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PECULIARITIES OF STATION ROTATION MODEL APPLICATION IN ONLINE LEARNING

Abstract

This study investigates the effectiveness of the blended learning model (online instruction station rotation model) that was implemented for Turkish as a foreign language A2 level students. The research took a mixed-method approach, combining qualitative insights by ratio metrics in a quantitative manner. The data were gathered from a sample (n=16) of students who were listening and reading in the online instruction station rotation model. This research program was statistical, and it looked at students' performances. Results showed that students performed better on true/false and matching tasks than fill-in-the-gap exercises. The research also found that spelling mistakes in dictation tasks occurred at a more frequent rate and indicated that students tended to code-switch at the time of production, often reverting to their native language. The findings here provide important evidence of the characteristics of the challenges that learners face in this mode of instructional delivery. The study found that the students showed significant gains at stations for online instruction, in particular, when they worked on their own.

Keywords: blended learning, station rotation model, online instruction, listening and reading skills, teaching a foreign language.

Introduction. Over the past two decades, there has been a growing trend focused on integrating face-to-face instruction and electronic learning in learning environments with the ultimate goal of improving the effectiveness and efficiency of adult education. The terminology used in blended learning is extensively defined. For example, this type of inquiry could be a hybrid of teacher-led instruction and computer-based independent learning (Graham & Allen 2005; Ye et al., 2022; Chen et al., 2024). Some educators also argue that the concept of blended learning should include the use of multimedia types (Osguthorpe & Graham 2003; Yezhgurova & Prosvirnina, 2019; Kosagovskaya et al., 2021). Mayadas & Picciano (2007) explained how different people understand blended learning. According to Watson (2008), blended learning enhances the physical presence of traditional learning environments and sustains the dynamics of those environments online, providing a more meaningful and targeted training service so for students.

Blended learning materials and learning environments, which are complex combinations of technology and learning interventions, should be evaluated to ensure that they are designed with practical application. Levy (2002) argues that blended learning provides a space in which topics can be discussed in depth. Flexible models are adopted when planning and developing these materials, which are conducted in-house and attempt to take into account specific classroom features, students' levels of L2 proficiency, and language skills (Vandersenga et al., 2023; Tan et al., 2024).

Christensen et al., (2013) suggested that blended learning models combine teacher-centered instruction with online technologies to facilitate student-centered learning. Practice is usually done first and written first in this model (Christensen et al., 2013). This approach allows

students to flexibly engage with the material at their own pace, maximizing student time for practice, problem solving, or project-based activities Staker and Horn (2012) classify blended learning into four widely accepted models: (1) rotation, (2) flexible, (3) self-directed, and (4) enriched virtual. Specifically, in transitional models, students rotate through different learning activities based on a given program or instructor's instructional plan, with at least one online learning activity (Staker & Horn 2012). These models can include a variety of instructional methods such as small group or whole class instruction, group projects, individual instruction, and traditional pen and paper instruction (Christensen et al., 2013). Although students primarily learn the material in the classroom, this model includes a variety of learning strategies including at least one online learning component. The rotation model is further divided into four subcategories: (1) station rotation, (2) lab rotation, (3) flipped classroom, and (4) individual rotation. (Staker & Horn 2012, Lim, 2015). These subgroups vary in structure and delivery methods within the classroom.

Research on the use of the station rotation model in language teaching has shown that it places particular emphasis on the development of basic language skills. For example, Lim's (2015) study of Thai students found that, although students initially struggled with independent work and showed a high degree of reliance on their teachers, their ability to a practicing independently developed gradually, leading to more comfortable interactions with peers over time Similarly, Pimpiban (2016) used stations for Thai primary school students which included interaction and benefits of it is based on language activities and individual online discussions facilitated by teachers The study concluded that this approach enhanced students' language skills and highly motivated them to learn English.

