

## Research Article

# The Application of Wireless Sensor Technology of Internet of Things in Korean Language Teaching

## Yajie Bi 🕩

School of Humanities and Education, Xijing University, Xi'an, 710123 Shaanxi, China

Correspondence should be addressed to Yajie Bi; 20130083@xijing.edu.cn

Received 2 March 2022; Revised 14 April 2022; Accepted 25 April 2022; Published 26 May 2022

Academic Editor: Lisheng Fan

Copyright © 2022 Yajie Bi. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

The Internet of Things sensor technology network can be regarded as consisting of three parts: data acquisition network, data distribution network, and control management center. Sensor technology has the comprehensive processing ability to obtain various information signals, and the technology is integrated into the sensor equipment, so that the sensor technology is connected to form a sensor network with comprehensive information processing capability, which has been widely used in foreign language teaching in recent years. This paper analyzes the shortcomings of traditional Korean language teaching methods in the new situation in detail. It starts from the actual situation and focuses on stimulating students' interest and proposes a Korean language teaching method based on the Internet of Things wireless sensor technology. This article focuses on analyzing the application of the wireless sensor technology of the Internet of Things in Korean language teaching and applies this method in practical teaching. It verifies the feasibility and effectiveness of the technology for Korean language teaching the wireless sensor technology of the Collected data. In this paper, the experiment shows that the application of the wireless sensor technology of the Korean language teaching can improve the students' grades by about 30%. This stimulates students' interest in learning very well and is of great help to improve students' learning ability, oral communication ability, and Korean thinking ability, which stimulates students' interest in learning ability.

## 1. Introduction

The rise and development of Internet of Things technology have made it more and more widely used in other fields. As one of the technologies in the Internet of Things, which has a huge effect on education and teaching, wireless sensor technology is one of the modern sciences and technologies to promote educational reform, and its application in the field of education has become an irresistible trend [1]. And as the Korean trend has gradually penetrated into the lives of the people in China, major universities have successively opened Korean language learning courses in order to conform to the trend of the times [2]. However, there are still big problems in traditional Korean language teaching, such as lack of Korean language teaching resources, poor teaching effect, and difficult teaching environment to meet the standards of modern education. In addition, the evaluation of Korean language teaching is also a big problem. It is difficult

for teachers to accurately evaluate students' Korean learning effect and overall Korean teaching level, so they cannot formulate accurate teaching plans. Therefore, it is imperative to promote the reform of Korean language teaching with the help of the Internet of Things and wireless sensor technology.

By applying the Internet of Things to Korean language teaching, students and teachers can search for abundant teaching and learning resources through the Internet of Things, to promote the sharing of Korean language teaching and learning resources, and improve the problem of lack of teaching resources in Korean language teaching. It promotes the reform of Korean teaching mode, changes the teacherled teaching mode in traditional Korean teaching, and promotes the innovation of Korean teaching methods [3]. The application of wireless sensor technology to the Korean language teaching can effectively promote the formation of the Korean language learning environment, improve the single phenomenon of the Korean language teaching curriculum, and improve the rationality of the teaching curriculum. It can also enable students to speak Korean with their mouths open and improve their oral Korean proficiency. It not only focuses on cultivating students' listening, speaking, reading, and writing skills but also improves students' driving ability and improves classroom teaching efficiency. It changes the Korean language teaching mode to improve students' motivation to learn Korean and guide students to set correct learning goals so that they can have enough motivation to learn the language.

In order to promote the change of the teaching mode of Korean and improve the enthusiasm of students to learn Korean, many scholars have discussed and researched the current Korean teaching and learning. Among them, Tong is exploring the possibility of applying flipped learning, which has recently attracted attention in the world of education, to oral language education in order to improve the communication skills of Korean language learners in Chinese universities. He proposed the problems of oral Korean education in Chinese universities and the actual teaching model of flipped learning oral teaching [4]. In order to improve the Korean language ability of learners from multicultural backgrounds, Park has studied effective reading education and teaching programs and confirmed the learners' self-esteem and learning motivation induction and other meaningful theories for Korean language learning [5]. Lee believes that the myth of Tangun is a practical colloquial literary text that is useful for teaching Korean language and culture. But in practice, most textbooks fail to activate the potential power of myth as oral literature. Therefore, beneficial features such as dynamic communication of communicative competence and active dissemination of cultural knowledge of texts as oral literature rarely appear in language classrooms [6]. Kwon examines the teaching and assessment methods for learning Korean music in elementary schools and details the activities used in and out of school and students' expected learning outcomes by increasing the number of achievement standards [7]. Although these studies have certain implications for Korean language teaching and learning, these studies only discuss Korean language teaching and learning in theory, without specific experimental support and data support, and we cannot know whether it has significantly improved the traditional Korean teaching mode and whether it can promote the improvement of students' comprehensive ability.

