

## CHAPTER 5

### DISCUSSION AND ANALYSIS

#### **5.1. Introduction**

After an elaborate description of the results and interpretation of the data as explained in Chapter 4 of the thesis, a discussion of the same is presented in this chapter. As mentioned in the previous chapter regarding the studies on the effects of scheduling and manipulating the task practices by various researchers, a discussion of the results is offered to understand whether the two methods of practice led to the improvement of L2 interaction, pronunciation, fluency, and vocabulary & grammar among the participants. A comprehension of the facts provided by the findings of the study also helped to determine the differences in English speaking proficiency of the participants in the study. A discussion of the L2 attitudinal and motivational changes among the participants is also offered here. Thus, this chapter provides a thorough discussion of the answers to the four research questions of the current study which are mentioned below:

1. Is there any significant difference between IL and BP in English interaction, pronunciation, fluency, and vocabulary & grammar performance in the first two rounds of the STSs?
2. Is there any significant difference between IL and BP in English interaction, pronunciation, fluency, and vocabulary & grammar performance in the final round of the STSs?
3. Is there any significant difference between IL and BP in English interaction, pronunciation, fluency, and vocabulary & grammar performance during the three rounds of the STSs?
4. Is there any significant difference between IL and BP in their effect on the progression of attitude and motivation of the participants towards learning English during the three rounds of the STSs?

#### **5.2. Research Question 1:**

**Is there any significant difference between IL and BP in English interaction, pronunciation, fluency, and vocabulary & grammar performance in the first**

## **two rounds of the STSs?**

### ***5.2.1. Difference in Interaction Performance in the Initial Rounds of the STSs***

In the initial stages of the STSs, the existence of statistically significant differences was not found between the effects of interleaving and blocked practice on the English interaction performance of the participants in both groups. With regards to the first round of the STSs, neither the participants in BP nor those in IL revealed any significantly striking performance in interaction. Even when the participants in both groups made an effort to participate in the conversation with the teacher, they were mostly passive and their exchanges of dialogues were only loosely connected to the main topic of the conversation. However, the second test of interaction which was conducted after finishing the second round of the STSs showed a slight decline in the interaction performance of the participants in both groups. But, it is to be taken into account that there may not have been a significant fall in the interaction performance of the participants. Rather, the occurrence of this slight difference may have been caused by the four assessors who had a subjective approach in the assessment of the participants. So, the descending curve may be the result of that subjective assessment of the interaction performance of both groups in the second interaction test. This slight variation observed in the mean values of the English interaction scores might not be regarded as significant since in both groups the descending curve in interaction performance in the relevant tests was seen. However, it may also be considered that in the initial two intermediate English interaction tests, it was found that blocking had a marginally more advantageous effect on the interaction performance of the participants than interleaving. This finding is consistent with some research done in the past on the impact of blocking on L2 learning (e.g., Carpenter & Mueller, 2013; Schneider et al., 1998, 2002).

### ***5.2.2. Difference in Pronunciation Performance in the Initial Rounds of the STSs***

In the initial phases of the English pronunciation teaching sessions, no noticeable impact was observed in the effect of interleaving and blocking on the participants'

pronunciation performance. No notable improvement was demonstrated by the participants while conducting the experimentation in the initial round. The intermediate pronunciation test which was taken in both groups just after the completion of the second round revealed a minor drop in performance. This waning observed in pronunciation performance might be caused by the assessors' subjective approach toward the assessment. Nevertheless, the minor differences were comparable between the two groups in terms of their pronunciation performance. It was thought-provoking that in the initial two pronunciation tests, participants who practised using blocking performed marginally better than those who were taught using the interleaved method, supporting the findings of the research done by Schneider et al., (1998, 2002).

