

Students Learning Outcomes Through the Teacher-Parent Partnership Learning System: Parent Background and School Type Impacts

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ABSTRACT

The authors develop a teacher-parent partnership-based learning system and apply it to investigate through experimentation. Samples were taken by multistage random sampling and placed in two groups. The experiment group involved 56 elementary schools (899 students and 899 parents), and the control group (without using the system) was fifty-two schools (541 students). Describing student competency data using descriptive statistics and competence in the experimental group was tested through one-way ANOVA, Sig. = .05. The students' competence with the partnership-based learning system was better. Student competence in the group of parents' work type, educational level, and economic level appears to vary. The kind of parents' work interacted with parents' academic rank and parents' financial status levels. In conclusion, various parents' backgrounds play a crucial role in partnership learning through internet-based learning systems, which must be considered in learning system use.

KEYWORDS:

Partnership, Learning, Competence, Parent, Teacher

INTRODUCTION

Our concern is the parents' involvement in learning activities through their partnership with teachers. It needs to be studied more deeply to find the most suitable participation pattern based on parent backgrounds in Indonesian schools. Some research indicates that involving parents in education results positively (Tambunan et al., 2022; Ertem & Gökalp, 2020; Nyakundi et al., 2020; Lau &

DOI: 10.4018/IJWLTT.327281

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Ng, 2019). And the diversity of parents' backgrounds affects student learning outcomes (Qi & Wu, 2020; Smith-Adcock et al., 2019). The parents' presence impacts student learning activities and is a supervisory measure for students (Gür & Türel, 2022; Manav et al., 2021; Ben-Tov & Romi, 2019). Developing learning becomes the basis for directing students' learning activities (Curtis et al., 2021; Ogg et al., 2022). However, the impact of parents' background in their partnership with teachers when conducting learning is not yet clear, including their level of education, type of work, and level of economic status—likewise, the impact on the practice of different schools. Knowing the basis for choosing a partnership suitable for groups of parents with specific backgrounds is vital to obtain maximum results.

We built a teacher-parent partnership-based learning system that allows them to collaborate and synergize in learning activities. The system has several supporting facilities, including space for teachers, students, and parents as a virtually interactive place. So the learning platform does not limit the distance and time for studying and learning (Vigo-Arrazola & Dieste-Gracia, 2019) and can form student learning independence (Daniel et al., 2016; S. Park et al., 2017). The intensity of communication between teachers and parents can be maintained when intervening in broad learning. Therefore learning objectives are achieved and ensure the continuity of quality learning (Rimm-Kaufman & Pianta, 2005). The gap between the learning process and results can also be addressed intensively (Marschall & Shah, 2020; Stroetinga et al., 2019). Teachers, parents, and students can partner in teaching and learning activities (Finn, 2019; Maldonado & De Witte, 2021) and determine options (Barger et al., 2019). So, students can achieve encouraging achievements (Carpenter & Gann, 2016; Curtis et al., 2021), and parents can actualize their functions and roles by parenting, communicating, volunteering, learning at home, decision making, and collaborating with the community in learning (Ihmeideh et al., 2020). The partnership between teachers and parents is realized in planning and implementing learning (Bang, 2018).

The parental education level impacts are also our concern because it determines student learning outcomes, as Van Houdt et al. (2019) reported. But it is not explained whether it applies to all levels of education. Still, it has not covered all levels of education. So, it is necessary to know and ensure the suitability of the partnership for parents of high school graduates and college graduates. Likewise, their knowledge, attitudes, and perceptions come to our attention because they are closely related to performance, which can be more or less their autonomy-supportive involvement activities, as stated by Lerner et al. (2022). We also investigated parents' economic status impacts because it determines the learning outcomes (Qi & Wu, 2020). The parents with different economic levels differ in the use of time (Huikari et al., 2021), so the intensity of their involvement can be different, and it is possible to have a different impact on learning outcomes.

There are two types of elementary schooling practices in Indonesia: public and religious-based schools. Although using the same curriculum, there are differences in teaching practice, so we feel it is crucial to investigate the impact of teacher-parent partnerships on the results obtained. The parents' work types play a role and are related to student learning outcomes (Krolikowski et al., 2020). Because parents' activities at work may vary according to their kind of work, it can have a different impact on learning outcomes due to the different intensities of their involvement, as stated by Hamlin & Flessa (2018). Their influence also needs to be known to be considered when involving them in learning.