The research on Korean language teaching in this paper has the following innovations: (1) this paper summarizes and analyzes the existing problems of Korean language teaching by consulting relevant literature and materials and evaluates the existing Chinese language teaching mode in combination with the actual situation; (2) bring the Internet of Things into Korean teaching, and use the Internet of Things to promote the sharing of Korean teaching resources and the change of Korean teaching mode; (3) use the wireless sensor technology to promote the generation of the Korean language environment and introduce the mother tongue-like learning method into the Korean language learning, in order to improve the students' enthusiasm for Korean language learning; and (4) carry out experiments on the application of wireless sensor technology in Korean language teaching to test whether it can promote Korean language teaching.

## 2. Discuss the Application Method of Wireless Sensor Technology in Korean Language Teaching

2.1. Wireless Sensor Technology. With the continuous development and progress of related disciplines, the sensor network also has the comprehensive processing ability to obtain a variety of information signals. And it is associated with sensor control to form a sensor network with information synthesis and processing capabilities [8]. The wireless sensor network structure is shown in Figure 1.

Wireless sensor network is a distributed network, which is a network form formed by freely conducting and combining a large number of sensor nodes through radio technology. It can be connected to the Internet through a multihop self-organizing network formed by wireless communication [9]. With the help of wireless sensor technology, Korean language teaching can expand the scope of acquisition of Korean language teaching resources and obtain more abundant learning resources. Because the sensor technology needs to be connected to the wireless network, it is necessary to test the distance between the network and the wireless sensor device. Our traditional ranging method uses a three-dimensional centroid positioning algorithm, which is also to allow the sensor to sense the rule of the wireless network so that the two can be connected, so that the sensor device can obtain the required Korean teaching resources through the wireless network [10]. Then, the principle of the 3D centroid positioning algorithm is as follows.

We assume that the centroid is the node at the center of the 2D sensing area, and the 2D coordinate of this node is  $(s_i, y_i)$ . It is assumed that there are w secondary network nodes in the sensor network, and it is assumed that the two-dimensional coordinate of a secondary network node is  $(s_n, y_n)$ , and the coordinate of other unknown nodes is  $(s_0, y_0)$ . Then, the following algorithm is obtained by the position coordinates of the secondary network nodes:

$$s_0 = \sum_{i=2}^N \frac{s_i}{w},\tag{1}$$

$$y_0 = \sum_{i=1}^{N} \frac{y_i}{w}.$$
 (2)

Then, the traditional two-dimensional space is brought into the three-dimensional space to calculate the position coordinate  $(s_i, y_i, t_i)$  of the three-dimensional center of mass; similarly, it can be concluded that the threedimensional coordinates of other unknown nodes are  $(s_0, y_0, t_0)$ , and the three-dimensional coordinates are obtained as follows:

$$s_0 = \sum_{i=1}^N \frac{s_i}{N},\tag{3}$$

$$y_0 = \sum_{i=1}^{N} \frac{y_i}{N},$$
 (4)

$$t_0 = \sum_{i=1}^{N} \frac{t_i}{N}.$$
 (5)

Although this method can quickly calculate the location of network nodes, the signal recovery of wireless communication network is affected by many other factors. Therefore, there will be some errors in the calculation of these unknown nodes, which will cause network delays and make the acquisition of teaching resources slower. Therefore, when the sensor device is connected to the Internet, it is necessary to carefully check whether a network node is normal, which will generate a lot of cumbersome procedures. Wireless sensor network is a multihop self-organizing network that can be formed through the Internet; then, we can use this multihop feature to improve the accuracy of its calculation of unknown node coordinates [11]. The 3D DV-hop algorithm is a positioning method based on distance vector calculation of hops. When the wireless sensor device cannot connect to the wireless network node for a long time, it will automatically jump to find the next network node. It keeps jumping until it finds the best network node to connect to the wireless communication network. In the three-dimensional DV-hop algorithm, let the number of hops be *a* and the hop distance be l. When we calculate the average hop distance between network nodes, the blood medicine relies on the minimum hop distance in the network node and the location information of one of the network nodes. The algorithm of the average hop distance R is as follows:

$$R = \frac{\sum_{i=n} \sqrt{(s_i - s_n)^2 - (y_i - y_n)^2 - (t_i - t_n)^2}}{a * l}.$$
 (6)

