Hindawi
Wireless Communications and Mobile Computing
Volume 2023, Article ID 9867265, 1 page
https://doi.org/10.1155/2023/9867265

Retraction

Retracted: Applications of Artificial Intelligence and IoT in the Development of Sports Training Education Management

Wireless Communications and Mobile Computing

Received 1 August 2023; Accepted 1 August 2023; Published 2 August 2023

This article has been retracted by Hindawi following an investigation undertaken by the publisher [1]. This investigation has uncovered evidence of one or more of the following indicators of systematic manipulation of the publication process:

(1) Discrepancies in scope
(2) Discrepancies in the description of the research reported
(3) Discrepancies between the availability of data and the research described
(4) Inappropriate citations
(5) Incoherent, meaningless and/or irrelevant content included in the article
(6) Peer-review manipulation

The presence of these indicators undermines our confidence in the integrity of the article's content and we cannot, therefore, vouch for its reliability. Please note that this notice is intended solely to alert readers that the content of this article is unreliable. We have not investigated whether authors were aware of or involved in the systematic manipulation of the publication process.

Wiley and Hindawi regrets that the usual quality checks did not identify these issues before publication and have since put additional measures in place to safeguard research integrity.

We wish to credit our own Research Integrity and Research Publishing teams and anonymous and named external researchers and research integrity experts for contributing to this investigation.

The corresponding author, as the representative of all authors, has been given the opportunity to register their agreement or disagreement to this retraction. We have kept a record of any response received.

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[1] Y. Tang and X. Jiang, "Applications of Artificial Intelligence and IoT in the Development of Sports Training Education Management," *Wireless Communications and Mobile Computing*, vol. 2022, Article ID 1061461, 8 pages, 2022.

Hindawi
Wireless Communications and Mobile Computing
Volume 2022, Article ID 1061461, 8 pages
https://doi.org/10.1155/2022/1061461

Review Article

Applications of Artificial Intelligence and IoT in the Development of Sports Training Education Management

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Received 21 July 2022; Revised 31 July 2022; Accepted 26 August 2022; Published 9 September 2022

Academic Editor: Hamurabi Gamboa Rosales

With the persistent improvement of information technology, regular physical education showing techniques are presently not pertinent. To guarantee the objectivity of school physical education assessment, this paper plans a bunch of school physical education the board information framework in view of artificial intelligence technology. The weighting calculation in the understudy execution assessment module and educator execution assessment module in the framework takes on the canny calculation in light of FNN brain organization. In this review, the artificial intelligence and current technology of physical education have explored and talked about which to give the best hypothetical premise to the advanced technology of physical development and improvement. Obviously, artificial intelligence has a place with serious areas of strength for a disciplines which is growing yet in addition one of the principal heading of the PC and its connected advancement interdisciplinary examination, impacting the whole educating progress. Artificial intelligence enjoys many benefits in the use of educating technology.

1. Introduction

Wang Yuqing said in a review that physical education in Chinese schools and universities is divided into physical education, physical education, and nonphysical education. In his review, Wang Ming mentioned which terms, such as sports executives and board competition, are nonsports majors [1–4]. Li Feifei stated that nonphysical majors must consistently take at least two hours of formal PE classes, as specified by the Ministry of Education's requirements [1]. In a school physical education lecture, Wen Jao said that the reason undergraduates gained graduation ability was because the physical education exhibition passed the official evaluation of physical education. Li Zhang suggested the content of the college sports test in the review. Tests include medium and long distance running (1500 m for young men and 800 m for young women), standing long jumps or high jumps, pitching (bullet throws, elastic balls, and long range projectiles are optional), and body. Learn adaptive adaptability (mostly bent forward and sitting) and rivalry. LiuYanRu also revealed in school sports tests that running, skipping, throwing, adaptability, and other tests all pass the score exactly despite their rivals. Zhang Jianye understands different opportunities in school sports tests. Competition opportunities can usually be selected from badminton, tennis, table tennis, B-ball, volleyball, other ball games, or hand-to-hand combat.

