author at Burdur Mehmet Akif Ersoy University Institute of Educational Sciences

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## Farklı Eğitim Yaklaşımı Uygulayan Okul Öncesi Eğitim Kurumlarına Devam Eden Çocuklarda Öz-düzenleme

**Öz**

*Son yıllarda artan ilgi nedeniyle alternatif eğitim yaklaşımlarını benimseyen anaokullarının sayısında bir artış yaşanmıştır. Araştırmacılar, bu yaklaşımların çocukların gelişimini nasıl etkilediğine odaklanmışlardır. Bu çalışma, nedensel karşılaştırmalı araştırma modelini kullanarak Montessori Anaokulu ile Millî Eğitim Bakanlığı müfredatını uygulayan anaokullarındaki öz-düzenlemeyi karşılaştırmaktadır. Örneklem, Montessori, özel ve devlet anaokullarından oluşan 48-72 ay arası 140 çocuğu içermektedir. Veriler, Kişisel Bilgi Formu ve Anaokulu Öz Düzenleme Değerlendirmesi ile toplanmış ve dikkat, duygu ve davranış düzenlemeyi ölçmektedir. Montessori öğrencileri daha yüksek öz-düzenleme ve olumlu duygu düzenlemesi sergilemiştir. Altı yaşındaki çocuklar dikkat/dürtü kontrolünde daha yüksek puan almıştır. Genç ebeveynlerin çocukları daha yüksek öz-düzenleme seviyelerine sahiptir. Genel olarak, çalışma grubundaki çocukların öz-düzenlemesi yüksektir. Çalışma, bu bulguları mevcut literatür bağlamında tartışmakta ve gelecekteki araştırmalar için pratik öneriler sunmaktadır.*

*Anahtar Kelimeler:* okul öncesi dönem, öz-düzenleme, Montessori okulu, devlet okulu

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# The Impact of Asynchronous Reflection and Discussion on Pre-Service Teachers' Evaluation of Arguments about the COVID-19 Pandemic

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**Abstract**

*Pre-service teachers (PSTs) play a key role in creating future citizens who critically evaluate information. Therefore, this study investigated PSTs' ability to evaluate two controversial topics about COVID-19 before and after asynchronous reflection and discussion on the trustworthiness of evidence and credibility of sources of evidence. Eighteen sophomores who studied in the English Language Teacher Education Program in the Faculty of Education at a private university in Turkey participated in the study. Their pre- and post-assignments, in which they discussed arguments about COVID-19, were analyzed. The results of the study reveal the positive impact of asynchronous reflection and discussion to facilitate PSTs' critical evaluation. The results suggest further implications in teacher education programs and teacher education research for promoting argumentation skills.*

*Keywords*: asynchronous reflection and discussion, pre-service teachers, critical evaluation, COVID-19

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## Introduction

In the post-truth era, digital misinformation has become pervasive in society via the internet and social media (Del Vicario et al., 2016). The spread of disinformation results in a lack of public confidence in facts and science (Kienhues, 2020). The information people get strongly impacts their decisions and behaviors (Cinelli et al., 2020), leading to science denial and anti-vaccination movements (Jamison et al., 2019). The denial of scientific evidence could potentially be a threat to democracy and society (Allcott et al., 2019). The main problem of science denial is a lack of understanding of uncertainty in science rather than scientific knowledge itself (Kampourakis, 2018). The dissemination of misinformation and unscientific views can be prevented by educating scientifically literate citizens with the ability to cope with uncertainty in science (Kampourakis &

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McCain, 2019) and make informed decisions by engaging in evidence-based reasoning and critical thinking processes (Erduran, 2020).

The circulation of misinformation about COVID-19 has been raising public concern, and the World Health Organization (WHO) labeled this situation as an infodemic (World Health Organization, 2020a). To fight this infodemic, WHO created a section on its website publishing daily reports to provide the population with reliable data (World Health Organization, 2020b). The argument of this paper is that it is necessary to improve learners' ability to evaluate alternative arguments on controversial topics about COVID-19 as well as provide them with reliable data and scientific knowledge in order to facilitate their evidence-based reasoning and critical thinking. It is especially important to investigate pre-service teachers' (PSTs') evaluation of arguments to educate future scientifically literate teachers who create future scientific citizens.

Arguments from evidence and obtaining, evaluating, and communicating information are among the science and engineering practices described in A Framework for K-12 Science Education (NRC, 2021) and the goals of the science curriculum of the Turkish Ministry of Education (MoNE, 2018). Discourse, argumentation, and evaluation of information require engaging in not only discourse-intensive scientific practices but also mastering language (Swanson et al., 2014). Setting the goal of argumentation in PST education will facilitate the use of argumentation as a long-term pedagogical strategy (Erduran et al., 2016). Argumentative writing skills are significant for language learners and, thus, for language teachers (Gill & Janjua, 2020). Therefore, examining pre-service language teachers' evaluation of arguments is essential for developing their argumentative skills. From this point of view, it is necessary to equip language teachers with the ability to engage in the evaluation of arguments as well as argumentation. However, studies about the argumentation of in-service or pre-service English language teachers (ELT) are rarely found. Recent studies about ELT teachers' argumentation have mainly focused on their moral decisions in teaching (e.g., Soleimani & Lovat, 2019) or investigated pre-service ELT teachers' critical thinking skills as one of the 21st-century skills (e.g., Bedir, 2019). These studies emphasized the necessity of developing in-service and pre-service ELT teachers' evaluation of arguments without clearly defining the criteria for developing argumentative skills.

The COVID-19 pandemic forced teachers to use online teaching (Bajaj et al., 2021). Therefore, examining the efficiency of online teaching settings is required. A previous study by Saribas and Çetinkaya (2021) revealed the positive impact of online courses implementing discussion and feedback on PSTs' analysis of claims about COVID-19. However, these researchers reported that PSTs were challenged to justify whether the claims were scientific or not and were rarely able to judge the credibility of sources critically, even after completing the course. To promote their ability to evaluate claims and the credibility of sources, it seems necessary to equip PSTs with the ability to evaluate information, data, and evidence, detect bias and misinformation on the internet and media, and ask critical questions to judge the trustworthiness of evidence and credibility of sources of information.

Recent literature indicates gains in online and virtual classes regarding argumentation (Fettahlıoğlu & Aydoğdu, 2020; Kapici et al., 2021; Ng, 2022; Saribas & Çetinkaya, 2021). Written reflections (Choi & Hand, 2020; Kim et al., 2021; Yaman, 2018) and asynchronous discussions are also shown to be effective regarding argumentative skills (Choi & Hand, 2020). Therefore, it seems necessary to include a detailed reflection in which PSTs discussed the trustworthiness of evidence and credibility of sources, as well as the discussions of claims, evidence, and argument in online classes as well as face-to-face instructions. PSTs need to discuss their ideas by comparing them to their peers' ideas as well as those written in the sources that they cited. Saribas and Bayram (2017) revealed the benefits of using reflection and discussion in the laboratory regarding their understanding of chemistry topics. The argument of this paper is that reflection and discussions are effective tools in not only laboratory courses, but also other courses, especially those requiring the evaluation of claims and evidence. From this background, examining PSTs' evaluation of claims and arguments throughout an online course in which asynchronous reflection and discussion are implemented may provide a detailed insight into their reasoning for the arguments about COVID-19.

Saribas and Çetinkaya (2021) investigated pre-service Arabic language teachers' analysis of claims and identified high, moderate, and low levels of analysis by depending on the following criteria: evaluating the relationship between claim and evidence, demarcating fallacies and conspiracy theories from scientific arguments, and judging the credibility of sources. However, analysis of PSTs' evaluation of arguments includes more than the three criteria listed above. The following criteria are necessary to evaluate PSTs' arguments: (a) expressing the required information; (b) distinguishing the concepts of claims, arguments, and evidence; (c) providing evidence; (d) distinguishing relevant from irrelevant evidence; (e) searching information not only for but also against their own position; (f) drawing conclusions based on facts and sound reasoning; (g) understanding the bias and propaganda in the given information; (h) recognizing whether the information is a result of investigation; (i) recognizing that facts and interpretations are blended in most of the sources of information; and (j) asking critical questions to judge the credibility of sources of information. PSTs' evaluation of arguments can be analyzed again at three levels, considering how effectively they achieved each of these criteria. Thus, the following research question was addressed in the current study:

1. Is there a significant effect of asynchronous reflection and discussion on PSTs' evaluation level of arguments about COVID-19?

## Theoretical Framework

Evaluating arguments and evidence in personal, societal, and political contexts is among the goals of science education (e.g., Carey & Smith, 1983; Duggan & Gott, 2002; Roberts, 2007; Ruhrig & Höttecke, 2015). Allchin (2011) pointed out the necessity of understanding uncertainty in science to be an informed citizen. Uncertain scientific evidence plays an important role in public debate about socio-scientific issues such as climate change or electromagnetic pollution (Ruhrig & Höttecke, 2015). On the other hand, Lang et al. (2020) argued that uncertainty beliefs are beneficial when dealing with

competing scientific claims and evaluating scientific controversies. The spread of unscientific beliefs about controversial topics such as vaccines, the shape of the Earth, and climate change among the public has existed for a considerable amount of time. However, the spread of misinformation has been progressively rising today due to the COVID-19 pandemic (Mian & Khan, 2020).

### *Misinformation about COVID-19 Pandemic*

Misinformation regarding COVID-19 not only prevents practices of health, such as hand washing and social distancing, but also increases erroneous practices like consuming hazardous substances and actions that lead to food insecurity and health problems (Tasnim et al., 2020). A tsunami of information, which spreads faster than a virus, is defined as an *infodemic* and creates fear and anxiety in the public, who finds it difficult to differentiate between evidence-based information and a broad range of unreliable misinformation (WHO, 2021). Combating the infodemic of COVID-19 requires people to become more critical of the information they are presented with and distinguish between facts and fake news (Naeem & Bhatti, 2020).

Many researchers and philosophers indicated the harmful effects of misinformation and the necessity of dealing with these problems via education (e.g., Nguyen & Catalan, 2020; Pennycook et al., 2020). Educating future citizens who participate in debates and make informed decisions in a democratic society is one of the goals of science education for all students. This kind of participation requires students to become aware of different positions and dilemmas about the issue in question (Ottander & Simon, 2021) and to be able to critically evaluate information based on its source and the methods it produces (Roberts, 2007). From this point of view, teacher education programs need to educate future teachers who educate such citizens for a democratic society. To achieve this aim, it is necessary to equip pre-service teachers with the ability to critically evaluate arguments about COVID-19.

Due to the COVID-19 pandemic, the universities were forced to shift from face-to-face in-class teaching to online classes in 2020. Therefore, there are a considerable number of studies that examine the effectiveness of online teaching compared to face-to-face classes (e.g., Almanar, 2020; Daumiller et al., 2021; Kemp, 2020; Moorehouse, 2020; Paudel, 2021; Serhan, 2020). Depending on the duration and impact of the pandemic on society and education, synchronous and asynchronous online learning experiences seem to continue to be employed in education. From this point of view, teaching science in general and specifically scientific knowledge about the COVID-19 pandemic requires incorporating discussions in online environments.

In a previous study, Saribas and Çetinkaya (2021) found that synchronous discussions and the instructor's feedback during an online course had a positive impact on PSTs' evaluation of arguments, demarcation of fallacies and conspiracy theories from scientific arguments, and judgment of the credibility of sources. On the other hand, they concluded that there are still deficiencies in evaluating the credibility of sources of

evidence. It is, therefore, necessary to promote PSTs' ability to evaluate sources and evidence as well as arguments.

### *Asynchronous Reflection and Discussion*

Writing in science helps to activate cognitive attributes such as critical thinking (Lamb & Etopio, 2019). Bagheri (2015) suggested that language learners have higher critical thinking skills. Saleh (2019) also argued the necessity of the development of critical thinking skills as a 21st century skill for language learners and suggested engaging students in tasks that involve reflection to promote their critical thinking skills. Galikyan and Admiraal (2019) highlighted the significance of asynchronous online discussion in teacher education courses. Thus, it is beneficial to provide learners with opportunities to reflect and discuss their ideas in writing. Providing frequent opportunities for reflection and discussion is the core element of inquiry about and in science (Murphy et al., 2021). Research studies pointed out the benefits of reflection in evidence use (e.g., Iordanou & Constantinou, 2015) and finding reliable sources (e.g., Yaman, 2018). Burns et al. (2020) indicated that including interactive online lessons in the first-year general biology course facilitated students' taking responsibility for their own learning. Furthermore, Farina and Bodzin (2018) stressed positive student perceptions of asynchronous learning experiences. Asynchronous discussions are also effective to encourage learners to construct and critique arguments (Choi & Hand, 2020) and provide opportunities for productive argumentation and the growth of scientific knowledge (Callis-Duehl et al., 2018; Huang et al., 2015).

The COVID-19 pandemic can continue for an extended period, and it will likely have impacts on society for a long time. Therefore, investigations should include different approaches to teaching and learning science through online resources and the quality of online learning environments (Erduran, 2020). Based on this background, examining PSTs' level of evaluating arguments in an online course may bring insight to teacher education courses to promote PSTs' argumentation. In order to assess their level of evaluation, it is also necessary to determine criteria to assess PSTs' evaluation level of arguments about the COVID-19 pandemic.

## Method

A pre- and post-test design was used in this study. The study was conducted in the Critical and Analytical Thinking course, which aims at improving PSTs' analysis and evaluations of information and demarcating scientific knowledge from unscientific claims and misinformation. The course was carried out online due to the pandemic in the fall semester of 2020–2021. PSTs were introduced to the concepts of analysis, claim, evidence, arguments, and fallacies during online classes. Researchers identify the following types of evidence during the discussions to support or refute views: the trustworthiness of evidence considering the types of evidence, including research findings and statistical data, expert judgment, personal and secondhand experience, specific cases and examples, and laws and policies (Asen et al., 2013). Therefore, they were informed about the

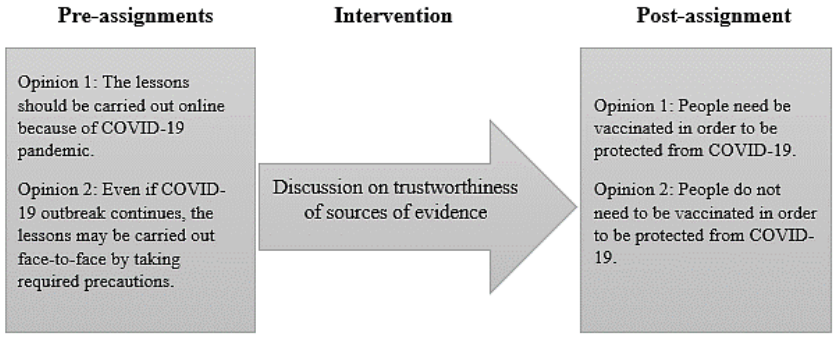
trustworthiness of evidence considering these types of evidence. However, laws and policies were not emphasized frequently during the discussions because the scope of this course did not include them. The credibility of sources was also discussed, considering the following questions (Warrington et al., 2020):

(1) Who is the author?
(2) How do I know that he/she is knowledgeable about the subject?
(3) Is the author using emotional appeals/manipulation in his or her argument?
(4) Does the author use "loaded" language to distract readers from relevant reasons and evidence?
(5) Is the support for the argument appropriate to the claim?
(6) Are all the statements believable?
(7) Is the argument consistent and complete?

Following these discussions of these concepts, they submitted their pre-assignments, in which they discussed whether the lessons should be carried out online or face-to-face. Asynchronous discussions of the trustworthiness of evidence and credibility of sources of evidence followed the submissions of pre-assignments and lasted for three weeks. Finally, they submitted their post-assignments, including alternative ideas about whether vaccination protects people from COVID-19. Figure 1 illustrates the design of the study.

**Figure 1**

*The Design of the Study*




## Data Sources

The participants' pre- and post-reflections on an argument and counterargument about a controversial topic in public regarding COVID-19 were analyzed in this study. The participants reflected on their evaluations of two alternative claims about online and face-to-face instruction on their pre-assignments, while they evaluated two alternative claims either in favor of or against vaccination. In their pre- and post-assignments PSTs answered the following questions:

(1) Write claims and arguments for each of the opinions.
(2) Provide set of evidence for each of the claims.

(3) Do you think each of the set of evidence are trustworthy? Why/why not?
(4) List each source that you obtained each evidence.
(5) Do you think each of these sources are credible? Why/why not?
(6) Construct a strong argument for the claim that you support. Justify your reason.

Expert judgment was used during the construction of the questions. The author was the instructor for the course. Therefore, in order to assure ethical considerations, two independent researchers on science education who work on scientific practices and argumentation checked the content validity of the questions.

**Determining Criteria for Critical Evaluation**

The current study examined PSTs' evaluations of arguments, evidence, and sources of evidence. According to Paul and Elder (2005), students who think critically search for information relevant to the questions to be answered or issues to be resolved. They routinely check information for accuracy. They also question information for bias and propaganda. From this point of view, they identified the following criteria:

- Students express in their own words (clearly and precisely) the most important information (in a discussion, chapter, assignment, etc.).
- Students distinguish the following related but different concepts: facts, information, experience, research, data, and evidence.
- Students state their evidence for a view clearly and fairly.
- Students distinguish relevant from irrelevant information when reasoning through a problem. They consider only relevant information, disregarding what is irrelevant.
- Students actively search for information against, not just for, their own position.
- Students draw conclusions only to the extent that those conclusions are supported by facts and sound reasoning. They demonstrate the ability to objectively analyze and assess information by coming to conclusions based on the information.
- Students understand the nature and function of bias and propaganda.
- Students recognize that most news stories are not a result of investigative journalism (but are taken from news conferences and press releases designed to influence the news).
- Students recognize that facts and interpretations are blended in most news stories.
- Students ask key questions when coming to conclusions about any given news story: What is the intended audience of this story? What point of view is being privileged? What points of view are being dismissed or played down? How can I gain access to viewpoints not covered? What stories are highlighted and why? What stories are buried and why.

Among the 25 standards and the indicators and dispositions that Paul and Elder (2005) identified, the aforementioned list is chosen to be used in this study as the criteria to evaluate arguments, evidence, and sources of evidence, as well as detect bias in various

kinds of information requires the list of these indicators. Paul and Elder (2005) classified their standards into six main sections. The first section includes competencies that focus on reasoning and intellectual standards. The six standards (from 1 to 6) in the third subsection of this section, namely information, data, evidence, and experience, were directly related to the aim of the current study and used as criteria in the study. Understanding bias and propaganda standards in Section 21 and three standards about news stories in Section 25 to detect media bias are also included among the criteria to evaluate arguments about the COVID-19 pandemic. The rest of the standards were excluded from the study since they mainly dealt with the information within particular subjects or required a more sophisticated understanding and elaborating of information about a topic, or traits, virtues, and dispositions were out of the scope of this study. The second section deals with intellectual standards. Therefore, the standards that are not directly related to the aim of the current study were excluded from the criteria used to evaluate the participants' arguments.

## Procedure

After PSTs submitted their pre-assignments, they discussed the trustworthiness of evidence and credibility of the sources of evidence they utilized to prepare their assignments for three weeks asynchronously in the forums on Moodle. All the PSTs who participated in these discussions received feedback from the instructor. The instructor informed them about the trustworthiness of evidence and credibility of sources in an online course. The asynchronous discussion began with the question of whether their evidence and sources meet the criteria of trustworthiness and credibility, and why. The discussion continued with the trustworthiness and credibility of the sources of evidence provided for counterargument. During this discussion, the author suggested the participants not to evaluate the trustworthiness and credibility of evidence and sources of evidence by just reading the arguments. She pointed out that reasoning about claims and arguments is different from evaluating trustworthiness and credibility. The discussions are carried out to help the PSTs understand that trustworthiness and credibility are ensured by data- and evidence-based conclusions, the expertise of the author, and the quality of publication.