Ogude and Chukwegwu (2019) found no significant difference between the station rotation model and the traditional teaching methods in assessing the reading comprehension performance of secondary school students. Based on the findings, they recommended that teachers incorporate technology-based learning strategies and encourage the use of computers, software packages and computer-assisted modules. Conversely, a study by Nisa (2018) showed that when the station rotation model was applied to reading comprehension skills, it proved more effective than traditional methods, increasing comprehension rates among students

Nagi (2018), who used the station rotation model to enhance the writing skills of English-prepared students in Cairo, found that this model significantly increased student writing motivation and productivity. Similarly, other studies focusing on academic writing skills have found comparable results. In a study conducted by Belaji and Ganpathy (2021) on the use of station rotation model in English writing classrooms, teachers and students reported that the model was effective in academic achievement and engagement but research also revealed challenges such as technical challenges and the need for innovation training.

Smalls (2019) discovered the effectiveness of station rotation and flipped classroom models in middle school settings, focusing on improving the academic English scores of seventh-grade students. The study indicated that both models effectively enhanced student development. Similarly, Nurkamto et al. (2019) implemented these models within an advanced English academic writing course in Indonesia. They concluded that blended learning frameworks facilitate flexible learning opportunities, thus permitting students to engage with their studies whenever and wherever they prefer (at their own pace). Furthermore, Ayob et al. (2020) discovered that the station rotation model significantly boosted student achievement by merging online learning with conventional face-to-face instruction. This integration not only heightened engagement but also provided personalized learning experiences, ultimately improving academic performance. These investigations advocate for the broader adoption of blended models in foreign language instruction, promoting more innovative and adaptable teaching methodologies.

In addition to the studies previously mentioned, research has also concentrated

on integrating effective learning strategies within the station rotation model. This model has been compared to traditional teaching methods and adapted for distance education. For instance, Sulistyorini (2018) assessed the efficacy of learning strategies in English classes utilizing the station rotation model, observing a significant improvement in student outcomes. Notably, differences were evident before and after the model's implementation. McCollum (2019) compared the station rotation model to conventional teaching methods and discovered that students in the blended learning environment excelled in reading skills. Furthermore, Jingtao (2023) investigated how the station rotation model affects the listening skills of Chinese university students learning English, where the experimental group revealed significant improvements compared to control group which was taught through traditional methods. Yukhymenko et al., (2024) explored that the station rotation model effectively fosters personalized learning and digital skills among higher education students in Ukraine. However, they also emphasized that successful implementation requires additional preparation and advanced digital competencies from educators.

Skolastika (2020) aimed to modify the conventional station rotation model into a virtual format in order to more effectively meet the needs of teachers and to enhance student engagement. Specifically, Skolastika (2020) proposed four distinct types of virtual station rotation activities: a teacher-led station, an online station, an offline station and an extension activity. This model was advanced in response to the need of transitioning from traditional to online getting to know in the period of the pandemic. The station rotation model's flexible structure lets in it to be effortlessly implemented in distance learning, tailor-made to students' circumstances, desires, pursuits, and to be available for technological resources.

Although there are notable advantages to blended learning, there continues to be a demand for further evidence regarding the impact of blended learning models on teaching Turkish as a foreign language (TFL), particularly concerning the acquisition of receptive skills such as listening and reading. In this respect, the current study aims to apply a certain blended learning model, namely station rotation, to students learning TFL by using different stations of online instruction, pair work, and group work, each being rotated in order to engage students in activities for the improvement of their receptive skills.

This research investigates students' performance within the Station Rotation Model's online station while learning TFL. The current study focuses on developing listening and reading skills of A2-level students by using activities assigned within the online station. The significance of the present study is that the online station allows students to learn individually and independently, which positively influences their self-discipline. It, therefore, shows that the online station has been effectively used to teach TFL through the improvement of the students' listening and reading abilities. The study has tried to answer the following three central research questions in determining how effective the online station is in the station rotation model:

1. How do true/false, fill-in-the-blank, and matching activities enhance students' receptive skills in TFL?
2. What is the role of linguistic and cultural associations in improving students' receptive skills during gap-filling and connotation activities in TFL?
3. How do dictation and question-answering activities reveal challenges in students' receptive skills, and what strategies can address these issues in TFL?