After the average hop distance of the sensing device, it is necessary to consider how to reduce the error. Because the more the number of jumps, the error will gradually accumulate and become larger, so it is necessary to use the PSO algorithm to reduce the error and improve the accuracy of the network connection. The PSO algorithm can help the sensing device find the optimal location of the network node. It can be seen that the simplified mathematical model of the network node is as follows:

$$a(s_0 + 1) = wf(s) + n(s) - f(s),$$
(7)

$$l(y_0 + 1) = wf(y) + n(y) - f(y),$$
(8)

$$(t_0 + 1) = wf(t) - f(t).$$
(9)

In the above formula, f represents the speed of the jump. We set the position of the optimal network node P to be  $(s_p, y_p, t_p)$ ; then, the position coordinate  $(s_0, y_0, t_0)$ 

of the unknown node needs to gradually approach P by reducing the error; then, the error reduction process is as follows:

$$\operatorname{Error}_{s_0} = [wf(s) + n(s) - f(s)] * (w_0 * c_0) \longrightarrow s_p, \quad (10)$$

$$\operatorname{Error}_{y_0} = [wf(y) + n(y) - f(y)] * (w_0 * c_0) \longrightarrow y_p, \quad (11)$$

$$\operatorname{Error}_{t_0} = [wf(t) - f(t)] * (w_0 * c_0) \longrightarrow t_p.$$
(12)

In the above formula,  $w_0$  1 is the inertia coefficient, and  $c_0$  is the acceleration coefficient, so that the position of the node at this position is close to the optimal position, and the sensing device can find a better network connection secondary node position. The nodes in the sensing area must be connected with the communication nodes of the wireless network, and there is a distance between the two nodes, as shown in Figure 2.

Figure 2(a) shows the TOA ranging principle, and (b) shows the time difference of arrival ranging method. If the TOA ranging method is used, we assume that the connection time of the two nodes is t, that is, the time from S4 to S3; the formula for calculating the distance g to be measured is as follows:

$$g_1 = \frac{[(s_1 - s_0)] * \nu}{2},$$
 (13)

$$g_1 = \frac{[(s_4 - s_3] * \nu}{2}.$$
 (14)

Then,

$$g = \frac{(g_1 + g_2) * \nu}{2t}.$$
 (15)

In the above formula, v is a certain value, which expresses the propagation speed of wireless signal in the case of quasielastic collision of elementary particles of matter. Although the TOA ranging method can be used to measure the distance, this method ignores a certain equipment response time, so there will be a certain error, and we can use the time difference of arrival ranging method to subdivide these. We can see that the speed of ultrasonic transmission is  $v_1$  and the time is  $t_1$  in Figure 2(a); while the transmission speed of radio communication is  $v_2$  and the time is  $t_2$ , the calculation method of the distance to be measured is as follows:

$$g_1 = (s_1 - s_0) * \frac{v_2}{2} * t_2, \tag{16}$$

$$g_2 = (s_1 - s_0) * \frac{\nu_1}{2} * t_1. \tag{17}$$

Then,

$$g = (g_1 + g_2) * \frac{t_1 t_2}{v_1 - v_2}.$$
 (18)

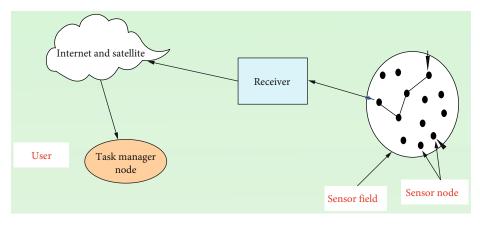


FIGURE 1: Wireless sensor network structure diagram.

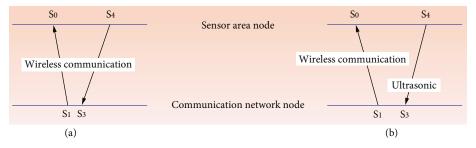


FIGURE 2: Ranging schematic.

The distance and position of the connection between the nodes in the sensing area and the nodes of the wireless network are obtained, which is helpful for us to adjust the connection between the sensing equipment and the wireless network. It can also better obtain online Korean learning resources and teaching resources and at the same time change the Korean teaching mode in colleges and universities.

2.2. Existing Korean Language Teaching in Colleges and Universities. Korean is not as popular as English, so there is a lack of teaching resources in Korean teaching in colleges and universities. Most of the teaching resources of students and teachers come from the textbooks provided by the school, and they continue to learn and teach repeatedly, and the teaching form is single. The traditional Korean teaching mode is shown in Figure 3.