## Participants

The participants of this study were 18 (8 male, 10 female) sophomores of the English Language Teaching Department who were enrolled in the Critical and Analytical Thinking course of a private university in Turkey. One male PST withdrew from the study before the submission of pre-assignments. The rest of the PSTs volunteered to participate in this study. The language of this course was English. All of these participants had the proficiency in reading, writing, and speaking English to participate in the oral and written discussions that were carried out in the course. Three of these participants are international students (1 from Libya, 1 from Lebanon, and 1 from Japan). The rest of them were Turkish citizens. None of these participants took any courses about argumentation or research. Therefore, they have no or limited knowledge of what counts as evidence, a claim, or an argument.

## Data Analysis

The chosen indicators of critical thinking that Paul and Elder (2005) listed were adapted for this study, and the rubric was created after receiving an expert judgment on each criterion. PSTs' assignments were analyzed for each category by using the rubric presented in Table 1. Table 1 shows an example of the rubric. The rest of the rubric is shown in Appendix 1.

**Table 1**

*The Rubric to Assess PSTs' Evaluation Levels*

| Criterion | Critical | Moderate | Low |
|---|---|---|---|
| Expressing information | PST expressed clearly and precisely the most important information. | PST expressed some aspects of the important information; however, some of the required information was missing or his/her explanation was not clear and precise. | PST's expression was superficial and weak, which made hard to make sense of the topic. |
| Distinguishing the concepts | PST distinguished the following related but different concepts: claim, argument, and evidence in the information. | PST distinguished two of the following related but different concepts: claim, argument, and evidence in the information. | PST could not distinguish any of the following related but different concepts: claim, argument, and evidence. |

The current study includes qualitative data but is transformed into a quantitative one by scoring the participants' responses in each category and comparing their total scores in the pre- and post-assignments by using a paired samples t-test. In each criterion, PSTs' evaluations for critical, moderate, and low levels were scored as 3, 2, and 1, respectively. One of the researchers who checked the validity of the questions also checked the scoring of the PSTs' responses. The following equation was used to calculate the percentage agreement:

(Number of ratings in agreement / Total number of ratings) × 100 = 132 / 180 × 100 = 0.73. The initial percentage agreement between the researchers was 73%. They discussed their conflicts until they reached complete agreement on their coding.

## Results

Paired-samples t-test was used in this study to identify the PSTs' evaluation level of arguments about COVID-19 before and after asynchronous reflection and discussion and investigate whether asynchronous reflection and discussion have an influence on the PSTs' evaluation level of arguments about COVID-19. However, in order to utilize the t-

test, a goodness-of-fitness test needs to be applied to the distribution of the scores. The Kolmogorov-Smirnov test indicated that the scores in each criterion as well as in total were normally distributed ($p > 0.05$). Table 2 illustrates descriptive statistics of PSTs' scores, while Table 3 reveals t-test scores of PSTs' evaluation level of arguments about COVID-19 before and after asynchronous reflection and discussion in each criterion as well as in total.

**Table 2**

*Descriptive Statistics of PSTs' Pre- and Post-Assignment Scores*

| | | Mean | *N* | Std. Deviation | Std. Error Mean |
|---|---|---|---|---|---|
| Expressing information | Pre | 2.89 | 18 | 0.32 | 0.08 |
| | Post | 3.00 | 18 | 0.00 | 0.00 |
| Distinguishing the concepts | Pre | 2.17 | 18 | 0.86 | 0.20 |
| | Post | 2.5 | 18 | 0.51 | 0.12 |
| Stating evidence | Pre | 2.33 | 18 | 1.03 | 0.24 |
| | Post | 2.89 | 18 | 0.32 | 0.08 |
| Distinguishing relevant information | Pre | 2.56 | 18 | 0.70 | 0.16 |
| | Post | 2.89 | 18 | 0.32 | 0.08 |
| Searching information | Pre | 2.56 | 18 | 0.62 | 0.15 |
| | Post | 2.83 | 18 | 0.38 | 0.09 |
| Drawing conclusions | Pre | 2.06 | 18 | 0.64 | 0.15 |
| | Post | 2.78 | 18 | 0.43 | 0.10 |
| Understanding bias and propaganda | Pre | 2.50 | 18 | 0.79 | 0.19 |
| | Post | 3.00 | 18 | 0.00 | 0.00 |
| Recognizing investigation | Pre | 2.33 | 18 | 0.97 | 0.23 |
| | Post | 3.00 | 18 | 0.00 | 0.00 |
| Recognizing facts and interpretations | Pre | 2.50 | 18 | 0.79 | 0.19 |
| | Post | 3.00 | 18 | 0.00 | 0.00 |
| Asking critical questions | Pre | 2.11 | 18 | 0.83 | 0.20 |
| | Post | 2.78 | 18 | 0.55 | 0.13 |
| Total | Pre | 2.40 | 18 | 0.50 | 0.12 |
| | Post | 2.87 | 18 | 0.14 | 0.03 |

Table 2 indicates that the scores of PSTs' pre-assignments regarding expressing information, distinguishing relevant information, and searching information were mostly at the critical level. On the other hand, PSTs' abilities to distinguish the concepts of claim, argument, and evidence; provide evidence to support arguments; distinguish relevant information from irrelevant information; search information not only for but also against their own position; draw conclusions based on facts and sound reasoning; detect bias and

propaganda; recognize that not every piece of information is based on investigation; differentiate facts and interpretations; and ask critical questions seem to have been at a moderate level before intervention.

**Table 3**

*T-test Scores of PSTs' Evaluation Levels of Arguments*

| Pre-post | Mean | *SD* | *SE* | 95% CI Lower | 95% CI Upper | *t* | *df* | Sig. (2-tailed) |
|---|---|---|---|---|---|---|---|---|
| Expressing information | -0.11 | 0.32 | 0.08 | -0.27 | 0.05 | -1.46 | 17 | 0.16 |
| Distinguishing the concepts | -0.33 | 0.69 | 0.16 | -0.67 | 0.01 | -2.06 | 17 | 0.06 |
| Stating evidence | -0.56 | 1.10 | 0.26 | -1.10 | -0.01 | -2.15 | 17 | 0.04 |
| Distinguishing relevant information | -0.33 | 0.84 | 0.20 | -0.75 | 0.08 | -1.69 | 17 | 0.11 |
| Searching information | -0.28 | 0.83 | 0.19 | -0.69 | 0.13 | -1.43 | 17 | 0.17 |
| Drawing conclusions | -0.72 | 0.75 | 0.18 | -1.10 | -0.35 | -4.08 | 17 | <0.01 |
| Understanding bias and propaganda | -0.50 | 0.79 | 0.19 | -0.89 | -0.11 | -2.70 | 17 | 0.02 |
| Recognizing investigation | -0.67 | 0.97 | 0.23 | -1.15 | -0.18 | -2.92 | 17 | 0.01 |
| Recognizing facts and interpretations | -0.50 | 0.79 | 0.19 | -0.89 | -0.11 | -2.70 | 17 | 0.02 |
| Asking critical questions | -0.67 | 0.97 | 0.23 | -1.15 | -0.18 | -2.92 | 17 | 0.01 |
| Total | -0.47 | 0.53 | 0.12 | -0.73 | -0.20 | -3.75 | 17 | <0.01 |

It is evident from Table 3 that PSTs benefited from asynchronous reflection and discussion in terms of evaluating arguments about COVID-19 in general. After three weeks of implementation, they improved their evaluation of arguments, especially regarding stating evidence, drawing conclusions, understanding bias and propaganda, recognizing investigations, recognizing facts and interpretations, and asking critical questions. However, PSTs' ability to distinguish the concepts of claim, argument, and evidence did not increase significantly throughout the intervention. PSTs' pre-assignments regarding expressing information, distinguishing relevant information, and searching information were mostly at the critical level. Therefore, the influence of the intervention cannot be observed in these categories either.

Cohen's *d* value is calculated in this study as the difference between the mean scores of PSTs' pre- and post-test scores, which are then all divided by the standard

deviation of the data (*d* = Mean / Std. deviation). Table 4 shows Cohen's *d* value of PSTs' scores in each criterion and in total.

**Table 4**

*Cohen's d Value of PSTs Scores*

| Criterion | Cohen's *d* Value |
|---|---|
| Stating evidence | 0.51 |
| Drawing conclusions | 0.96 |
| Understanding bias and propaganda | 0.63 |
| Recognizing investigation | 0.69 |
| Recognizing facts and interpretations | 0.63 |
| Asking critical questions | 0.69 |
| Total | 0.88 |

It is evident from Table 4 that the effect of asynchronous reflection and discussion on PSTs' stating evidence, understanding bias and propaganda, recognizing investigation, facts and interpretations, and asking questions was medium, while this method has large effect on their ability to draw conclusions based on evidence and evaluating arguments in total scores (Howell, 2009).

## Discussion and Conclusion

The COVID-19 pandemic prompted a sudden shift to remote instruction in 2020 (Gerard et al., 2021) and thus the necessity of finding effective ways to teach in online environments. The study presented here is one of these attempts to promote PSTs' evaluation of arguments through asynchronous reflection and discussion in an online course. Asynchronous reflection and discussion on the trustworthiness of evidence and credibility of sources of evidence that PSTs utilized during preparing their assignments for three weeks seemed to have positive impacts on their evaluation of arguments.

PSTs' ability to express information, distinguish relevant information, and search information was mostly at a critical level even before intervention. Therefore, the influence of the intervention cannot be observed in this study. The reason behind this outcome may be PSTs' prior learning experiences. Pre-service ELTs are used to search for information, distinguish relevant information from irrelevant information, and express their inferences from this information when writing essays in other courses. On the other hand, they increased their evaluation of evidence and arguments, drawing conclusions based on evidence, understanding bias and the importance of investigation, recognizing facts and interpretations, and asking questions throughout the intervention. The medium effect of asynchronous reflection and discussion on PSTs' statements of evidence, understanding bias and propaganda, recognizing investigations, facts, and interpretations,

and asking questions is a promising result since the intervention lasted for only three weeks. This result indicates the necessity of reflection and discussion, especially on the trustworthiness of evidence and credibility of arguments, in the whole class. Previous research pointed out the necessity of integrating the use of evidence in science classes to promote argumentation (Bravo-Torija & Jiménez-Aleixandre, 2018). This result also supports the argument that not only science classes but also language classes should incorporate the use of evidence.

Despite the aforementioned gains in PSTs' evaluations of arguments, this method did not seem to have an impact on PSTs' ability to distinguish the concepts of claim, argument, and evidence. This finding indicates the necessity of further efforts to improve their understanding of what counts as evidence as well as claims and arguments. Solli (2021) also suggested addressing the disjuncture between the claims in a scientific journal and the interpretations of such claims in a scientific setting. Further studies examining PSTs' evaluation of scientific reports may shed new light on this issue.

Kuhn and Lerman (2021) stressed the importance of coordinating evidence with claims, yet pointed out the different forms of evidence that pose different interpretational challenges. They suggested challenging students by using different forms of evidence with respect to not only their strengths but also their weaknesses in supporting or weakening claims by using the "Yes-But" prompt that requires students to explain in what respect this evidence falls short. The findings of the current study are consistent with this suggestion by pointing out the benefits of challenging the learners on the strengths and weaknesses of evidence by using asynchronous reflection and discussion on lines of evidence. Further studies investigating PSTs' evaluations of arguments and evidence about COVID-19 with respect to the type of evidence and its strengths and weaknesses in online teaching settings may shed new light on argumentation in teacher education literature.

Teachers' active participation in research may help teachers to not only fill the gap between research and teaching language (Leow et al., 2022), but also acquire the skills of providing evidence for their inferences during teaching practices. Nguyen et al. (2022) suggested that inquiry-based teacher education fosters teachers' research mindsets. From this perspective, restructuring teaching practice courses during undergraduate years to include providing evidence, reflective practice, and discussion with peers may be beneficial to promote their research and argumentation skills. Future research, including the components of evidence, reflection, and discussion in teacher practice courses, may bring new insight into specifically ELT education research and teacher education research in general.

Sato and Leowen (2022) suggested the support of universities and schools for researcher and practitioner collaboration and a productive research-practice dialogue in the future. The results of the present study suggest that asynchronous reflection and discussion may be helpful for such collaboration and dialogue. The implications of various forms of reflection and discussion among researchers and teachers might also be

beneficial for creating future scientifically literate teachers who construct arguments for teaching practices by providing sufficient evidence.

The main limitation of the current study is the sample size. On the one hand, the results gathered from eighteen participants are hardly generalizable to the PST argumentation literature. On the other hand, the results of this study are still remarkable for pointing out the impact of asynchronous reflection and discussion on pre-service ELTs' evaluation of arguments. Considering the scarcity of research studies conducted on pre-service and in-service language teachers' argumentative skills, the results of this study bring new insight into the development of ELTs' argumentative skills. Further investigations on a larger group of pre-service and in-service language teachers' evaluation of arguments and development of arguments may broaden our perspective in this manner.

Another limitation may be the only use of PSTs' assignments as a data source. Although these assignments depicted the participants' evaluation of arguments in a detailed manner, further investigation utilizing observations of classroom discussions on controversial issues, such as the COVID-19 pandemic, may shed new light on in-service and pre-service language teachers' understanding of arguments and evidence.

## Code of Ethics

This study met the ethics requirements for human subjects' research. Educational Sciences Ethics Committee reviewed the study, and its approval number is E- 42048860-020-57730. Furthermore, the details (names, dates of birth, identity numbers, and other information) of the participants that were studied are not published in written descriptions, photographs, and genetic profiles.

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## Asenkron Yansıtma ve Tartışmanın Öğretmen Adaylarının COVID-19 Salgını Hakkındaki Argümanları Değerlendirmesine Etkisi

**Öz**

*Öğretmen adayları, bilgiyi eleştirel olarak değerlendiren geleceğin vatandaşlarının yaratılmasında kilit rol oynamaktadır. Bu nedenle, bu çalışma, COVID-19 ile ilgili iki tartışmalı konuyu öğretmen adaylarının kanıtların ve kanıt kaynaklarının güvenilirliği üzerine asenkron yansıtma ve tartışma öncesi ve sonrasında değerlendirme yeteneklerini araştırmıştır. Çalışmaya, Türkiye'de özel bir üniversitenin Eğitim Fakültesi İngilizce Öğretmenliği Programında öğrenim gören on sekiz ikinci sınıf öğrencisi katılmıştır. COVID-19 ile ilgili argümanları tartıştıkları ön ve son ödevleri analiz edilmiştir. Çalışmanın sonuçları, asenkron yansıtma ve tartışmanın, öğretmen adaylarının eleştirel değerlendirmeleri açısından olumlu etkilerini ortaya koymaktadır. Sonuçlar, argümantasyon becerilerinin geliştirilmesi açısından öğretmen eğitimi programlarında ve öğretmen eğitim araştırmalarında daha fazla uygulama önerileri sunmaktadır.*

*Anahtar Kelimeler:* asenkron yansıtma ve tartışma, öğretmen adayları, eleştirel değerlendirme, COVID-19

## Appendix 1

*The Rubric to Assess PSTs' Evaluation Levels*

| Criterion | Critical | Moderate | Low |
|---|---|---|---|
| **Expressing information** | PST expressed clearly and precisely the most important information. | PST expressed some aspects of the important information; however, some of the required information was missing or his/her explanation was not clear and precise. | PST's expression was superficial and weak, which made hard to make sense of the topic. |
| **Distinguishing the concepts** | PST distinguished the following related but different concepts: claim, argument, and evidence in the information. | PST distinguished two of the following related but different concepts: claim, argument, and evidence in the information. | PST could not distinguish any of the following related but different concepts: claim, argument, and evidence. |
| **Stating evidence** | PST provided pieces of evidence for both arguments by correctly indicating the strength of each piece of evidence due to the connection between the evidence and argument. | PST stated some pieces of evidence clearly but seem to have overlooked some other or could not indicate the connection between the evidence and argument. | PST could not state evidence for a view clearly and fairly. |
| **Distinguishing relevant information** | PST distinguished relevant from irrelevant information; considered only relevant information during evaluating arguments and evidence, disregarding what is irrelevant. | PST distinguished some relevant from irrelevant information. However, he/she seemed to have overlooked some relevant information or missed some irrelevant information during evaluating arguments and evidence. | PST seem to have been confused about relevant and irrelevant information. |
| **Searching information** | PST seemed to have actively searched for information against, not just for, their own position. | PST seemed to have searched for information in limited number of sources without elaboration or it is unclear which sources he/she utilized. | PST did not seem to have searched the information. He/She just expressed his/her own opinion. |
| **Drawing conclusions** | PST drew conclusions only to the extent that those conclusions are supported by the facts and sound reasoning. He/She demonstrated the ability to objectively analyze and evaluate arguments and evidence. | PST seemed to have considered facts, but he/she seemed to have been challenged during evaluating both supporting and contradictory evidence and relating it to the arguments. | PST's conclusions seemed to have been biased. |
| **Understanding bias and propaganda** | PST seemed to have understood the nature and function of bias and propaganda since he/she evaluated the trustworthiness of evidence accurately. | PST seemed to have overlooked bias and propaganda since he/she provided accurate and trustworthy evidence; however, evaluated its trustworthiness based on the plausibility of the claim that it supports. | PST seemed to have overlooked bias and propaganda since he/she utilized sources of evidence that includes biased information. |
| **Recognizing investigation** | The PST's evaluation of trustworthiness of evidence revealed his/her recognition that most information is not a result of investigation. | PST seemed to have understood the significance of utilizing credible sources; however, did not seem to have recognized the importance of investigation regarding trustworthiness. | PST did not seem to have totally understood the relationship between trustworthiness and investigation. |
| **Recognizing facts and interpretations** | PST seemed to have recognized that facts and interpretations are blended in most of the sources of information. | PST sometimes seemed to have been confused about distinguishing facts and interpretations. | PST did not seem to have distinguished facts and interpretations at all. |
| **Asking critical questions** | PST discussed all the required critical questions to judge the credibility of sources of information. | PST discussed some of the critical questions to evaluate the credibility of sources. | PST did not discuss any of the critical questions to judge the credibility of sources. |

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# Assessment of Creativity in Artifacts Designed by Gifted Students: A Social Semiotic Multimodal Perspective

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**Abstract**

*Creativity is a central trait of giftedness, making the assessment of creativity an essential endeavor. A socio-cultural perspective takes into account all aspects of the social environment in which creative products emerge and underscores the necessity of considering these aspects when assessing such products. Regarding gifted classroom as a socio-cultural context, this study aims to introduce a systemic approach to evaluating creativity in designs created by gifted students, considering the multimodal discourse practices within the classroom. A qualitative descriptive method was employed, involving 16 fifth-grade gifted students in the study. Data were collected through participant design of artifacts and analyzed using multimodal and semiotic richness analysis. The results indicate that the analyzed texts are predominantly rich in semiotic aspects and demonstrate the effectiveness of the evaluation tool in assessing creativity in designs based on the discourse nature of the gifted students' science classroom.*

*Keywords*: artifacts, creativity, gifted students, multimodal design, social semiotics

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## Introduction

Giftedness is described from various perspectives including intellectual and non-intellectual variables concerning learning, training, and practicing which transform basic, genetically determined gifts into specific talents in daily life (Kaufman & Sternberg, 2008). According to the three-ring model of Renzulli (2005), giftedness melts well-above-average ability, creativity, and task commitment into the same pot. Similarly, Kaufman and Sternberg (2008) propose that creative people typically have above-average intelligence, and Runco and Albert (1986) posit that creativity is the highest form of giftedness. Therefore, creativity has been identified by many as an important indicator of giftedness (Plucker et al., 2018). In this respect, creativity is considered one of the main traits of giftedness, and gifted students are expected to produce creative learning products

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in the classroom (Bailey et al., 2016). As such, gifted students are considered to have higher-order cognitive abilities including creative abilities in the classroom. These creative abilities are also viewed from different perspectives which are divergent thinking, convergent thinking, flexible creating process, and creative artifacts. Creative abilities are demonstrated through many recognizable human actions and artifacts in a socio-cultural context (Csikszentmihalyi, 1988; Glăveanu, 2010).