Materials and methods. The design of this research is a mixed-method, whereby qualitative data will be quantified using ratio analysis. This design was adopted to describe, develop, exemplify, and explain the impacts of online station on the students listening comprehension in teaching Turkish as a foreign language. Qualitative research methodology was applied to analyze the whole process, and as part of this, content analysis by coding and sub-coding was done in order to assess the performance based on the activities of the online station. The following section describes the research group,

methods of data collection, and procedures of data analysis.

The sample of the study consisted of A2-level students who were studying at the Preparatory Faculty of Khoja Ahmet Yesevi International Kazakh-Turkish University for learning Turkish as a foreign language. The station rotation model was carried out with A2 level Turkish learners totally for three weeks. In this respect, 16 students composed the sample and all of them were assigned as the experimental group of the research; 11 were female and 5 were male participants. This qualitative study constituted the sample groups through students. During the implementation process, all students participated in the activities on a voluntary at the station rotation model.

The station rotation model of implementation involved the carrying out of individual activities by learners at the online instruction station on certain skills related to reading and listening. Activities were designed on certain topics; the listening and reading materials, including videos, audio recordings, and songs, amongst others, were sourced mainly from several websites and YouTube channels. According to the purpose, at an appropriate time and with the expertise, the researcher prepared the listening and reading activities based on the chosen video and audio recordings. At the beginning of each lesson, the prepared materials were sent to the students in the form of a WhatsApp group. Later, at the online instruction station, students were given listening activity sheets corresponding to either the video or the audio recordings. They were also required to use headphones to listen individually.

The listening activities included questions in the form of true/false, multiple-choice, and fill-in-the-blank questions. True/False and multiple-choice questions identified both knowledge-based and comprehension-based understanding. Fill-in-the-blank questions were mainly during dictation activities and were supposed to test the cognitive, psychological, and social conditions of the students through writing what was being heard. In the case of the reading skill activities, it had generated discussion on only two topics, and the questions were prepared based on some matching, knowledge-based, and comprehension-based criteria related to the provided text. After the implementation of activities, data were collected from students' performances in the online instruction station including listening and reading skills.

The data from the online instruction part of the SRM were analyzed using the computer-assisted data analysis program MAXQDA 2020. During the online instruction station, which was individual student work, students participated in activities targeting their listening and reading skills. The MAXQDA program analyzed all the activities, while codes were developed by investigating the content of these activities. All the files containing the data of online instructions, before analysis, were imported into the program.

Coding activities relied on diverse activity types: true/false, filling in the gaps, connotation, dictation, matching, and answering questions (see Table 1). Sub-coding for each code was developed based on the content of the data. For the true/false activity, no further sub-coding was added because this activity required responses given in only two ways-correct or incorrect. However, for the fill-in-the-gaps activity, sub-codings were developed to reflect students' attempts to write what they heard, correct versus wrong spelling, and inability to perceive the word. Besides, since students made associations while filling in the gaps, these were analyzed under sub-codes reflecting influences from their mother tongue, foreign language, and background knowledge.

The perception code was used to identify how well the students perceive the main information from the listening texts, such as guessing the content of the text or failing to understand it completely. The data gathered from the performance of the students regarding their listening and reading activities in the online station were analyzed according to the codes established for use, where the emerging figures were assessed for evaluation of their performance.

Table 1. *Code System of Analysing Online Instruction Station Activities*

Code System	Sub-codings	Skills
True False	-true -false	listening & watching
Filling the Gap	-correct spelling -incorrect spelling -leave blank	listening & watching
Simulation	-native language -simulation word	listening
Dictation	-incorrect spelling -unknown word -most accurate	listening
Matching	-correct -incorrect	reading
Answering	-detailed & extended -normal -short -incorrect unanswered	listening; watching & reading
Perception	-grasp the main point -estimated comprehension -incomprehension	listening; watching & reading

Reliability was ensured through the review of all activities at the online station by experts and the incorporation of feedback. Qualitative analyses were made from the data obtained about the online station activities and then evaluated and presented quantitatively as ratios. In this way, the performance of students at the online station was analyzed using ratio analysis. In this way, the data collected during all the implementation were interpreted both qualitatively-using coding and sub-coding-and quantitatively-through the analysis of the ratio-to have a complete perception about the performance of the student.