Teacher and Parent Partnerships

Information and Communication Technology (ICT) is now making life easier, including teaching-learning activities (Bai et al., 2021; Eze et al., 2021) and business affairs (Lobo et al., 2019). ICT supports school operations, mainly administrative management (Ben-David Kolikant, 2019). The availability of these facilities provides an opportunity for schools to build websites to support school operations and provide a forum for teachers and parents to communicate through the system (Gu, 2017). By that condition, the partnership between teachers and parents can form the learning activities.

A partnership is a formal agreement between two or more parties to manage a business, share profits, jointly build, carry out tasks equally, and get equal benefits (Bigg et al., 2018). In practice, the partnership between teachers and parents is based on an understanding between teachers and parents in building and implementing student learning (Kohler et al., 2013). In other words, teachers and parents have the exact expectations for the achievement of student learning outcomes. For this reason, it is necessary to have a positive attitude and perception of the partnership. They felt that they benefited from the event with the understanding that the school met the targets for achieving the institution's goals, and parents felt the learning success of their students (their children). Their awareness shows that learning aims to build students' competence and character (Kendall, 2019; Kong, 2018).

The partnership can be activated by building understanding and agreement on learning activities realized through a learning support system (Epstein, 2018). The learning site is their place to partner (Said & Albagory, 2017) and to communicate intensively (Rimm-Kaufman & Pianta, 2005). The frequency of communication occurs as often as possible to make it easier to make joint decisions related to learning matters. In this regard, the Internet is essential in ensuring the continuity of interaction (Vigo-Arrazola & Dieste-Gracia, 2019); in other words, learning is Internet-based (Nurakun Kyzy et al., 2018).

The learning system built facilitates learning activities. Based on that, teachers and parents are jointly responsible for learning activities. Parents monitor their child's learning activities, and interactive communication between Teacher-Parents and Teacher-Students can occur effectively. The learning system ensures that collaboration and synergy between teachers and parents can occur, and at the same time, teachers and parents can communicate with students. This method illustrates the partnership between teachers and parents in learning activities that can provide the expected student learning outcomes.

Various Characteristics of Parents in Partnership-Based Learning

Therefore, to implement partnership-based learning, it is necessary to consider the various characteristics of parents and the type of school. People with different factors will likely respond differently to certain situations and conditions (Czibere & Paczári, 2021). People with different kinds of work may have different views on something (Manz & Bracaliello, 2016). Compared to those who work outside the office, people who work in the office may have a different view of their involvement in a particular activity (van Holen et al., 2019). In line with that, the diversity of education levels, types of work, and the parents' economic status level become a consideration in building partnerships between teachers and parents in learning activities.

Parents' work greatly determines learning outcomes when involved in learning (Baxter & Kilderry, 2022) because the tasks they perform may vary according to the type of work performed. Therefore, a forum is needed to accommodate their involvement in learning activities according to the group type. Each group involvement form is essential because their different work affairs can impact their activeness in learning activities. It is necessary to ensure their acceptance of the implementation of learning. Positive attitudes and perceptions of their involvement in learning activities are vital in determining success (Ogg et al., 2022; Shapiro et al., 2017).

Different parental education levels deserve attention in implementing partnership-based learning to ensure successful understanding (Ertem & Gökalp, 2020). Groups of parents based on varying levels of education may perceive their partnership with teachers in learning to be different. Parents of higher education graduates may view blocks more positively than the parents' group who are not higher education graduates. It may be due to their experience during college, in which almost all the time involved using computers (Chigbu & Nekhwevha, 2022). The economic status level factor is essential because it determines learning success (Sun et al., 2021). It illustrates the importance of adjusting parents' various educational levels, types of work, and economic status levels in conducting teacher-parent partnership-based learning at the elementary school level.

Students' Learning Outcomes Through Partnership-Based Learning

Learning outcomes are the goal of learning activities (Irawan et al., 2017; Matthews et al., 2017), involving teachers and parents in learning. Carry out their respective roles and actively support each other so that the learning objectives achievement maximized. Partnerships are carried out by synergizing in the planning and implementing of learning activities. The teacher designs lessons and confirms to parents that they decide and manage to learn jointly and the extent of their involvement during the learning activity (Seghers et al., 2021). On that basis, their partnership in the implementation can take place well (Sannen et al., 2021), including evaluating learning outcomes (Carpenter & Gann, 2016).