Assuming that creativity is a central component of giftedness, the provision of gifted students may include pedagogical strategies to support creativity. In this respect, Besançon (2013) expresses that, in the gifted classroom, creativity needs to be valued at least as much as knowledge acquisition. As such, numerous research has explored creativity in the gifted classroom. Creativity researchers have studied descriptions and characteristics of creativity and creative potential (e.g., Amabile, 1996; Csikszentmihalyi, 1988, 1999; Glăveanu, 2013; Guilford, 1967; Rhodes, 1961; Stenberg & Lubart, 1995), the relationship between intelligence and creativity (Sternberg et al., 2001), the different kinds of pedagogical strategies for fostering creativity in the classroom (Clifford, 1988; Demetrikopoulos & Pecore, 2016), characteristics of creative individuals within domain-general and domain-specific perspectives (Plucker & Beghetto, 2004), the cognitive resources of creativity including thinking styles and flexibility (Stenberg & Lubart, 1995), and the environmental factors that affect creativity (Lubart et al., 2003). Furthermore, the assessment and evaluation of creativity in human actions, thoughts, or products is another prominent topic in the relevant research field (Plucker & Makel, 2010).

Assessment of creativity has been explored from various perspectives as well. In this vein, there have been numerous conceptions of creativity and methods of measuring creative output. These perspectives firstly include personality assessment which focuses on the personal characteristics of creative persons or creative gifted persons (Basadur & Hausdorf, 1996; Davis, 1992). The second perspective or approach is related to process and cognitive assessments which include divergent thinking tests such as the Torrance Tests of Creative Thinking (Torrance, 1976) and the Evaluation of Potential for Creativity (Lubart et al., 2011), and questionnaires on creative abilities (Milgram & Hong, 1999). Third, environmental assessments focusing on the environmental factors that influence creativity were explored (Amabile, 1996; Csikszentmihalyi, 1988, 1999). Finally, the assessment of creativity perspectives involves product assessment where the creativity is assessed by the products or artifacts designed by the individuals. A prominent example of a product assessment method is the Consensual Assessment Technique (CAT) of Amabile (1983). Regarding the assessment of creativity in products, Plucker et al. (2018) put forth that measures of creative products have been examined many times for reliability, but validity remains an issue, in part because there is no universally accepted criterion of creativity.

Regarding the previous studies on creativity, by foregrounding the embedded and extended nature of cognition in its socio-cultural setting, Glăveanu (2013) posits that creativity research is generally done by isolating or detaching the individuals from their socio-cultural contexts. From a system perspective (Csikszentmihalyi, 1988; Rhodes, 1961), Glăveanu (2013) reports that creativity must be considered within the elements of

the socio-cultural systems that the person is embedded in not as a phenomenon taking place in the person's mind or cognition. This issue also engages the assessment of creativity which is also mostly handled in an isolated approach that is unable to assess the creative properties concerning the socio-cultural setting. Deeming that products are products of a cognitive process, deeming that cognition is extended and embedded in the socio-cultural setting, and products are results of psychological and cultural objects, the assessment techniques generally omit an approach that fits the intersections, and generally omit one. In this respect, as the assessment of creativity is a major component of fostering creativity in the classroom (Besançon, 2013; Plucker & Makel, 2010), this study focuses on the assessment of creativity in learning products concerning a socio-cultural context which is the gifted classroom.

## Purpose of the Study

This study aims to investigate the creativity in learning products designed by gifted students in the science classroom. For this purpose, the current study looks for employing an evaluation tool for exploring creativity in learning products about meaning-making practices in the discourse system of the science classroom and evaluating the creativity of the deployed semiotic resources deployed in the learning products. In this aim, the learning products or artifacts designed by gifted students in the science classroom are assessed regarding the meaning-making practices in the specific discourse system of science and science classrooms. By sketching a multimodal description of the meaning-making practices and discourse system of the science classroom as a social-cultural context of the artifacts, the evaluation tool is expected to assess the creativity of the semiotic properties of artifacts.

What the study brings new is adopting a social semiotic multimodal perspective (Kress, 2010) to evaluate creativity in the learning products as student-designed artifacts. This perspective is important for inspiration regarding the assessment of creativity in learning products designed in classroom activities as a socio-cultural context for teachers and students. In this way, the creativity in learning products is assessed in terms of semiotic properties of representational practices and choices made by students in their learning products as artifacts.

## Theoretical Framework

The study is informed by the 5A model of creativity (Glăveanu, 2013) which socio-cultural perspective to theorize and explain creativity. Secondly, for describing the nature of classroom discourse and representational practices, social semiotics, and multimodality (Kress, 2010) guide the theoretical backdrops.

### *Creativity*

Creativity is defined according to various perspectives. In general terms, creativity can be defined as the capacity to produce something new and adaptive within the constraints of a given situation (Lubart et al., 2003). But Barron (1995) posits that “creativity is not a

rootless flower," (p. 9) by emphasizing the ecology of creative expression. This expresses that creativity is not a phenomenon taking place solely in the cognition or mind of the person but related and extended to the natural and social world where the person exists and acts. This view is pertinent to cultural psychology which is the study of the way cultural traditions and social practices regulate, express, transform, and permute the human psyche" (Shweder, 1990, p. 1). In this respect, cultural psychology deals with *cultured* constitution and expression of the human mind and creativity cannot be isolated from this cultured expression. In this line, Plucker et al. (2004) propose that "creativity is the interaction among aptitude, process, and the environment by which an individual or group produces a perceptible product that is both novel and useful as defined within a social context" (p. 90). This is specifically pertinent to understanding a phenomenon like creativity in which the person is embedded in/acts from within a system of social relations and the activity of creation produces meaning by integrating and transforming types of knowledge that, although individual in expression, are social in origin (Glăveanu, 2013).

In this respect, in exploring the creativity in the gifted classroom, and in exploring the creativity in learning products designed by students, we need to consider the socio-cultural setting where students are embedded both socially and materially. Regarding learning in the classroom as the socio-cultural setting, from a Vygotskyan perspective, Wertsch and Stone (1985) deem learning as a construction rather than a process of direct transmission or copying and posit that, for an individual, learning depends on mastery (internalization) of the cultural system of symbolic representations. Similarly, Engeström (1999) remarks that internalization is pertaining to the reproduction of culture and externalization can be considered as the process where the creation of artifacts takes place to transform the culture which is considered a human creation. Regarding these transformed creations, many scholars view learning products as student artifacts designed through learning activities (Andersen & Munksby, 2018; Jewitt et al., 2001a; Waldrip et al., 2010), and knowledge is demonstrated through representations (Wartofsky, 1979). Therefore, in exploring the creativity in learning products one should remind that the learning products are emerged in such a socio-cultural and psychological process taking place in the classroom settings.

This study adopts the 5A model of creativity of Glăveanu (2013). The Five-A framework of creativity engages Actor, Action, Artifact, Audience, and Affordance to theorize and study creative acts. The model concerns "the action of an actor or group of actors, in its constant interaction with multiple audiences and the affordances of the material world, leading to the generation of new and useful artifacts" (Glăveanu, 2013, p. 76). In referring to actors, the current paper acknowledges gifted students as socialized selves, as beings that are shaped by a socio-cultural context (science classroom) and act from within it, in coordination with others (peers and teachers), to change and mold this context in suitable ways. Audience refers to the social aspect of the environment, and affordance refers to the material aspect of the environment including the material opportunities in creating an act. In classroom settings, the former can be teachers' and peers' reviews and comments, and the latter can be resources such as books, computers, or other materials. Action is considered as both psychological and material, internal and external, goal-directed, structured, and symbolic or meaningful. Ginsburg (1980) states

that "human action necessarily is situated; it occurs in a context" (p. 333). In this respect, creative action emerges out of actor–audience relations that both produce and are mediated by the generation and use of new artifacts (objects, signs, symbols, representations, etc.) within a physical, social, and cultural environment. Therefore, the student act of creating is the action that is done in the socio-cultural setting of the classroom concerning other social selves as teachers and peers. Some actions in the classroom can be teaching, learning, and engaging extracurricular activities. Finally, artifacts are the result of the creative action or process, which includes not only perceptible items such as buildings, paintings, and inventions but also creative ideas that can be embodied into tangible forms.

### *Creativity in Artifacts as Student Learning Products*

The science classroom is a socio-cultural context and culture is seen as an accumulated system of symbolic and material human creations (Cole, 1996). According to this assumption, the discourse of science involves its representational practices and meaningful artifacts or representations for meaning-making and communication of scientific knowledge. This discourse involves teaching and learning activities as actions. Regarding the creative act as a human activity and learning to engage in internalization and externalization, student-generated artifacts can be seen as the externalized and materialized product of creative action. Moran and John-Steiner (2003) "externalization is the construction and synthesis of emotion-based meanings and cognitive symbols, and once expressed, these meanings and symbols are embodied in cultural artifacts" (p. 63). Therefore, the creative artifact is a product of cultural participation and thus an artifact or cultural *object* (Glăveanu, 2010). In other words, Glăveanu (2013) notes that "each creation or product comes into being, is understood, and is valued as part of a larger web of relations of people, things, institutions, and beliefs beyond that particular creation" (p. 74). What is new is form transformed; a new form, generated from an old one existed in the social environment. Therefore, the meaning and the creative potential in materialized student-generated learning products can be understood in the discourse of the science classroom and the discourse of science.

### *The Multimodal Nature of Discourse in Science Classroom*

Artifacts are seen as the part or product of such a socio-cultural system, and this study explores the creativity of these artifacts in an assessment framework that fits with the socio-cultural approach. As such, assessment and evaluation of creativity in artifacts designed by gifted students cannot be understood until encoding the meaning related to the discourse of its context and meaning-making practices and how an artifact should be creative within its socio-cultural context, which is a science classroom. When referring to a study of creative artifacts, it has been noted that current techniques are overconcerned with the measurement of properties and evaluation of creativity and fail to consider artifacts in the broader context of meaning-making processes taking place between actors and audiences in particular socio-cultural settings. In this respect, this study aims to do this regarding the representational tools and resources taking place in the discourse system of the classroom. This engages focusing on the learning products designed by gifted

students in the science classroom by evaluating the creativity in relation to the discourse system of socio-cultural context with an analysis of semiotic properties of artifacts.

The discourse of science is characterized as multimodal (Yeo & Nielsen, 2020), and multimodal representations are crucial tools for meaning-making and knowledge production. In this process, multimodal representations become essential "tools for meaning-making and knowledge production" (Prain & Waldrip, 2010, p. 1). As such, the nature of meaning-making processes in the discourse system of socio-cultural context is multimodal where the internalization and externalization take place through multimodal artifacts. Therefore, the construction and communication of scientific knowledge are considered multimodal where various modes including language, visual imagery, mathematical symbolism, or gestures are deployed (O'Halloran, 2007). In parallel, Waldrip et al. (2010) note that the discipline of science should be understood "historically as the development and integration of multi-modal discourses" (p. 66) and "where different modes fulfill different needs regarding reasoning and recording scientific inquiry" (p. 66). As such, scientific representations of artifacts are multimodal ensembles that are comprised of various semiotic resources and modes. The design of scientific representations/artifacts involves the deployment of these semiotic resources within certain aforementioned modes. Therefore, the analysis of these artifacts involves the deconstruction of semiotic resources or signs within various modes and how they are composed in the text.

### *Multimodal Design and Creativity in Artifacts*

According to the social semiotics account of learning, the process of learning is a communicational and societal phenomenon that takes place through the re-construction and re-contextualization of meanings mediated by semiotic resources (Jewitt, 2008). This re-contextualization and re-construction include student internalization and externalization which is materialized process involving design (Lemke, 1990). Externalization is a design process that involves "the ability to select, produce and productively use representations but also the abilities to critique and modify representations and even to design completely new representations" (DiSessa & Sherin, 2000, p. 387). Furthermore, Azevedo (2000) proposes that when students design representations, they come up with new inscriptional tools and develop their creativity and demonstrate their abilities.

Kress's (2000) theory of *design* accounts for how the meaning-maker (here gifted student) integrates the different representational choices in artifacts. Kress (2000) argues that "design is thus both about the best, the aptest representation of anyone's interest; and about the best means of deploying available resources in a complex ensemble" (p. 158). This proposition is concordant with Cox (2005) who states that children's abilities are not only affected by their level of motor control and cognitive development, but also by their intention and their socio-cultural context. Within this design conception, Kress (1997) argues that different children have different dispositions and preferences for self-expression. As Kress (1997) notes:

> Children see the complexity of the meaningful cultural world with absolute clarity; and in their making of meaning, they construct elaborate, complex representations of that world – out of the materials which are to hand... In this process, they construct complex alternative systems of representations, never arbitrarily, never simply copying, always producing forms which reveal and bear the logic and interest of their sign-maker's cognitive actions and affective interests. (p. 33)

In this respect, the creative artifacts designed by gifted students in the classroom must be evaluated in a way that sees that the student is internalized the accumulated sign system of the discourse system and externalized it in terms of her/his abilities, interests, or preferences. A creative actor is arguably one able to exploit the affordances of his or her surroundings innovatively, discover new affordances, and even create the ones needed to fulfill a specific action (Glăveanu, 2012). Multimodal design of learning products as artifacts, Bock (2016) notes that guided by social semiotic theories of communication, multimodal pedagogies, and cognitive accounts of artifacts, how students work easily and seamlessly across a variety of materials and modes, using the semiotic resources available in their environments, "to create imaginary worlds and express meanings according to their interests". In Newfield's (2009) terms, students' utilizing a range of semiotic resources (representational choices) to design artifacts, is a *transmodal moment* (italic added) a moment when students' "sense of design and interest guides their choice of mode, and results in a transformation of meaning" (Bock, 2016, p. 14).

These moments engage resemiotisations where students express their understanding or knowledge with different semiotic resources (Bock, 2016). In this respect, Stein (2003) argues that these resemiotisations are the key to *unleashing* children's creativity, reshaping their knowledge, and stimulating learning. Stein refers this to Hofstadter's (1985) argument that "making variations on a theme is the crux of creativity" (p. 233): as the concept or idea passes from one mode to the next, it develops in ways that are unexpected and unanticipated, thereby enabling multiple variations (of forms, shapes, colors, patterns, words, and images) to emerge. In this respect, the variety in semiotic resources, modes, and representation in demonstrating an understanding of content can be seen as a creativity measure in artifacts. However, in the words of Csikszentmihalyi (1999), "one must internalize the rules of the domain and the opinions of the field so that one can choose the most promising ideas to work on and do so in a way that will be acceptable to one's peers" (p. 332). This means that, besides the variety in use, the deployed semiotic resources must make meaning in the discourse system of the science topic and science classroom. In this respect, the student's capability to produce something new and adaptive within the constraints of a given situation emerges.

### *Semiotic Richness of Artifacts as a Measure of Variation and Creativity*

The concept of semiotic richness is developed by Gebre and Polman (2016) to explore the variety in the creative use of semiotic resources (representational choices) to make meaning in the design of artifacts. Semiotic richness is seen as the effective and creative deployment of representations (or semiotic resources) in artifacts that are multimodal in

nature. The creativity aspect deals with the distinct and effective deployment of various types of verbal and non-verbal representational choices which communicate distinct messages. What is more, these representations are complemented and co-operated with each other to construct a unified and complete scientific knowledge. Such a construction of multimodal artifact engages creativity in design since the text does not include parsimonious, distinct but related representations and uniqueness across representations demonstrating a whole message (Gebre & Polman, 2016). Semiotic richness is measured by the dimensionality of artifacts. In this respect, Gebre and Polman posit that the dimensionality of artifacts is seen as a measure of creativity in design through which students demonstrate scientific knowledge with the deployment of various material-semiotic resources of meaning-making. As such, the variety in the representational choices can be seen as the creative deployment of resources in the artifacts and the semiotic richness level can be seen as a criterion for evaluating the level of creativity in these artifacts.

This paper, then, explores the different ways in which gifted students utilize a range of semiotic resources (representational choices) including modes (verbal and non-verbal) and different types of representations to demonstrate scientific knowledge. In this respect, this study aims to explore creativity in science representations or artifacts designed by gifted students in science classrooms regarding the discourse system and meaning-making practices of the science classroom as a socio-cultural context. In this line the research questions of the research are determined as follows:

1. What are the representational choices in the construction of scientific knowledge as in fifth-level gifted students' design of science artifacts related to the solar system?
2. What is the level of creativity in the design of scientific knowledge regarding representational choices in fifth-level gifted students' design of science artifacts related to the solar system?

## Method

This study is descriptive qualitative research that entails multimodal discourse analysis (Tang & Danielsson, 2018) of multimodal science texts designed by gifted students in the science classroom. Braun and Clarke (2019) state that qualitative research does not provide a single and universal answer, it attaches great importance to context and can be empirical or critical. There is an ontological approach that guides every qualitative research. This ontological approach assumes that reality is independent of or constructed by human cognition. The ontological approach adopted by this research is the approach put forward by the constructivist philosophy (Savin-Baden & Major, 2013). According to the constructivist approach, knowledge is constructed and developed by the individual's building of new knowledge on his previous knowledge and experiences through his own life (Savin-Baden & Major, 2013). To answer the first question, the variety in verbal and non-verbal representational choices is analyzed. To answer the second question, students' design of science texts/artifacts is analyzed according to the semiotic richness concept of

Gebre and Polman (2016) to reveal the variety in the use of semiotic modes and representations and how effectively they are deployed in the artifacts.

**Procedure and Research Process**

This study is conducted with the participation of a science teacher and 16 fifth grade gifted students in the 2021-2022 fall term. The students studied at a formal school of gifted and talented. Admission to the school, where the participants study, involves IQ tests and ability tests. Students voluntarily designed artifacts in the science classroom and they are informed about the context of the research. The research was conducted after the teaching of the solar system subject. The topic of the solar system is a part of their curriculum. The teaching of the subject took two lessons. In the lessons, the teacher lectured the subject through oral representation and PowerPoint presentations. After two lessons, the teacher asked students to design representations of the solar system. Students used pseudonyms for the texts. The design of the representations took one lesson. After students designed the representations of the solar system, the teacher delivered the texts to the researcher. The researcher did not participate in the classroom setting. Since the texts are given with pseudonyms to the researcher and there were no identifiers on the texts (artifacts) confidentiality was kept. Furthermore, because this study employs a text analysis no questions are asked, and no extra data was collected.

**Data Collection and Analysis**

The data is comprised of 31 multimodal artifacts designed by gifted students. Each student designed two artifacts, except one. The artifacts were designed after the science teacher introduced the subject. As science artifacts are multimodal, multimodal representational analysis is adopted for data analysis. This strategy can reveal the representational value of text regarding constituent semiotic resources and text arrangement. In this paper, the analysis of multimodal texts involves two stages. The first stage involves the determination of representational variations (the number of different representation types) in the science artifacts. The second stage involved figuring out the semiotic richness of the designed artifacts. After these two stages, it is observed how gifted students use various representational choices to demonstrate scientific knowledge creatively.

***Representational Variations***

The representational variations are determined in the following way: Representations are first categorized as linguistic (written language) and non-linguistic representations. Next, the non-linguistic representations are classified into three groups: iconic/symbolic, schematic, and mathematical (i.e., charts and graphs). According to Lemke (1998), iconic representations are signs that have a physical resemblance to their referents for example, images representing walking or turning right. Further, these representations can signify processes, participants, or circumstances in which they maintain a similar physical structure. O'Grady and O'Grady (2008) state that symbolic representations are abstract signs that are based on socially generated symbol systems and do not have any physical or structural resemblance to what they represent. For example, the symbol for *nuclear*

*danger* is a symbolic representation that does not have any physical resemblance to the referent. Secondly, schematic representations function to "identify components and represent hierarchies, and flow of processes" (Gebre & Polman, 2016, p. 2674). Flowcharts and organizational charts are viewed as exemplary cases of this kind of representation. Finally, charts and graphs are representations that demonstrate the quantitative relationships between entities or participants. Gebre and Polman (2016) also state that this kind of representation is good for concretizing abstract data. Examples of this category are line graphs, pictographs, tables, or bubble charts. The variety in the deployment of these representations and their types is an indicator of creativity in the designed artifacts.

