



Research Article

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Exploring the Motivation of Pupils towards the Implementation of QR Codes in Pronunciation Learning

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Abstract

The implementation of Quick Response (QR) codes in education has become increasingly popular. Previous studies proved that it can increase the motivation of pupils in learning. Hence, this research investigates the difference of pupils' motivation levels in learning pronunciation after the implementation of QR codes. We examine the motivation of pupils in terms of four aspects: interest, competence, perceived choice and sense of belonging. Accordingly, we propose a QR code model, which is linked to Google Forms that contain audio recordings for pronunciation practice. With the proposed QR code activity, the pupils can record their versions of audio recordings of pronunciation and submit to their teacher for feedback. The participants are 90 year 4 pupils from a sub-urban Chinese primary school in Johor. We employ a pre-experimental research design in this research. We collect our data by using 2 research instruments: survey questionnaires and observation checklist. We administer the survey questionnaires before and after the implementation of QR codes to find out the changes in the motivation of pupils. We also utilise an observation checklist to examine the attitude of the participants during the implementation of QR codes in pronunciation learning. The findings of this research reveal a significant change in the pupils' motivation towards the implementation of QR codes in pronunciation learning. Specifically, we find an increment of motivation in learning pronunciation as the pupils show interests in learning.

Keywords: Quick Response (QR) code, motivation, pronunciation, interest

1. Introduction

English is considered a global lingua franca because of its wide usage worldwide. It meets the need for a common language because it maintains the relationship amongst people from different nations (Rao, 2019). People who speak different mother tongues can communicate with one another using English. Therefore, it plays a crucial role in connecting people around the world. Given the importance of English, many people learn it as a second language or as a foreign language. Four language skills, namely, listening, speaking, reading and writing, play an essential role in learning English (Sadiku,

2015). To teach and improve the performance of students in language skills, teachers have employed different teaching methods in the teaching and learning processes. One of the teaching methods is integrating technology into classroom activities. These activities can act as supporting tools to improve the quality of the teaching and learning processes.

Currently, technology is widely used in education as it can ease teaching in different ways. Apart from facilitating the teaching process, it also helps in improving the learning process and increasing pupils' motivation (Yunus, Nordin, Salehi, Embi & Salehi, 2014). According to Peeraer and Van Petegem (2012), technology facilitates the efficient delivery of the learning content. One example is the use of Quick Response (QR) codes. QR codes are images that can be scanned to access considerable information, such as texts, links, email addresses and websites (Sharma, 2013). A wide variety of information can be embedded in these 2D barcodes. Moreover, QR codes are an effective and time saving tool, given that people can simply use their mobile phones to scan these codes. By scanning these codes, people can access the information that they want.

The use of technology, such as QR codes, is becoming common in various fields, such as in the marketing, communication or industry sectors. QR codes are also being introduced and employed in education. The use of QR codes in education brings numerous benefits to educators and learners. This practice is supported by Sharma (2013) who stated that QR codes are an ideal tool in education as they allow educators and learners to access information easily. QR codes are also a potential tool to be used in the teaching and learning processes as they affect the motivation of pupils (Rasul, Rauf, Mansor & Affandi, 2017). This claim is supported by Mehendale, Masurekar, Nemade and Shivthare (2017) who argued that QR codes enhance the motivation of pupils in learning. The importance of pupils' motivation is also mentioned by Gilakjani and Ahmadi (2011) who stated that motivation determines whether pupils can develop their pronunciation. Gilakjani (2011) mentioned that lack of motivation is one of the serious difficulties faced in pronunciation learning. Hence, QR codes can be implemented in learning process as it can motivate the pupils to learn.

Considering the findings in previous studies, we find that QR codes have been implemented in classroom for teaching language skills. These studies are significant for education sector as they provide insights and findings on the potential use of QR codes in improving the teaching and learning processes. The above studies presented that QR codes have positive influences on teaching language skills as they motivate and improve pupils' motivation in learning. Accordingly, this study aims to determine whether the implementation of QR codes can result in changes in pupils' motivation in pronunciation learning.