Results. Students' performances are measured by the frequency of the codes and sub-codes that were created from the activities done within the online instruction station. This kind of analysis is necessary for giving the overall performance in terms of all students for specific codes, namely, true/false, fill-in-the-gap, simulation, dictation, matching, answering, and perception. This provided a comprehensive overview of the student's performance across various activities.

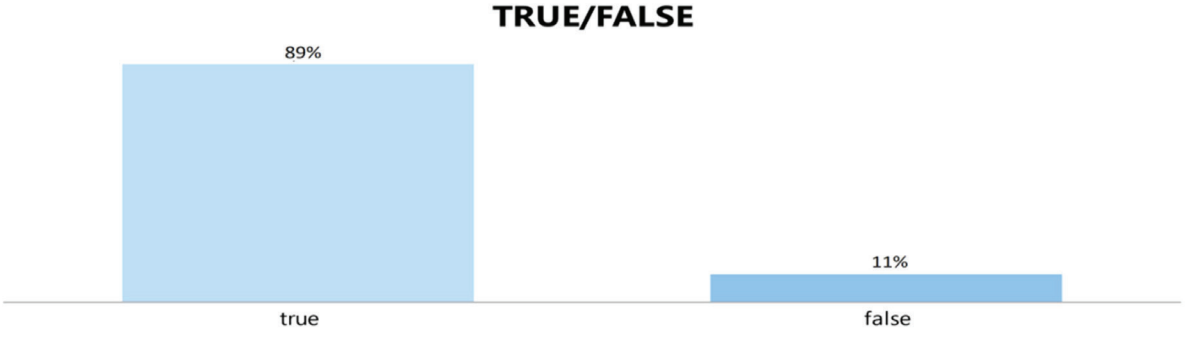

Figure 1: True/False Code Frequencies of Students' Performances

Coding for true/false was analyzed and reflected that 89% of the students had answered correctly, while 11% had answered incorrectly (Figure 1). It shows that the students did exceptionally well on true/false questions related to the listening skill activity.

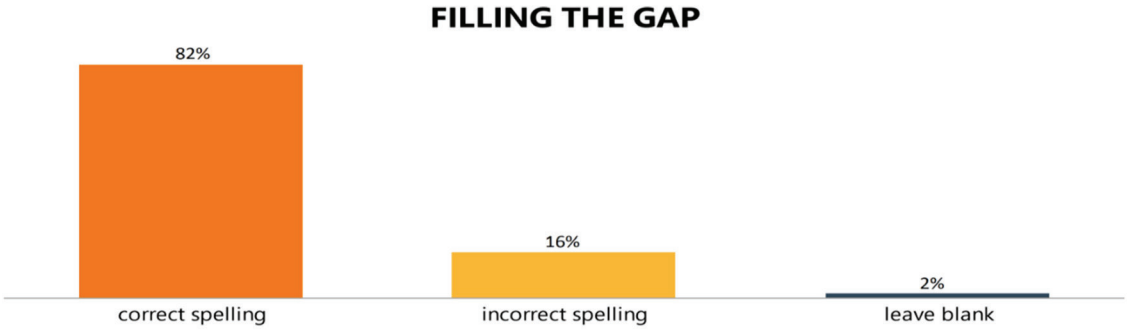

Figure 2: Filling the Gap Code Frequencies of Students' Performances

While examining the fill-in-the-blank coding, Figure 2 shows that 82% of students correctly wrote the words; 16% of the students made mistakes, while 2% left blank.