In Figure 3, it can clearly be seen that teachers and students use textbooks issued by the school for after-school learning, so the teaching resources of Korean language teaching in domestic colleges and universities are very limited. In addition, the Korean textbooks of various colleges and universities are the same, which is the same every year, and there is no innovation in the textbooks, nor does it take into account whether the textbooks are suitable for the education of current college students [12]. Since Korean majors enter colleges and universities, they have been bound by the traditional education model, blindly adopting rigid learning methods to learn Korean and rote memorization, and plunge into language learning, regardless of other learning methods. Moreover, students cannot determine in advance

what the ultimate goal of learning Korean is and what their future employment direction is [13]. The lack of flexibility makes learning Korean even more difficult. Some colleges and universities only set up majors for Korean language learning without more detailed subprofessional directions, which will also lead to students learning only some basic language knowledge and no knowledge in other fields except the language itself. Secondly, the level of Chinese and Korean teachers in colleges and universities is insufficient. Teachers are specialized personnel who cultivate the new generation of society and improve the quality of the nation. The social function of education is realized through teachers. With the so-called "famous teachers produce high apprentices," teachers' teaching level and orientation of teaching materials are directly related to students' professional development and learning effect [14, 15]. In colleges and universities, the number of Korean language teachers is sufficient, but the teachers' own teaching level and the ability of Korean language knowledge are not much different. In teaching, one-size-fits-all teaching methods are basically used, and individual teachers cannot form their own teaching directions, and at the same time, they generally lack professional knowledge other than Korean language, such as speaking, reading, and other teaching expertise, but also generally lack professional knowledge other than Korean language [16]. There is also a problem with teachers' teaching methods. At present, the teaching methods of Korean in colleges and universities are all teacher-based teaching methods. Teachers input a large amount of knowledge into students' brains, but what students have learned cannot be effectively output; teachers are

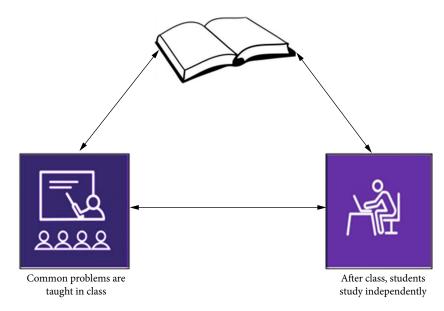


FIGURE 3: Traditional Korean teaching mode.

unable to achieve teaching goals and achieve teaching quality. The problems in Korean teaching are shown in Figure 4.

In addition, in colleges and universities, students' enthusiasm for learning is not high. The temptation of the outside world is more attractive to students, which will gradually wear down the willpower of students to learn, and only effective efforts will make people ignite continuous learning motivation. However, there is a big problem in the curriculum setting of the university. Students cannot see their own obvious progress in their learning, and their motivation to study is gradually wiped out. And when learning Korean, students will think about what aspects of Korean language can be linked to life after graduation, and whether it can play a role in future work and study is unclear. Students lack overall goals and are more lazy [17]. In addition, there is no specific Korean language environment, which makes the learning of Korean even more difficult. Students blindly receive the knowledge imparted by teachers, but there is no effective output, so that the learned knowledge will be gradually forgotten. Therefore, it is difficult for Korean language teaching in colleges and universities to achieve teaching goals and achieve teaching level.

2.3. Application of Wireless Sensor Technology in Korean Language Teaching. Korean language learning is all about listening, repeating, and communicating. The Korean immersion environment can promote the efficiency of students' Korean learning, and wireless sensor technology can improve students' listening, reading, and speaking skills in Korean. Learning a new language requires understanding its auditory and written forms, as well as the ability to communicate ideas through sound and speech. It sounds simple, but it is difficult to implement because learning Korean in a non-Korean-speaking country makes the immersive environment of Korean extremely lacking [18]. But IoT wireless sensing technology plays a big role in creating an immersive environment in Korean, as the sensor device system can

simulate an immersive experience by using connected objects, as shown in Figure 5.

As shown in Figure 5, it is a smart device using wireless sensing technology. Students need to practice Korean and need to drive the sensor device system, and then, they can have intelligent Korean conversations. Students start speaking in Korean, and what they hear is relayed to the foreign media device. When the foreign media device receives the student's speech, it will be quickly transmitted to the smart device through the wireless network, and the smart device will transmit the sound back to the sensor device to realize Korean communication. If colleges and universities create classrooms with sensing devices, they can create a Korean learning environment for students. In addition, it can improve the motivation of students to learn Korean and greatly promote their comprehensive ability of listening, speaking, reading, and writing in Korean. It creates a simulated learning environment so that students can improve their Korean listening and speaking skills. At the same time, it can also improve students' interest in Chinese learning from the side, and the use of connected hardware in the simulation of the Korean environment helps guide learners.