### ***5.2.3. Difference in Fluency Performance in the Initial Rounds of the STSs***

None of the groups demonstrated statistically significant development in English fluency performance throughout the initial phases of the teaching sessions. The first two fluency tests that were arranged for the participants after conducting the first two rounds of experimentation did not display any statistically significant differences employing the two methods- interleaving and blocked practice- and how these methods affected the participants' enhancement of their fluency. In the second intermediate test too, a slight decline in fluency performance between both groups was observed. Since the drop in both groups in their fluency performance did not expand and happened within the same purview, the fall might have been caused by the biased perspective of the assessors while assessing the participants rather than by a factual decline in the participants' English fluency performance. The participants who were kept in the blocked condition performed a bit better in the initial phases of the practice sessions than the participants who were given the treatment using interleaving, yet this difference in performance was not statistically significant which is to some extent reliable with the findings of Suzuki (2021) about the advantage of blocking on L2 fluency development.

#### ***5.2.4. Difference in Vocabulary & Grammar Performance in the Initial Rounds of the STSs***

In the initial phase of the sessions of task repetition, no apparent difference existed between the two groups while retaining L2 vocabulary and grammar rules. The communication was done based on some personal matters of the participants. The participants in both groups demonstrated limited flexibility and appropriateness which could be traced from their pre-test results. In addition to that, they used a very small sum of vocabulary to express novel ideas, and also no complex sentence structures and forms were presented by the participants during the interaction. Moreover, no prominent improvement was noticed in both groups specifically in their exhibition of flexibility during performance, selection of words, and articulation of English sentences using complex forms and structures. Their performance was noted in the intermediate test which was taken after the end of the first round of English vocabulary and grammar practice sessions. A gap of about one month existed between the pre-test and the intermediate test. The participants who were kept under the interleaved condition demonstrated a little decline in their flexibility in their use of vocabulary and it was difficult for most of the participants to construct even correct English grammatical sentences throughout the intermediate test. Yet, even in the intermediate test, the participants who were clubbed under blocked conditions carried on the same exhibition of their pre-test performance particularly in choosing words and in the construction of sentences (e.g., Pan et al., 2019; Schneider et al., 1998, 2002). As the variations observed in the participants' retention rate of English vocabulary and grammar between the two groups were not in excess, it may be concluded that the slight variations in the individual biases of the four assessors during the assessment may have affected the scores of the tests. Thus, at the start of the STSs, there was no significant difference in the effect of both methods on the retention of English vocabulary and grammar in the blocked as well as the interleaved groups.

#### **5.3. Research Question 2:**

**Is there any significant difference between IL and BP in English interaction,**

## **pronunciation, fluency, and vocabulary & grammar performance in the final round of the STSs?**

### ***5.3.1. Difference in Interaction Performance in the Final Round of the STSs***

No obvious impact was observed in the effect of using blocking and interleaving on how well the participants performed in both groups during the interaction in the final stages of the STSs. At the end of the third round of practice sessions, the final interaction test in English was conducted. The findings showed that neither the participants in IL nor the ones in BP demonstrated any remarkable improvement even though their performance was a little enhanced. Although neither group demonstrated significantly better performance than the other in the second intermediate test taken at the close of the second round in comparison to the final interaction test conducted at the end of the third round of the STSs, the minor enhancement demonstrated by the participants in their performance in their English interaction could not be considered as statistically significant. Nevertheless, the slight rise in the curve observed in the interaction performance of the participants present in the blocked practice group that was noted in the initial stages of the practice sessions persisted even in the final stages. As reported by some previous research on the favourable impact of blocked practice on learning L2 (e.g., Carpenter & Mueller, 2013; Schneider et al., 1998, 2002), it might be emphasized further that in the current study, the benefits of blocked practice may also be noted in the later phases of L2 practice in the improvement of participants' English interaction performance.