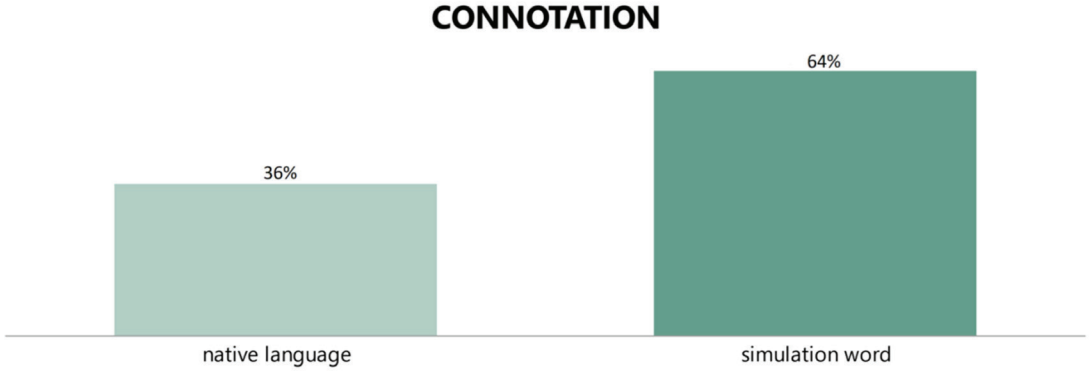

Figure 3: Connotation Code Frequencies of Students' Performances

The connotation coding is associated with the gap-filling activity and for that reason word choices made by students were examined based on associations they have made while writing. As shown by the analysis above (Figure 3), 64% of the students' associations were based on the words by drawing from their background knowledge, whereas 36% made those influenced by their mother tongue.

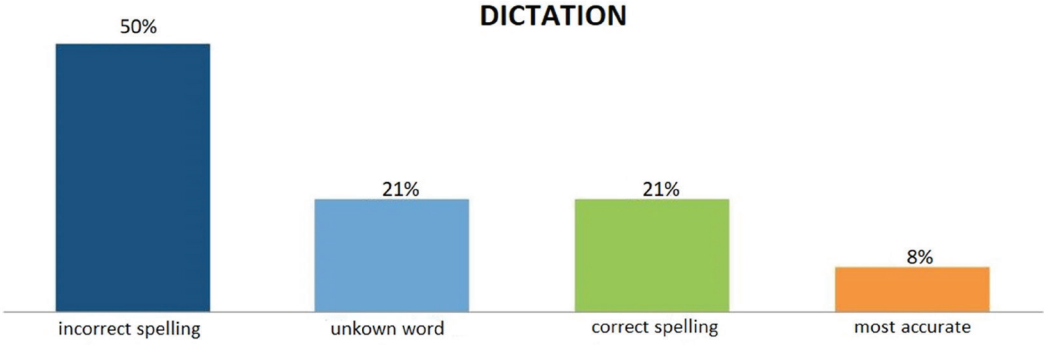

Figure 4: Dictation Code Frequencies of Students' Performances

The results from the dictation activity revealed significant challenges in students' writing skills, particularly in spelling accuracy (Figure 4).