The sensor equipment system can promote teachers to change their teaching methods, so that teachers can play an auxiliary role in the process of students' Korean learning, and promote students to learn autonomous learning, ensuring that students are learning Korean smoothly. In addition, teachers can give specific help to students in the process of autonomous learning and effectively teach students in accordance with their aptitude, so as to change the traditional teaching mode of teachers and make students become the center of the classroom. Under the simulation of the intelligent environment, the sensing device helps to monitor the students and promote their Korean language learning, thereby changing their learning inertia, and strengthen the online communication between teachers and students, so as to provide more influential learning guidance to students

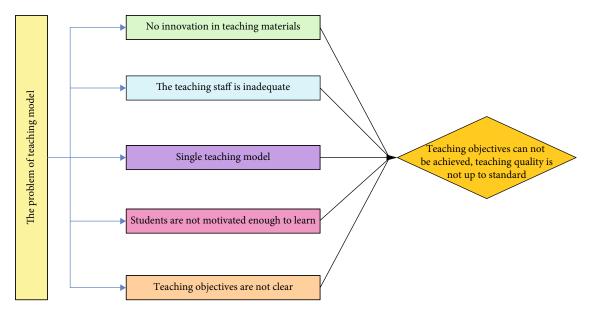


FIGURE 4: Problems in Korean language teaching.

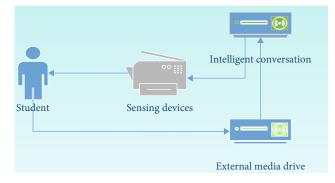


FIGURE 5: Sensing device system.

[19]. And the sensor equipment system has other functions as shown in Figure 6.

Shown in Figure 6 is the internal platform of the sensor equipment system, including the student's usual learning data and the recording platform of the learning situation, the teaching and learning resource platform, and the teacher-student exchange forum platform. In traditional Korean language teaching, teachers will first speak in Korean and then explain in Chinese. This practice is very unfavorable for students to master knowledge points and improve their learning ability and should be stopped. If the bilingual class tastes the same and cannot arouse students' interest, inertia will occur. Therefore, the sensor equipment technology can enable teachers to adjust the teaching method according to the students' specific Chinese learning situation, so as to improve the students' enthusiasm for learning. At the same time, it also improves the teaching ability and level of teachers and improves the teaching quality of Korean teaching [20]. It can also guide students to set correct goals and comprehensively improve their Korean learning ability and Korean language level, so that students can learn in an immersive Korean atmosphere and improve their comprehensive level of Korean [21].

## 3. Experiment and Analysis of the Teaching Effect of Wireless Sensor Technology in Korean Language Teaching

#### 3.1. Experiment and Analysis of Teaching Effect

3.1.1. Experiment 1. This experiment will compare the scores of various aspects in a Korean major in a university. This time, the Korean class 1 and class 2 with the same teacher were selected. The number of students in the two classes is 25. Then, divide the two classes into groups of five, and ensure that the level between each group is basically the same. The first class of Korean uses the traditional teaching method, while the second class of Korean will use the wireless sensor equipment system for teaching, and then, compare the changes of the students in the two classes. Table 1 is the current Korean learning situation of the two classes.

At present, the average Korean learning performance of each group in the two classes is shown in Figure 7.

From Table 1 and Figure 7, the current level of the two classes is basically the same, and the level of each class grouping is basically the same. In the next period of time, the second class will use wireless sensor equipment to conduct classes and Korean language learning, while the first class will still use the usual teaching methods. We usually record the learning situation of the two classes and compare the data recorded before to see the effect of wireless sensor technology in Korean language teaching. The two-class learning situation table is recorded in Table 2.

Comparing Tables 1 and 2, we can see that the students of class 2 Korean language learning using sensing technology have improved by leaps and bounds in all aspects, and their performance in all aspects has basically reached a good or

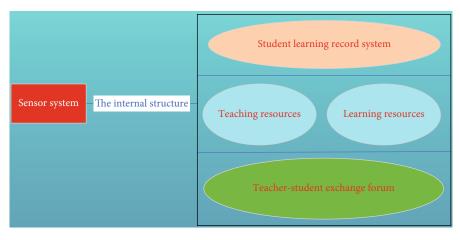


FIGURE 6: Sensing device background.

TABLE 1: The current	situation of Korean	n language lea	arning in the	two classes.