### *The Dimensionality of Representation as a Parameter of the Semiotic Richness of Representations*

Figuring out the dimensionality of representation starts with determining the communicative functions of each type of non-verbal representation in the artifacts. This is done by describing the purpose of each representation in terms of how much information or knowledge it demonstrates. In other words, for what purpose does each representation stands for? Does the used representation provide different information or repeat the same information with another representation deployed in the artifact? Gebre and Polman (2016) express that these questions can be answered by determining what information or knowledge is communicated with each representation within the artifact. This data helps to figure out if the used representation provides new information or repeats information presented by other verbal or non-verbal representations in the artifact. The dimension is viewed as an "aspect of the represented topic that is communicated by one type of representation." Therefore, the higher number of dimensions refers to the efficient and economic use of representations or semiotic resources in a non-repetitive (redundant or parsimonious) way for the construction of scientific knowledge in the artifact.

The dimensionality ratio is calculated by dividing the number of non-verbal representations (D) by the total number of non-verbal representations [R(f)]. The dimensionality ratio ranges from less than 1, equal to 1, and greater than 1, which means that one or more of the used representations communicate more than one piece of information. In addition, as mentioned above, semiotic richness is seen as the effective and creative use of representations. The creativity aspect deals with the use of various types of verbal and non-verbal representations that communicate different types of information or knowledge. Therefore, the dimensionality ratio is an indicator of semiotic richness, which refers to the creative deployment of various representations. Therefore, creativity is both related to variations in representational choices and the effective use of these choices in demonstrating scientific knowledge. As such, artifacts that have a dimensionality ratio equal to or greater than 1 are considered creative. What is more, these representations complement and cooperate with each other to construct a unified and complete representation of scientific knowledge. Such a construction of a multimodal artifact engages creativity in design since the text does not include parsimonious, distinct but related representations, and uniqueness across representations demonstrates a whole message. Regarding the above-mentioned strategy presented by Gebre and Polman

(2016), a multimodal representational analysis chart is developed (see Figure 1). The chart is used to analyze the multimodal representational choices and creative deployment of them in artifacts. The chart provides quantitative data about one artifact's representational variety and semiotic richness.

**Figure 1**

*The Chart for Multimodal Representational Analysis of Artifacts*

| **Verbal Reps.** | | **Non-Verbal Representations** | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | ***R(f)*** | ***Representation Type*** | | | ***Iconic/ Symbolic*** | ***Schematic*** | ***Graph/ Chart*** |
| ***Related*** | ***Non-Rel.*** | | ***1*** | ***2*** | ***3*** | | | |
| | | | | | | | | |
| ***Number of Dimensions (D)*** | | | ***Dimensionality Ratio (D/R)*** | | | | | |
| | | | | | | | | |

## Trustworthiness

To determine the reliability and validity of the data analysis tool, the following procedure was followed: In parallel to Smith et al. (2013) and West et al. (2013), the tool for semiotic and representational analysis was developed, and to test the reliability of the tool, the procedure of Rui and Feldman (2012) was followed. Observation criteria and codes of the observation criteria, as previously mentioned, stem from the multimodal semiotic analysis and empirical study of Gebre and Polman (2016). Therefore, the primary criterion for the validity of the tool is the theoretical and empirical basis of previous research in multimodality and creativity. The reliability of the data analysis tool is tested by intra-rater and inter-rater reliability procedures. For intra-rater reliability, the same researcher analyzed two texts at two distinct times (a one-week gap). For inter-rater reliability, two researchers, who are experienced in the field, analyzed the same two texts and made a comparison for the similarity and consistency among the given categorical codes. I employed Cohen's Kappa test to see the consistency and similarity between codes. Intra-rater and inter-rater reliability scores are given in Tables 1 and 2 below.

**Table 1**

*Kappa Results of Intra-Rater Reliability*

| | Verbal Relation | No Different Representations | Representation Types | Frequency of Representations |
|---|---|---|---|---|
| Text 1 | .878 | .839 | .726 | .863 |
| Text 2 | .859 | .816 | .841 | .875 |

**Table 2**

*Kappa Results of Inter-rater Reliability*

| | Verbal Relation | No Different Representations | Representation Types | Frequency of Representations |
|---|---|---|---|---|
| Text 1 | .678 | .749 | .736 | .843 |
| Text 2 | .759 | .846 | .731 | .865 |

## Findings

The analysis of texts is done in both quantitative and qualitative aspects. In the first part, quantitative data is presented. The quantitative data includes (1) frequencies of representational choices in all artifacts, (2) frequencies of artifacts regarding included non-verbal representations, (3) frequencies of deployed non-verbal representation types, and (4) dimensionality ratios of the non-verbal representations. The first three monitor the variety in the representational choices and, therefore, address the first research question. The latest indicates the semiotic richness that functions to answer the second research question. In the second part, four exemplary cases of student texts are demonstrated and qualitatively analyzed. In Figure 2 below, the frequency of representational choices for all 31 artifacts is represented. Data demonstrates that there are a total of 389 representational choices, and among these choices, 151 of them are verbal representations, which corresponds to 39%. 15 of these verbal choices are not related to non-verbal representation. Being related means that verbal information complements another representation or simply repeats others. Data demonstrates that 238 (61%) of the representational choices in all artifacts are non-verbal, including symbolic/iconic, schematic, or mathematical (graphs, charts, etc.) representations. Almost all verbal and non-verbal representational choices are related to each other in constructing scientific knowledge. This demonstrates that verbal and non-verbal representations complement each other when demonstrating information. In a different view, language mode and visual imagery mode are generally interacted with and integrated into designed artifacts.

**Figure 2**

*Frequencies of Representational Choices in All Artifacts*

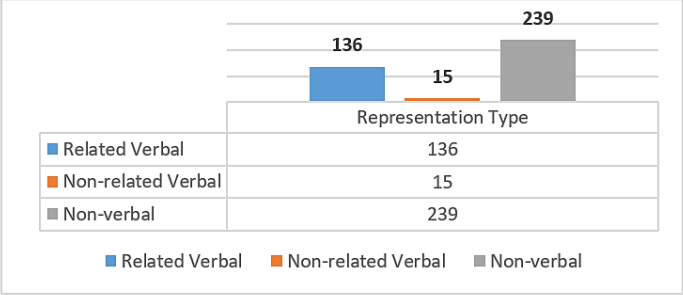


Figure 3 below demonstrates the frequency of artifacts in terms of how many different non-verbal representation types they include. 20 of the 31 texts are included with one type of non-verbal representation and one type of verbal representation. This data demonstrates the variety of non-verbal representational choices in artifact designs. It can also be said that the deployment of representation types is somehow dependent on the subject or the topic. Since the subject of the solar system does not involve, for example, many symbols or icons in comparison to the subject of kinetic energy, the designs involve limited icons or symbols. What is more, since the subject is observable phenomena, students mostly opt to draw these phenomena schematically.

**Figure 3**

*Frequencies of Artifacts Regarding Included Non-Verbal Representations*

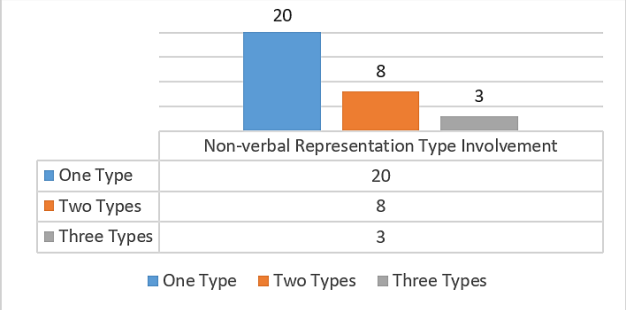



Figure 4 below displays the frequencies of deployed non-verbal representation types in all artifacts. 73% of the non-verbal representations are schematic, 24% are iconic or symbolic, and only 3% are mathematical representations, including charts or graphs. As stated early, schematic representations depict realistic physical phenomena as closely as possible to the referent. Students mostly preferred to demonstrate the solar system and states of the moon as they are shown and as they see them in daily life. The low amount of use of mathematical representation is due to the absence of quantitative or mathematical relations between the entities taking place in the subject matter. Students are expected to demonstrate the physical utterances in their way of understanding, and any information, including, for example, a mathematical comparison of sizes, is not required. Nevertheless, some students demonstrated the distances between the planets and the sun and compared them with mathematical representations. The iconic or symbolic representations mostly include icons for stars, mathematical signs, or icons demonstrating humans. Icons are generally used instead of verbal representations in schematic representations. For example, students drew sticky human icons rather than writing humans next to schematic representations. This result demonstrates the variety in the use of representation types and semiotic resources in different modes, which is an indicator of creativity in the designs. All the designed artifacts involve at least one non-verbal representation, which means that in externalizing scientific knowledge, multimodal artifacts are designed in accordance with the multimodal discourse of scientific knowledge.

**Figure 4**

*Frequencies of Deployed Non-Verbal Representation Types*

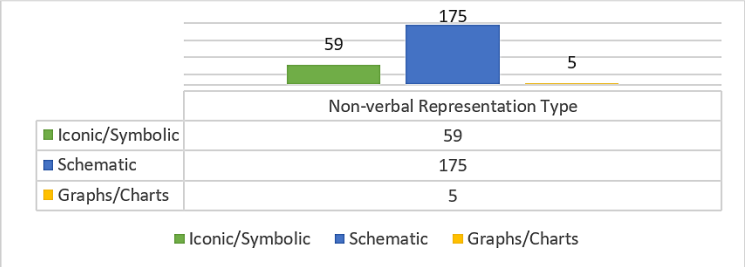



Table 3 shows the frequency of non-verbal representations deployed in all artifacts regarding the dimensionality ratio. After the analysis of each piece of information demonstrated by each verbal and non-verbal representation, it was concluded that whether a non-verbal representation repeats the information that existed in another representation (including verbal representations), demonstrates one piece of information that is not demonstrated by another representation in the texts, or demonstrates more than one piece of information, After obtaining this data, the dimensionality ratio for each representation is calculated. Data demonstrates that 23 non-verbal representations have a dimensionality ratio below 1. 123 representations have a dimensionality ratio that equals 1. Dimensionality ratio 93 of non-verbal representations is calculated as greater than 1. This means that these representations creatively demonstrated more than one piece of information. Semiotic resources in such kinds of representations are deployed in a way to demonstrate various information, such as the state of the moon and how it is seen by humans. These representations are generally included with metaphors such as the smiling sun. Exemplary cases for these representations are given in the next section.

**Table 3**

*Dimensionality Ratios of the Non-Verbal Representations*

| Ratio | Frequency of Representations |
|---|---|
| 1> | 23 |
| 1= | 123 |
| 1< | 93 |
| Average | 1.07 |

## Exemplary Cases for Student Designs

This part includes the analysis of exemplary cases. As stated earlier, student design after the teacher's instruction is a moment of resemiotization of content where students demonstrate what they learned in line with their interests and abilities. The exemplary artifacts are chosen in a way to demonstrate various cases regarding verbal representation

relevancy, non-verbal representation types, and the dimensionality ratio of representations.

**Figure 5**

*Exemplary Student Multimodal Science Artifact 1 and its Translation to English*

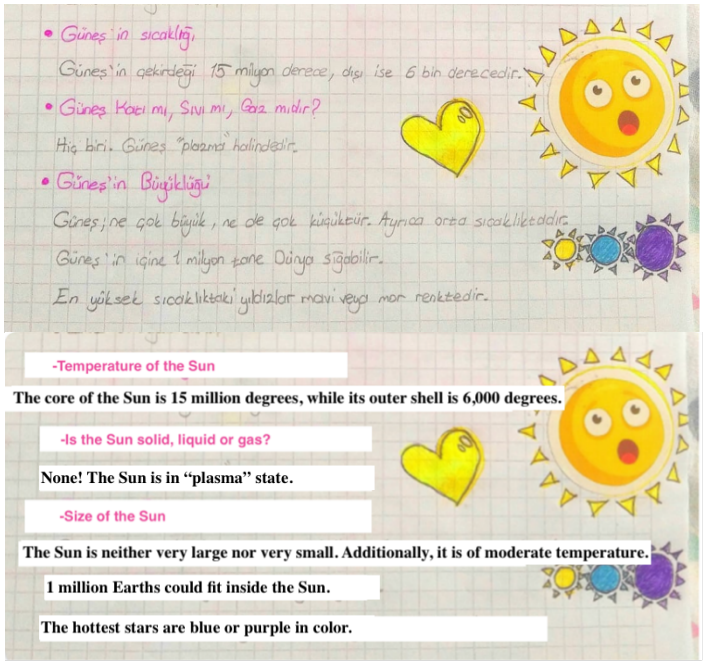



Figure 5 above shows an artifact that includes verbal and non-verbal representations to show information about the sun. The verbal representations include information about the temperature of the sun, the matter state of the sun, and the size of the sun. This text includes only schematic, non-verbal representations. The first non-verbal representation is the heart-shaped yellow metaphoric representation, which is unrelated to verbal information. This non-verbal representation can be seen as a decorative semiotic resource (Carney & Levin, 2002). The second non-verbal representation is a schematic representation that metaphorically depicts the shape and high temperature of the sun. By using a human emoji, it is depicted that the sun is quite hot. Since it provides information that does not exist in verbal representations, its dimensionality ratio is one. The last non-verbal representation gives information that compares the shape of the stars with their temperature. Again, since this representation repeats the information embedded in the last verbal representation, the dimensionality ratio of the artifact is below one.

Figure 6 is an exemplary case showing how the multimodal representational analysis chart is used to analyze the representational choices and dimensionality ratio (semiotic richness) of this artifact.

**Figure 6**

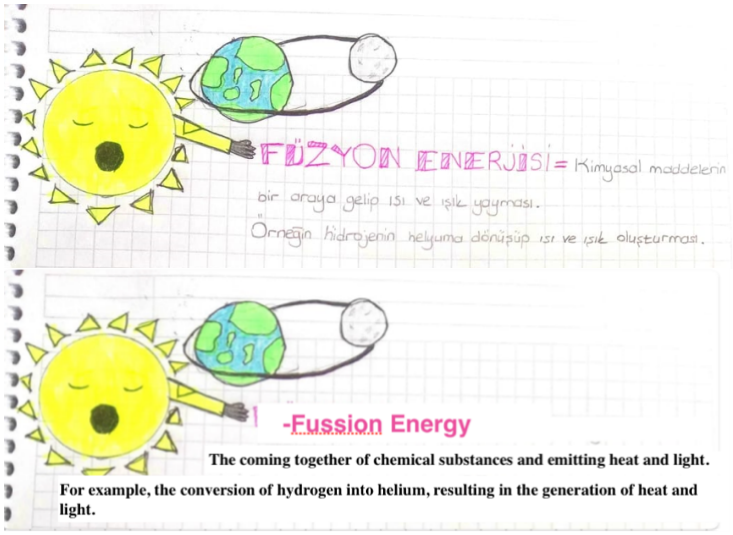
*An Exemplary Measurement of the Semiotic Richness of an Artifact*

| Verbal Representations | | Non-Verbal Representations | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 5 | | *R(f)* | *Representation Type* | | | *Iconic/ Symbolic* | *Schematic* | *Graph/ Chart* |
| *Related* | *Non-Related* | 5 | 1 | 2 | 3 | 5 | - | - |
| 5 | 0 | | X | | | | | |
| *Number of Dimensions (D)* | | | *Dimentionality Ratio (D/R)* | | | | | |
| 6 | | | 6/5-1.2 | | | | | |

The artifact includes five verbal representations at the sentence level, and all of them are related to other representations. Five non-verbal representations are iconic or symbolic. The three celestial bodies demonstrate the Sun and other planets and how the Sun heats these plants. The bigger sun image demonstrates the bigger temperature and size of the sun. The heart icon demonstrates that “the Sun is good for us." The heart icon and three celestial bodies demonstrate one piece of information, and the bigger sun image shows two pieces of information. One piece of information is the size of the Sun, and the second is the amount of temperature. Therefore, the number of dimensions is 6. The dimensionality ratio is 1, and the information or knowledge is demonstrated through the creative design of the artifact.

**Figure 7**

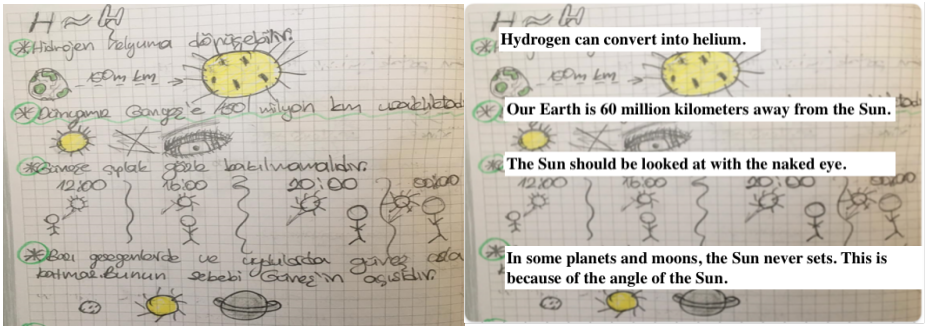
*Exemplary Student Multimodal Science Artifact 2 and its Translation to English*



The artifact in Figure 7 is designed in a creative way to demonstrate how the sun generates light. The verbal representations demonstrate how the fusion process takes place, and no information is given about the sun or the solar system. The non-verbal representation demonstrating the sun includes semiotic resources that show information in the following: First, the representation shows the shape of the sun and how it emits light through the arrowed tringles surrounding the shape. Second, the information shows the sun involves fusion processes for generating light and heat. This is achieved with a pointing metaphoric hand, which signs possess. The possession is also demonstrated by the emoji, which refers to presenting. Finally, information that shows the sun emits light and heat onto the earth and the moon circles the earth The yellow sun representation involves three pieces of information, so its dimensionality ratio is 3. The variety in the use of different representations is high. The representation including the earth and the moon demonstrates one piece of information that is not included by another representation, and, therefore, the dimensionality ratio is 1. Overall, the text provides information on how the sun generates light and heat by emitting light and heat onto the earth and the moon.

**Figure 8**

*Exemplary Student Multimodal Science Artifact 3 and its Translation to English*

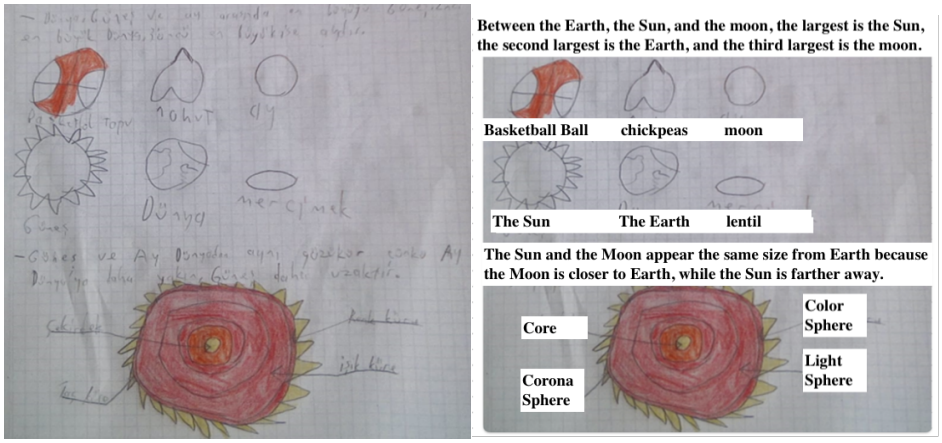



The artifact in Figure 88 above involves verbal and non-verbal representations. The first verbal representation is related to the two icons positioned above. The verbal representation implies that “hydrogen can be transformed to helium." In the non-verbal representation, the hydrogen icon is related to the helium icon, which is demonstrated mistakenly but differentiated with boldness and related to the word in the verbal representation. These non-verbal representations are symbols and have a dimensionality ratio below one since they repeat the information of the verbal representations. The second verbal representation engages information about the distance of the earth from the sun. The accompanying non-verbal representation includes mathematical and schematic signs and repeats the information within the verbal representations. Therefore, the dimensionality ratio is below one. The third verbal representation involves the information that “humans should not directly look at or gaze at the sun." This information is repeated with a schematic representation above. Below the verbal representations, four sets of representations are designed, and these are demonstrated when a person can

directly gaze at the sun. Without any verbal data, hours of the day are demonstrated, and the action of “a person can gaze at” is demonstrated through metaphoric human gestures involving rising and falling arm gestures. This information is given without verbal data. Humans are demonstrated through sticky icons and provide two pieces of information: “the gazing human” and “allowance for gazing." Therefore, these representations have a dimensionality ratio greater than one. The fourth verbal representation involves the information that “on some planets, there is no sunset due to the sun's positioning angle." Below this verbal data, the physical description is depicted through schematic representations. Since the non-verbal representation repeats the information, the dimensionality ratio is below one.

