



# Adaptive physical education learning: evaluation by teachers of deaf students at special elementary schools

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## ABSTRACT

**Purpose.** This research aims to evaluate adaptive physical education learning in deaf students at special elementary schools.

**Methods.** This study employs an evaluation model approach to assess the efficacy of adaptive physical education instruction. Specifically, this research utilizes the CIPP (Context, Input, Process, and Product) model for evaluation. The participants in this study were teachers who taught physical education in West Sumatra, with a sample size of 60 teachers in West Sumatra, Indonesia. Data collection was carried out using a research instrument in the form of a questionnaire administered via Google Forms. The results showed that all statement items of the questionnaire were valid for reliability testing.

**Results.** The results of this research showed that the evaluation using the context and input components of the CIPP scored 74.32% and 70.71%, respectively, indicating both as good. However, the process and product aspects attained a score of 50.83% and 48.10% indicating them as enough.

**Conclusions.** This research concluded that the implementation of adaptive physical education learning for deaf students was good. Based on the results, this research recommends that evaluations be conducted at the school level for students with special needs. Additionally, evaluation is also needed using participants involved in education.

**Key words:** adaptive, evaluation, physical education learning, deaf students, special elementary schools

## Introduction

Education serves as the foundational mechanism for cultivating enduring human virtues [1, 2]. Physical education (PE), sports, and health use focused values-

based learning to cultivate the skills needed in the 21<sup>st</sup> century [3]. More skills are needed in 21<sup>st</sup>-century learning targeted at enhancing critical and creative thinking abilities [4]. It is through the educational journey that children are inspired to unlock their potential

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across cognitive, affective, and psychomotor domains [5]. Implementing education in the form of a learning process requires special strategies that adapt to student needs [6–8]. One of these involves making adjustments for students with disabilities. Individuals with disabilities possess equal entitlement to education [9]. PE has been taught starting in elementary school [10], illustrating how important PE is to forming a healthy generation [11]. The focus of adapted PE is to cater to the PE needs of all students, particularly those with disabilities [12, 13]. Essentially, children with special needs possess the capacity to engage in learning similar to their developing peers, adjusting their approach to accommodate their unique challenges [9]. PE learning for students with special needs in Indonesia is called adaptive PE.

Adaptive PE serves as a comprehensive learning approach, focusing on nurturing motor skills, physical abilities, social interaction, and individual well-being [14]. Consequently, PE holds significant importance for students with special needs [15], facilitating their physical and mental development and fostering a healthy lifestyle [16]. The distinctive hallmark of incorporating adaptive PE in schools lies in its multifaceted impact on learning outcomes, extending beyond mere adherence to the curriculum. Specifically, educators delineate three primary objectives: academic progress, scholastic attainment, and developmental milestones. Of these, scholastic advancement stands out prominently within this institution's adaptive PE framework [17]. The pedagogical approach to adaptive PE follows a structured process encompassing assessment, program planning via detailed lesson plans, execution, and thorough evaluations [18]. However, the results of observations in several elementary schools in the West Sumatra region show that no evaluation has ever been carried out, especially on adaptive PE learning. This is an update to this research. In addition, this study only focused on deaf students. Students with hearing impairment have a disability of hearing so it causes a complex problem and affects their speaking ability (oral skills). Students with hearing impairment showed that they have difficulty speaking properly, and they are not familiar with the correct pronunciation of words, sentences, and rhythms [12, 19]. PE learning is necessary and important for deaf students [20]. For deaf students, PE offers additional advantages, notably fostering social inclusion. However, numerous hurdles must be addressed in adapting PE for this demographic, such as the shortage of bilingual teachers and the absence of specific signs for key PE terminology [12]. This

is also supported by previous research on adaptive PE learning.