2. Literature Review

2.1 *Teaching and Learning of English Pronunciation*

According to Foote, Trofimovich, Collins and Urzúa (2016), the most frequently used methods by educators in Ireland are listen-and-repeat activities to provide corrective feedback. In these activities, the teachers provide their feedback whilst the pupils read aloud the given words. In another context, Hayati (2010) pointed out that one of the effective ways to improve pronunciation in Iran is to integrate pronunciation instruction with other instructions. The teachers can bring in the pronunciation problem through different techniques and relate it to the real-life situations of the pupils. In the Turkish context, technology is incorporated into the teaching of pronunciation. Computer assisted pronunciation training software is used to improve the pronunciation because it provides drilling practice for the learners and enables them to select the materials that they want to review on. Hismanoglu and Hismanoglu (2011) found out that technology-based materials have better influence on pronunciation than printed materials.

In Malaysia, Pillai and Jayapalan (2011) found that the two most common used pronunciation activities in classroom settings are reading aloud and listening activities. In these activities, the teachers instruct their pupils to pronounce the words and sentences as a class, and thus this practice fails to

motivate the pupils' interest in learning. Given that the pupils have lack of personal experience with the target language, their motivation is affected (Smit & Dalton, 2000). The teachers are also having problems in teaching pronunciation based on a British model because of their Malaysian accent (Pillai, 2017). They are lacking in terms of pedagogical knowledge in teaching pronunciation. This issue influences the pronunciation learning of pupils as teachers form a core component in classes and determine the success and failure of any subject in school (Philip, Tan & Jandar, 2019). Consequently, the teachers are not able to motivate the pupils to learn pronunciation.

Despite the importance of pronunciation, teachers place lesser emphasis on teaching pronunciation (Shah, Othman & Senom, 2017) than grammar and other language skills, such as listening, speaking, reading and writing. Some of the teachers explained that they do not put much attention on pronunciation because it is not the main focus in examination. However, teachers who acknowledged that pronunciation is crucial in speaking spend time and exert effort in improving the pupils' pronunciation. The above findings are echoed by Nair, Krishnasamy and De Mello (2017) who claimed that pronunciation plays an essential role in supporting communication.

2.2 *Integration of QR Codes in Classroom Activities*

Previous studies investigated the effectiveness and potential use of QR codes in classroom activities. The influence of integrating the QR codes are being reported as the findings can be used as a reference and insight for future research. Considerable research reveals the positive influences of QR codes towards the learning of pupils, whereas a few studies report the limitations of integrating QR codes.

The most reported benefit amongst past studies is motivation. QR codes can motivate the pupils to learn and participate in the classroom activities. Rikala and Kankaanranta (2012) stated that QR codes are an interesting and motivating tool for the pupils. This tool supports and encourages the pupils to learn. Goh and Jarrett (2014) presented the same findings that QR codes encourage the active participation amongst the pupils by increasing their interest and motivation in learning. Accordingly, motivation is the main factor that leads to the active participation amongst the pupils. It is the intrinsic factor that encourages and triggers the learning of pupils.

Past studies revealed that technology can be used to help teachers and pupils access information at ease. Ali, Santos and Areepattamannil (2017) also claimed that the application is easy to use and allows for quick access of information. Thus, the learning period of pupils can be optimised through various technologies. A prior study proved that QR codes can fulfil pupils' learning needs as it is convenient, fast and efficient (Latif, Fadzil, Azzman & Ng, 2011). Given that QR codes are easy to manage, pupils can take control of their learning process, which in turn lowers their anxiety in learning.

Although the integration of technology is becoming increasingly common in the teaching and learning processes, QR codes remain a novel application to be implemented in classroom settings, especially in primary school. Hence, this tool arouses the curiosity amongst the pupils. Saprudin, Goolamally and Latif (2014) claimed that QR codes can promote the pupils' motivation and curiosity in learning. Curiosity within the pupils can promote their active participation and arouse their interest in learning. This claim is supported by Hapsari, Ekawati and Molla (2019) who presented QR codes as a fun medium that motivates, encourages and creates pupils' curiosity towards learning. Furthermore, QR codes promote self-exploration. Kossey, Berger and Brown (2015) pointed out that pupils can explore a topic on their own, which in turn creates a sense of ownership within them. This sense of ownership engages the pupils in the activities and makes the learning enjoyable. These benefits of QR codes are able to stimulate the positive learning attitude of pupils and develop their motivation in learning.