Class	Groups	Independent learning capability	Enthusiasm	Teaching effectiveness	Teaching quality
	1	40	45	50	54
	2	46	45	45	54
First class	3	45	46	53	56
	4	43	43	46	55
	5	44	46	47	54
Second class	1	42	42	56	57
	2	45	46	55	56
	3	46	47	53	54
	4	44	45	52	53
	5	43	44	53	56

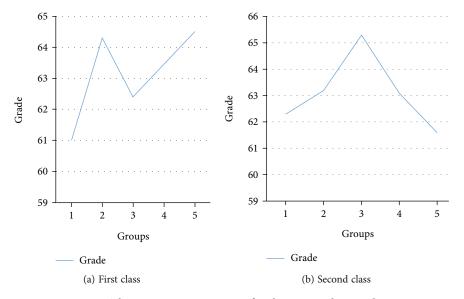


FIGURE 7: The current average scores of each group in the two classes.

even excellent situation, while the situation in all aspects of the first class remained basically unchanged. To this end, we also arranged tests for the two classes to compare with the previously recorded scores, as shown in Figure 8. It can be seen from Figure 8(a) that the results of the traditional teaching method are basically the same as before, and there is not much improvement, but the average scores of each group in the second class have improved significantly.

Class	Groups	Independent learning capability	Enthusiasm	Teaching effectiveness	Teaching quality
	1	44	45	55	50
	2	47	50	47	54
First class	3	44	46	53	57
	4	43	44	46	55
	5	44	47	47	56
Second class	1	66	77	69	69
	2	70	80	67	78
	3	71	78	70	73
	4	78	67	78	75
	5	68	81	75	65

 TABLE 2: Two-class study situation table.

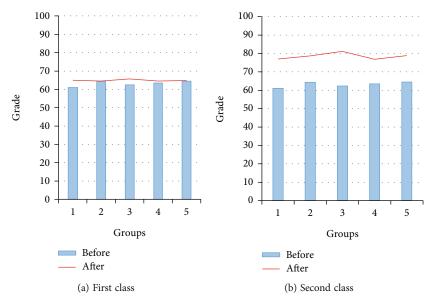


FIGURE 8: Score record.

It can be seen from Figure 8(b) that it is obvious that each group achieved good and excellent average scores.

#### 3.2. The Improvement of Students' Listening, Speaking, Reading, and Writing

*3.2.1. Experiment 2.* In this experiment, 8 students were selected from the second class to verify the changes of these students' listening, speaking, reading, and writing abilities after using the wireless sensor device system to study [22]. Table 3 is the test score record table arranged before using the sensory equipment system to study.

After learning Korean using the sensor equipment system, we arranged a test again to study if the 8 students' listening, speaking, reading, and writing skills have improved. The comparison chart is shown in Figure 9.

From Figure 9, it can be seen that after learning Korean with the help of wireless sensor technology, these eight students can basically achieve good scores in listening, speaking, reading, and writing, indicating that their ability to learn Korean has improved in all aspects. And the changes

TABLE 3: Test scores.

Student	Listening	Reading	Speaking	Writing	Average
1	60	56	56	45	54.25
2	55	46	53	43	49.25
3	65	60	52	65	60.5
4	70	68	45	54	59.25
5	56	67	54	55	58
6	54	56	45	45	50
7	56	67	48	65	59
8	68	77	61	56	65.5

in the comprehensive ability of these eight students are shown in Figure 10.

From Figure 10, it can be clearly seen that the comprehensive Chinese learning ability of the eight students has improved. The learning ability of each student has increased

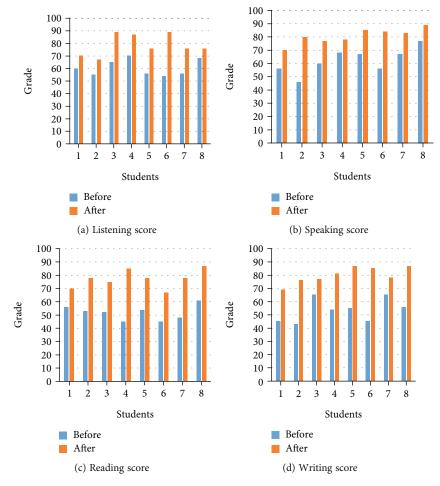


FIGURE 9: Grades.

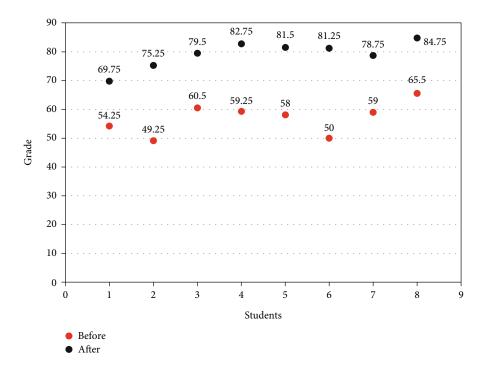


FIGURE 10: Changes in comprehensive capability.

by at least 30%, and the ability can basically reach a good stage.