**Figure 9**

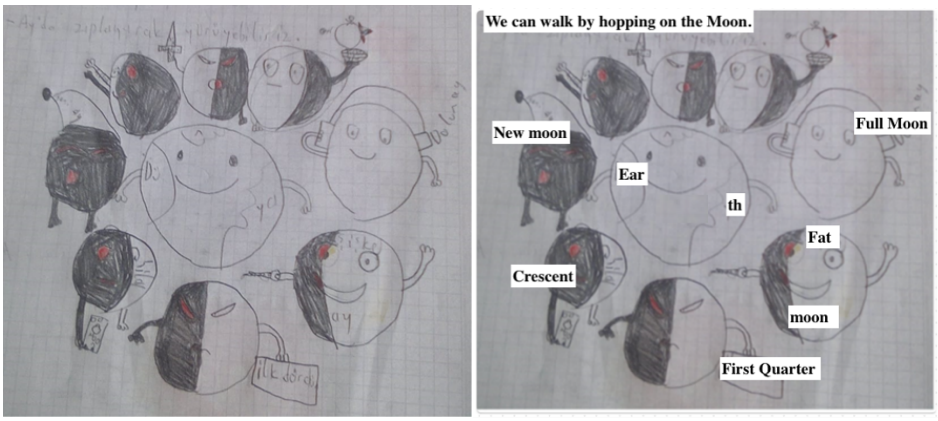
*Exemplary Student Multimodal Science Artifact 4 and its Translation to English*




The artifact in Figure 9 above involves verbal and non-verbal representations. Overall, the text gives information about the comparison of the sizes of the Sun, the Earth, and the Moon. In the first verbal information, it is given that the sun is larger than the Earth, and the Earth is larger than the Moon as well. To make this comparison more concrete, an analogy is made through schematic representations below the verbal representations. The sun is likened to a basketball ball, the earth is likened to chickpeas, and the moon is likened to a lentil seed. Since these representations provide new information about the sizes, their dimensionality ratio is equal to one. Next, verbal data provides information that the Sun and the Moon are both visible from the Sun since the Sun is quite bigger than the Earth and the Moon is quite closer to the earth. No non-verbal representation is related to this information. The last non-verbal representation is a schematic representation that depicts the structure and layers of the sun and is labeled with words. Its dimensionality ratio is greater than one since it gives information about the layers and their shapes.

**Figure 10**

*Exemplary Student Multimodal Science Text 5 and its Translation to English*




The artifact in Figure 1010 above includes non-verbal representations and labeling words. The text visualizes the states of the Moon through metaphoric schematic representations, including icons, in a humorous way. Being enlightened is demonstrated as a relaxing and good state. For example, the full moon is depicted as happy and relaxed, listening to music, while the full eclipse is depicted as angry and worried. The crescents are demonstrated in different emotions, and as they approach being fully eclipsed, they lose their comfort. This artifact creatively demonstrates the states of the Moon funnily and depicts this planetary process in a child's way of understanding and showing interest in the design choices.

## Discussion and Conclusion

This study explored creativity in artifacts designed by gifted students in terms of representational choices within the social semiotics multimodal perspective. Creativity is seen as a core trait of gifted students (Kaufman & Sternberg, 2008), who are expected to yield creative learning products in the science classroom (Demetrikopoulos & Pecore, 2016). Some scholars (e.g., Besançon, 2013) remark that creativity in the classroom is viewed as doing something in a new way of doing science. This study embraced a similar view to Starko (2014, p. 25), who proposes that "at its most basic, creativity involves the generation of a new (idea, artwork, invention, etc.) that is appropriate in some context," and the context here is the science classroom involving discourse of science. What is more, the approach of the study is similar to Bock's (2016) in evaluating creativity in student-generated artifacts regarding the variety of representational choices. This study bridges two perspectives, which are social semiotic multimodality and the system approach to creativity, for exploring creativity in artifacts designed by gifted students. Results demonstrate that gifted students in this research have big potential for using

various representations in various modes to demonstrate internalized representations as externalized learning products. The results first demonstrate that written language is not the dominant mode in the demonstration (or resemiotization) of scientific knowledge in artifacts. The use of schematic representations helps students visualize what resides in their minds and imaginations. In this regard, the non-representational choices help contextualize the demonstration of scientific knowledge. It was also observed that the symbolic signs generally stemmed from the discourse of science or the multimodal discourse of science. The mathematical mode and the innate symbols (Tang et al., 2011) are used to demonstrate the quantitative relationships taking place between entities or participants in information pieces. Therefore, if there is no quantitative relationship in the information piece, it is natural not to use graphs or charts in the artifacts.

Airey and Linder (2009) note that comprehension of the discourse of science and its language, which includes specific symbols, is a sign of being competent in that field. What is more, the depictions where scientific knowledge is adapted to daily life or real context can be seen as a sign of the re-contextualization of scientific knowledge. Further, it can be said that the collaborative deployment of symbolic and iconic representations enables students to demonstrate scientific knowledge more creatively. This can be considered an increase in the epistemic and aesthetic value of the representations in the artifacts. In this position, quantitative data yields that the representations designed by participants in this study are found to be sufficient to be evaluated as they demonstrate scientific knowledge through the creative deployment of representational choices. One more point is that, although one teacher instructed the same content, student designs have different features, including representational choices and the use of semiotic resources (i.e., color, shape, size, etc.). This finding is similar to that of Jewitt et al. (2001), who demonstrated that although a science teacher instructs students on the content with the same semiotic text structure and meaning-making resources for all students, students' designs or externalized learning products differed regarding the abovementioned representational features. In the context of this study, this situation can be attributed to the existing internalized structure of the content and the different creative potentials of the students who participated in the study. This situation is parallel to the proposition of Bock (2016), who states that multimodal design extends the space for creativity by enabling students to use various semiotic resources and modes for demonstrating their knowledge according to their interests.

In conclusion, artifacts designed by gifted students in the socio-cultural setting of a science classroom are the products of creative action, and their creativity is assessed regarding the multimodal discourse practices of the science classroom. The artifacts designed by gifted students were analyzed and it was observed that the variety and efficiency in the use of representations in different modes are high which is considered an indicator of creativity in the design of the artifacts.

## Implications for Gifted Education

Learning products as artifacts are designed by choosing and deploying semiotic resources for meaning-making. In this respect, creativity can be explored by analyzing these

resources pertinent to disciplinary discourse in the classroom. Moreover, other semiotic resources such as color, alignment, or syntagmatic choices in design can be analyzed within this approach for precisely analyzing the creative resources in student designs. The method of this study can be further extended to other student designs in different disciplines and other subjects in the science classroom. Moreover, the social semiotic multimodal perspective and multimodal pedagogy may explore other elements, or A's of creativity, in the socio-cultural setting of the gifted science classroom.

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# Üstün Zekalı Öğrenciler Tarafından Tasarlanan Ürünlerde Yaratıcılığın Değerlendirilmesi: Sosyal Göstergebilimsel Çokmodlu Bir Bakış Açısı


## Öz

*Yaratıcılık, üstün zekalılığın temel bir özelliğidir ve bu nedenle yaratıcılığın değerlendirilmesi önemli bir yere sahiptir. Sosyo-kültürel bakış açısı yaratıcı ürünün ortaya çıktığı sosyal çevrenin tüm unsurlarını dikkate alır ve bu ürünün değerlendirilmesinde bu unsurları dikkate almanın gereğini vurgular. Üstün zekalı öğrencilerin sınıflarını sosyo-kültürel bir bağlam olarak ele alan bu çalışma, sınıfın çokmodlu söylem pratiklerini göz önünde bulundurarak üstün zekalı öğrenciler tarafından tasarlanan tasarımlardaki yaratıcılığın değerlendirilmesine sistemik bir yaklaşım getirmeyi amaçlamaktadır. Nitel betimsel bir yöntem kullanılmış ve on altı beşinci sınıf üstün zekalı öğrenci araştırmaya katılmıştır. Veriler, katılımcı tasarımları aracılığıyla toplanmış, çokmodlu ve göstergesel zenginlik analizi ile analiz edilmiştir. Sonuçlar, analiz edilen metinlerin çoğunlukla göstergesel açıdan zengin bulunduğunu ve değerlendirme aracının üstün zekalı öğrencilerin fen sınıfının söylem doğasına göre tasarımlardaki yaratıcılığı değerlendirmede etkili olduğunu göstermiştir.*


*Anahtar Kelimeler:* çokmodlu tasarım, sosyal göstergebilim, tasarım, üstün zekalı öğrenciler, yaratıcılık

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# An E-Reflective Hybrid Professional Training for In-Service Teachers

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**Abstract**

*This qualitative case study aims to analyze how an E-Reflective Teaching and Learning Hybrid course is experienced by in-service English language instructors in terms of particular teaching skills, perception, and practice of reflection at the tertiary level. The implementation and evaluation stages of this course involved two different data sources (instructors' opinions and recorded lessons) and six data collection tools (interviews, discussion forum questions, trainer's reflection forms, instructors' reaction forms, instructors' reflection forms, and peer observation forms). The findings showed this course made a noticeable difference in the participants' target teaching skills and the understanding and skill of reflection. This study sets itself up as a model for trainers and instructors who aim to improve themselves through reflective practice.*

*Keywords*: e-reflective practice, hybrid, teacher development

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## Introduction

Professional development is indeed life-long learning, and "reflection is central to all learning" (Bruner, 1960, as cited in Ray & Coulter, 2008, p. 7), which sets an inextricable bond between reflection and professional development. Activities aimed at professional training result in success as long as they allow participants to reflect (Harris, 2016). It is argued that an effective teacher is a reflective teacher (Brandt, 2008; Dinçer, 2022). Thus, reflection has become a mainstream method in many teacher-development programs (Ottesen, 2007), particularly for the development of English language teachers since the early 1990s (Farrell, 2019).

Despite its prominent role in teacher training and education, there is not a standard definition of reflection (Vonti et al., 2023) since what exactly it is composed of is not fully known (Clara, 2015). Some take its literal meaning in Latin (reflectere, that is, look back), downgrading it to a process of merely looking back on what happened in

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the classroom, why it happened, and what else could have been done (Cruickshank & Applegate, 1981); and for some, beyond the classroom experiences, it includes broader components like revealing the tacit pedagogical beliefs of teachers and the moral contexts of schooling (Jay & Johnson, 2002; Quinton & Smallbone, 2010; Ulla, 2022). Rodgers (2002) also considers it a meaning-construction process through which individuals move forward from the trenches of practice to the theoretical comprehension of what they actually do. Procee (2006) attributes this variety to the different philosophical perspectives: pragmatic and critical. For the pragmatists, reflection aims to make an individual aware of his or her actions, and for the critical perspective, it paves the way to question the existing values, beliefs, and practices to free individuals from their settled limits and encourage them to explore the new. Considering the diverse outputs of reflection, many scholars have categorized it in terms of its depth. Farrell (2019), for example, argues that there is a "weak form," which refers to common-sense reflection, and a "strong form," which helps teachers make informed decisions about their teaching. Leijen et al. (2012) also order reflections in terms of their quality: description, justification, critique, and discussion. Descriptive information is at the lowest level, with statements just explaining what happened. In the justification stage, participants explain the reasons for their actions and beliefs. The critique stage consists of both explanation and evaluation. The highest level, discussion, covers all the previous stages and provides novel ideas and solutions to make changes in practice.

Distinguishing the difference between "reflection" and "reflective practice," Bolton (2010) states that reflection is a cognitive process that forms an integral part of practice rather than being viewed as a technique or an element of the curriculum. It is a state of mind that involves a continuous, active evaluation of one's experiences, beliefs, and actions in order to gain insights and improve one's professional development. The practice of reflection, on the other hand, can facilitate learning among practitioners, allowing them to draw insights from their experiences and understand more about themselves, their work, the dynamics of their relationships with significant others, and the broader society and culture in which they operate. The diversity in the interpretations of "reflective practice" and "reflection" demonstrates itself in the professional practices as well. Thus, Farrell (2019) argues that "reflection" and "reflective practice" are used interchangeably in literature as they both refer to the same meaning. Research clearly shows that numerous methods have been employed in professional reflective practice. Some of the methods through which teachers are encouraged to engage in reflective practices are reflective journals (Yee, 2022), anecdotes (Loughran, 2002), narrative inquiries (Johnson & Golombek, 2002), coaching (Mathew et al., 2017), and collaborative diaries (Richards, 2004). Technology also has a role in fostering teachers' reflective practices (Burhan-Horasanlı & Ortaçtepe, 2016). Unlike the traditional written way of reflecting, thanks to the advantages of multimedia instruments, reflective practice has become more convincing, data-led, and concrete (Mann & Walsh, 2015; Nagro, 2022).

Reflective practice in the field of English language teaching (ELT) has become an orthodoxy, and almost no professional would dispute its value (Sarab & Mardian, 2022; Walsh & Walsh, 2015). Ur (1996) underscores the importance of reflection in ELT by stating that teachers with twenty years' experience may be divided into two categories:

those with twenty years' experience and those with one-year experience repeating it twenty times. The numerous benefits of reflective practices such as promoting an action plan, identifying the points to improve, looking from different angles, and attending to moral and ethical issues are also reported in a number of studies (Fakazlı & Gönen, 2017, Purcell & Schmitt, 2023). Through reflection, ELT instructors can also disclose the tacit theoretical sources of their practice, analyze and evaluate their current teaching, and make changes for their following classes (Pacheco, 2005). Yang (2009) believes that it improves critical thinking skills; Graus et al. (2022) and Korthagen (2004) claim that it is a method to help teachers investigate their professional identity; and Bolton and Delderfield (2018) state that it improves the reflexive analysis of instructional settings and boosts students' motivation (Rezapour & Fazilatfar, 2023). Mphahlele and Rampa (2015) state that reflective practice is a solution to increase professional confidence and expertise, and McAlpine et al. (2004) state that it is a reliable instrument for formative evaluation.

The aim of this study was to analyze how in-service English language instructors experience the *E-Reflective Teaching and Learning Hybrid* course in terms of the teaching skills of "managing talking time," "giving and checking instructions," and "making corrections and giving feedback" by reflecting on their teaching in an innovative way that blends reflection with various digital tools. This study also focuses on the participants' perceptions and practices of reflection. It has set both a framework and a roadmap for any English language instructor or trainer who would like to improve their teaching skills by embarking on such a reflective practice.

## Method

This is a qualitative case study in which the implementation and evaluation stages of the *E-Reflective Teaching and Learning Hybrid* course were closely analyzed. In this study, the case refers to the given course, the design and development of which are given below in detail, showing the process dimension of the case. With in-depth qualitative data, this research displays a more comprehensive and real picture of the target problem. This study focused on a single case since it is thought that it sets a roadmap for a larger class of cases (Gerring, 2007).

### Participants and Context

The type, purpose, and nature of a study determine which sampling scheme is more appropriate (Etikan et al., 2015). Convenience sampling, which is one of the non-probability sampling techniques, was selected considering the accessibility and proximity of the instructors to the researcher.

While the sample size is required to be large, especially in non-experimental studies, for case studies there is no such necessity. The determination of an appropriate sample size was guided by several key factors, including the research design, the number of participants to be concurrently monitored and measured, and the chosen data analysis methods (Büyüköztürk et al., 2018). Since only one researcher was expected to deliver

the course, considering the amount of collected data, the researcher worked with a group of eight instructors in this study taking place at the School of Foreign Languages of a higher education institution in Turkiye. As an invaluable asset to the study, there was a wide variety in the participants in terms of gender, age (between 38 and 55), nationality (two Turkish, two English, two Scottish, one American, and one Italian), and teaching experience (between three and 20 years of experience). This diversity was an invaluable asset to the study. The similarity among the participants was in terms of their experiences in professional development and technology. They had been involved in many professional training events like seminars and workshops, but not in such an intensive course focusing on reflection. None of them had received any training on educational technology, either.

At the university, each class consists of 17–20 students. The instructors can use the learning management system (LMS) of the institution and lecture capture software (LCS) to record every single lesson in high quality. The university has a Teacher Development Unit (TDU), which was established to provide in-service support and development to enable language instructors to achieve their full potential. One of the four trainers of the TDU was one of the authors of this article. All the participants voluntarily took part in this course and gave their consent to the trainer so that all their data from this course could be used for this research only.

## Design and Development of the E-Reflective Teaching and Learning Hybrid Course

Instead of creating a new instructional design model, the MRK Instructional Design Model (Morrison et al., 2011) was adopted. This model provided as a framework to develop knowledge that was systematically obtained from practice and supported by data (Richey & Klein, 2005).

### *Instructional Problems*

Based on the collaborative action involving regular lesson observations and feedback sessions, it was noticed by the TDU and the researcher that many instructors needed to improve certain teaching and reflective skills through a particularly designed teacher training. Three such skills were allocating more time to student communication, giving instructions, and error correction. Morrison et al. (2011) state that a participant who selects one or more options—to illustrate, a workshop or seminar—in fact states an expressed need. They openly expressed their need for this instruction by signing up for the *E-Reflective Teaching and Learning Hybrid* course once the flier for the course was released.

### *Learner and Context Characteristics*

Before the course started, the participants were asked a set of questions to elicit information about their experience in teaching, competency and confidence in using technology, and dedication to the course. The context characteristics of the course

involved the features of both face-to-face and online engagement. That's why, at the very beginning, it was deemed prerequisite to ascertain whether the participants had access to the internet and felt comfortable communicating electronically and participating in online discussions. They were also asked whether they could manage the LMS and lecture capture software of the institution since all the lesson observations and written feedback would be conducted via these online tools.

### *Task Analysis*

Considering the instructional need, the trainer received feedback from all the instructors working in the preparatory program of the institution. Thereby, certain teaching points were prioritized, and the target teaching skills were determined as follows: (1) teacher talking time vs. student talking time; (2) giving and checking instructions; and (3) error correction and providing feedback. Those points are also given priority by the Cambridge University CELTA Program (Certificate in Teaching English to Speakers of Other Languages).

### *Instructional Objectives*

Having determined the task analysis, the trainer worked with the TDU members in order to identify the instructional objectives, which would function both as a roadmap to solve the instructional need and concrete criteria in the assessment process (Dick et al., 2014). Table 1 displays the link between the three main content areas and six performance objectives:

**Table 1**

*Content and Performance Objectives*

| Content | Performance Objectives |
|---|---|
| 1.Teacher talking time (TTT) vs. student talking time (STT) | 1.The instructors will be able to<br>A. compare the ratio of teacher talking time and student talking time in their lessons to increase student involvement and production.<br>B. demonstrate the awareness of the time allocated for the students in his/her lesson to enhance learning. |
| 2.Giving and checking instructions | 2.The instructor will be able to<br>A. demonstrate the knowledge of giving clear instructions in his/her lesson to enable students to complete the tasks as required.<br>B. describe the ways of checking instructions in his/her lesson to ensure the students' roles and responsibilities. |
| 3.Error correction & providing feedback | 3.The instructor will be able to<br>A. analyze how they correct learners' mistakes while observing a lesson to increase the quality of student production.<br>B. evaluate the benefits of different strategies used when providing feedback in group discussions to enhance learning. |

### *Content Sequencing*

The order of the tasks was decided based on the natural flow of a lesson. If an instructor keeps on talking (Task 1) throughout a lesson, there could be no tasks for students; therefore, the instructor will not give any instructions (Task 2). If the students are not involved in any learning activities but listen to the instructor only, there will be no student production, which does not require any error corrections (Task 3). That is why the first priority was given to "reducing the teacher's talking time" (Task 1) and giving time for the students to do activities. The following focus was on "instructions" (Task 2). Once the students have started doing activities and exercises in the class, the instructor can get the chance to correct their mistakes and "give feedback on their performance" (Task 3).