2.3 *Self-Determination Theory*

Motivation determines the attitude of a person. This definition is also applicable to the educational context in which pupils' motivation in learning influences their attitude. Self-determination theory can

be used to explain this situation in which pupil's motivation determines their engagement in classroom activities (Reeve, 2012). Self-determination theory is concerned with the fulfilment of basic psychological needs in promoting motivation. The three basic psychological needs in this theory are autonomy, competence and relatedness. The satisfaction of these needs has a direct relation to the well-being of pupils in a classroom. Accordingly, pupils' motivation in learning can be promoted when these psychological needs are being satisfied during the learning process.

According to Kusrkar, Croiset and Ten Cate (2011), autonomy refers to the need to feel that one carries out the task based on his/her own choice. Pupils tend to participate in the classroom activities when they are interested in learning. Competence is the ability to learn and master various materials effectively (Milyavskaya & Koestner, 2011). The learning process should let the pupils feel that they are supported by their teacher. By doing so, they can master the learning materials at ease. Relatedness is associated with the sense of belonging (Beachboard, Beachboard & Adkison, 2011). Pupils should feel that they are a member of the learning community. Pupils' intrinsic motivation can be enhanced when they are able to communicate and learn with their peers.

2.4 Conceptual Framework

This study aims to investigate the change in motivation amongst the pupils towards the implementation of QR codes in pronunciation learning. The learning attitude of pupils is greatly influenced by motivation. This relationship can be explained through self-determination theory in which pupils are motivated to learn, and the fulfilment of these psychological needs can result in changes in their learning attitude. Accordingly, we propose a conceptual framework.

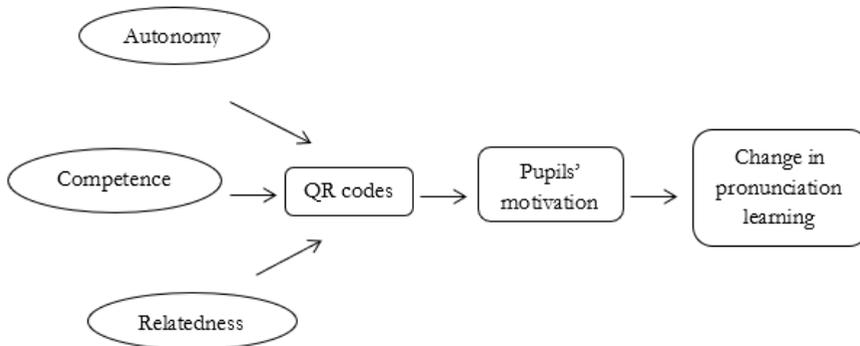


Figure 1: Conceptual Framework

Motivation within the pupils is driven by three psychological needs: autonomy, competence and relatedness. The integration of QR codes in teaching and learning of pronunciation can fulfil these needs. QR codes allow pupils to take control of their own learning and learn on their pace. Pupils can practice the pronunciation by themselves through QR codes. This advantage fulfils the pupils' need for autonomy. Past studies stated that QR codes are easy to use, and pupils can obtain information easily. This characteristic of QR codes meets the pupils' need for competence as they are able to manage the learning tool at ease. Consequently, they can improve their pronunciation using the application. QR codes also promote the pupils' need for relatedness. This tool allows the pupils to cooperate with their friends whilst using QR codes and practice their pronunciation with one another. When these three psychological needs are fulfilled, the pupils' intrinsic motivation is stimulated, which results in positive influence on pronunciation learning.

Motivation within the pupils can bring to the change in their learning attitude towards

pronunciation learning. Motivation plays a crucial role in promoting the active participation amongst the pupils. They are eager to do the activities prepared by the teachers when they can learn on their pace, work together with others and take control of their learning. Pupils' participation in the classroom activities facilitates the reception of knowledge from teachers effectively, thus improving their performance and stimulating changes in their learning attitude.

Following the proposed conceptual framework, we develop a QR code model.

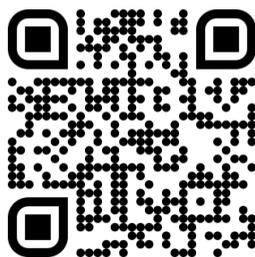


Figure 2: QR code model

This QR code is linked to Google Forms that contains pronunciation practices. The pupils listen to the audio recordings in Google Forms and practice their pronunciation by reading aloud the sentences. When they are confident with their pronunciation, they have to record their own audio recordings using Online Voice Recorder. The audio recording file is uploaded and submitted to the teacher. The teacher will then assess the pronunciation of the pupils and provide feedback as necessary.