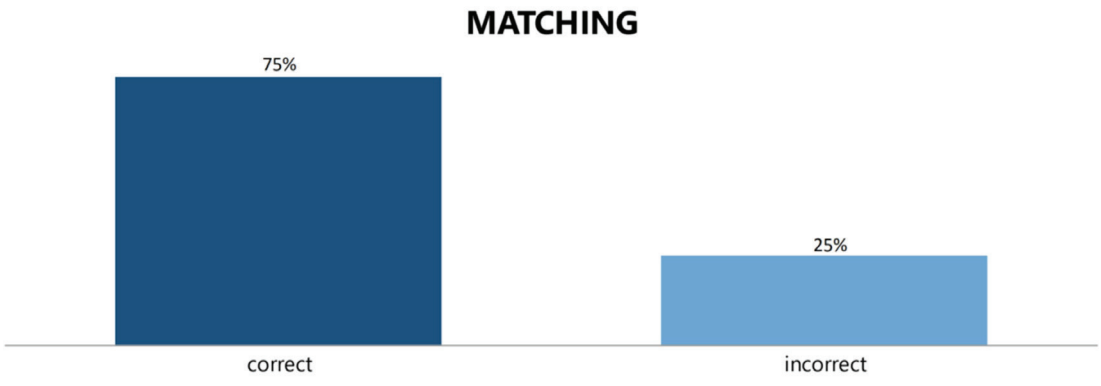

Figure 5: Matching Code Frequencies of Students' Performances

In the individual station, one of the subjects was given a matching activity, and as a result of the analysis of this activity, it was revealed that 75% of the students matched the words rightly while 25% matched them wrongly (Figure 5). It is observed herein that the students have an excellent level of vocabulary, knowing those words which are appropriate to their level.

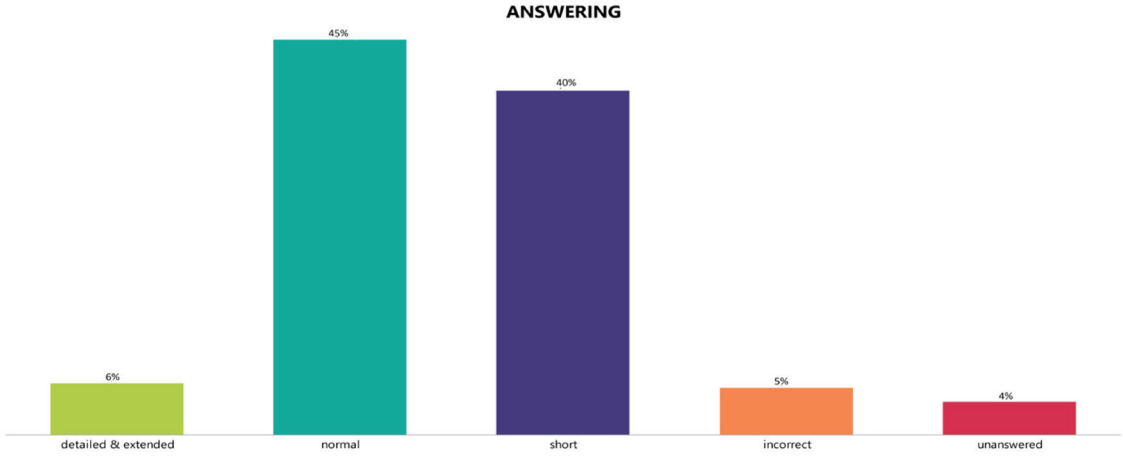

Figure 6: Answering Code Frequencies of Students' Performances

The findings from the question-answering activity in the online instruction station reveal a varied performance among students, with 45% providing average answers, 40% giving short responses, 6% offering detailed and extended answers, 5% answering incorrectly, and 4% leaving the questions unanswered (Figure 6).