### *Learning Strategies*

The instructional need, learner and context characteristics, task analysis, and objectives were taken into consideration when determining the learning strategies. Thus, this course presented the instructors with a variety of learning experiences: reflecting on their lessons twice, receiving written and oral feedback from the trainer and colleagues, observing other instructors' recorded lessons, accessing online resources and discussion forum questions, and joining the face-to-face input and feedback sessions. The instructors were given the chance to reflect on their lessons twice (one just after delivering their lesson and one after watching their recorded lesson). They were also asked to observe each other as of the second week of the course. Pseudonyms were used for the privacy of the participants. The schedule of the instructors watching their colleagues' recorded lessons is given in Table 2.

**Table 2**

*Peer Observation Schedule*

| Week 2 | Week 3 | Week 4 |
|---|---|---|
| Aleyna ←→Brian | Aleyna ←→ Linda | Aleyna ←→ Jenny |
| Ata ←→ Linda | Ata ←→ Jenny | Ata ←→ Giovanni |
| Betty ←→Jenny | Betty ←→Giovanni | Betty ←→Brian |
| Matthew←→ Giovanni | Matthew←→ Brian | Matthew←→ Linda |

Once the weekly task was released, it was planned to give access to the resources (articles, videos, webpages, etc.) related to the target point of that week on the LMS of the course. The instructors also answered the online discussion forum questions. The input and feedback sessions were held with all the participants. In those sessions, each instructor had the chance of

- increasing their awareness and knowledge of a particular teaching skill
- widening their perception of 'reflection' and various reflective practices

- sharing their self-reflection on their own lesson
- receiving feedback from the trainer
- receiving feedback from one of their colleagues who also observed his/her lesson
- giving feedback on the lessons they observed
- benefiting from the teaching experiences of their colleagues

***Designing the Message***

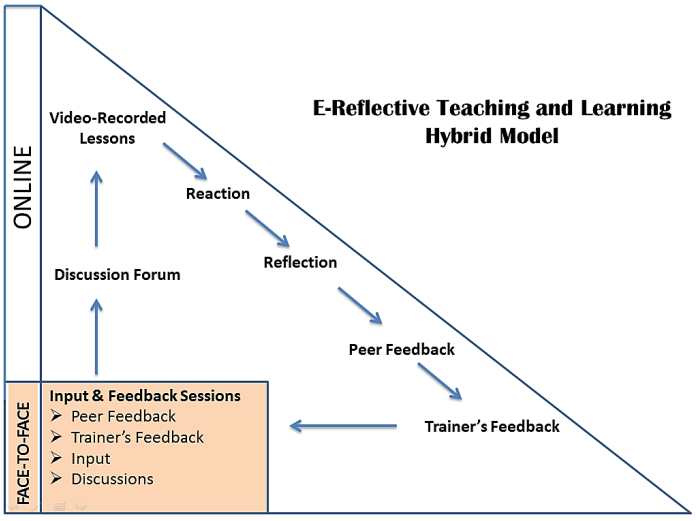
Designing the message is related to both the content and the factors that highlight and elucidate the intended messages by effectively using signal words, images, and graphics (Morrison et al., 2011). The researcher worked with a CELTA tutor and software expert when creating the content of the online course on the LMS and lecture capture folder so as to create manageable chunks on user-friendly platforms.

***Instructional Delivery***

The hybrid aspect of the course stemmed from the implementation of both online and face-to-face channels. The participants had their input and feedback sessions face-to-face and were totally engaged in online platforms and tools when observing their colleagues' recorded lessons, answering the discussion forum questions, and completing the reaction, reflection, and observation forms. The sequence and main components of the hybrid model in this course are displayed in Figure 1.

**Figure 1**

*E-Reflective Teaching and Learning Hybrid Model*



### *Assessment*

The nature of this course required a constructive and socio-constructive approach to the assessment, as there was no fixed solution or answer to the unique experiences or problems the instructors had in their lesson (Roberts, 2016). The trainer was not the source of the knowledge but a mediator between the participants in order to help them make sense of their teaching experiences (Johnson & Golombek, 2002). Another point related to constructivism is that the assignments and questions were open-ended for the participants to make their own interpretations (Çekiç & Korkmazgil, 2022; Fer, 2011).

## Data Collection Instruments and Processes

Evaluating the effectiveness of a course is an integral part of the training delivered. In order to evaluate the effectiveness of this course, it is focused on whether or to what extent there is progress in the instructors' perception of reflection and their target teaching skills. To do so,

- the instructors' answers to the discussion forum questions were analyzed.
- their responses in the pre and post course interviews were compared.
- the progress in the instructors' reaction and reflection papers was examined.
- the trainer's reflection papers focusing on the progress of the instructors' target teaching skills in their video-recorded lessons were looked into.

The data sources and data collection instruments are displayed considering the research questions in Table 3.

**Table 3**

*Research Outline*

| Research Questions (RQs) | Data Sources | Data Collection Instruments |
|---|---|---|
| How is the *E-Reflective Teaching and Learning Hybrid course* experienced by English language instructors in terms of<br>**1.** teaching skills involving<br>**1.1.** TTT (teacher talking time) and STT (student talking time)?<br>**1.2.** giving and checking instructions?<br>**1.3.** error correction and giving feedback?<br>**2.** perception and practice of 'reflection'? | Instructors' opinions | Semi-structured Interviews (RQ 2) |
| | | Discussion Forum Questions (RQ 1 & 2) |
| | Instructors' recorded lessons | Trainer's Reflection Forms (RQ 1) |
| | | Instructors' Reaction Forms (RQ 1 & 2) |
| | | Instructors' Reflection Forms (RQ 1 & 2) |
| | | Peer Observation Forms (RQ 1 & 2) |

### *Semi-Structured Interviews*

The participants were asked to answer a set of six questions in a semi-structured interview that was prepared by the trainer and a CELTA tutor. The questions aimed to reveal the instructors' current perception, beliefs, and knowledge of "reflection" at the beginning and end of the study (RQ 2). Some sample questions could be given as follows: "What do you understand by reflection?" and "What value does reflection have for your current or future career or life?" The interviews were recorded and transcribed when analyzing all the data.

### *Instructors' Reaction Forms*

The instructors' reaction form which was prepared by the trainer and other TDU members was the same for all the observations. The instructors completed this form just after delivering their lesson in order to reveal their first impressions and views on their lessons without filtering or focusing on a particular point. Some sample questions can be given as follow: "What went well in the lesson?" and "What changes would you make in the lesson?". The instructors were asked to submit their reaction forms before the reflection form with the purpose of the observation was released. They were not informed in advance about the purpose of the observations as it was aimed to see how they naturally teach. This form presented data for both research questions.

### *Instructors' Reflection Forms*

Once the instructors' reflection form prepared by the trainer and other TDU members was released, the instructors watched their own video-recorded lesson and reflected on their teaching with a particular focus. The template for each reflection form was different based on the observation task of the week (RQ 1) and involved various tasks like checklists, multiple-choice questions, gap filling, and open-ended questions. To illustrate, in the first reflection form, the instructors were provided with a guiding checklist to display who (the instructor or learners) talked and why (to ask a question, praise a student, make an explanation, talk to another learner, etc.) throughout the lesson. They were also asked to answer a set of multiple-choice and open-ended questions to deliberate on the use and amount of TTT and STT. The content of the instructors' reflection forms also displayed their understanding of reflection and the depth of reflective practice (RQ 2). In those forms, rather than searching for specific single answers, the focus was on the quality of reflection that the instructors provided due to the ill-defined structure of the reflection tasks.

### *Peer Observation Form*

The instructors were given the opportunity to take field notes freely when watching their colleagues' lessons, the purpose of which was to give them the chance to focus on other teaching points apart from the task of the week. This helped the instructors have a wider perspective when looking critically at their colleagues' lessons. Peer observations had two functions: one was to share their colleagues' experience in the class vicariously and derive

teaching-wise implications for themselves (RQ 1), and the other was to engage in reflective practice (RQ 2).

### *Discussion Forum Questions*

"It is important to remember that no matter which media formats are used…, the trend is to reduce the 'amount' of information delivered and to increase the 'interactive value' of the learning experience" (Simonson et al., 2015, p. 134). For that purpose, apart from the face-to-face interactions, the instructors were also encouraged to participate actively in the weekly discussion threads which aimed to reflect their skill of reflection figuratively (RQ 2) and also to evaluate and reflect on their teaching skills from different angles (RQ 1). These discussion forum questions helped the participants to (socio)construct a unique meaning of their own experiences. The weekly discussion forum question in week two was "What analogy can you suggest for your first lesson? And why?", in week three, "If your lesson was a movie, what kind of movie would it be? Starring who? Happy ending? Why?", and in week four, "If you had deliberately wanted to deliver a bad lesson, what would you have done differently?".

## Data Analysis

The primary objective of conducting data analysis is to obtain responses to one's research inquiries in a practical manner (Merriam, 2009). A content analysis was conducted when interpreting the qualitative data. In the process of the data analysis, the segments in the data set that were relevant to the two research questions were gathered through the six different data collection instruments. Rather than creating themes, in this study, the data were grouped based on the two research questions with regard to the data collection tools. This instrument-based approach prevented repeating the same or similar findings and presented a clear and convincing picture of the results because each research question was answered with the various data collected through various tools.

As peer debriefing refers to "the review of the data and research process by someone who is familiar with the research" (Creswell & Miller, 2010, p. 129), the researcher shared the data and his interpretations with a CELTA tutor. The tutor collaborated with the trainer of the course in the process of analyzing the reaction and reflection papers and also the participants' responses to the discussion forum questions. She already knew the process of the course as she took part in its design and also conducted a similar one a year ago. Maxwell (2005) states that the most appropriate way to eliminate any chance of misinterpreting what the participants mean is member checking. The researcher did member checks throughout the research, not merely at the end.

## Findings and Discussion

All six different data collection instruments presented findings that could be triangulated through different lenses. The results, which were put into two groups considering the two

research questions, demonstrated how the English language instructors experienced this course in terms of the target teaching skills and their perception and practice of reflection.

**Improving Teaching Skills**

Simonson et al. (2015) claim that with frequent online tasks, participants are kept alert and on task. In this study, the weekly discussion forum questions helped the instructors focus on their particular teaching skills and identify certain points to work on. This online platform also created dialogic interaction between the instructors and trainers (van Braak et al., 2018). One of the instructors, Giovanni, referred to "*a tennis match*" as the interaction pattern in his first lesson was limited to the teacher and students only. Another instructor, Aleyna, thought the instructions she had given in her second lesson were not clear enough; therefore, as a concrete example, she compared her lesson to "*a movie with subtitles in an unfamiliar language*." For the last discussion forum question, the instructors modeled what not to do in an ELT class, which, in fact, implies that they learned what to do instead. To illustrate, "*I would have given the materials first and then the instructions. I would have started giving the instructions before attracting everyone's attention and never used any other instruction-checking questions except for OK? Is it clear?"* (Instructor Betty). "*I would have corrected all the mistakes by myself instantly*" (Instructor Brain). Their responses reflected their progress in those three distinct teaching skills (interaction, giving instructions, and error correction). Choi and Morrison (2014) also suggested in their study that being involved in online discussions on their lessons and reflections fostered the instructors' professional development.

In order to complete the trainer's reflection forms, the trainer analyzed the instructors' reflections and their teaching practices in order to see whether they took their reflections and the feedback they had received on board. As examples, based on the analysis of Instructor Ata's recorded lessons, it was noticed that the TTT (teacher talking time) in his classes considerably decreased compared to the STT (student talking time) ratio. The TTT ratios were 51%, 47%, and 30%, respectively. It was also observed, both in his reflection forms and recorded lessons, that he managed to add a variety of interaction patterns to his teaching. When Instructor Betty's lessons were analyzed, it was noted that she had trouble with her boisterous learners, especially in her first lesson. As noted in the trainer's reflection form, in her first lesson, she did not ask any instruction-checking questions (ICQs). In her second lesson, she asked poorly formulated ones such as "*Do you have 5 minutes right?"* and "*First read your paragraph and then work in pairs. OK*?". In her third lesson, most of her ICQs were proper and clear, like "*Will you work in pairs or groups?"* and "*How much time*?" which was a sign of progress. The improvements in their teaching were evidence that their reflections were not only on paper but in practice as well, which demonstrated that the instructors had improved the target teaching skills. The trainer's reflection forms showed that reflective practice improved the instructors' particular teaching skills as displayed in previous studies (e.g., Gudeta, 2022; Gün, 2011; Nagro, 2022; Rozimela & Tiarina, 2017).

The instructors reflected their progress in the target teaching skills on their reaction, reflection, and peer observation forms. In the first reaction forms, they tended

to give superficial responses like "*I was able to achieve my aims*" (Instructor Brian) and "*The first part of the lesson went well*" (Instructor Ata), which Farrell (2019) refers to as "common sense" reflection as they are examples of weak forms of reflection. Towards the end of the course, thanks to the input and feedback sessions, the instructors gained the knowledge and skill of evaluating their particular teaching skills so that they could move forward to a strong form of reflection and make informed decisions (Farrell, 2019). Apart from becoming more aware of the points they needed to work on, they managed to provide solutions or alternatives such as:

> *Considering my students' attempts to do the activity at the beginning, I cannot say that my instructions were clear. Out of habit, I keep on asking Is it clear? Do you understand? This course proved how unreliable the answers to such questions are. Instead, I will definitely ask wh questions like will you work in pairs or alone? How much time do you have? How many words will you write in your paragraphs?* (Instructor Matthew)

> *For me, providing feedback to students was showing all my learners the accurate statements and correcting their sentences. However, in this course, I learned a new way of error correction and giving feedback: Student-centered error correction.* (Instructor Brian)

The reaction and reflection papers can be regarded as the output of teaching practice and deep thinking on focal teaching points. On these papers, the evidence of whether what the instructors had done in the class worked or not, the alternatives they suggested, and the realization they had achieved clearly showed that the instructors improved their target teaching skills.

**Changing Perception and Practice of Reflection**

In the interview held at the very beginning of the course, some instructors downgraded reflection to observing themselves without any purpose, justification, or reference to learners or learning contexts, like "*watching myself*" (Instructor Ata) and "*seeing yourself*" (Instructor Aleyna). Some also added the reason behind "watching" themselves, like "*thinking about in detail: the positive and negative effects on my learners" (*Instructor Matthew*).* Although the video recording reduced the stress caused by the feeling of being observed (Tuncer & Özkan, 2021), all these vague definitions may have brought about a sense of insecurity towards the course as the instructors described their initial feelings towards the course as follows: "*intimidating because you see yourself*" (Instructor Jenny) and *"I didn't want to do the course because I felt insecure about my personal things like voice* and *posture that you cannot hide"* (Instructor Linda).

By the end of the course, the instructors had developed a more comprehensive and accurate understanding of what reflection means. In their definitions given in the interviews held at the end of the course, they paid attention to "context," "learners," "when to reflect," and "action plans." For example, Instructor Ata referred to the holistic analysis of his teaching without limiting it to a single lesson (Farrell, 2019); Instructor Brian emphasized that reflection is a continuous process (Gözüyeşil & Soylu, 2014); and

Instructor Giovanni also focused on the connection between theory and practice in his revised definition (Fazio, 2009).

The scope and breadth of the instructors' reflective skills that progressed throughout the course were noticed in their reaction and reflection forms as well as in their performance in the input and feedback sessions. When the first reflection forms of the instructors and trainer were compared, it was hard to miss the great discrepancy in the pictures taken from the same lessons. The initial reflections of the instructors were limited to mere descriptions: "*I repeated the instructions twice*" (Instructor Jenny) and their personal judgments of the lessons; "*I didn't like that lesson*" (Instructor Ba), without a focus or justifying their responses. The close analysis of their reflections displayed progress since their reflections changed from superficial to in-depth ones (Leijen et al., 2012) throughout the course as they:

- involved the signs of reflection-for action, "*I will definitely avoid asking yes/no questions as ICQs"* (Instructor Linda).
- focused on learners or learning process instead of the instructor himself/herself "*When the students were given the role of a teacher when checking their friends' sentences, classroom management also became much easier*" (Instructor Jenny).
- referred to the previous and future teaching experiences or feedback received earlier, "*Though I had received feedback on it, I again forgot to check my instructions*" (Instructor Ba).
- justified the instructor's decisions and actions in the class, "*I gave the instructions first and then the materials. Otherwise, they would have stopped listening to me*" (Instructor Betty).
- reflected the instructor's critical thinking "*I should stop asking "OK?" many times. That was really annoying*" (Instructor Giovanni).
- provided alternative solutions to the points raised "*Student-centered error correction may work better* [as an alternative to the instructor's corrections]" (Instructor Brian).

As Gün (2011) stated, the instructors gained a more reflective eye as long as it was certain what areas they were expected to focus on when benefiting from the particularly designed reflection tasks and multimodal reflective tools like recorded videos. Those recordings provided multimodal, qualitative, rich, and thick descriptions (Schmid, 2011) in a non-threatening way (Rich & Hannafin, 2009), which increased the quality and depth of the instructors' reflections.

The answers to the discussion forum questions helped the instructors reflect on their lessons figuratively. With the analogies they produced, they added a critical and creative dimension to the self-reflection of their lessons. With the "*tennis match*" analogy, Instructor Giovanni implies his dissatisfaction with the interaction patterns and the ratios of TTT and STT in his first lesson. Instructor Ata likened his second lesson to "*a war*

*movie with samurai swords*," reflecting how challenging it was for him to give clear instructions and check them with proper ICQs. "Mr. Bean on Holiday" was Aleyna's movie for her third lesson, saying, "*Though I made mistakes, they were not fatal*." The selection of a comedy also denotes that the instructor does not feel "*nervous*" anymore, as a proof of her changing understanding of reflective practice. Yob (2003) also argues that metaphors serve well when explaining high-level abstract and complicated phenomena, which was also shown in this study as the instructors could reflect on their lessons in a unique way when they were asked to select an analogy to describe their lessons.

## Conclusion

All the data demonstrated that the *E-Reflective Teaching and Learning Hybrid* course made a difference in the instructors' target teaching skills and the perception and skill of reflection. The effectiveness and success of this professional development could be attributed to certain facts. First, it was a voluntary and needs-driven (Aydın et al., 2016) reflective practice that took place in an authentic context (McNeil, 2013; Nagro, 2022). Additionally, the instructors were always given continuous support and timely guidance (Glazer et al., 2005) to help them throughout the course (Keengwe & Onchwari, 2009). That help and guidance were also given by their peers in their role as "more knowledgeable others" (Vygotsky, 1978, as cited in Smith, 2013). The role and collaboration of the trainer and peers enabled a collaborative aura in this professional training (Darling-Hammond & Richardson, 2009), and it was based on first-hand experience through learning communities (Paulus et al., 2020). Moreover, the course was in line with the existing pedagogical practices of the participants (Olson, 2000). The six principles of reflective practice stated by Farrell (2019) were also implemented in this study. To illustrate, the course provided tangible proof of progress. (Principle 2: evidence-based), the participants were provided with a high quality of input involving theoretical knowledge and feedback based on their in-class performance and implemented what had been taught. (Principle 4: bridging principles and practices); and they were willing to learn and improve themselves (Principle 6: a way of life).

As in other studies, there may be some potential limitations in this research. First of all, one of the two data sources was the participants' opinions, so the reliability of the results was partly based on the honesty of the participants' responses. Another point is that, regarding the nature of the qualitative approach, this research was highly contextualized and aimed to explore the given case in depth; thus, all the data were collected from a single institution, which may be regarded as a factor reducing the generalizability of the results. Additionally, the participants had to follow the coursebook and syllabus provided by the institution, which means that they did not have the complete freedom to use any instructional material they wanted during the study. Though this course has a flexible structure that can be implemented in other institutions, there are certain recommendations to be followed. The digital infrastructure should not cause a strain on the trainer(s) or participants when reflecting on their teaching. Furthermore, the target teaching skills should be clearly identified, and the reflective practice is expected to focus particularly on those skills. Based on the experiences and findings, the *E-*

*Reflective Teaching and Learning Hybrid* course could be regarded as a model that can be implemented in many different institutions. With its theoretical foundations, instructional design, clear stages to follow, hybrid format, and formative and summative evaluation aspects, this reflective practice sets itself as a model for English language trainers and instructors who aim to improve themselves through reflective practice.