Utilizing the floor time methodology has shown promising results in enhancing the educational achievements of students with cerebral palsy through adaptive PE, particularly in mastering the side roll technique [9]. The floor time method is a learning approach that encourages spontaneous play and conversation. It involves spending at least 20 hours a week engaging with children at their level, often by sitting on the floor to interact and participate in their activities [21]. According to prior research, the assessment of the integration of adaptive PE during the COVID-19 pandemic in Special Schools in Yogyakarta City yielded outcomes categorized as unsatisfactory [22]. According to these findings, it is evident that the execution of adaptive PE learning at SLB Negeri 1 Dompu during the 2022/2023 academic period has made a beneficial impact on educational inclusivity, as reflected in a student engagement rate of 85% during the learning process [23]. The challenges experienced by students with special needs underscore the difficulty they encounter in adapting to mainstream students in receiving instruction, particularly in PE classes. Hence, evaluation is imperative to facilitate enhancements for future efforts [19, 22, 24]. Creating and assessing tailored e-learning modules for individuals with hearing impairments, utilizing the advanced Adaptation Pedagogical Index methodology. The Adaptation Pedagogical Index methodology consists of three dimensions including learning style, media, and interaction. This method was designed specifically for deaf and hard-of-hearing students so that it suits the characteristics of deaf students [25]. Earlier studies focused on assessing the Learning Outcome Evaluation System in Health and PE classes, specifically at the junior high school level [26]. CIPP Evaluation on PE learning in sports and health in special schools in Yogyakarta shown to be good [27]. The overall quality of educational learning in the Special School using CIPP for the South Kalimantan Province is rated as good [28].

Based on previous research, adaptive PE learning requires evaluation in its implementation, and one of the evaluation methods uses CIPP. The CIPP model, an evaluation framework, is divided into four aspects: context, input, process, and product [29, 30]. These aspects can yield comprehensive results in the evaluation process [28]. Evaluation using CIPP in sports learning for deaf students is the right method because it can show all aspects of learning. In the initial study of SLB in West Sumatra, the evaluation process was not yet

available for teachers and students. This is because deaf students are difficult to condition, so they need more assistance. However, evaluations can still be carried out on teachers who are directly involved in learning at special schools in West Sumatra.

The novelty of this research is the evaluation of adaptive PE learning using CIPP by teachers for deaf students at special elementary schools. Therefore, this research aims to find out the evaluation of adaptive PE learning using the CIPP method for deaf students in Special Elementary Schools in West Sumatra.

**Material and methods**

The study described in this article employs an evaluation model approach [10, 31, 32] to assess the efficacy of adaptive PE instruction. Specifically, this research utilizes the CIPP (Context, Input, Process, and Product) model for evaluation. The participants in this study were teachers who taught PE in West Sumatra, Indonesia, with a sample size of 60 teachers selected through purposive sampling. Data collection was carried out through a research instrument in the form of a questionnaire given via Google Forms [33]. The instruments in this research must be tested for validity and reliability [34], which is presented in Appendix 1, an instrument in the form of a questionnaire is declared valid. The

results show that all statement items were valid, so reliability testing can be continued. The reliability test is presented in Appendix 2, which shows that all question items are reliable. Participants filled out the Google form according to the instructions given and needed to fill in 59 statement items using Likert scale categories ranging from 1–4 covering aspects of context, input, process, and product for adaptive PE learning [35]. Assessment of adaptive PE learning was performed using the following criteria: very good (76–100%), good (51–75%), enough (26–50%), and poor (1–25%). Descriptive percentages were employed as the data analysis technique in this study.

**Results**

The results of this research will be presented in the form of a description of sample characteristics and extraordinary elementary schools in West Sumatra, then continued with the results of each CIPP component, and finally the overall average evaluation of adaptive PE learning (Table 1).

Based on the Table 2, there are 19 regions in West Sumatra with a total of 60 special schools. Next, the results of the CIPP evaluation on PE learning will be presented (Figure 1).

Table 1. Sample characteristics

		Total	
Gender	male	32	60
	female	28	
Age	20 – < 25	10	60
	25 – < 30	12	
	30 – < 35	8	
	35 – < 40	15	
	40 – < 45	4	
	45 – < 50	7	
Graduate	50 – < 55	4	60
	bachelor of physical education	23	
	bachelor of sports science	18	
	bachelor of sports coaching	13	
School location	master of physical education	6	60
	urban	18	
	sub urban	32	
Number of students	rural	10	1380
	total number of students	60	
Student to teacher ratio	guru	60	–
	siswa	1380	–
	ratio	1:23	–