The learning platform in the system can provide space for teachers, students, and parents to be involved in learning activities (Boonk et al., 2021). Their interaction can occur through the system or social networks in their respective roles. Synergy and collaboration between teachers and parents discuss student development through the system accompanied by communication. (Stroetinga et al., 2019). Their agreement decides the learning achievement targets and is carried out collaboratively by both parties (Kawasaki et al., 2020). They exchange information about the recorded results based on their observations (JY Park, 2014). Furthermore, it becomes the basis for knowing how students have achieved the set targets and determining the following action in public and religious-based schools.

The partnership between teachers and parents can begin with their similar attitudes and perceptions of learning, which includes planning, implementing, and evaluating (Figure 1). Interactive communication between students, teachers, and parents can occur directly (teachers at school and parents at home) and indirectly (through the system). On the other hand, teachers and parents can communicate through the system during learning activities. According to the previous plan, this condition creates practical student learning and competence. Its shape is continuous so that the formation of student competence becomes optimal. Learning outcomes are evaluated jointly through agreed-to-measure instruments, including observation sheets to record student learning progress.

Research Questions and Research Objectives

Do we consider the research questions are 1) What are the students' learning outcomes taught through a teacher-parent partnership-based learning system better than without the teacher-parent partnership? 2) How does teacher-parent partnership-based learning impact learning outcomes regarding the school types, occupation types, parental education levels, and parents' economic status levels? 3) What are the participants' (teacher, student, and parent) attitudes and perceptions toward the learning system implementation?

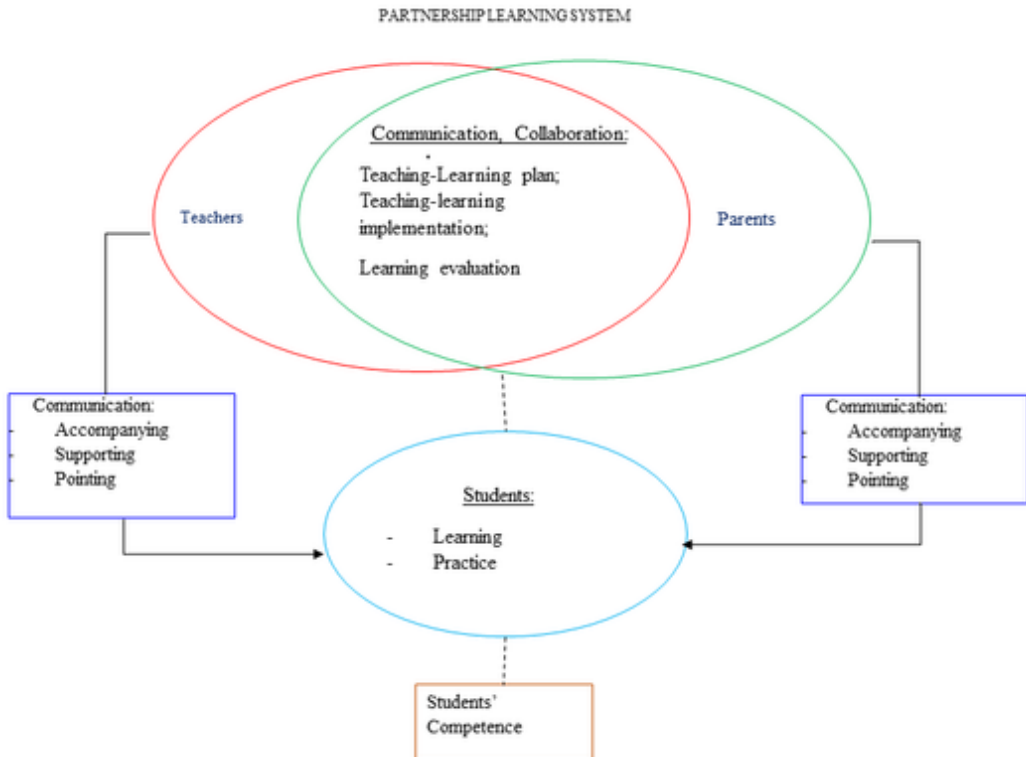
The main research objective is to obtain information regarding the effectiveness of teacher-parent partnership-based learning at the elementary school level. The details are (1) to find out the differences in student learning outcomes taught through teacher-parent partnership-based learning with student learning outcomes taught without teacher-parent partnerships and (2) to determine the impact of teacher-parent partnership-based learning on student learning outcomes based on various parental education levels, parental occupation type, parent's economic status levels, and school type, and (3) to describe the attitudes and perceptions of teachers, parents, and students towards the implemented teacher-parent partnership-based learning system.