As of now, the ever-evolving modernization of education in China yet in addition on the planet and what was to come situated and have accomplished better education results [5–7]. To the extent, the ever-evolving modernization of education in China chiefly has two implications: first is moderate administrations for the modernization of the education modernization, and second is educational modernization as well as including those external the advanced educational ideas and thoughts; current education technology technique is additionally included and is really buckling down on their applications in instructing. Lately, with China's science and technology improvement, human culture has entered a

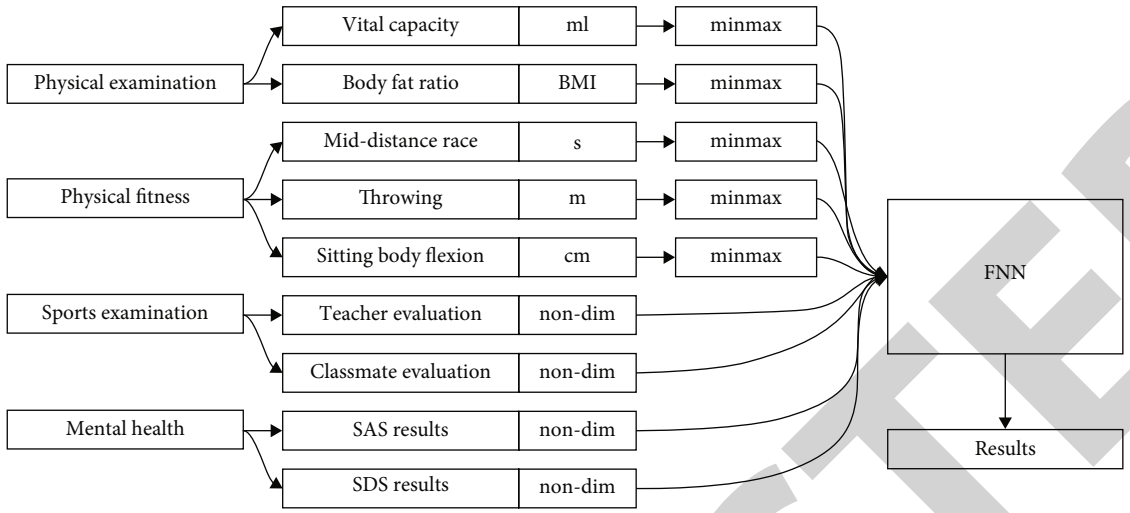

Figure 1: Physical education evaluation index and machine learning analysis in colleges and universities.

period of quick turn of events, and education has accomplished uncommon turn of events, making China present day physical education showing all the more steadily applied in science and technology. [2]. Utilization of cutting edge science and technology in sports educating, notwithstanding the effect, shows content and shows strategy for physical education yet additionally changes the conventional idea of PE showing mode and added to the advanced physical education framework in China and significant changes in the association. Obviously, present day cutting edge innovation and its application in showing thoughts in the educating of physical education will generally experience a few issues practically speaking, and how to determine these issues of educational technology is currently should focus on. These incorporate a portion of the accompanying parts of the inquiry: What is showing method results how to utilize; how it might give full play to present day PE showing asset impacts; current games showing how might we increment; how might we better serve the general change of current physical education, etc. To resolve these issues, this article presents artificial intelligence; utilization of artificial intelligence in it is great to manage and tackle these issues, to improve current physical education. A new age in athlete training is brought about by IoT and wearable technologies, primarily for performance monitoring and evaluation and fitness assessment. IoT wearable technologies that rely on sensor systems are often used for this. It collects, examines, and transmits data such as biomarkers or other pertinent indicators that can be used to gauge an athlete's potential and assess any physical or health issues, hence raising performance levels.

2. A Comprehensive Model for Evaluating College Students' Physical Education Achievements

Yang Dapeng in his review recommended that, in the genuine administration of undergrads, understudies' physical wellness test and physical education assessment can straightforwardly mirror understudies' physical education educational plan level. Bayne [3] expressed in the review that, what is more, understudies' fundamental limit, muscle versus fat rate, and different markers were explored by broad careful assessment in understudies' standard physical assessment and understudies' SAS and SDS level overall mental assessment can mirror understudies' physical and psychological wellness from a specific point. The sensible connection between the over four classes of information and related subcategories is displayed in Figure 1.