Table 2. Description of special elementary schools in West Sumatra, Indonesia

No.	Region	Number of schools	Special elementary public schools	Special elementary private schools
1	Padang City	5	2	3
2	Agam Regency	5	2	3
3	Pesisir Selatan Regency	6	4	2
4	Padang Pariaman Regency	2	0	2
5	Solok Regency	4	2	2
6	Lima Puluh Kota Regency	3	1	2
7	Tanah Datar Regency	4	2	2
8	Pasaman Barat Regency	3	1	2
9	Pasaman Regency	4	2	2
10	Sijunjung Regency	4	2	2
11	Dharmasraya Regency	3	1	2
12	Solok Selatan Regency	3	2	1
13	Kepulauan Mentawai Regency	1	0	1
14	Payakumbuh City	2	1	1
15	Pariaman City	3	2	1
16	Bukittinggi City	2	1	1
17	Sawah Lunto City	2	1	1
18	Padang Panjang City	2	1	1
19	Solok City	2	1	1
Total		60		

Table 3. Results of evaluation adaptive physical education learning

No.	Aspects	Mean (%)	Results (%)
1	Context	74.32	60.99
2	Input	70.71	
3	Process	50.83	
4	Products	48.10	

The average results for the context, input, process, and product aspects obtained a percentage of 60.99%.

**Discussion**

According to the findings of the research, the evaluation across various dimensions yielded positive results. Specifically, the context aspect scored 74.32%, indicating a good category, while the input aspect reached 70.71%, indicating a good category. Similarly, the process aspect attained a score of 50.83%, indicating an enough category, and the products aspect achieved 48.10% as an enough category. The average performance across all context, input, process, and product dimensions was 60.99%. The evaluation results using CIPP in adaptive PE learning for deaf students at special elementary schools are in the good category. A parallel study focusing on evaluating the adaptive PE curriculum revealed that the implementation of the Special Elementary Schools’ Penjasorkes curriculum demonstrates proficiency across various aspects. The preliminary assessment of syllabus formulation, lesson plans, teaching materials, and class proficiency reflects commendable performance. Similarly, the review of the transactional process during learning implementation and assessment exhibits effectiveness. However, in evaluating outcomes, particularly in tailoring assessments to accommodate various types of student disabilities, there exist areas requiring improvement [36]. According to the study findings, it can be deduced that the execution of online PE instruction at West Nias Regency Public High School falls within the “less” category [35].

In this research, context aspects rated as good encompass learning materials, learning objectives, organization of materials, media, and additional learning resources, design of teaching and learning activities, classroom management, and evaluation. Regarding the input aspect, the good category includes the suitability of learning materials with educational objectives and learner characteristics. The process aspect falls within the sufficient category, covering learning activities, PE, and participant education activities. The product

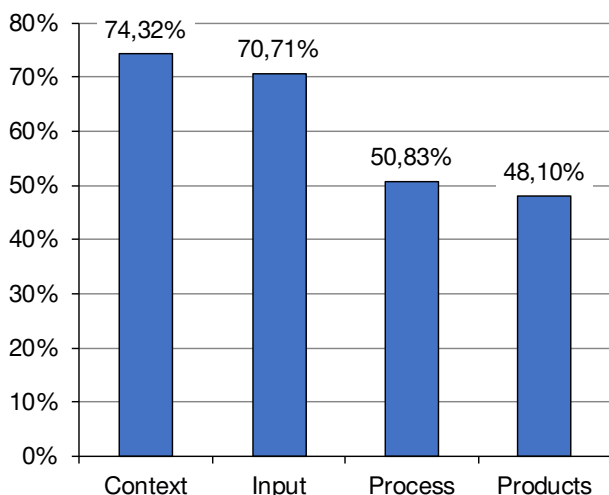


Figure 1. CIPP on adaptive physical education learning

Based on the research results, the context aspect results obtained 74.32%, the input aspect was 70.71%, the process aspect was 50.83%, and the product aspect was 48.10%. Table 3 presents the average results of the four aspects for evaluating adaptive PE learning below.

aspect yielded results in the sufficient category, specifically addressing learning outcomes. Based on the results of this research, the implementation of adaptive physical learning in West Sumatra at the special elementary school level still needs to be improved and enhanced.