## Code of Ethics

This study has been approved by the Ethical Committee of Izmir University of Economics (Number: B.30.2.İEÜ.0.05.05-020-261).

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## Hizmet-içi Öğretmenlere Yönelik Yansıtmalı Hibrit Mesleki Eğitim

**Öz**

*Bu nitel çalışma, yükseköğretim kurumunda çalışan İngilizce öğretmenlerinin yansıtmaya yönelik bilgi, beceri ve algıları ile belirli öğretme becerileri üzerine verilen E-Yansıtmalı Öğretim ve Hibrit Öğrenme dersini nasıl deneyimlediklerini analiz etmeyi hedeflemektedir. Dersin uygulama ve değerlendirme aşamaları iki farklı veri kaynağı (öğretmenlerin düşünceleri ve kayıtlı dersleri) ve altı veri toplama aracını (görüşmeler, tartışma forum soruları, eğitmen yansıtma formu, öğretmen izlenim formu, öğretmen yansıtma formu ve öğretmen ders izleme formu) kapsamaktadır. Bulgular katılımcıların hedef öğretme becerileri ve yansıtmaya ilişkin bilgi ve uygulamaları üzerinde dikkate değer farklılık oluşturduğunu göstermiştir. Bu çalışma, kendilerini yansıtma uygulamaları ile geliştirmek isteyen öğretmen ve öğretmen-eğitmenleri için bir model olmaktadır.*

*Anahtar Kelimeler:* e-yansıtma uygulaması, hibrit, öğretmen gelişimi

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# Critical Engagement with Teacher Perceptions of Language and Communication

**Martin Dewey**[a]

**Abstract**

*In recent years, we have seen growing awareness of ELF principles and research, with extensive discussion of the relevance of ELF in all manner of educational settings. Nevertheless, it is also apparent that approaches to language awareness and analysis continue to be underscored by monolingualism and language ideologies. This paper re-examines some long-standing assumptions in language education about the perceived role of Native Speaker English (NSE), both as a pedagogic model and as a means of determining language competence. In doing so, I critically appraise the concept of emergent language, an increasingly influential idea gaining currency in language teaching methodology. As I have argued for some time now, to promote greater uptake of ELF pedagogic principles among practising language teachers, we must engage in critical discussion of the pedagogic impact of ELF in the curriculum for language teacher education. Only by facilitating the development of critical awareness can we hope to move beyond convention and enable teachers to adopt an ELF perspective. This paper is thus primarily concerned with two key questions: what do teachers need to know about language, and how do they respond to student language in the classroom? In order to address this, I will interrogate and offer alternatives to the manner in which knowledge about language is broadly oriented in language teacher education, which, when framed from an ELF perspective, is in need of substantial critical engagement.*

*Keywords*: English as a lingua franca (ELF), native speaker English (NSE), language teacher education, critical engagement

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## Introduction

Despite the growing awareness of ELF in recent years (see especially Bayyurt & Sifakis, 2015 on "ELF-aware pedagogy"), which continues to occur in all manner of educational settings, there is unfortunately extensive evidence to suggest approaches to language awareness and language knowledge continue to be strongly influenced by undercurrents of monolingualism and standard language ideology. My objectives in this paper are to address this apparent mismatch by re-examining the longstanding assumptions we make in language education about the perceived role of Native Speaker English (NSE) as both a pedagogic model and a means of determining language competence. In order to take

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stock of these assumptions, I will examine the concept of *emergent language*, a recently influential notion that has gained currency in language teaching methodology. I will be re-evaluating this concept from an ELF perspective, which entails developing a critical approach to thinking about language. As I have argued elsewhere (see, e.g., Dewey 2014), if we wish to promote greater uptake of ELF pedagogic principles among practicing language teachers, it is essential that we engage in critical discussion of these issues as part of the curriculum in language teacher education. In my view, it is only by promoting and facilitating the development of critical awareness that we can hope to move beyond conventional approaches and enable teachers to adopt an ELF-oriented perspective on language and communication. This critical awareness would need to be exercised in connection with several key areas of teacher decision making. These include: the question of language models (that is, *what kind of English(es) do teachers present in the language classroom*?); notions of language proficiency/communicative competence (or, *what do we expect language learners to be able to do with/in English?*); the nature of teacher language awareness and knowledge (so ultimately, *what do teachers need to know about language(s) in order to be effective practitioners?*), as well as ultimately in connection with questions relating to pedagogic methods and procedures for responding to students' use of language in the classroom. In this paper, I am primarily concerned with these last two matters: *what do teachers need to know about language* and *how do they respond to student language in the classroom?* In order to address this, I will first discuss the manner in which knowledge about language is broadly oriented in language teacher education (LTE), which, in my view, can be best framed from an ELF perspective as being in need of critical engagement.

## The Need for Critical Engagement in ELT

Over the past two decades or so, I have undertaken fairly extensive and periodic reviews (though not in-depth analysis) of the professional discourses in ELT, including at least a preliminary reading of methodology texts and handbooks/guides for teachers, course books and supplementary materials for pedagogy, as well as policy documents and related material. My purpose in engaging in these reviews is first and foremost to try and ensure I remain relatively informed about developments and current thinking in ELT, and then secondly to gauge to what extent there is uptake of ELF in any practice-oriented way (see, e.g., Bayyurt & Akcan (2015) on practice-based perspectives on ELF in language pedagogy). In particular, I have been especially interested in reading new editions of established volumes. To illustrate this, I will give as an example a comparison of Thornbury (1997) and Thornbury (2017). The first of these, *About Language: Tasks for Teachers of English* (Thornbury, 1997), was from the time of its first publication, a widely recognised text on language awareness. The aims of this first edition of the book were to present the reader with a series of language focused tasks designed to prompt teachers to think about language in an in-depth way and consider what they need to know about language in order to be effective English language teachers. The second edition of the book (Thornbury, 2017) sets out precisely the same aims, adopting a perspective on language that essentially remains unchanged from the first edition. In the introduction to the second edition, we can read the following:

> The assumption underlying this book is that teachers of English not only need to be able to speak and understand the language they are teaching; they also need to know a good deal about the way the language works: its components, its regularities, and the way it is used. It is further assumed that this kind of knowledge can usefully be gained through the investigation – or analysis – of samples of the language itself. Accordingly, the core of the book consists of sequences of tasks, the purpose of which is to raise the user's understanding of how language works, that is, to promote *language awareness.* (Thornbury, 2017, p. xv., italics in original)

What stands out from an ELF perspective are the sources of the language samples provided for each task, which disappointingly are a little different from the earlier edition. The note to the new edition includes recognition of the global spread of English, as well as explicit reference to ELF, which Thornbury (2017, p. xxi) acknowledges has meant "the whole notion of 'correctness' has been problematized." Thornbury explains that as a consequence of developments in ELF, this second edition of the book includes a chapter entitled "Varieties of English." However, this chapter is only very introductory in nature, is only one chapter out of a total of thirty chapters, and does not appear to have had any impact on either the language samples provided (all are as in the first edition from NES sources) or the approach to language awareness being adopted (see Dewey forthcoming for a detailed critical review of tasks included in the "Varieties of English" chapter). In short, we see that ELF is present in name but not in substance.

This continued orientation to nativeness and normativity is also extensively in evidence in the literature that deals with language teaching methodologies. Alongside the continued predominance of Task Based Language Teaching (TBLT) in discussions of English language teaching (ELT) methodology—and fairly related in terms of approach and ethos—the notion of "emergent language" has become a widely discussed topic area in ELT professional discourse. The concept is closely associated with the *Dogme* approach (see especially Meddings & Thornbury (2017) for a detailed account), in which lesson content is driven by the students, with language focus occurring in response to learner output rather than through pre-planned teacher input and instructional use of published materials, activities, and technology. Essentially, the term "emergent language" (in wide circulation in ELT methodology literature) is used to refer to students' use of language that "comes up" during the course of a lesson; in other words, language that occurs unpredictably in interaction among the learners and/or between the teacher and the learners. In short, the term is used to refer to any language students produce when communicating in class, typically when the focus of attention is on the freer speaking stages of a lesson rather than during more controlled language-based activities. From both a TBLT and Dogme perspective, the role of the teacher is to determine when and how to pick up on what the students say in order that their language use can become a focus in the lesson. The emergent language is thus seen to provide learning "affordances"—opportunities for teachers to exploit as a means of focusing on language in a responsive or reactive way. The term is defined by Anderson (2017) as follows:

> (Unplanned) language that arises naturally during the learning process, often produced or needed by learners, that is then focused on through clarification with the support of the teacher. (Anderson, 2017, p.226).

In principle, this clarification and support could come in several guises. One option would entail teachers highlighting and providing comments on effective language use to thereby make this available as a source of input for other learners in the class. Or, by contrast, teachers could provide feedback on language use deemed to be inappropriate or in need of some modification. In practice, discussion of responses to emergent language tends to be far more oriented towards the latter; in other words, teacher response to emergent language is predominantly framed in ELT discourse as unplanned language use that is dealt with in a corrective way.

This is, in large part, a consequence of a strong normative orientation to language ELT, with underlying standard language and monolingual ideologies that continue to exert influence on teachers' thinking. We see this is extensive evidence in methodology-oriented literature in the profession. The concept of *noticing* in TBLT, which entails teachers raising their learners' awareness of their use of language and "notice" its form, is a particular case in point. Discussion of noticing and form focus work in TBLT is predominantly framed in a corrective manner. This we can see in the following explanation.

> Focus on form involves reactive use of a wide variety of pedagogic procedures to draw learners' attention to *linguistic problems in context*, as they arise during communication in TBLT, typically as students work on problem-solving tasks, thereby increasing the likelihood that attention to code features will be synchronized with the learner's internal syllabus. Long (2015, p.317, my emphasis)

The key issue here is that the role of teachers in responding to student language is understood in relation to identifying 'problem' language or 'gaps' in the learners' linguistic knowledge. From a task-based and Dogme perspective, the evaluation of language use focuses more on the accuracy or supposed appropriateness of form than it does on the interactional outcome of language use. Similar to Long's account above, Nasaji (2016, p.536) describes the role of the teacher in responding to student language as giving "corrective feedback", which can be "generated implicitly or explicitly through negotiation and modification processes that occur during interaction *to deal with communication or linguistic problems*" (my emphasis).

Reference to and descriptions of such "linguistic problems" and "linguistic gaps" abound in ELT literature. In discussions of TBLT methodology and approaches, there is generally a strong emphasis on teachers engaging in strategies designed to draw learners' attention to what is either "problematic" (because it does not conform to the norm) or "missing" (because it is different from how an idealized native speaker might say it) in their output. This is characterized by Ellis and Shintani (2014) as follows:

> Such strategies help learners make the link between meaning and form: it includes learners' attention to the linguistic form required to convey the message the learner is trying to understand or to produce. It achieves this in three ways: (1) by means of 'negative evidence' (i.e. signaling to learners that something they have said *contravenes target language norms*), (2) by providing learners with 'positive evidence' that enables them to *notice the gap between their existing L2 system and the target language* system and (3) by pushing learners to modify *their own erroneous output.* (Ellis & Shintani, 2014, pp. 144-145, my emphasis)

In other words, student output is seen as being in deficit; it is "learner language" that either fails to conform or does not meet the requirements of the target language. In this way of thinking, there appears to be little space allocated to thinking about classroom language from a more pragmatic viewpoint. In summary, feedback on language use tends to be primarily conceived in relation to identifying and raising learner awareness of linguistic "gaps" and "problems," and is thus form focused. By contrast, adopting an ELF-informed perspective, teacher feedback could be much more oriented toward identifying success and difficulty in relation to communicative acts, which would thus be much more interaction focused. Instead of identifying "erroneous" language, teachers would thus be able to provide commentary and support on language forms and strategies that facilitate meaning construction and comprehensibility. In order to achieve this move from a corrective form-focused orientation to a more interaction focused and open one requires engagement in critical thinking.

In order to further evaluate the way language and professional knowledge are conceived in ELT, I have also consulted a number of syllabus documents and related texts. In earlier discussions on this matter, I have argued (see Dewey, [2014]) that the syllabus guidelines for several accredited teaching awards, while now making reference to ELF and Global Englishes in name, have not made a conceptual shift necessary to make this inclusion a meaningful one. In addition, I have considered the Teaching Knowledge Test (TKT), a qualification (administered by Cambridge University Press and Assessment) designed for both novice and experienced English language teachers as a means for them to demonstrate their level of professional knowledge in ELT. TKT comprises three modules: background *to language learning and teaching;* lesson *planning and use of resources for language teaching;* and managing *the teaching and learning process.* These are designed to test candidates' knowledge of key terms and concepts and teachers' knowledge in a range of specific areas in ELT. In addition, there are two specialist modules available, one with a focus on CLIL (Content and Language Integrated Learning) and another on teaching younger learners.

According to Cambridge, TKT "will help you to build your confidence, and is a cost-effective way to get an internationally recognized qualification" (https://www.cambridgeenglish.org/teaching-english/teaching-qualifications/tkt/, accessed December 2021). As a resource for teachers wishing to prepare for the test, Cambridge has produced the *TKT Glossary*, which is essentially a list of words, concepts, and terminology deemed to be necessary for teachers to become familiar with in order to

do well in the test. On close inspection, the glossary proves to be somewhat problematic. There are numerous entries that reveal a strong normative orientation to language and language learning and a predominantly deficit perspective on learners, including among many others: *accuracy, authentic material, correction* (14 tokens, with descriptions of 5 different error correction techniques)*, fossilised error/fossilisation, interference* (not transfer, it should be noted), and so on (Cambridge Assessment English, 2019, https://www.cambridgeenglish.org/Images/22184-tkt-glossary-document.pdf). What is most striking, though, is the very notable absence of terms that represent a more multilingual or ELF-oriented perspective on language and language learning. For ELF to have been taken into account in TKT, we would expect to see in the glossary terms such as the following: *accommodation/accommodate, bi-/multilingual(ism), code-switching, communicative/ion strategies, culture, inter(trans)cultural, paraphrase/rephrase, repertoire, translanguaging, translate/translation*; yet none of these appears in the TKT Glossary.

**Investigating Critical Awareness among Language Teachers**

In recent years, a key focus of my work has involved investigating teachers' beliefs about language and language teaching, with the view to encouraging teachers to articulate and then question their own professional beliefs and preconceptions in a manner that will open up alternative pedagogic choices available to them. In a recent study of this kind, Dewey and Pineda (2020) report on the initial findings from a collaborative project conducted across two higher education contexts: one in Malaga, Spain, and one in London, UK. A key aim of this project was to expose ELT practitioners to linguistic diversity, promote reflective attitudes towards language and towards new developments in ELT methodology so that this may facilitate teachers in incorporating an ELF perspective in their individual practices. The first phase of the study entailed administering an online survey, which comprised 14 questionnaire items that had been organized according to the following categories: *personal and professional background*; *awareness and understanding of ELF and related* concepts; *teaching priorities; language models;* and *teacher roles.* In the section focusing on teachers' understanding of ELF and related concepts, we included questions that gauged teachers' level of familiarity with key terms, such as *ELF* and *Global Englishes,* as well as a question in which the participants were asked to describe what they understood by the phrase "good English." The purpose of this was to explore how teachers conceptualize notions of proficiency in English.

The survey responses (n = 80) reveal that there is widespread awareness and understanding of ELF as a concept, at least in principle, with most teachers able to provide a fairly detailed account of the terms related to ELF. What we found in our participants' responses to the question of "good English" was a fairly even split across teachers who associated the concept with standard English and those who articulated this in terms of communicative effectiveness, thereby disconnecting the concept from standardization and NS norms. Teachers who associated this concept with standard English tended either to refer to NS varieties, e.g., "English spoken in the UK" and/or link this to notions of correctness as in "To use the correct form of English." These responses we characterize as normative descriptions of English. By contrast, we were also able to identify

descriptions that resulted from what we term an "ELF-compatible perspective," as illustrated very cogently in one participant's response, for example, as "any form of the English language that successfully achieves the intended purpose of communication." It is important to note here that although the teachers participating in the survey generally expressed good awareness of ELF and Global Englishes and could define these terms very effectively, only some of those teachers then subsequently made a connection to the way they think about English from a pedagogic perspective. Teachers who describe "good English" in relation to intelligibility and capacity to communicate effectively seem to be going beyond having an awareness of ELF and have thus begun to relate the role of English as an "extraterritorial" (Seidlhofer, 2017) global lingua franca to their professional beliefs about the language.

The influence of awareness of ELF and Global Englishes on professional beliefs can extend to teachers' thinking in relation to their teaching priorities. In order to investigate this in the survey reported in Dewey and Pineda (2020) we asked respondents to rate a series of statements (presented to participants in randomized order) designed to reflect either a conventional approach to dealing with language in the classroom – as in "It is important for learners to use correct language forms when speaking English" – or to reflect what might be deemed a more *ELF-compatible* approach – as in "Developing communicative strategies is more important than learning to use correct grammar", in that statements such as this reflect some take up of ELF awareness in teachers' practice-related thinking. (An equivalent number of statements for both approaches/perspectives were included in the questionnaire). We found quite mixed responses to these statements, with a fairly even spread across all possible ratings (from 'strongly disagree' to 'strongly agree', on a scale from 0 to 5) for many of these statements. From an ELF perspective, though we can see some very promising results emerging from the survey data, with strongest agreement being conveyed in response to statements that reflected a less conventional, more ELF compatible approach, while those statements representing a more traditional perspective received the strongest disagreement (see, Dewey & Pineda, 2020) for a more through account of the survey findings in this regard).

In summary, we can say with some confidence that the study reported in Dewey and Pineda (2020) reveals widespread awareness of ELF and Global Englishes among research participants, and some understanding that this has consequences for the way teachers orient to language and learning goals in practice. It is clear that many teachers are beginning to take into account the relevance of ELF for their professional thinking and practices. However, the situation is quite complex, with some teachers apparently more predisposed to modify their views on pedagogy in response to ELF than others. There continues inevitably to be some ambivalence among teachers (see, Siqueira & da Silva, 2016), with many teachers still quite firmly attached to notions of correctness and standard language norms. As the ELF compatible statements tend to represent quite a radical departure from conventional pedagogic practice, teachers will need to reconcile the potential conflicts that may arise from adopting an alternative view. Without guided and supported critical reflection it is thus difficult for teachers to fully engage with the arguments put forward with regard to ELF, which will in turn reduce the practical impact of ELF research in the classroom.

The complexities and challenges involved in promoting greater in-practice uptake of an ELF perspective is clearly something that needs further empirical research. The findings presented in Dewey and Pineda (2020) provide an overview of the data to emerge from the initial phase of a longer-term research study which (though partially stalled as a result of the COVID19 pandemic) is still ongoing. In addition to the questionnaire, we have begun to carry out interviews, organize focus group discussions and conduct preliminary classroom observation. This research will allow us to delve deeper into teachers' understanding of ELF and further investigate teacher cognition with regard to interfacing ELF with teachers' pedagogic preferences. In order to examine how teachers make sense of ELF in more depth, I will now look more closely at some of the responses of individual teachers, drawing on interview data gathered in the London setting. I will start by discussing a case study of Nahid (pseudonym), an experienced teacher working in an ESOL setting in London at the time of the data collection. Here is Nahid's response to the questionnaire item that asks participants to identify what language(s) they have in their linguistic repertoire.

> Marathi as it is my L1 or mother tongue and I learnt it as my first language at home. However, I would also say English as I have been educated in an English-medium school and I am most proficient in English than any other language I know. (Dewey & Pineda, 2020, p. 431)

Marathi is an Indo-Aryan language spoken in western and central India, extending from Mumbai to Goa along the west coast of India and is the official language of the state of Maharashtra. As with several participants in my interview and focus group studies, identifying a 'native' language or Nahid is not a straightforward matter. She identifies Marathi as the 'first' language as this is the primary language she spoke at home as a child, but she identifies English as her dominant language given her formal education was English medium and because it is the language she uses in her professional life. In addition to Marathi and English, Nahid also comments that she has some proficiency in Gujarati, Hindi, and German, so it is clear she has a diverse multilingual profile.