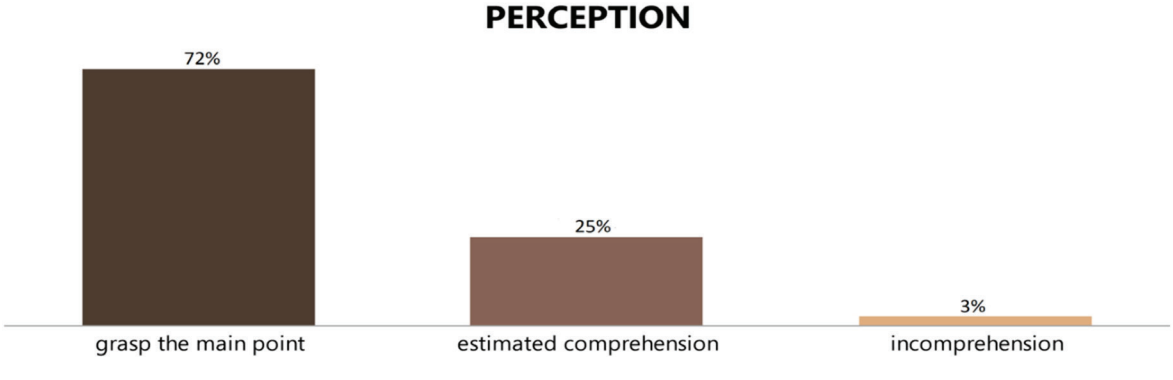

Figure 7: Perception Code Frequencies of Students' Performances

The perception coding data now show a positive result in students' listening comprehension skills Figure 7. It means that 72% of the students grasped the key information in the listening texts, which can reveal effective processing and comprehension of core contents by these subjects. The 25% who perceived the content as an estimate shows a reliance on the use of inference strategies to fill gaps in understanding. However, the fact that 3% of students could not understand the text of this test during a listening session underlines the chronic problems some learners experience with regard to the processing of auditory input.

Discussion. Students performed exceptionally well on the true/false questions on the listening skills task. True/False questions are known to be more efficient in learning, as they save time and directly test participants' knowledge (Burton, 2004). The rapid feedback and objective analysis of this question format provides particular advantages in listening activities. Martín-Luengo et al. (2021) pointed out that true/false questions were more effective when culturally adapted. Apparently, this was showing the importance of tailoring the tests to the target audience. This would therefore mean that these questions probably worked for the student because they were fitted into his cultural and linguistic background.

Overall, the students performed well in fill-in-the blank activities. Research indicate that filling-in-the-gaps testing increases short-term and long-term vocabulary knowledge (Masuhara & Tomlinson 2010). Clearly, this success with differentiation tasks helps students develop grammar and listening skills. Furthermore, Zhang et al., (2019) highlighted that gap filling exercises can improve memory performance in language learning, making it an effective tool for accurate word recall. This finding explains how many students were able to spell the words correctly.

Students often associated new words with words they already knew, perhaps because it was difficult to pay attention while listening or because there are so many similar words in Turkish. Yang emphasizes the importance of word association emphasizes importance in language learning, noting that learners naturally associate their existing knowledge with the vocabulary of new ones (Yang, 2018). The findings also suggest that these associations, based on students' prior vocabulary knowledge, are a natural part of language acquisition. Zhang and Li (2019) emphasized the importance of cultural and linguistic associations in language learning, suggesting that such association can enhance academic performance. These studies support the findings that students use associations influenced by their native and foreign languages, an effective creative learning strategy.

Results have shown that only 8% of the students were able to write a whole correct dictation, and the percentage of wrong writing by students was 50%, while 21% could not write a new word which they had not studied previously. Results have pointed out further developments which need to be developed in the writing skills of students, particularly spelling words which they come across for the first time.

Previous research supports these findings by citing the effectiveness of dictation in language learning. For instance, Syakur (2020) highlighted that dictation can be effective in providing language learners with ways of improving their listening comprehension and spelling accuracy, especially if the activity is created in a way that it contains familiar and relevant content for the students. Also, Morshedi and Nasiri (2020) mentioned how dictation tasks could reveal their deficiencies in phonological awareness, an important element in both listening and writing. It was revealed that it tallies with the observed fact that the students in this research depended so much on their mother tongue when doing dictation, which resulted in frequent spelling mistakes upon attempting to copy some unfamiliar sound or word.

It is noticed that the students have quite good vocabulary and know the words which are appropriate for their level. The results of the matching game show that the students improved in their knowledge and use of vocabulary. According to Figure 5, 75% of the students matched the words correctly, which means a good grasp of vocabulary at an appropriate level does exist. This finding agrees with a previous

literature review that vocabulary development forms a very significant basis of second language acquisition, especially in the case of learning English as a foreign language (Koç, 2023). Correct matching of words indicates that the students not only recognize such words but also know their meanings in specific context in achieving language proficiency (Alautdinova, 2023). Nevertheless, 25% wrong word matching still means there are some gaps that should be oriented in vocabulary acquisition. Such discrepancies in results may arise from limited exposure to some vocabulary items or semantic difficulties of differentiation among semantically similar words.