Education stands as a cornerstone in the advancement of a nation, as the calibre of education directly influences the quality of its human capital [29]. Hence, the significance of evaluations in education cannot be overstated [37]. This is because evaluation is an integral part of the learning process [31, 37–40]. In this study, the evaluation of context comprised assessments based on indicators of learning philosophy and educational objectives [26]. The second component, referred to as input, encompasses all the plans, strategies, and budget allocations associated with the chosen approach for implementation [41]. Within the process dimension, it is crucial to prioritize adaptable learning methodologies that cater to the diverse needs of students, particularly those with special requirements [33]. In terms of the product aspect, it is imperative to deliver precise information, foster student engagement, increase motivation, enhance institutional efficacy, and elevate the overall standards of education [37].

### Conclusions

This research concludes that the evaluation of using CIPP is that the context aspect scored 74.32%, and the input aspect reached 70.71%, indicating good categories. Similarly, the process aspect attained a score of 50.83%, and the products aspect achieved 48.10%, indicating both as enough categories. The average results for the context, input, process, and product aspects obtained a percentage of 60.99%, which shows that the evaluation using CIPP in adaptive PE learning for deaf students at Special Elementary Schools is in the good category. This research is limited only to deaf students, so further research should evaluate students with other special needs and at junior and senior high school levels.

### Ethical approval

The research related to human use has complied with all the relevant national regulations and institutional policies, has followed the tenets of the Declaration of Helsinki, and has been approved by the STKIP PGRI Bangkalan approval No.042/C8/6/VI/2024.

### Informed consent

Informed consent has been obtained from all individuals included in this study.

### Conflict of interest

The authors state no conflict of interest.

### Disclosure statement

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### References

- [1] Saunders J, Lutan R. Sport, science and politics in Indonesia: challenges in epistemology within an evolving global context. *Int Sports Stud.* 2020; 42(3):4–17; doi: 10.30819/iss.42-e.02.
- [2] Chan CKY, Hu W. Students' voices on generative AI: perceptions, benefits, and challenges in higher education. *Int J Educ Technol High Educ.* 2023; 20(43):1–18; doi: 10.1186/s41239-023-00411-8.
- [3] Susanto N, Nurhasan N, Mintarto E, Rohmansyah NA, Syahrudin, Hiruntrakul A. The effect of learning models on creativity, knowledge, and big ball game skills in high school students. *Int J Disabil Hum Dev.* 2023;22(1):17–22.
- [4] Matitaputty JK, Saputra N, Judijanto L, Susanto N, Hanif M, Sopacua J, Fadli MR. PjBL-based digital history model to improve historical concept skills and historical consciousness. *J Educ Learn.* 2024;18(2):430–40; doi: 10.11591/edulearn.v18i2.21152.
- [5] Tafuri F, Martinez-Roig R, Susanto N, Setyawan H, Latino F. Physically active lifestyles within the school context: morpho-physiological and functional aspects. *Retos.* 2024;58:48–60; doi: 10.47197/retos.v58.106154.
- [6] Lopes JC, Palomares EG, Palomares BA, Aranha AM, Silva FP. Pedagogical knowledge of teaching fights by trainers in an informal environment. *Hum Mov.* 2018;19(4):11–9; doi: 10.5114/hm.2018.77319.
- [7] Maureen I, Imah E, Savira S, Anam S, Mael M, Hartanti L. Innovation on Education and Social Sciences. *Proceedings of the International Joint Conference on Arts and Humanities (IJCAH 2021).* London: Routledge; 2021; doi: 10.1201/9781003265061.
- [8] Voloshina LN, Buslovskaya LK, Kovtunen AJ, Klimova VK, Ryzhkova YP. Evaluation of the adaptive potential of first-graders with normal speech development and speech disorders. *Cypriot J Educ Sci.* 2019;14(2):345–51.