In her questionnaire response to the item on "good English" Nahid describes this as "English, that despite not being standard, is intelligible. Might have more pragmatic and elliptic forms." In this description, Nahid adopts a non-conventional perspective on English proficiency, relating this to intelligibility and pragmatics, in fact, explicitly stating that it is not connected to Standard English. This perspective is further evidenced in her responses to the questionnaire items relating to teaching priorities. For the following statements, Nahid strongly disagrees with each one (giving a rating of 0 for all): "NNESTs should adopt an ENL variety as their target model"; "It is important for learners to use correct language forms when speaking English"; "Teachers should correct learners' errors in class because these tend to cause a breakdown in communication". This perspective is further reinforced by her responses to statements reflecting an ELF-compatible approach, as can be seen in her strong agreement (she gives a rating of 5 to each) with the following: "Teachers should encourage students to experiment with new language forms to communicate meaning"; "The students' L1 and sociocultural identity are resources that can enrich English"; "Developing communicative strategies is more important than

learning to use correct grammar". It is evident then that Nahid is aligning quite decidedly in these response with many of the principles underpinning an ELF perspective on language in the classroom, by detaching her notion of what counts as "good English" from NS varieties, acknowledging the sociocultural identity and agency of NNSs as users of English, and prioritizing communication strategies over formal properties.

This take-up of ELF in Nahid's thinking shows evidence of critical reflection, with Nahid having moved away from several conventional principles in ELT pedagogy. However, when talking about her experiences in the interview, the full complexity of teacher cognition becomes apparent. In the following extract, I ask Nahid to comment on her identity as a speaker of English and on how peers on her MA program position her.

**Extract 1**

M:> how do you think other people on the course see you? Especially since we had the two sessions on Global Englishes: (.) do other people talk to you about being a native speaker of English or: non- native speaker of English?
N:> yes (,) a couple of times a couple of students in the class have said that <you are a native speaker (,) and it's quite shocked me because I'm not a native speaker but- so: it's probably because of the fact- ok let me tell you (,) I'm I'm terrible with pronunciation (,) I hate my pronunciation (,) te accent that I have
M:> do you?
N:> Yeah
M:> but you have an Indian English accent
N:> I know I know but (.) still (.) @@
M:> but: so you don't like your accent?
N:> I like my accent (,) I don't have anything against it but (.) I do not teach pronunciation in the class (,) I'm very very conscious of it

What we see here are two quite different ways Nahid has of identifying with English, one as a competent speaker of the language – from which she is confident to claim English as her dominant language – and then another, quite different one as an ELT practitioner – from which she is more cautious about claiming agency. So while Nahid appears to have begun to transition from a more conventional orientation to language, with her views on teaching priorities informed by her awareness of ELF and Global Englishes, she does not extend (or at least has not yet done so) that to her own accent, which she does not see as a viable classroom model. It is perhaps the case that although Nahid reports a willingness to define English language learning objectives in relation to intercultural communication rather than an NS model, her socialization in the mainstream principles of ELT is causing a certain amount of inertia when it comes to presenting her English as a basis for modeling pronunciation.

In short, engaging with ELF in practice constitutes a complex, gradual process of transformation, in which the long-term impact of teachers' professional socialization in the various communities of practice found in their educational settings will need to be refigured. For this reason, it is essential that we identify critical awareness as a principal objective in programs of teacher education.

**Promoting Critical Awareness in Language Teacher Education**

If we fully take into account the current predominance of a strong normative orientation in ELT discourse, it is clear that promoting critical awareness among teachers is paramount if we are to see greater up-take of an ELF perspective in practice. This is especially important when it comes to developing language awareness in teacher education programs. Andrews (2007), for instance, describes language awareness work as "tasks designed to stimulate participants' reflections on and insights into the workings of different parts of the *language systems*, and to encourage them to *question pre-digested facts and their own pre-conceptions about language*" (p. 183, my italics). On the face of it, this questioning of preconceptions seems encouraging as this would suggest the need to adopt a critical perspective on language is being acknowledged. This questioning is not, however, extended to the issue of nativeness, with NS norms continuing to be promoted unquestioningly throughout the remainder of Andrews' (2007) text. It is also indicative – and somewhat problematic – that language awareness is understood in relation to 'language systems', as this tends to suggest a static notion of language and downplays the dynamic properties of how we use language (or engage in *languaging*) through interaction. Adopting an ELF perspective on language requires us to at least question the assumptions underlying this orientation to nativeness and to language as a system (see also Llurda et al., 2018).

If we wish to reconceptualize established views about language, we need to uncover and then question these predominant assumptions regarding approaches to language learning and teaching. Encouraging this critical reflection, in my view involves adopting a sociocultural perspective on teacher education (see, e.g., Johnson & Golombek 2002). In relation to taking a sociocultural approach, Johnson and Arshaksaya (2011) say the following:

> [T]he responsibility of teacher education, from a sociocultural perspective, is to present relevant scientific concepts to teachers but to do so in ways that bring these concepts to bear on concrete practical activity, connecting them to their everyday knowledge and the activities of teachers. (p.169)

In order to connect with teachers' everyday knowledge and activities, we need in-depth engagement with teachers' existing beliefs, paying attention to how these beliefs may have been socially constructed over long periods, may be difficult for teachers to articulate and may be deeply ingrained and so sometimes difficult to uncover. Adopting a sociocultural perspective also provides opportunity to overcome a sometimes-common perception among teachers that there is a divide between theory and practice (see, Sifakis et al., 2018 on bringing together theory and practice in ELF). If we enable teachers to make strong connections to their own practices, we encourage them to develop their own critical stance on local pedagogies, which in turn facilitates the closing of this perceived divide.

According to Norton, in her introduction to an edited volume on critical pedagogies, "[a]dvocates of critical approaches to second language teaching are interested

in relationships between language learning and social change" (Norton & Toohey, 2004, p.1). Norton goes on to comment that adopting this perspective entails acknowledging that "language is not simply a means of expression or communication; rather, it is a practice that constructs, and is constructed by, the ways language learners understand themselves, their social surroundings, their histories, and their possibilities for the future" (*ibid*). Each of the chapters in this edited volume on critical pedagogy considers how current practices may be modified in diverse educational settings but only with proper engagement with the particularities of local sites of learning and teaching. It is thus crucial that we give teachers space and support in connecting ELF with their own individual contexts. Only by considering what Seidlhofer (2017) aptly describes as this "extraterritorial" globally diffuse lingua franca and exploring how this is relevant locally can teachers reflect on the pedagogic impact of ELF research on their own thinking and professional expertise.

To initiate a process of critical reflection, it is in my view essential that early on in any teacher education program there is a foregrounding of linguistic and cultural diversity. This helps set the scene so to speak, as greater awareness of the extent to which globalinguistic diversity shapes the contemporary world enables teachers to become more informed about how English relates to other languages in global function and status, how much the language has evolved over time, and crucially how much it continues to evolve now. If engaging with ELF in practice means teachers need to consider how their own teaching practices might evolve in response to ELF then it has to become a priority that we provide focus in teacher education on the dynamic properties and evolutionary nature of language. Raising awareness of ELF and promoting greater understanding of linguistic diversity will inevitably lead to some degree of reflection on the relevance of global sociolinguistic realities from the perspective of language learning and teaching. However, we have seen repeatedly in discussions of ELF the language ideologies underpinning ELT methods and materials are pervasive and can be resilient to change. Our inherited beliefs about language, especially in connection with models and norms in the language classroom – as can be seen from the comments above – mean that teachers' orientation to Standard language norms is still very strong. As I have commented elsewhere (e.g. Dewey 2014), it is paramount that we do not merely discuss the 'implications' of ELF for language teaching. For the impact of ELF in pedagogy to be more fully realized we need to critically engage with these ideologies. In my view, this has to be a systematic undertaking in language teacher education. Crucially, educating the teacher educators themselves will necessarily be a fundamental aspect of this, since we cannot assume that educators will have sufficient awareness of ELF (with many likely to have completed their initial teacher education before ELF research became widely disseminated).

In order to instigate discussion of language ideologies among teachers I draw on Bauer and Trudgill (1998), an edited collection of essays designed to tackle popular beliefs (especially widespread misconceptions) about the nature of language. The motives of the editors are to address the gap between non-specialist views of language (or *folk linguistics*, Niedielski and Preston (2000)) and the specialist views of language held by linguists, approaching this by addressing a series of common perceptions. In light of this, the editors make the following comment in their introduction.

> We believe that if you want to know about human respiratory physiology you should ask a medic or a physiologist, not an athlete who has been breathing successfully for a number of years. If you want to know how an underground train works you should as an engineer and not a commuter. And if you want to know how language works you should ask a linguist and not someone who has used language successfully in the past. (Bauer & Trudgil 1998, p.xvi)

This point is made in light of the apparent trend for books about language that are intended for a non-specialist reader to be more likely written by journalists, broadcasters and writers than by linguists. A key objective of the collected essays is to promote greater public engagement with what we have learned about language as a result of systematic specialist research. Each chapter addresses a different popular belief (or myth) and is written by an established scholar in a relevant area of applied linguistics research. There are 21 such chapters in total, from which I select the following three for discussion with teachers: "The Meanings of Words Should Not be Allowed to Vary or Change" (addressed by Peter Trudgill); "Double Negatives Are Illogical" (by Jenny Cheshire); and "Everyone Has an Accent Except Me" (by John H. Esling). I select these in particular because I feel they have all been to some extent influential in shaping the way ideas about language are conceived in ELT.

The first of these myths surfaces in ELT in that we tend to see language as unchanging and constant, where the focus of dealing with lexis is on specifying meaning as precisely as possible. There thus tends to be little scope for discussion of variability and little awareness of language change in the way English is conceptualized in the curriculum. The second myth is a widely voiced popular proscription about English, which is an expression of a prescriptive sentiment – one that underlies concern with correctness and grammatical accuracy that so often characterizes our approach to English in the language classroom (see my discussion above). Finally, the myth that everyone else has an accent is the result of a normalizing tendency among NSs of English – in that speakers of standard, prestige varieties see their way of speaking as 'normal' and so therefore as 'unaccented'. This normalizing tendency is widely manifested in the way NSE norms continue to be promoted. After discussing the extent to which a) these myths are believed to be true and b) have come to influence the way we approach English in ELT, teachers are then asked to reflect critically on the language ideologies underpinning these statements so that they may be questioned and (if deemed appropriate) rejected. Following on from this I present the following statements:

- Standard English is more intelligible than non-standard Englishes
- Native speakers provide appropriate language models
- Grammatical accuracy is essential for effective communication
- IELTS is a valuable test of English proficiency
- Language teaching materials focus on communicative language use

I present these statements as "ELT myths about English" as I feel they represent commonly held views in mainstream ELT approaches, which I then suggest can similarly be treated to the same kind of critical questioning, and might also – where appropriate

(and where local circumstances would permit) – be regarded as myths and thus ultimately be rejected. Each of these represents an ELF-informed perspective on language teaching. And some of them are intended to be on the provocative side in order to stimulate an in-depth discussion of language attitudes and beliefs. Finally, teachers are then encouraged to make their own statements designed to represent widespread and popularly held beliefs about the way we approach language in ELT so that these can then also be subjected to critical scrutiny.

In order to take this discussion and critical reflection further teachers can also be encouraged to explore a more multilingual perspective on language in the classroom. One key aspect of this is to raise awareness of the concept of translanguaging and the overlap between this and ELF (see, Cogo, 2016 on "conceptualizing ELF as a translanguaging phenomenon"). Translanguaging is defined by García (2009, p.140) as "the act performed by bilinguals of accessing different linguistic features or various modes of what are described as autonomous languages, in order to maximize communicative potential." In mainstream ELT practices, particularly since the advent of CLT (Communicative Language Teaching), second language pedagogy in English has been predominantly monolingual in approach, with little to no acknowledgment given to resources in languages other than English (though see, Cook (2010) for a critical reappraisal of this). Recognition of translanguaging practices will give teachers a more nuanced understanding of the complexities involved in the way communication occurs in multilingual, multicultural settings. This is especially important when we take into account the reconceptualization of ELF as a multilingua franca (EMF), which Jenkins (2015, p.73) defines as "multilingual communication in which English is available as a contact language of choice, but is not necessarily chosen". The use of the term *translanguaging* complements this reconceptualization, aptly emphasizing the dynamic ways multiple languages can be used conjointly and simultaneously in the construction of meaning.

In recent years there have been many attempts to adopt translanguaging practices as a pedagogic resource. Notable among these is Hiller (2021), who describes an intervention to introduce translanguaging in an EAP (English for Academic Purposes) course at an international university in China, with the view to "promote the use of Chinese students' full linguistic and communicative repertoires in an English-medium-of-instruction university" (p. 307). Hiller incorporates translanguaging by first providing an explicit discussion of translanguaging, then a writing assignment in which students are asked to give a definition of a Chinese concept, followed by a group project designed to test a generalization about Chinese culture. Below is an outline of the task.

**Figure 1**

*An Intervention to Introduce Translanguaging in an EAP (Hiller (2021, p. 313))*

You will write an extended definition of a concept that is important in Chinese culture.

**Purpose and Audience**

The **purpose** of this short assignment is to practice introducing and defining terms with an appropriate level of explanation. Therefore, although you may consult and refer to sources, you should spend most (or all) of the paper explaining the concept in your own words. For this assignment, your **audience** is educated, living in China but not Chinese, and unfamiliar with what your chosen concept means historically as well as its relevance to current society. (Think, for example, of international students and faculty at DKU.)

**Your Task:**

- Choose one of the following terms to define: 孝顺, 忍耐, 素质, 中庸, 和谐, 含蓄美, 关系, 面子. You may choose a different term to define, but it must represent a concept that you think is important for non-Chinese people to understand about Chinese culture.
- In the beginning of your paper, introduce the term (in Chinese characters, pinyin, and English translation) and explain why it needs to be discussed: Do people debate the meaning of the term? Is it difficult for your target audience to understand the concept? What makes it important for your audience to understand the concept you have chosen to define? (Remember "who cares" and "so what" from *TSIS*!)
- In the rest of your paper, define and explain the concept for your target audience. Your short paper should include at least two of the three ways to define terms that we discussed in class.
- A successful paper will demonstrate your ability to use strategies discussed in class and the "Definitions in Academic Writing" reading to explain the concept in a way that will help your audience understand it.

In the task students are actively encouraged to engage in translanguaging, by for example drawing on resources (including texts and research participants) in more than one language and determining how best to communicate ideas to an audience, which may for instance involve translation and explanation of concepts taken from sources that a diverse audience may not be familiar with. Hiller (2021, p. 313) comments that students "shuttled between languages through all stages of the project". This represents a significant departure from conventional EAP style tasks in EMI settings, in which languages are usually kept separate from each other and where the approach is thus essentially a monolingual one, with students only accessing texts in English and using only English to discuss and convey their ideas. Hiller finds through observation and student feedback that these translanguaging assignments "have the potential to contribute to students' cultural knowledge, writing and communication skills, intercultural communication and awareness, and identity construction as translingual and transnational students" (2021, p. 315).

Translanguaging tasks such as this offer productive ways we can try to move beyond the monolingual ideologies underpinning the way we have traditionally oriented to language(s) in education. They allow greater recognition of all the languages available in students' and teachers' repertoires, allow greater recognition of the complex, dynamic nature of language and identity, and they provide intriguing possibilities for teachers and learners to move beyond a conventional conceptualization of language proficiency and teacher knowledge about language.

## Conclusion

It is clear that we can approach concepts such as 'emergent language' in the classroom in a more progressive way than has largely been the case up to now. We can encourage teachers to pay more attention to how speakers negotiate meaning through processes of accommodation and collaboration, with teachers encouraged to notice how speakers draw on and prioritize strategies not linguistic form. By promoting awareness of linguistic diversity our concept of language can be entirely reconsidered. Instead of simply 'training' teachers how to identify and reformulate language that does not conform to a standard, teacher education can do much more to encourage teachers to respond to their students' language output in more positive ways, including for example by helping teachers identify moments of interaction that are effective but 'non-conforming'.

We have argued time and again that Global Englishes and ELF research make it essential for teachers and teacher educators to reflect critically on pedagogic resources and practices. That programs of language teacher education traditionally make little reference to linguistic diversity has to be remedied. This inevitably entails moving beyond normative concepts of competence in the curriculum and adopting an ELF perspective so that our concept of language might be rethought in such a way that we can support teachers to focus less on linguistic gaps and more on how communication can be successfully achieved in multilingual settings. However, change in teachers' beliefs and attitudes does not always lead to concomitant change in pedagogic practice. Teachers must be able to see the need for change, which necessitates a certain degree of critical literacy. If we want to bring about curriculum development in response to ELF, teacher education ought also to mean involving teachers in (action) research so that they might explore the relevance and transformative potential of ELF in ways that will be meaningful to them.

Based on my experience of promoting critical reflection among teachers, it is clear that practising and novice teachers alike tend to be quite keen to critically re-examine shared practices in language pedagogy, both in relation to concepts of competence and in their own sense of professional knowledge. When reflecting on what ELF means in practice Teachers identify with English in complex ways. As we have seen, there may be differences between how they identify with the language as speakers and how they identify with it professionally as teachers. This can ultimately complicate attempts to instigate change in practice. In short, critical reflection is challenging and requires long term investment in our epistemic repertoire. A crucial and long-term goal ought to be to expose teachers (and teacher educators) to the emergent properties of language, to thereby promote systematic reflection on existing linguistic and methodological norms and continually (re)explore the dynamic properties of language and communication.

So while teachers are keen to engage with critical reflection, this is necessarily gradual and thus has to be an ongoing process. There is no end point that we want teachers to arrive at, as there is no end point we want to arrive at in our understanding of the nature of language and communication from and empirical research perspective. Teachers,

teacher educators and researchers alike, we all need to be actively and openly involved in our own critical reflection if we are to continue to make sense of our linguistic world.

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## Öğretmenlerin Dil ve İletişim Algılarına Eleştirel bir Yaklaşım


## Öz

*Son yıllarda, Ortak Dil Olarak İngilizce (ODİ) ilkeleri ve araştırmaları konusunda farkındalığın arttığına ve ODİ'nin her türden eğitim ortamındaki önemine dair kapsamlı tartışmaların gerçekleştiğine tanık olmaktayız. Bununla birlikte, dil farkındalığı ve analizine yönelik yaklaşımlarda hala tek dillilik ve dil ideolojilerinin baskın olduğu da açıkça görülmektedir. Bu makale hem pedagojik bir model hem de dil yeterliliğini belirleme aracı olarak Anadil olarak konuşulan İngilizcenin algılanan rolü hakkında dil eğitiminde uzun süredir devam eden bazı varsayımları yeniden incelemektedir. Bunu yaparken, dil öğretim metodolojisinde geçerlilik kazanan ve giderek daha etkili bir fikir olan "gelişmekte olan dil" kavramı eleştirel bir şekilde ele alınmaktadır. Daha önce de tartıştığım gibi sahadaki dil öğretmenleri tarafından ODİ pedagojik ilkelerinin daha fazla benimsenmesini teşvik etmek için, dil öğretmeni eğitimi müfredatında ODİ'nin pedagojik etkisine dair eleştirel tartışmaları içeren çalışmalara yer vermelidir. Alışılmışın ötesine geçmeyi ve öğretmenlerin ODİ bakış açısını benimsemelerini, ancak eleştirel farkındalığa olanak sağlayarak mümkün kılınabilir. O nedenle bu makale öncelikle iki anahtar soruyla ilgilenmektedir: "Öğretmenlerin dil hakkında ne bilmesi gerekiyor?"; ve "Öğretmenler sınıfta kullanılan öğrenci diline nasıl tepki veriyorlar?". Bu makalede, bu iki ana soru ele alınırken, ODİ bakış açısıyla çerçevelendirildiğinde önemli ölçüde eleştirel katılım gerektiren dil öğretmenliği eğitiminde, dil hakkındaki bilginin yaygın olarak yönlendirilme biçimini sorgulanacak ve buna alternatifler sunulacaktır.*


*Anahtar Kelimeler:* ortak dil olarak İngilizce (ODİ), anadil olarak konuşulan İngilizce, yabancı dil öğretmenliği eğitimi, eleştirel katılım

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