METHODS

Preparation of the Learning Containers and Teaching Materials

The authors are building the learning systems with the [URL: https://ht-pnbp-2022.edu20.org/](https://ht-pnbp-2022.edu20.org/). And also provide learning implementation guidebooks. Improvements are made based on the validators' comments and inputs until the system and manuals are final. Several experts and practitioners

Figure 1. Teacher and Parent partnership in learning



examined the site and guidebooks, including six learning design experts, three ICT experts, and 23 learning practitioners.

The system has several facilities, including user registration (teachers, parents, students), storage of teaching materials in text, images, and video form, discussion forums (general), user interpersonal communication, and archiving activities of teachers, parents, and students. We introduce system operations to teachers, students, and parents by the principal of the prospective user school accommodate. Meetings are held online via Zoom, and at the same time, they register themselves in the system. Teachers and parents agree to implement learning in mathematics subjects in grade 5.

Mathematics teaching materials are prepared to cover competencies in exponents, square roots, cube roots, operations of numbers and roots, and problem-solving and then loaded into the system. Collaboration is agreed upon, communicates intensively during learning activities, and interacts reciprocally.

Instruments

There are two types of research instruments, namely student learning outcomes tests and attitude and perception questionnaires (for teachers, parents, and students) regarding the implementation of the learning system. We investigate the validity and reliability of all instruments through trials.

The students' learning outcomes test has 45 items. It consists of multiple-choice = 33 items, essay = 12 questions, and has a reliability coefficient of .73. The scoring range is 0 – 100, which is based on the formula,

$$Score = \left(\frac{Correct\ choice}{33} \right) 50 + \left(\frac{Correct\ solution}{12} \right) 50$$

The attitude and perception questionnaire uses the Likert Scale has 35 and 31 valuable items. After examination, they have reliability coefficients of .71 and .73, respectively. Measuring by the Likert scale, 1 = Very disinterested/wildly disagree; 2 = Not interested/ not agree; 3 = Fairly curious/ reasonably agree; 4 = Interested / Agree; 5 = Very interested/ very agree.

Sampling

The authors took 56 elementary schools by multistage random sampling to become research samples, namely 31 public schools and 25 religious-based schools. Participants are in two groups, the experimental group of 30 schools and the control group (parents not involved in the learning system) of 26 schools.

The experimental group consisted of 21 public schools and nine religious-based schools. There are 36 teachers (public schools = 25 people, religious-based schools = 11 people) and 899 students (public schools = 597 people, religious-based schools = 302 people). The parents who participated are the same as the number of students who are the experimental group participants, namely 899 people (parents of participating students). According to the census of those registered in the system, the participants' group numbers according to their work types are Farmers = 315 people, Private employees = 220 people, Civil servants = 156 people, and Entrepreneurs = 208 people. Based on the education level are 503 high school graduates and 396 college graduates. Based on economic status, stories are tall = 135 people, middle = 516 people, and low = 248 people. The control group consisted of 19 public schools and seven religion-based schools. There are 26 teachers and 541 students (Table 1).

Table 1. Groups participants

Group			Experiment Participants	Control Participants
Schools	Public		21	19
	Religion based		9	7
Teachers	Public school		25	19
	Religion based school		11	7
Students	General School		597	381
	Religion based school		302	160
Parents	Profession types	Farmer	315	-
		Private employees	220	
		Government employees	156	
		Entrepreneur	208	
	Education level	High school graduate	503	
		Higher education graduate	396	
	Economic status level	High	135	
		Medium	516	
		Low	248	

Procedure

Investigating the initial conditions of the two groups of participants (students in the experimental group and students in the control group) ensures initial conditions before implementing the system. It found no significant difference in their initial ability ($t = .729$, $\text{Sig.} = .466 > .05$) and served as the basis for experimenting.