In Figure 1, the overall careful assessment information and physical assessment information in physical assessment have a place with layered information, which can be perceived by FNN solely after dimensionless standardization [4]. Different information has a place with dimensionless information and can be straightforwardly input into FNN. The fluffy convolution aftereffect of FNN can be straightforwardly utilized as the fluffy assessment consequence of understudies' physical education accomplishment. The consequences of the above dimensionless standardization calculation are shown as follows:

$$Y_i = \frac{x_1 - \min(x)}{\max(x) - \min(x)}, \tag{1}$$

where i is the input esteem in x grouping, is the dimensionless result esteem relating to the i input esteem in arrangement x, is the base worth of succession x, and is the most extreme worth of arrangement x.

The information organized by the minmax module above is in the range [0,1], but the information about psychological well-being, such as SDS and SAS, and the information about physical examination results are dimensionless information [6–10]. Assuming no exceptional conditions exist, SDS and SAS are included in the [0,10] range according to the 10-point framework, and physical evaluation results are entered in the [0,100] range according to the recorded 100-point framework increase [5]. To reduce the complexity of the measurable history of this module, enter the 1-point frame score directly if you expect to have SDS and SAS scores. That is,

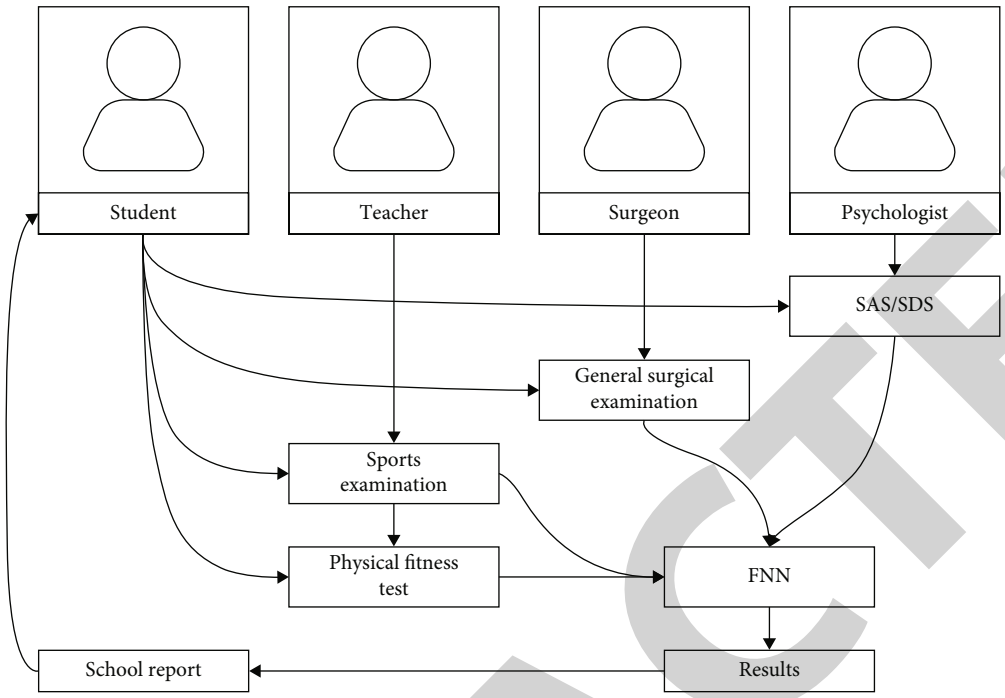

Figure 2: The architecture diagram of an artificial intelligence system (FNN) for evaluating physical education teaching in colleges and universities.