3.3. Experimental Summary. From Experiment 1, the comparison of two different teaching methods after teaching, it can be found that the students of Korean class 2 who use the sensor equipment system improved faster, indicating that the use of sensor technology in Chinese teaching can improve students' ability and enthusiasm for learning Korean. In Experiment 2, the Korean listening, speaking, reading, and writing skills of the eight students we selected were compared before and after, and it was found that the eight students' Korean listening, speaking, reading, and writing skills had improved, and their comprehensive ability had also improved rapidly. It shows that the sensor device system can stimulate the motivation of students to learn Korean and improve their enthusiasm and initiative.

#### 4. Discussion

This paper expounds the wireless sensing technology and finds that the sensing technology can not only be used in Korean language teaching but can also be widely used in the whole field of education and other fields. And as one of the Internet of Things technologies, it must rely on wireless communication network technology to achieve the transmission of data and information in the heroic process [23]. The sensor equipment system that needs to be involved in the application of Korean language teaching also needs to use multimedia technology to be more efficient and intelligent. This creates a more realistic language immersion environment for students, enabling students to learn in a Korean language environment that promotes knowledge and language assimilation. Students can communicate with the intelligent sensor device to achieve the language output process and improve the students' language knowledge application ability. Moreover, abundant teaching and learning resources can be obtained in the sensor equipment system, which can promote the reform of Korean language teaching.

This paper also discusses the existing Korean teaching mode and finds that the existing Korean teaching materials are not updated, resulting in very limited teaching resources in schools and limited students' vision, and it is difficult to achieve good teaching quality. To this end, the application of sensor technology can not only improve the role of wireless network in Korean language learning but can also help students change their previous rigid learning methods. At the same time, it can also practice listening, speaking, reading, and writing skills with the help of the sensor equipment system, which has a huge role in promoting the cultivation of students' comprehensive Korean ability. And students use the sensor device system to learn; the background of the device will record the students' learning situation so that teachers can find the students' problems in time. At the same time, it can also improve its own teaching plan based on this data monitoring and students can make common progress. The resources in the background of the equipment system can be used for teachers to teach and students to learn, which can improve the problem of lack of resources.

Teachers can communicate with students online, which enables them to go deep into the student group to obtain the learning needs of students, to prescribe the right medicine, to more effectively improve the quality of education, and to achieve teaching goals.

The experiment in this paper also verifies the effect of sensing technology in Korean language teaching. From the comparison of the class, it can be found that the sensing technology can effectively promote the improvement of students' Korean learning ability and application ability. Continuing to use the sensory equipment system to assist teaching can make students' Korean language ability improve by leaps and bounds. Regarding the application effect of sensing technology in Korean language teaching, which can be used as a reference for the improvement of teachers' teaching plans and promote the transformation of teachers' teaching thinking, it can also promote the learning of other majors. This technology can be vigorously promoted in the campus to promote students' autonomy and change the inertia of students' learning and improve students' interest in learning.

## 5. Conclusions

This paper discusses the sensing technology and Korean language teaching in the Internet of Things and finds that the sensing technology has high application value. As an advanced modern technology, it has made great contributions to Korean language teaching. In the traditional Korean language teaching, it is found that students have a lot of inertia in learning Korean, and the teachers' teaching lectures are boring and just blindly input knowledge to the students, but the students cannot get effective output, which makes the students' learning efficiency low. Sensing technology can create a Korean language environment, so that students can effectively output the knowledge they have learned and promote their learning efficiency. The experiments in this paper show that the use of wireless sensor technology in Korean language teaching can promote the change of teachers' teaching plans. It can strengthen the communication between teachers and students, at the same time, it can also promote the improvement of students' comprehensive ability of Korean, such as listening, speaking, reading, writing, etc., to promote the enthusiasm of students to learn Korean, and cultivate students' interest. All in all, the application of wireless sensor technology in Korean language teaching is very effective, and the discussion in this paper has great practical value and reference significance. However, the application of wireless sensor technology knowledge in the field of Korean language teaching discussed in this paper still has many deficiencies. It is hoped that future research can make up for these deficiencies and make wireless sensor technology applied in a wider field.

#### **Data Availability**

No data were used to support this study.

## **Conflicts of Interest**

There is no potential conflict of interest in this study.