### ***5.3.2. Differences in Pronunciation Performance in the Final Rounds of the STSs***

The participants in the interleaving, as well as the blocked practice groups in the final phases of the STSs, did not demonstrate any significant variations in their English pronunciation performance. It was observed in the final pronunciation test that the performance of the participants both in the interleaving as well as the blocked practice groups did not demonstrate a significant difference. A slight improvement was noticeable in English pronunciation performance in PT 2 in both

groups following IMT. However, this rise in the performance in neither group showed any apparent improvement in English pronunciation. In the initial two tests, the improvement in pronunciation performance was noted for the participants in the blocked practice group. This improved pronunciation performance persisted even in the final pronunciation test. Therefore, the findings of the current research are backed up by Schneider et al.'s (1998, 2002) study that the method of blocked practice bears a positive impact on the tasks of L2 pronunciation in the initial phases of practice and also offers a suggestion that with the use of blocking, the benefits may persevere even until the later phases of learning L2.

### ***5.3.3. Difference in Fluency Performance in the Final Rounds of the STSs***

After the end of the third round of teaching sessions, an English fluency test was taken to examine the effects of interleaving and block practice methods. The findings revealed that neither group demonstrated noticeable variations in their performance. The participants in both groups showed little improvement in their fluency performance when the final English fluency test was conducted. This slight rise in their performance as compared to their performance in the second intermediate test was, however, not statistically significant. The participants' English fluency performance improved in the first two initial tests that were kept under blocked conditions. This demonstration of better fluency performance recurred in the third and final test of the current research. The results of this study showed that the effectiveness of the blocked practice method in the progress of the participants' fluency enhancement (Suzuki, 2021) may be carried on into the later phases of fluency practice sessions, supporting the remarks formed by Schneider et al. (1998, 2002) regarding the positive influence of blocking the initial stages of L2 learning. After the completion of the two rounds of fluency practice sessions, it was observed that the participants who were taught using the blocked practice method displayed reluctance in their manner of speech and also their pace of utterance was slow. On the contrary, by the completion of the third round of practice sessions, they began to deliver prolonged English speeches with periodic repetition and self-correction. Those who were in the interleaved group continued

to stay a little reluctant to speak and their rate of English speech also persisted to be slower despite treating them with three rounds of English fluency training sessions. An important point to be considered here is that the participants in both groups did not cease to exhibit approximately similar patterns in speech production. Thus, the variation in their fluency performance as observed here might not be in favor of showing statistically significant results.

#### ***5.3.4. Difference in Vocabulary & Grammar Performance in the Final Rounds of the STSs***

The teaching sessions related to English vocabulary and grammar in the final phases exhibited no significant difference in the effect of interleaving and blocking on the participants' retention rate of English vocabulary and grammar. In both methods of practice, the participants kept on restricting themselves in being flexible and exhibited inadequate appropriateness in the selection of words during their performance. Their post-test performance revealed that the participants' speeches were all the same and kept simple as the forms and structures of their spoken sentences were hardly complex. However, there were some differences observed among the participants kept under the blocked practice group. They demonstrated more flexibility in speech production to some extent and their picking up of words according to the context was also suitable. Moreover, they also made improvements by using English sentences that were complex in form and sentence structure. But no improvement in performance was observed among the participants, who were taught using the interleaved method. Nevertheless, no rapid growth was observed in the post-test concerning the participants' selection of suitable English vocabulary and use of correct grammatical sentences in both groups (e.g., Tan Li Ning et al., 2020; Pan et al., 2019). The impact of the four assessors' subjective assessment standards which might have led to the slight variations between the groups cannot be disregarded in this circumstance even if the variations in participants' performance between the blocked and the interleaved group are incredibly less. Yet, it is to be taken into account that the participants in the blocked practice group performed slightly better in terms of presenting

enhanced L2 vocabulary and grammar thereby drawing the attention of the assessors than the participants who were in the interleaved group.