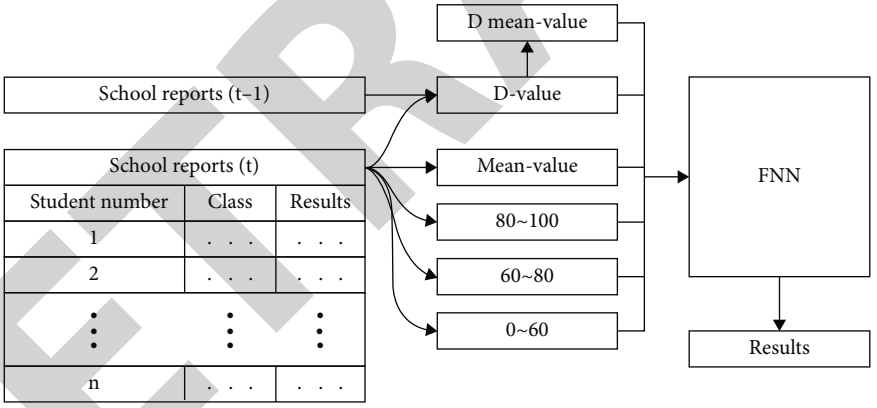

Figure 3: The teacher performance evaluation system is depicted schematically.

Table 1: The investigation sample sequence's standard deviation rate.

New method	National unified examination result
20	30
40	40
60	50
80	60
100	70
120	80

the first result is formed in the range [0,1], and the result of the physical evaluation is added directly to the result of the 1-point frame. That is, the first result is formed with a [0,1] span [11].

The measurable meaning of FNN brain network is to sum up every one of the above input information into a twofold accuracy information as the genuine assessment result information of understudies [12–16]. In the event that there is no resulting information handling, FNN brain organization will be prepared to unite to a twofold accuracy variable in the [0,1] span [6]. This variable is increased by 100 to frame a 100-point assessment result as the last physical education accomplishment of understudies. The hub capability of the brain network chooses polynomial profundity iterative relapse capability 2:

$$y = \sum_{i=j}^{n} \sum_{j=0}^{s} A_j x_i^j, \tag{2}$$

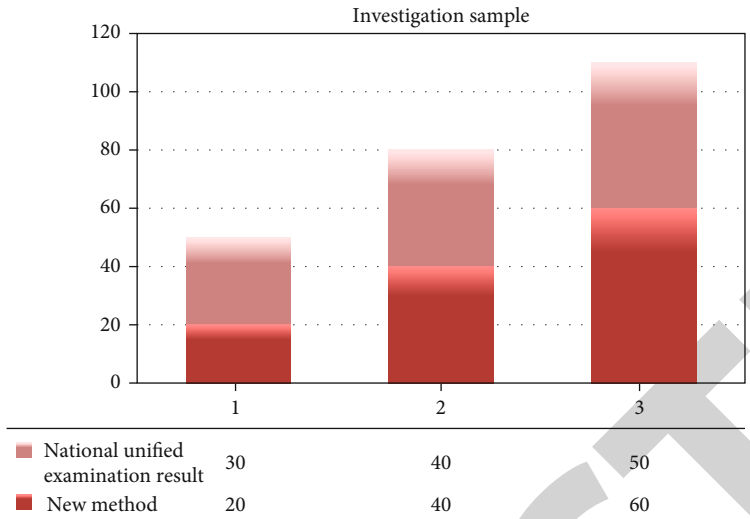

Figure 4: The investigation sample sequence's standard deviation rate.

Table 2: Analysis of correlations between relevant data and system evaluation results.

Comparison items	Regression analysis		Bivariate–check	
	R^2	P	t	P
Unified examination results	0.9509	0.004	89.373	0.005
SDS	0.8963	0.008	69.136	0.008
SAS	0.8852	0.007	72.485	0.008
Physical fitness test results	0.9859	0.003	93.716	0.005
Surgical examination results	0.8775	0.005	89.569	0.006

where n is the number of hubs of brain tissue in the past, j is the polynomial requirement, and the coefficient is backed by the j requirement polynomial [17–21]. The pictures of other numbers have the same meaning as (1).