Teachers and parents facilitate students in learning directly and indirectly (through the facilities available in the system). The teachers can teach in class presently while parents accompany their children home. An experimental implementation guidebook supports the learning scenarios contained in the system.

During the learning process, the discussion forum space for the public and communication space (interpersonal communication between teachers, parents, and students) can function. The system records all teaching and learning activities. Student learning activities include student assignments, student learning outcomes, and teacher-parent-student communication activities that occur through the system directly stored. They all become part of the assessment of the effectiveness of the learning system.

The system was implemented in learning activities for 12 weeks of lessons in mathematics and tested students' competence after the experiment. Furthermore, it traced the attitudes and perceptions of teachers, parents, and students toward implementing the learning system.

Data Collection and Data Analysis

To capture the attitudes and perceptions of teachers, students, and parents toward implementing the learning system through the questionnaire. The authors used learning outcomes test instruments to collect data from the experimental and control groups at the end of learning. The attitude and perception tendency toward education is determined based on the ideal Score.

The attitude minimum and maximum scores were 35 and 175, and perception had the minimum and maximum scores of 31 and 155. Describing the student learning outcomes scores and the attitudes and perceptions scores of the participants (teachers, students, and parents) used Descriptive statistics.

We are determining the tendency of attitudes and perceptions using Ideal Scores in five categories. $\text{Mean} - 1.5 \text{ Sd} = \text{Very low}$. $\text{Mean} - 1.5 \text{ Sd} < \text{Score} < \text{Mean} - .5 \text{ Sd} = \text{Low}$. $\text{Mean} - .5 \text{ Sd} < \text{Score} < \text{M} + .5 \text{ Sd} = \text{Medium}$. $\text{M} + .5 \text{ Sd} < \text{Score} < \text{M} + 1.5 \text{ Sd} = \text{High}$. $\text{Score} \geq \text{Mean} + 1.5 \text{ Sd} = \text{very high}$.

Checking the normality and homogeneity of the data was done to ensure the fulfillment of the analysis requirements. Investigating the learning outcomes differences between the experimental group and control group participants use the statistical t-Test. Use One-Way ANOVA at the level of .05 to test the learning outcomes differences of participants' groups in teacher and parent partnerships-based learning groups (practical) based on the various parental education levels, the parental occupation type, the parents' economic status levels, and the school type. All statistical analyses using the IBM SPSS 26 program. The communication between teachers and parents recorded in the system also becomes the basis for analyzing the implementation of learning.

RESULTS

Description of Participants' Competencies

Competencies of the two groups obtained are the experimental group participants $n = 899$, $\text{Mean} = 78.51$, $\text{Std. Deviation} = 5.22$, $\text{SE} = .174$ and the control group participants $n = 541$, $\text{Mean} = 72.24$, $\text{Std. Deviation} = 6.607$, and $\text{SE} = .284$.

Assumption Test

The two data groups met normality and homogeneity. The Kolmogorov-Smirnov test showed that the data for both groups were normal. The experimental group data has $\text{Statistic} = .065$, $\text{Sig.} = .000$

$< .05$, and the control group data has Statistic = .113, Sig. = .000 $< .05$. The requirements for data homogeneity are also met based on the Levene test, which is marked by Statistic = 90.196, $df_1 = 1$, $df_2 = 1438$, Sig. = .000 $< .05$.

The results of the two tests serve as the basis for examining the differences in the impact of teacher-parent partnership-based learning on the competence of experimental group members and control group members, differences in competence between group members based on various types of schools, parental education levels, parents' occupations, and level of education.

The Experimental and Control Group Participants' Competence Difference

The results of the competency difference test showed the experimental group and the control group participants were significantly different on average (Sig. (2-tailed) = .000, Mean Difference = 6.267, Std. Error Difference = .315). The experimental group participants' competence $n = 899$, Mean = 78.51, Std. Dev. = 5.224, SE = .174 was higher on average than the control group participants competence $n = 541$, Mean = 72.24, Std. Dev. = 6.607, SE = .284.

The Experimental Group Participants' Competence Differences

The group participants' competence based on the school type appears that the General school group has a Mean of 78.73 and the Religion based school group has a Mean of 78.08. The average difference test showed no significant difference between the two groups (Sig. = .076 $> .05$, Mean Difference = .654, and SE Difference = .368). It shows that teacher-parent partnership-based learning had a no different impact on student learning outcomes between public and religious-based schools.