- [9] Pramantik IAD, Burhaein E. A floor time approach to improve learning outcomes of the body roll to the side in adaptive physical education learning: classroom action research study on two cerebral palsy students. *Int J Disabil Sports Health Sci.* 2019;2(2):45–53; doi: 10.33438/ijdshs.652061.
- [10] Astutik NWW, Yudanto. Comparative study of post-marriage nationality of women in legal systems of different countries international journal of multicultural and multireligious understanding evaluation of online learning for physical education in sport and health (PJOK) in state elementary school throughout Bantul Regency. *IJMMU.* 2022;9(6):399–406; doi: 10.18415/ijmmu.v9i6.3823.
- [11] Kurniawan OM, Susanto N. Learning enhancement efforts are throwing a game capture rounders using modification tool on students of class V SDN 004 River Beehive Stone Subdistrict Spreadsheet Rokan Hilir. In: *Proceedings of the 3<sup>rd</sup> Progress in Social Science, Humanities and Education Research Symposium (PSSHERS 2021).* Atlantis Press SARL; 2023; pp. 155–64; doi: 10.2991/978-2-494069-33-6\_18.
- [12] Barboza CFS, Ramos ASL, Abreu PA, Castro HC. Physical education: adaptations and benefits for deaf students. *Creative Educ.* 2019;10(4):714–25; doi: 10.4236/ce.2019.104053.
- [13] Burhaein E, Tarigan B, Budiana D, Hendrayana Y, Tyas D, Phytanza P, Lourenço C, Permana D, Nuruldani G. Dimensions in the learning implementation and strategies of adapted physical education for children with special needs during the covid-19 pandemic: a literature review and grounded theory. *Sport Sci.* 2021;15(1):189–201.
- [14] Fernandez-Rio J, de las Heras E, González T, Trillo V, Palomares J. Gamification and physical education. Viability and preliminary views from students and teachers. *Phys Educ Sport Pedagogy.* 2020;25(5):509–24; doi: 10.1080/17408989.2020.1743253.
- [15] Savliuk S, Kashuba V, Romanova V, Afanasiev S, Goncharova N, Grygus I, Gotowski R, Vypasniak I, Panchuk A. Implementation of the algorithm for corrective and preventive measures in the process of adaptive physical education of pupils with special needs. *Phys Educ Theory Methodol.* 2020;20(1):4–11; doi: 10.17309/tmfv.2020.1.01.
- [16] Tafuri F, Martinez-Roig R, Susanto N, Setyawan H, Latino F. Physically active lifestyles within the school context: morpho-physiological and functional aspects. 2024;58:48–60; doi: 10.47197/challenges.v58.106154.
- [17] Heryati, E., Ratnengsih, E. Adaptive physical education model for increasing physical fitness of children with intellectual disability. *Adv Soc Sci Educ Humanit Res.* 2017;118:202–7.
- [18] Wijayanti DG, Kurniawan W, Kurniawan Z, Arum D. Adaptive physical education learning during pandemic in school for children with special needs. *Proceedings of the 5<sup>th</sup> International Conference on Sports, Health, and Physical Education, ISMINA 2021.* 2021; doi: 10.4108/eai.28-4-2021.2312251.
- [19] Marshall MM, Carrano AL, Dannels WA. Adapting experiential learning to develop problem-solving skills in deaf and hard-of-hearing engineering students. *JDeafStudDeafEduc.* 2016;21(4):403–15; doi: 10.1093/deafed/enw050.
- [20] Xu W, Li C, Wang L. Physical activity of children and adolescents with hearing impairments: a systematic review. *Int J Environ Res Public Health.* 2020;17(12):4575; doi: 10.3390/ijerph17124575.
- [21] Maisyarah Safitri J, Zwagery RV. Application of dir/floor time method in improving speaking ability on children who have speech delay. *J Kognisia.* 2019;2(2):75–82; doi: 10.31539/joeai.v3i1.1316.
- [22] Fatikhah MA, Sumaryanti, Hartanto A, Yashsie BTPWB, Ayudi AR, Arianto AC, Nurdin U. Evaluation of implementation of adaptive physical education learning during the covid-19 pandemic in SLB Yogyakarta city. *Int J Multidiscip Res Anal.* 2022;5(5):495–505; doi: 10.47191/ijmra/v5-i2-38.
- [23] Fauqi A, Munandar R, Zen M, Muhtar. Implementation of adaptive physical education learning in SLB Negeri 1 Dompu learning year 2022/2023. *J Pendidikan Mandala.* 2023;8(4):1612–7.
- [24] Reis M, Santos J, Matos M, Cruz T, Vasconcelos F, Almeida M. Assessment of the performance of novice futsal players in the execution of futsal-specific motor skills. *Hum Mov.* 2019;20(3):29–37; doi: 10.5114/hm.2019.83994.
- [25] Debevc M, Stjepanovič Z, Holzinger A. Development and evaluation of an e-learning course for deaf and hard of hearing based on the advanced Adapted Pedagogical Index method. *Interactive Learn Environ.* 2014;22(1):35–50; doi: 10.1080/10494820.2011.641673.
- [26] Ismail, Astuti I, Mering A. Evaluation of learning outcome assessment system in health and sports physical education subject in junior high school. *J Educ Teaching Learning.* 2018;3(2):296–301.