3. Design and Development of an Artificial Intelligence System for College Physical Education

Considering the complete study of the brain network model above, regardless of the framework's supervisor, the framework includes exactly four evaluated undergraduates, PE educators, professionals, and analysts. You can see that you need a post. Experts fill in follow-ups on general hard-working assessments, clinicians fill in the aftermath of the SAS and SDS scales, and PE teachers fill in publicly convened PE assessments and PE tests at schools and colleges [7]. Fill in the aftermath. In addition to supporting four or more exams, understudy has the power to challenge the record. Records are also submitted to the laboratory for the presentation of quality assessments and to the second placement room for the second placement. Figure 2 shows the frame design.

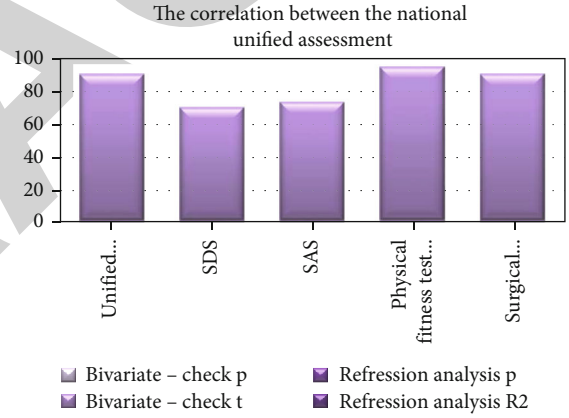

Figure 5: The relationship between the results of the national unified assessment and the comprehensive evaluation of the artificial intelligence system.

In Figure 2, FNN brain organization and originate before handling process have been profoundly examined in the past text [22–25]. Here, we center around the posthandling of understudies' records. The framework gives the general question capability of understudies' records; that is, entering the understudy number can inquire the records of the predetermined understudies, and entering the class name can get to the synopsis table of the records of the entire class, including the diving arranging of scores and the grouped insights of incredible (80-100 focuses), pass (60-80 focuses), and fall flat (0-60 focuses) [8]. Simultaneously, educators' postpresentation is assessed by the change and circulation of understudies' exhibition. Since other factual work calculations are moderately basic and restricted by space, they are not examined here [26–28]. Just the educator postexecution assessment calculation is extended as Figure 3 [22].

In Figure 3, one more gathering of FNN brain networks is utilized to assess educator execution. The hub capability of

Table 3: The impact of new and old systems on the performance evaluation results of teachers.

Comparison items	Advanced teacher Total	Differences	Overlap	Backward teachers Total	Differences	Overlap
Previous method	7 (26)	-	-	6 (22)	-	-
New method	5 (2)	4 (76)	3 (51)	9 (34)	2 (19)	5 (51)

the brain network is steady with that of the FNN network in Figure 3. Allude to (2), and the information prehandling calculation before the brain network alludes to (1) [10]. In the event that the conventional educator execution assessment plot in view of the weighted variable strategy is embraced, on the grounds that the weighted component itself has an efficient blunder and the orderly mistake might be focused on various understudies' essential physical circumstances, contrasts in schools and divisions, contrasts in understudies' orientation and age, and so forth, the assessment unwavering quality cannot be really ensured [12]. In this review, FNN brain network is chosen for the exhaustive assessment of understudies' physical education execution, and it likewise understands the thorough assessment of educators' exhibition.

4. System Effectiveness Verification through Overall Simulation

Understudy performance and educator performance are broken down using the traditional method as the reference bunch, and the artificial intelligence strategy developed in this study is used to break down understudy performance and educator performance as the perception bunch, using the real-world, unique records of 21 No Games Studies from the academic years of 2018 and 2019 as the information source [13].The accompanying three approval studies were done [29, 30].

4.1. Artificial Intelligence Evaluation and National Physical Education Examination Result Correlation. To check the job of the artificial intelligence strategy planned in this concentrate in understudy accomplishment and educator accomplishment [14], the R^2 esteem was acquired by the direct relapse technique under SPSS, and t worth and P esteem were gotten by vicariate t adjustment [9].