The group participants' competence based on the variety of parental education levels is significantly different on average, Sig. (2-tailed) = .000, Mean Difference = -3.109, and Std Error Difference = .335. It shows that the partnership between teachers and parents in learning has a better impact when it involves parents of higher education graduates. The group participants' competencies belonging to the parents with higher education graduates had higher competence ($n = 396$, Mean = 80.25, 3.944, SE = .198) compared to the group belonging to the parent with high school graduates ($n = 503$, Mean = 77.14, Std. Dev = 5.685, SE = .253).

The group participants' competence based on the parental occupation type is students whose parents are civil servants were on average higher ($n = 156$, Mean = 81.96, Std. Dev. = 3.695, SE = .296) compared to other groups. Successively followed by the private employees' group ($n = 220$, Mean = 79.50, Std Dev. = 4.551, SE = .307), the Entrepreneurs group ($n = 208$, Mean = 77.44, Std. Dev. = 4.894, SE = .339), and Farmers group ($n = 315$, Mean = 76.82, Std. Dev. = 5.555, SE = .313).

The participant competence groups based on work types (farmers, civil servants, private employees, entrepreneurial) are significantly different ($df = 3$, $F = 45.023$, and Sig. = .000 $< .05$). But based on the Post Hoc Test, there are two groups not different. They are the participants with the parents of farmers and the parents with entrepreneurial (Mean Difference = .618, Std. Error = .436, Sig. = .156 $> .05$).

The group participants' competence based on the parents' economic status level obtained by the participants with the parents' middle-class financial status has the highest average competence ($n = 516$, Mean = 78.91, Std. Dev. = 5.137, Std. Error = .226) and overall successively followed by the participants' group with high parental economic status ($n = 135$, Mean = 78.66, Std. Dev. = 5.048, Std. Error = .434), the participants' group with low parental economic status ($n = 248$, Mean = 77.61, Std Dev = 5.406, Std Error = .343). The groups' mean difference test showed the three groups were significantly different $F = 5.269$, Sig. = .005 $< .05$. The competency average difference test showed that the participants' group with low parental economic status significantly differed from those with middle socioeconomic status. Mean Difference = 1.296, Std. Error = .402, Sig. = .001 $< .05$. Meanwhile, the mean competence of the middle and high groups was not significantly different.

Based on the average of the participants' group learning outcomes (Table 2), members of the middle-income parents' group and the high school graduates working as farmers scored the highest

Table 2. Participants group's competence in the group

Dependent Variable: Competence					
Profession	Education	Economic	Mean	Std. Deviation	n
Farmer	High school graduate	High	68.00	.000	11
		Medium	70.22	2.528	65
		Low	66.33	.577	3
	Higher education graduate	High	79.31	3.808	120
		Medium	79.05	4.385	116
Private employees	High school graduate	Medium	76.68	3.906	59
		Low	71.78	3.507	18
	Higher education graduate	High	88.00	.000	2
		Medium	81.55	2.882	141
Government employees	High school graduate	Medium	81.16	3.733	110
		Low	84.30	2.136	30
	Higher education graduate	High	89.00	.000	2
		Medium	82.21	3.167	14
Entrepreneur	High school graduate	Medium	79.10	5.486	10
		Low	77.29	4.803	197
	Higher education graduate	Medium	89.00	.	1

($n = 65$, Mean = 70.22, Sd = 2,528). The parents' higher education groups' members' highest scores are those with a high economy ($n = 120$, Mean = 79.31, Sd = 3,808).

The participants' group with the highest Score was the parents of private employees with a high school graduate at a moderate economic level ($n = 59$, Mean = 76.68, Sd = 3,906). The participants' group of parents who are higher education graduates found in the participants' group of parents high economic levels ($n = 2$, Mean = 88.00, and Sd = .00).

The participants' group with the highest Score in the participant group of parents' civil servants in the high school graduates' group is the participants' group of parents' low economic ($n = 30$, Mean = 84.30, Sd = 2.136). The group whose parents of higher education graduate is the participants' group of parents' high economic ($n = 2$, Mean = 89.00, Sd = .00).