3. Methodology

We employed a pre-experimental research design in this study.

3.1 Participants

A total of 90 pupils participated in this study. All the participants were 10 years old. They were year 4 pupils in a sub-urban Chinese primary school. The participants came from different ethnic groups, including Malay, Chinese and Indians. They were learning English as their second language. We provided the participants with pre-survey questionnaires to determine their motivation levels in learning pronunciation with traditional method. Then, they answered post-survey questionnaires after they underwent the learning process with the implementation of QR codes.

3.2 Instruments

We used two research instruments, namely, questionnaires and observation checklist, to collect our data. We selected questionnaires to compare and contrast the gathered data. We provided the participants with questionnaires before and after the implementation of QR codes. The participants used their previous learning experiences with traditional method to answer the pre-survey questionnaires. Then, we provided post-survey questionnaires after the implementation of QR codes. These post-survey questionnaires aimed to investigate the change in the participants' motivation in pronunciation learning. We adopted Intrinsic Motivation Inventory to construct the questionnaires and assess the subjective experiences of the participants when developing an activity grounded on self-determination theory (Monteiro, Mata & Peixoto, 2015). The questionnaires included 4 aspects: (a) interest/enjoyment, (b) competence, (c) perceived choice and (d) sense of belonging. Each aspect

consisted of 3 statements, with a total of 12 statements. We required the participants to tick ‘Agree’ or ‘Disagree’ for every statement. We provided the participants with the same set of questionnaires before and after the implementation of QR code. We explained and translated the statements in the questionnaires orally into Chinese language to ensure that the participants could comprehend the statements and provide accurate responses.

We also utilised an observation checklist to analyse the participants’ attitude during the learning process. The checklist consisted of 7 statements on the aspects to be observed. The statements examined the participants’ attitude in terms of interest, competence and sense of belonging. We randomly selected 30 participants in groups of 5 to observe them effectively and ticked the relevant statements on the basis of our observation.

3.3 Data Collection and Analysis

We used questionnaire and observation checklist to collect our data. We tabulated and analysed descriptively the data collected from both research instruments. All the participants (n = 90) were involved in answering the questionnaire. The questionnaire had a total of 12 statements. We counted and presented in percentage form the number of participants who chose ‘Agree’ and ‘Disagree’. We compared the data for pre and post-survey questionnaires, as shown in Table 1. We employed Cronbach’s Alpha to examine the internal reliability of the items in the pre-survey questionnaire. The result showed that the questionnaire had high internal consistency reliability of 0.989 for all the items. Hence, we used the same questionnaire for the post survey.

We also analysed the observation checklist descriptively. The participants carried out the learning process with QR codes in groups of 5. We randomly observed 6 groups consisted of 30 participants each. Specifically, we observed the participants’ individual attitude and reaction during the learning process. We ticked a total of 7 statements in the observation checklist on the basis of the observed attitude. We counted and tabulated in percentage form the number of participants who met each statement in the observation list.

4. Results

In this section, we presented the data collected from survey questionnaire and observation checklist. Table 1 shows the data collected from survey questionnaire. A total of 90 participants were involved in answering the pre and post-survey questionnaires. We analysed and presented the results through descriptive statistics. The descriptive statistics showed the percentage of the participants who answered ‘Agree’ and ‘Disagree’ for both questionnaires.

Table 1: Data collected from survey questionnaire (n = 90)