The R^2 values were calculated as the regression residue to mean residue ratio as follows:

$$R^2 n = \frac{\sum i(x_i - \underline{x})}{\sum i\left(x_i - \underline{x_i}\right)}, \quad \underline{x} = \frac{1}{n}\sum_{i=1}^{n} x_j, \tag{3}$$

i is the info esteem in the succession, and n is the quantity of test tests.

The t and P values for vicariate t-check are from the vicariate t-actual process, and the t values are the resulting values. At $t > 10{,}000$, it is assumed that there is a measurable contrast between the two pieces of information, and the more prominent the t-score, the clearer the difference in facts [15]. The P-score is the logarithmic value of the result. At this point, the result information is assumed to be in the certainty space. At this point, the result information is considered to have great measurable significance. The more modest the value, the higher the certainty. Depending on the length, only the estimated calculation of the t value (evaluation) makes sense here:

$$t_{\text{value}} = \frac{\underline{X} - \mu}{\left(\sigma_x/\sqrt{-1}\right)}, \underline{x}, \quad \mu = \frac{1}{n, m}\sum_{i=1}^{n,m} x_i, \quad \sigma_x = \frac{1}{n-1}\sqrt{\sum_{i=1}^{n}(x_i - \underline{x})^2}, \tag{4}$$

where x means the typical worth of the examination test arrangement and μ implies the typical worth of the reference succession. n is the quantity of hubs of the examination test grouping, m is the quantity of hubs of the reference test arrangement, and σ implies the standard deviation pace of the examination test succession [16]. First and foremost, the straight relapse technique is utilized to ascertain the connection between the public bound together assessment results and the exhaustive assessment consequences of the framework, and Table 1 is gotten.

In Figure 4, there is a huge straight connection between the consequences of the National Physical Education bound together assessment and the thorough assessment worth of the framework, $R^2 = 0.9509$, and on the grounds, the extensive assessment cycle of the framework does not present the aftereffects of the National Physical Education brought together assessment; however, as per the aftereffects of the physical education homeroom showing test, it is very well may be viewed as that the framework has a specific prescient incentive for the aftereffects of the National Physical Education bound together assessment [31]. The R^2 esteem estimation plot is the proportion of relapse change to direct fluctuation, which can compute the contrast between the relapse result and the first outcome.

In Figure 4, there is a huge straight connection between the consequences of the National Physical Education bound together assessment and the thorough assessment worth of the framework, $R^2 = 0.9509$, and on the grounds, the extensive assessment cycle of the framework does not present the aftereffects of the National Physical Education brought together assessment; however, as per the aftereffects of the physical education homeroom showing test [17], it is very

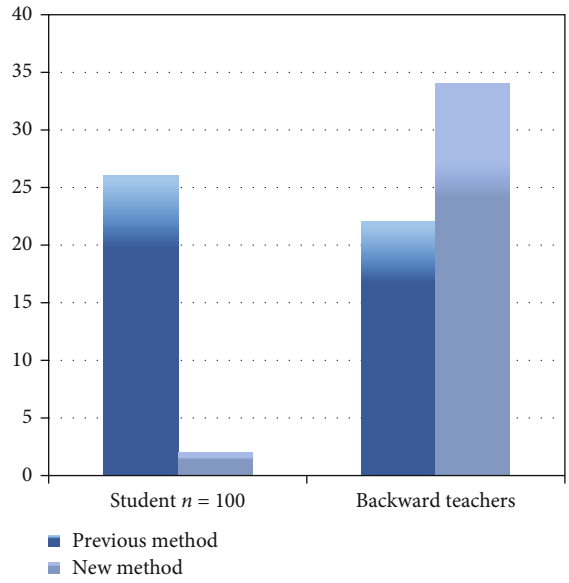

Figure 6: Correlation between old and new schemes and teachers' performance evaluation results.

Table 4: Statistics on student and teacher support for the new system.