The group with the highest Score in the participants' group of self-employed parents in the high school graduate group is the participants' group of moderate economic level parents ($n = 59$, Mean = 76.68, Sd = 3,906). And in the participants' group of the parent of higher education is the participants' group of high economic parents ($n = 2$, Mean = 88.00, Sd = .00).

Parents' education level, work type, and economic status significantly affected learning outcomes. Indicating of them are $F = 59,095$, $df = 1$, Sig. = .000 < .05; $F = 35,922$, $df = 3$, Sig. = .000 < .05; $F = 3,573$, $df = 2$, Sig. = .028 < .05, respectively. And it turns out that the interaction between parents' profession type and education level also occurs ($F = 15,740$, $df = 3$, Sig. = .000 < .05), so further analysis is carried out. Also, profession type interacts with the economic status level ($F = 10,306$, $df = 5$, Sig. = .000 < .05). Meanwhile, the education level and the parent's financial status level did not interact significantly ($F = 3.322$, $df = 1$, Sig. = .069 > .05) (Table 3).

The results analysis of participants' group competency based on the parents' work type and the parents' education level group (Table 4) shows the civil servant group has the highest Score ($n = 79$, Mean = 81.84, Sd = 3.681) in the high school graduated parents' group. Sequentially followed

Table 3. Competence tests of between-subjects effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Corrected Model	11333.239 ^a	15	755.549	50.628	.000
Intercept	340256.333	1	340256.333	22800.104	.000
Profession	1608.253	3	536.084	35.922	.000
Education	881.901	1	881.901	59.095	.000
Economic	106.648	2	53.324	3.573	.028
Profession * Education	704.677	3	234.892	15.740	.000
Profession * Economic	769.004	5	153.801	10.306	.000
Education * Economic	49.581	1	49.581	3.322	.069
Profession * Education * Economic	.000	0	.	.	.
Error	13177.411	883	14.923		
Total	5565865.000	899			
Corrected Total	24510.650	898			

a. R Squared = .462 (Adjusted R Squared = .453)

by the entrepreneur parents' group (n = 207, Mean = 77.53, Sd = 4.839), private employees parent group (n = 77, Mean = 75.53, Sd = 4.330), and farmers parent group (n = 79, Mean = 69.76, Sd = 2.523). While for the higher education graduate group, only one person became a participant in the self-employed group and was the highest scorer. Successively followed by the civil servant parents' group (n = 16, Mean = 83.06, Sd = 3.750), the private employee group (n = 143, Mean = 81.64, Sd = 2.961), and the farmer parent group (n = 236, Mean = 79.18, Sd = 4.095).

Graphically it looks like Figure 2.

The participants' group competence on the parental occupation type in the parents' economic status level (Table 5) is seen in the participants' group of the parent's high financial level. The highest Score is the participants' group of government employee parents (n = 2, Mean = 89.00, Sd = .000) followed by the participants' group of private employees parents (n = 2, Mean = 88, Sd = .000).

The participants' group of parents of farmers (n = 131, Mean = 78.36, Sd = 4,815). Graphically, it looks like Figure 3.

Table 4. Participants' competence based on parents' profession in the educational level group

Education	Profession	Mean	Std. Deviation	n
High school graduate	Farmer	69.76	2.513	79
	Private employees	75.53	4.330	77
	Government employees	81.84	3.681	140
	Entrepreneur	77.38	4.839	207
Higher education graduate	Farmer	79.18	4.095	236
	Private employees	81.64	2.961	143
	Government employees	83.06	3.750	16
	Entrepreneur	89.00	.	1

Figure 2. Competence graph of parent education level participants group based on parents' profession