Aspect	Statements	Pre survey		Post survey	
		Agree n (%)	Disagree n (%)	Agree n (%)	Disagree n (%)
Interest/ Enjoyment	1. I enjoyed doing this activity very much.	37 (41.1)	53 (58.89)	58 (64.44)	32 (35.56)
	2. This activity was fun to do.	29 (32.22)	61 (67.78)	60 (66.67)	30 (33.33)
	3. This activity held my attention.	34 (37.78)	56 (62.22)	55 (61.1)	35 (38.89)
Competence	4. I was satisfied with my performance.	48 (53.33)	42 (46.67)	60 (66.67)	30 (33.33)
	5. I could do well in this activity.	43 (47.78)	47 (52.22)	63 (70)	27 (30)
	6. I think I did well compare with others.	35 (38.89)	55 (61.1)	57 (63.33)	33 (36.67)
Perceived choice	7. I did this activity because I wanted to.	26 (28.89)	64 (71.1)	63 (70)	27 (30)
	8. I believed I had some choice about doing this activity.	30 (33.33)	60 (66.67)	54 (60)	36 (40)
	9. I felt I was free to decide what to learn.	32 (35.56)	58 (64.44)	48 (53.33)	42 (46.67)
Sense of belonging	10. I could learn from other pupils.	47 (52.22)	43 (47.78)	56 (62.22)	34 (37.78)
	11. I could interact with others in this activity.	26 (28.89)	64 (71.1)	53 (58.89)	37 (41.1)
	12. I enjoyed learning with other pupils.	28 (31.1)	62 (68.89)	63 (70)	27 (30)

4.1 Interest/Enjoyment

We used Statements 1 to 3 to determine the interest of participants in carrying out the activity. From Statement 1, we found that the participants enjoyed the pronunciation learning with QR codes as 64.44% of them agreed with the statement. We could also observe a great increment of percentage from Statement 2, 'This activity was fun to do' and Statement 3, 'This activity held my attention'. Moreover, 66.67% of the participants agreed that learning pronunciation with QR codes was fun, and 61.1% agreed that the activity was able to hold their attention. These results showed that the participants' attitude had changed and they became interested and motivated to learn pronunciation.

4.2 Competence

We used Statements 4 to 6 to find out the participants' competence in using QR codes and satisfaction towards their performance. The participants agreed that they could perform well in the activity, and they were satisfied with their performance. Specifically, 66.67% of the participants said that they were satisfied with their performance in pronunciation using the QR codes. Moreover, 47.78% of the participants felt that they did not do well when they learnt pronunciation with traditional method, and 70% opined that they could do well after QR codes were implemented in the learning process. For Statement 6, 63.33% of the participants agreed that they did better than the others.

4.3 Perceived Choice

We used Statements 7 to 9 to investigate the participants' perception towards the choice of learning. We find that 60% of the participants felt that they had choice about doing the activity, and 70% agreed with Statement 7, 'I did this activity because I wanted to'. This result showed that the participants had gradually gained motivation and interest in learning pronunciation. We observed a slight increment of percentage for Statement 9 in which 53.33% of the participants expressed that they were free to decide what to learn.

4.4 Sense of Belonging

With regard to sense of belonging, we also listed 3 statements in the questionnaire. From the data collected, we found that QR codes encouraged interaction amongst the pupils. Specifically, 58.89% of the participants agreed that they could interact with others during the activity. Moreover, 70% of the participants expressed that they enjoyed learning with one another. QR codes were able to encourage the learning amongst the participants. From Statement 10, we found 62.22% opined that they could learn with one another during the learning process.

In addition to survey questionnaire, we analysed the data collected from observation checklist and presented them descriptively. We ticked the 7 statements in the observation checklist on the basis of our observed reaction and behaviour of the 30 participants during the pronunciation learning with QR code. Then, we counted the number of the participants who possessed the behaviours stated in the observation checklist and presented them in descriptive statistics, as illustrated in Table 2.

Table 2: Data collected from observation checklist ($n = 30$)

No.	Statements	Number of participants - n (%)
1	Feel happy or excited whilst doing the activity	24 (80)
2	Show boredom or confusion during the activity	12 (40)
3	Carry out the activity without assistance from the teacher	21 (70)
4	Listen to the recording repeatedly	26 (86.67)
5	Repeat after the recording	30 (100)
6	Ask help from other group members	15 (50)
7	Correct other group members' pronunciation	12 (40)

We constructed the statements in the observation checklist on the basis of 3 aspects: interest, competence and sense of belonging. Statements 1 and 2 were concerned with the interest of participants in learning pronunciation with QR codes. Amongst the 30 participants observed, 80% of them showed happiness and excitement whilst doing the activity. This result showed that the participants were motivated to learn and practice their pronunciation through the use of QR codes. However, we also observed that 40% of the participants showed boredom and confusion during the activity.