- [27] Citra Y, Nopembri S, Susanto PSY. Evaluation study of physical education learning in sports and health in special schools in Yogyakarta. *Int J Multidiscip Res Analysis*. 2024;7(1):411–6; doi: 10.47191/ijmra/v7-i01-49.
- [28] Yuwono I. Evaluation of physical education in SLB-C of South Kalimantan Province. *Kinestetik*. 2021;5(1):198–203; doi: 10.33369/jk.v5i1.14617.
- [29] Wahidah I, Listyasari E, Rahmat AA, Rohyana A. Evaluation of physical education independent curriculum through cipp: managerial implementation in learning activities. *Indones J Sport Manag*. 2023;3(2):208–23.
- [30] Yastıbaş AE, Erdal T. Evaluating English for Academic Purposes II Course through the CIPP Model. *Gumushane Univ J Soc Sci*. 2020;11(1):86–94.
- [31] Richter C, O'Reilly M, Delahunt E. Machine learning in sports science: challenges and opportunities. *Sports Biomech*. 2021;23(8):1–7; doi: 10.1080/14763141.2021.1910334.
- [32] Iqbal Z, Khan R, Wadood A. Evaluation of the effectiveness of the process of undergraduate health and physical education program by the CIPP model. *Global Educ Stud Rev*. 2022;7(2):285–95; doi: 10.31703/gesr.2022(vii-ii).27.
- [33] Susanto N, Dinata WW, Ihsan N, Bahtra R, Andria Y, Pranoto NW, Anam K, Sofyan D, Lourenço CCV, Burhaein E, García-Jiménez JV, Setyawan H. Instrument for assessing basketball skills in junior high school students in Indonesia. *J Phys Educ Sport*. 2023;23(12):3220–7; doi: 10.7752/jpes.2023.12368.
- [34] Siregar FHN, Nurkadri, Hasibuan S. Evaluation of physical education learning program at the West Nias District Senior High School. *Proceedings of the 6<sup>th</sup> Annual International Seminar on Transformative Education and Educational Leadership (AISTEEL 2021)*. 2021;591:306–17; doi: 10.2991/assehr.k.211110.101.
- [35] Pamungkas GNP, Sukarmin Y, Nanda FA. Evaluation of the implementation of the adaptive physical education curriculum. *Adv Health Exerc*. 2022;2(1):29–37.
- [36] Mulato N, Hidayatulloh F, Purnama S, Syaifulah R. Context, input, process, product (CIPP) evaluation of physical education learning implementation: a case study of schools assisted by the quality assurance agency of West Kalimantan Region. 2023; doi: 10.4108/eai.29-10-2022.2334036.
- [37] Fasold F, Houseman L, Noël B, Klatt S. Handball-specific skill acquisition by use of different instruction methods. *Hum Mov*. 2021;22(3):45–53; doi: 10.5114/hm.2021.100323.
- [38] Mayrhofer W, Nixdorf S, Fischer C, Zigart T, Schmidbauer C, Schlund S. Learning Nuggets for Cobot Education: A Conceptual Framework, Implementation, and Evaluation of Adaptive Learning Content. 11<sup>th</sup> Conference on Learning Factories, CLF2021. 2021; doi: 10.2139/ssrn.3868713.
- [39] Petiot GH, Bagatin R, Mouchet A. Describing the tactical knowledge used by young competitive soccer players: a psychophenomenological analysis. *Hum Mov*. 2022;23(4):99–111; doi: 10.5114/hm.2022.108323.
- [40] Suryobroto AS, Hastuti TA, Jatmika HM. Using the Context, Input, Process, and Product Evaluation Model (CIPP) to Evaluate Elementary School Teacher-Learner Program of Physical Education in Yogyakarta City. *Adv Soc Sci Educ Hum Res*. 2018;278:233–5; doi: 10.2991/YISHPESS-COIS-18.2018.58.