#### **5.4. Research Question 3:**

**Is there any significant difference between IL and BP in English interaction, pronunciation, fluency, and vocabulary & grammar performance during the three rounds of the STSs?**

##### ***5.4.1. Difference in the Progression of Interaction Performance during the STSs***

During the three rounds of the training sessions, there was no significant variation in how the participants made progress in their English interaction performance. In the case of both the groups, the ascending and descending curves were noticed in the enhancement of their performance in interaction at various stages of the STSs. Although these differences were not statistically significant, the slight rise in the blocked practice group in the initial stages of the STSs may have been due to the effect of the desirable difficulty that was comprehended in other studies like this in the earlier years (e.g., Bjork, 1999; Porter et al., 2007; Porter & Magill, 2010). In this regard, topics and matters of learning must be made accessible at a suitable proficiency level for a desirable difficulty framework to become operational. The methods of interleaving for participants with a low language proficiency may not be applicable according to the understanding of its efficacy on L2 learning. Interleaved practice is estimated to be suitable for learners who are highly proficient in L2 because it requires more practice accompanied by a higher degree of contextual interference (Porter et al., 2007; Porter & Magill, 2010). On the contrary, the blocked practice may be applicable in situations where it is linked to learners who have low L2 proficiency because it lessens the anxiety and stress during the performance in the case of beginners (Soderstrom & Bjork, 2015). The participants kept under blocked conditions experienced low difficulty levels as well as anxiety reduction which might be the reason for the slight rise in the curve during the interaction performance in all three tests conducted in the study (Bjork, 1994; Soderstrom & Bjork, 2015).

##### ***5.4.2. Difference in the Progression of Pronunciation Performance during the***



## **STSs**

Throughout the three months of the training sessions, the rate of progression in learning English pronunciation did not differ significantly. It was noted during the initial phase of the STSs that the variation in the performance of the participants was not statistically significant. It might be a sign that blocking might seem to be effective when the task of learning requires the retrieval of stimuli or when there is a necessity for discriminative contrast in items of practice (Brunmair & Richter, 2019; Carpenter & Mueller, 2013; Dunlosky et al., 2013; Schneider et al., 1998, 2002). The tasks of pronunciation call for the understanding of auditory-to-visual mapping and the fragments of auditory memory are transient, which has been found in research on learning rules of L2 pronunciation (e.g., Baddeley et al., 1975). It thus turns out to be more challenging in this situation to recall the phonological traits of the previous auditory item before learning the next item. Blocking may be more beneficial than interleaving for learning L2 pronunciation because it increases the chance for retrieval of previous examples in tasks of pronunciation (Carpenter & Mueller, 2013). It is argued that learning pronunciation rules takes into notice the shared traits among stimuli rather than observing discriminative contrast which may be supported by the ongoing increase in pronunciation performance of the participants kept in blocked condition in all three tests (Carpenter & Mueller, 2013; Dunlosky et al., 2013). Moreover, the blocked practice method is more successful than interleaving in assisting the learners in learning the rules of pronunciation as this method makes it easier to notice similarities among stimuli.

### ***5.4.3. Difference in the Progression of Fluency Performance during the STSs***

There was no statistically significant difference observed in the current research between interleaving and blocked practice in measuring the degree of improvement in fluency during the three rounds of STSs. The benefits of blocking in the improvement of L2 fluency in all three tests seen in the study were not statistically significant. Yet, this observation may propose that blocking rather than interleaving may be more effective for task repetitions concerning high similarity