### References

- P. Constantinos, "Backscatter communications for wireless powered sensor networks with collision resolution," *IEEE Wireless Communications Letters*, vol. 6, no. 5, pp. 650–653, 2017.
- [2] J. Jeoung, "Understanding the reasons for loss to follow-up in patients with glaucoma at a tertiary referral teaching hospital in Korea," *British Journal of Ophthalmology*, vol. 101, no. 8, pp. 1059–1065, 2017.
- [3] Q. Yi, "Security and wireless communication networks," *IEEE Wireless Communications*, vol. 27, no. 3, pp. 4-5, 2020.
- [4] X. Tong, "A study on the applicability of flipped learning in oral Korean teaching in China -based on the current oral Korean teaching in China's higher institutions-," *Ratio et Oratio*, vol. 10, no. 1, pp. 165–193, 2017.
- [5] S.-T. Park, "A study on teaching Korean reading to learners of multicultural background," *Contemparary Society and Multiculture*, vol. 7, no. 1, pp. 161–186, 2017.
- [6] E.-J. Lee, "Teaching Korean language and culture using the myth of Dangun," *Culture and Convergence*, vol. 39, no. 4, pp. 285–312, 2017.
- [7] H.-J. Kwon, "Teaching-learning and evaluation methods of primary school Korean music for the 'music in daily life' domain under the 2015 revised music curriculum," *The Journal of Korean Music Education Research*, vol. 11, no. 1, pp. 5–35, 2017.
- [8] F. Bahlke, O. D. Ramos-Cantor, S. Henneberger, and M. Pesavento, "Optimized cell planning for network slicing in heterogeneous wireless communication networks," *IEEE Communications Letters*, vol. 22, no. 8, pp. 1676–1679, 2018.
- [9] T. Xu, L. Gong, W. Zhang, X. Li, X. Wang, and W. Pan, "Application of wireless sensor network technology in logistics information system," *AIP Conference Proceedings*, vol. 1834, no. 1, pp. 1–5, 2017.
- [10] P. W. Kim, "Real-time bio-signal-processing of students based on an Intelligent algorithm for Internet of Things to assess engagement levels in a classroom," *Future Generation Computer Systems*, vol. 86, pp. 716–722, 2018.
- [11] P. Wang and S. Qiao, "Emerging applications of blockchain technology on a virtual platform for English teaching and learning," *Wireless Communications and Mobile Computing*, vol. 2020, Article ID 6623466, 10 pages, 2020.
- [12] F. Fan, S. C. Chu, J. S. Pan, C. Lin, and H. Zhao, "An optimized machine learning technology scheme and its application in fault detection in wireless sensor networks," *Journal of Applied Statistics*, vol. 34, no. 1, pp. 1–18, 2021.
- [13] H. Hamidi and K. Fazeli, "Using Internet of Things and biosensors technology for health applications," *IET Wireless Sen*sor Systems, vol. 8, no. 6, pp. 260–267, 2018.
- [14] Z. M. Yuldashev, A. M. Sergeev, and N. S. Nastueva, "Perspectives for the use of the Internet of Things in portable online cardiac monitors," *Biomedical Engineering*, vol. 55, no. 3, pp. 210–214, 2021.
- [15] A. Karimnia and M. Khosravani, "A comparative study of form-focused and communicative methods of language teach-

ing in ESP courses," *Sustainable Multilingualism*, vol. 12, no. 1, pp. 152–165, 2018.

- [16] J. Park, "A study on the development of the basic major Korean teaching materials for KSAP by analyzing Korean textbooks," *Korean Linguistics*, vol. 75, no. 4, pp. 129–160, 2017.
- [17] H. Yoo, "Method for teaching Korean past tense to foreigners," *The Journal of Language & Literature*, vol. 71, no. 7, pp. 325– 342, 2017.
- [18] I. You, G. Pau, W. Wei, and C. Fung, "IEEE access special section editorial: Green communications on wireless networks," *IEEE Access*, vol. 8, no. 27, pp. 187140–187145, 2020.
- [19] J.-m. Park, "Exploration on elementary school Korean traditional music teaching method for STEAM education," *Journal of the Korean Music and Education*, vol. 43, no. 78, pp. 117– 142, 2017.
- [20] C. Park, "The design of class introduction in Korean languae teaching," *Korean Language in China*, vol. 87, no. 3, pp. 90-91, 2017.
- [21] Y. Hyesoo, "Teaching the Korean folk song (Arirang) through performing, creating, and responding," *General Music Today*, vol. 31, no. 1, pp. 16–25, 2017.
- [22] M. Lyu, "Exploring preliminary Teachers' competence through overseas educational service program and teaching practice in Korean middle school as pre-service physical education teacher education," *The Korean Journal of Physical Education*, vol. 56, no. 2, pp. 243–257, 2017.
- [23] J. Lee and J. B. Kim, "Learning assistant (LA) instead of teaching assistant (TA) in Korea?," *Journal-Korean Physical Society*, vol. 73, no. 4, pp. 414–421, 2018.