**Appendix 1. Questionnaire validity test results**

Component evaluation	Indicator	No.	Statement	Information	
Context	Learning materials	1	Use material learning in accordance with curriculum	Valid	
		2	Formulate material learning in accordance with curriculum	Valid	
		3	Standard competence in learning	Valid	
		4	Indicator in learning	Valid	
	Learning objectives	5	Affective	Valid	
		6	Cognitive	Valid	
		7	Psychomotor	Valid	
	Organize materials, media, and sources learn something else	8	Organize material learning in a complete and fulfilled manner	Valid	
		9	Organize source study in a complete and fulfilled manner	Valid	
	Designing activity study teach	10	Arranging steps learning	Valid	
		11	Determine type activity learning	Valid	
		12	Determine method motivating participant education	Valid	
		13	Prepare material discussion learning	Valid	
	Management class	14	Determine allocation time learning	Valid	
		15	Determine organizing participant learning to participate actively in learning at school	Valid	
	Evaluation	16	Define and create procedure guideline scoring	Valid	
		17	Make test evaluation	Valid	
		18	Determine types and tools of evaluation	Valid	
		19	Make key of answers	Valid	
Inputs	Suitability learning materials with Core Competencies and objective	20	Convey material lesson according to Basic Competencies	Valid	
		21	Teach use varied methods	Valid	
		22	Explain objective learning or competence basis that will be achieved	Valid	
	Characteristics of learners	23	Convey moderately material to be studied	Valid	
		24	Understand potential and development of participant education	Valid	
		25	Participant education enthusiastic in follow up Physical Education Sports and Health lessons	Valid	
		26	Participant educate to-do tasks in accordance with time that has been set	Valid	
	Process	Activity learning physical education	27	Physical Education, Sports and Health Learning held every Sunday	Valid
			28	RPP adjusted with material version for deaf child	Valid
			29	Preparation of RPP with methods for special deaf child enough held	Valid
30			School provide facility for support learning of deaf child	Valid	
31			Difficulty determining material learning in special deaf	Valid	
32			Difficulty determine the Basic Competencies of the Physical Education, Sports and Health Learning material that will be achieved for learning special deaf child	Valid	
33			Difficulty For using and selecting learning media moment learning physical education special deaf child	Valid	
34			Selected learning media in accordance agreement with participant students and parents	Valid	
35			There are devices that support it application of learning media in special deaf child	Valid	



Activity participant educate	36	Participant educate enthusiastic moment learning	Valid
	37	Parent role moment learning in deaf children	Valid
	38	Participant education not enough to understand material learning carried out in a way special	Valid
	39	Participant education capable do task with appropriate moment learning	Valid
	40	Participant education no understanding of the task given moment learning	Valid
	41	Participant education feels fast bored moment learning taking place	Valid
	42	Participant education difficulty for use of equipment sports at the moment learning	Valid
	43	Participant education difficulty when starting learning	Valid
	44	Learning taking place can condition well	Valid
	45	Interaction intertwined with good in learning	Valid
	46	Difficulty for teacher to explain material in a direct way	Valid
	47	Controlling and conditioning performance participant education when the learning process in the field is quite difficult	Valid
	48	Teachers influence the implementation of learning in special mentally retarded with good	Valid
	49	In field learning, warm-up, and activity physique still done with truly	Valid
	50	Bait go back and evaluate learning special deaf difficult	Valid
	51	Question-related material from classroom learning capable of being answered well by the participants education	Valid
	52	Participant education more active in learning	Valid
	53	I give task practice in accordance with Core Competencies and objectives moment learning	Valid
	54	Evaluation carried out on the results on the learning process	Valid
	55	Assignments, discussions, and others given for come up with an idea or idea new connection with Physical Education, Sports and Health Learning lessons	Valid
	56	Works as resource persons and facilitators in answer question participant students who face it difficulty	Valid
	57	Plan activity learning remedial based on study results participant education	Valid
	58	Evaluation done to measure level of achievement competence participant educate	Valid
	59	Acquire mark test practice final above Minimum Completion Criteria	Valid

**Appendix 2. Reliability test results**

Cronbach's alpha	Information
0.955	Reliabel

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