or stimuli retrieval (Brunmair & Richter, 2019; Carpenter & Mueller, 2013; Carvalho & Goldstone, 2014; Zulkiply & Burt, 2013). This slight benefit for blocking observed in the present study may also be explained by the conceptualizer, formulator, and articulator components found in the speech production model (Levelt, 1989) and bilingual production model (Kormos, 2006). When the same language tasks or closely associated language tasks are repeated a definite number of times, before switching to a different language task which is implemented in blocking, it may clear out the attentional resources for all the components recognized in speech production or bilingual production. The dissemination of attentional resources is needed for the tasks designed for the enhancement of fluency for the functioning of the working memory of the L2 learners (Fukuta, 2016) in the acts of conceptualization, formulation, and articulation. The attentional resources released by the method of blocked practice allow for linguistic formulation because task repetition of a similar kind may make the L2 learners acquainted with it (Fukuta, 2016). Task repetitions of such type may also encourage L2 learners' basic linguistic knowledge in the process of proceduralization or automatization, which provides a route to a steady and significant development in L2 fluency with regards to a decline in mid-clause pauses and a rise in clause repairs (de Jong & Perfetti, 2011; Lambert et al., 2017). A greater improvement in fluency in the L2 can be observed in such task repetitions because blocked practice results in the rise of articulation rate and also shortens mid-clause pause duration than the practice of interleaving (Suzuki, 2021).

#### ***5.4.4. Difference in the Progression of Vocabulary & Grammar during the STSs***

During the period of three-month-long vocabulary and grammar practice sessions, no significant difference was observed between the methods of interleaving and blocking in an attempt to examine whether any progression was made in the learning of English vocabulary and grammar in the study. It was remarkable that those participants who followed the blocked practice method frequently used little more complex forms and structures in the intermediate test as well as the post-test.

Additionally, they also demonstrated slightly more flexibility and chose suitable words. According to some studies (e.g., Brunnair & Richter, 2019; Carpenter & Mueller, 2013; Carvalho & Goldstone, 2014; Zulkipli & Burt, 2013), task repetition practices where items have high resemblance or where retrieval of stimuli are effectively implemented, hold more effectiveness under the method of blocked practice than interleaving. These studies may help to explain the advantage of blocking. The influence of a desirable difficulty framework may also be the reason for the advantage noted in favour of blocked practice (Porter et al., 2007; Porter & Magill, 2010). The participants in the study had an experience of learning the English language for more than ten years. But, surprisingly, their pre-test performance revealed their inadequacy in flexibility and correctness in the choice of words. Moreover, there was rarely any complexity in the forms and structures of their English sentences. Since the participants in both groups demonstrated low English proficiency, the practice of interleaving might have caused anxiety due to the influence of contextual interference among the participants who were kept under interleaved conditions. On the other hand, the practice of blocking might have offered an appropriate level of difficulty to the participants kept under the blocked condition which led to slightly more flexibility and choice of proper words accompanied by utterance of complex forms and sentence structures in English frequently.

#### **5.5. Research Question 4:**

**Is there any significant difference between IL and BP in their effect on the progression of attitude and motivation of the participants towards learning English during the three rounds of the STSs?**

##### ***5.5.1. Differences in L2 Attitude and Motivation in the Initial Phase of the STSs***

In an attempt to examine the changes in L2 attitude and motivation, it was found that across the three SA-based criteria, there was no statistically significant variation observed between the groups in this current research. This observation supports certain longitudinal studies conducted in the past by San Isidro and Lasagabaster (2022). However, there were some important outcomes regarding the

impact of scheduling tasks on the remaining two SA-based criteria- coping potential and self/social image. Some of these findings supported the shifting trait of L2 attitude and motivation seen in earlier studies (e.g., Dörnyei et al., 2014; Kim & Kim, 2016; Ryan & Dörnyei, 2013; Ushioda, 2009). In addition to that, it agreed with the claim made by Lasagabaster and Doiz (2017) that L2 attitude and motivation may be influenced by strategies and methodology of teaching. The observations that follow can be discussed in this context more precisely.