Sherman (1997) points out that the quality of students' responses in relation to school based language activities may be affected by a number of factors such as knowledge of the content, the type of tasks and the open questions being employed; hence, the questions may, and may not, attract the usage of longer responses. The fact that so many students wrote average or short responses is perhaps indicative evidence that students are learning the basic knowledge in a course without necessarily developing more sophisticated concepts or being able to say more about a topic beyond its most surface features. This, therefore, augments the work of Özçelik et al. (2023), who outline that scaffolding plays an important role in student progress from simple recall to more detailed and analytical responses.

The 6% who gave extended and detailed responses reflect that some students can do higher-order thinking and more in-depth analysis when answering questions. It would seem that, with the right support and encouragement, more students might achieve this level of performance. According to Kao and Kuo (2023), when the expectations and examples of the answers are given in detail, students will clearly understand what is expected from them and thus have a greater urge to do better. Conversely, 5% provided incorrect answers, while 4% were not answered, as areas where students were considered not confident or not to have understanding. According to Crowell and Au (1979), the errors that had taken place during the administration of the question-answering activities played a useful diagnostic role as they had pointed out some points which the students needed further teaching or practice. In the context of the present study, the findings suggested that some students may require additional assistance either in understanding the material or devising strategies for answering questions.

The 72% of the students grasped the main information in the listening texts, this proved that they grasped the core information given to them. It confirms what has been expressed in the literature about the importance of listening comprehension in second language acquisition. According to Ahmadi (2016), listening plays an important role in language learning because, through this skill, learners get the input they desperately need for good achievements in their language knowledge. This means that around 25% of the students would have taken the content as an estimate and utilized the inference strategies to fill the break in comprehension.

This seems to indicate that though the students understood the general concept, details were missed, which mostly happened during listening activities. According to Nazarieh et al. (2022), it is an active process; the listener himself actively constructs the meaning by decoding the linguistic input with the use of contextual cues and prior knowledge. On the other hand, it can be noticed that 3% of the students did not understand the text by listening; this reflects the difficulties some learners still face in dealing with information auditorily. This may be due to the inability to recognize slight phonetic differences or to attend appropriately during listening, as debated in the relevant literature on listening errors in language acquisition (Cho, 2021). Such challenges raise the need for the continued emphasis on targeted listening strategies that can be of great help in improving the comprehension of all the students, especially in distinguishing and then processing the spoken language accordingly.

In summary, while overall success in perception coding does point to the effectiveness of the instructional methods, it points out areas

where further support and practice should be given to ensure that all students can achieve a high level of listening comprehension.

As a result, it was determined that students made good progress at the individual study station and developed some progress in listening and reading skills. Besides, it is observed that, while listening and reading, with focusing on the subject carefully, the students worked and developed an ability of managing themselves at individual studies. Hence, it is possible that good performance of students affects language learning positively at this station.

Conclusion. The results of the research indicated that the online instruction station of the station rotation model showed effectiveness in improving receptive skills in the case of A2-level students learning Turkish as a foreign language. These results were reflected as notable improvements in the areas of listening and reading through such activities as true/false questions, fill-in-the-blank exercises, and matching tasks. In other words, the finding proved that the online radio station had helped the individual learning and autonomous work of students to be more self-disciplined and to improve their study practices. It also emerged from the analysis that the inclusion of materials relevant to the student's culture and language was a major contributor to their success. This particularly came out in the word association and comprehension activities. Some of the challenges, however, as identified in dictation and question-and-answer activities, point to the need for further instructional support in those areas. The study thus brings out the adaptability of the model and its potential for enhancement to accommodate the development of students' phonological awareness and higher-order thinking skills.

In summary, this study underlines that the station rotation model has the potential to effectively influence language learning due to the structured yet flexible environment that allows both individual and collaborative learning. The effectiveness of the online instruction station to enhance students' receptive skills may indicate that this model could be well implemented in teaching Turkish as a foreign language, particularly for the skills of listening and reading. At the same time, however, the study identifies further refinement of teaching approaches as necessary to adequately address a series of specific challenges that students face, so that all learners may benefit from this style of learning in depth.

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