Statements 3, 4 and 5 focused on the aspect of competence. Amongst the participants, 70% could carry out the activity without assistance from the teacher. This result showed that QR codes were easy to use and suitable to be implemented in the learning process. For Statement 4, 86.67% of the participants listened to the recordings repeatedly. This result proved that they were motivated to learn and improve their pronunciation. All of them could be seen to repeat the sentences after the recordings. They tried their best to practice their pronunciation before recording their own versions to be submitted to the teacher.

Statements 6 and 7 focused on the aspect of sense of belonging. We found that 50% of the participants asked help from other group members during the activity. This result proved that they could help one another in solving problems during the learning process. Moreover, 40% of the participants would correct their friends' pronunciation. This result showed that learning pronunciation with QR codes encouraged the mutual relationship between the pupils in which they would support one another.

5. Discussion

This study aims to investigate the motivation of pupils towards the implementation of QR codes in pronunciation learning. We use the results from the questionnaires and observation checklist for discussion. We discuss the changes in pupils' motivation in terms of interest, competence, perceived choice and sense of belonging.

From the survey questionnaire results, we find that the pupils gained interest in learning pronunciation. Most of the pupils disagreed that they enjoyed the learning with traditional method. The traditional method could not attract the attention of pupils and thus failed to increase their motivation. On the contrary, the pupils agreed that they enjoyed learning pronunciation with QR codes in the post-survey questionnaire. The pupils also expressed that the QR code activity was fun and able to hold their attention. The results from the observation checklist prove that the QR code activity has succeeded in gaining the pupils' interest in learning pronunciation. The pupils looked happy and excited during the activity. Gaining interest in learning leads to the increment of motivation amongst the pupils. This finding supports the study of Shahriarpour and Kafi (2014) who claimed that the motivation of the pupils can be improved if the learning method aligns with their interests.

Contradicting with the positive attitude shown by most of the pupils, a few pupils showed boredom and confusion whilst using QR codes. These pupils were still struggling with the use of QR codes, which was a novel learning method for them. However, the majority of the pupils agreed that they could do well during the activity. They also expressed that they were satisfied with their performance in learning pronunciation. The observation checklist shows the same result in which the pupils could carry out the activity without assistance from the teacher. This finding proves that QR codes are easy to use, and the young learners manage to learn on their own. The same finding can be found in the study of Durak, Ozkeskin and Ataizi (2016) who mentioned that QR codes support independent learning. The pupils also listened to the audio recordings repeatedly, and all of them tried to repeat the words after the recordings. This observation shows that they were motivated to learn as they practised the pronunciation on their own, and they had the initiative to improve their pronunciation as good as they can.

QR codes also allow the pupils to have choices whilst learning. According to a study by Hanover Research (2014), pupils' choice has positive effects on their motivation and participation. From the

questionnaire results, we notice that the pupils agreed that they had some choices in doing the activity. They also opined that they were free to decide what to learn. The pupils' perceived choices enable them to engage actively in the learning process, promoting their motivation in learning. By developing the pupils' intrinsic motivation, they develop the desire to continue learning (Alizadeh, 2016). QR codes can promote the motivation of pupils as the result obtained from the questionnaires showed that they did the activity because they wanted to.

Sense of belonging is another crucial component in promoting the motivation of the pupils. From the questionnaire result, we find the pupils agreed that they could learn and interact with others during the activity. They also expressed that they enjoyed learning with one another. This finding shows that QR codes promote the sense of belonging within the pupils. The pupils were having mutual relationship amongst themselves that would bring to the development of motivation. The result from observation checklist shows that the pupils would ask help from other group members when they faced difficulties in learning pronunciation. They also corrected the pronunciation of their friends. They were comfortable with the learning environment and willing to help one another. Hence, we can conclude that QR codes promote the pupils' motivation by developing their sense of belonging.

6. Conclusion

The findings in this study revealed that the implementation of QR codes resulted in changes in the pupils' motivation towards pronunciation learning. The pupils showed positive attitudes and increments of motivation after implementing QR codes in pronunciation learning. QR codes are able to motivate the pupils to learn as it fulfils their learning needs. This tool promotes the pupils' interest in learning, encourages social learning and exhibits advantages, such as ease of use. Motivation stimulates the pupils to continue learning and improving their pronunciation.

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