The English training sessions conducted in the first month demonstrated no significant difference in the effects between the two methods-interleaving and blocking on the majority of the SA-based criteria of L2 attitude and motivation. However, some slight variations were noted during the initial phase of data collection. In the second round of data collection which was planned and organized after the end of the first round, these minor differences continued to show up. Throughout the first month, the responses of the participants to the SA criteria of novelty, pleasantness, need significance, and self/social image remained almost constant. In their initial responses, the interleaving and blocked practice groups exhibited a high degree of motivation for learning English. Additionally, the task schedule manipulation did not establish any distinct impact on the motivation of L2 learners. Nevertheless, in all the five SA criteria the participants in the blocked practice group demonstrated a comparatively higher rate of motivation than the participants in the interleaved group. In the SA criterion of coping potential, the blocked practice method was found to significantly affect L2 motivation. To foster a worry-free environment in the classroom during the training program, the task scheduling method of blocked practice was found to be significantly more effective and successful than the method of interleaving. Blocking is suitable for language learners who are at the beginner stage with low language proficiency, as suggested by the desirable difficulty framework (Bjork, 1999; Porter & Magill, 2010). Whereas, interleaving might cause anxiety among novice learners at the beginning phase (Bjork, 1994). Interleaving triggered more stress among the learners and they became anxious while performing which was

not observed in blocking, even though the learners' stress and anxiety levels decreased after one month into the speaking sessions.

### ***5.5.2. Differences in L2 Attitude and Motivation in the Final Phase of STSs***

The findings of the task scheduling methods of interleaving and blocking were diverse in the later phase. Both methods were effective and showed some benefits although the differences in the effects of interleaving and blocking on the majority of the SA criteria of L2 motivation were not statistically significant. The end of the third round of practice sessions demonstrated that blocking still had a relatively more positive impact on the SA criteria of novelty, pleasantness, and coping potential than interleaving did. Contrary to what was noticed in the session's initial phases, the criterion of coping potential did not reveal any significant difference between interleaving and blocking in the later phases. Another SA criterion, i.e., need significance remained unaffected by either interleaving or blocking, and, thus, their difference was not significant. However, the interleaved group upgraded significantly from where they were in the initial stages of the program to where they were in this SA criterion in the later stages. The participants' self/social image on the effect of interleaving in this stage was extremely greater than the effect of blocked practice on the similar criterion of SA. In contrast to the initial results of task scheduling that supported blocking, interleaving had a significant positive impact on the participants' self/social image in the later phases. By the third round, the participants were seen to be accustomed to the task scheduling method of interleaving and they might have started to feel that it was suitable for their level of capability in terms of English speaking proficiency (Porter & Magill, 2010).

### ***5.5.3. Differences in the Progression of L2 Attitude and Motivation***

The experimentation scheduled for three months revealed that the scheduling of tasks in the study displayed an ascending and descending curve while measuring the progression of each of the five SA criteria of L2 attitude and motivation for interleaving and blocked practice groups. Both methods yielded immense motivation for the SA criteria of pleasantness and coping potential during the data

collection of the first and fourth rounds. But, in the second and third rounds, there was a significant drop in motivation. Moreover, both the methods of interleaving and blocking maintained high motivation in the beginning concerning the SA criteria of novelty and need significance. Yet, it declined significantly in the middle and shrunk a little short of a similar amount of motivation in the third round. Whereas, there was a significant change in the initial level of motivation for interleaving and blocked practice methods in the SA criterion of self/social image. In the case of blocking, it decreased slightly in the middle and increased at a rapid rate. However, it declined very rapidly in the middle and significantly increased in the case of interleaving. As a result, a slight increase in motivation was found between the two rounds of collection of data using the same instrument -at the beginning and the end for interleaving and blocking in the SA criteria of pleasantness and coping potential. In the case of the SA criteria of novelty and need significance, there was a minor drop in motivation in interleaving and blocking. On the other hand, an increase in interleaving was seen in the SA criterion of self/social image and a decrease in blocking during the same period. However, there were only two SA criteria of L2 motivation that were statistically significant. These were coping potential and self/social image. The significance was measured in terms of how L2 attitude and motivation progressed throughout the three-month experimentation. Language learning might be made less stressful by creating a positive learning environment with the help of blocking. A more positive self/social image can be attained in the long term using the method of interleaving which is more effective than blocking in this regard.

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