Comparison items	Student $n = 500$			Teacher $n = 25$		
	Support	No obj	Oppose	Support	No obj	Oppose
Previous method	20	40	40	10	10	5
New method	50	30	20	5	15	5

well may be viewed as that the framework has a specific prescient incentive for the aftereffects of the National Physical Education bound together assessment. The R^2 esteem estimation plot is the proportion of relapse change to direct fluctuation, which can compute the contrast between the relapse result and the first outcome.

In Table 2, there are critical measurable consistency ($t > 10.000$) and direct relationship ($R^2 > 0.75$) between the five information and the extensive assessment consequences of artificial intelligence given in this review. Be that as it may, there are a few measurable contrasts between the important information [18]. For instance, the far-reaching assessment consequences of artificial intelligence given by the framework are exceptionally corresponded with the aftereffects of the public physical assessment, physical wellness test, and general careful assessment (both t esteem and R^2 esteem are enormous), yet somewhat less connected with the aftereffects of emotional well-being assessment (SAS and SDS) (both t esteem and R^2 esteem are little).

In Figure 5, the connection between the public brought together appraisal results and the extensive assessment of the artificial intelligence framework is determined by the straight relapse technique to analyze the distinctions between the first evaluation things and artificial intelligence framework.

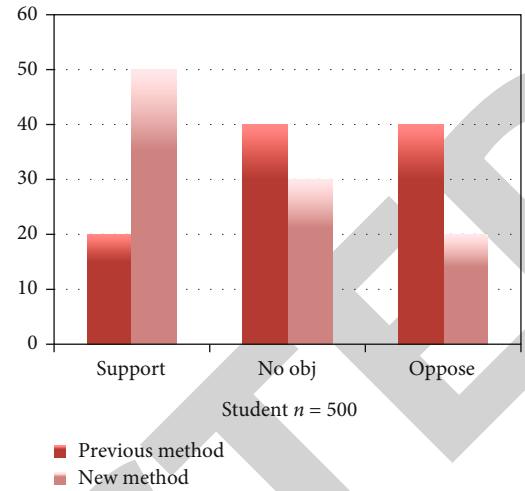

Figure 7: Correlation between the new scheme and the support rate of teachers.

4.2. The Statistical Results of Teachers' Performance Change after Using the Artificial Intelligence Comprehensive Evaluation System. Our school has 24 PE teachers. The evaluation results of the evaluation instructor's first presentation are counted, and then, the evaluation strategy given by the framework for the execution of the artificial intelligence instructor is used to evaluate the instructor's exhibition. The correlation results are shown in Table 3 and Figure 6.

4.3. An Investigation and Statistical Analysis of Teachers' and Students' Subjective Feelings about the System's Evaluation Results. Since the above reproduction process is focused on the understudy execution and educator execution in the scholarly year 2020-2021, 100 understudies are chosen as the review article, and every one of the 24 instructors are chosen as the study object [20]. They are expected to "support," "no complaint," and "go against" the difference in the assessment framework by showing the past assessment results and the assessment results given by the new framework; the measurements of three assessment results are displayed in Table 4 and Figure 7.

5. Conclusion

In the school physical education the board information framework, the artificial intelligence assessment strategy is utilized to supplant the past weighted record assessment technique with the goal that the information showed in the regular showing connection can naturally foresee the National Physical Education brought together assessment results, and the assessment of understudies' exhibition and educators' presentation are more goal and extensive [21]. Be that as it may, contrasted and the extensive artificial intelligence framework, dependent upon the verifiable issues of the ongoing specialized framework and the school physical education showing information the executive framework, as well as the linkage limitation of the assessment component of the encompassing showing gatherings, the framework cannot understand the exhaustive mediation of the

artificial intelligence framework in the school physical education instructing process [32, 33]. The subsequent exploration will additionally figure out the interaction, extend the showing change, and further the use of artificial intelligence framework.

Data Availability

The data used to support the findings of this study are included within the article.

Conflicts of Interest

The authors declare that they have no conflicts of interest.

Acknowledgments

This work was supported by the Neijiang Normal University. The name of the project is Online (general education) first-class undergraduate course-Pingpang. The project number is JK202061.

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