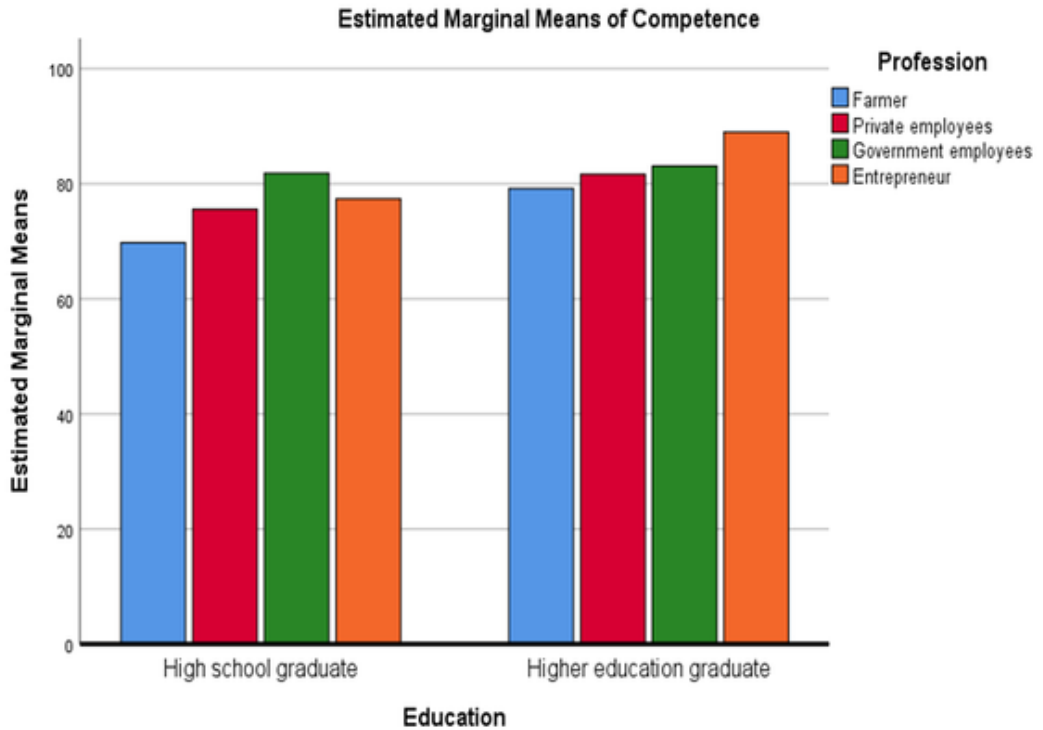


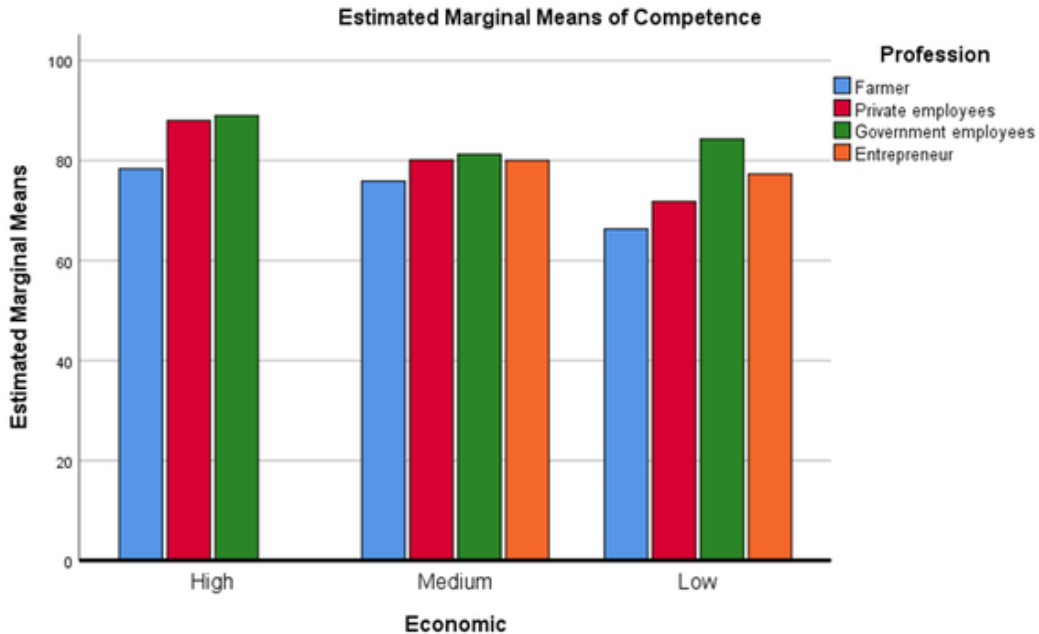
Table 5. Participants' competence in the economic level group based on parent profession

Economic	Profession	Mean	Std. Deviation	n
High	Farmer	78.36	4.815	131
	Private employees	88.00	.000	2
	Government employees	89.00	.000	2
Medium	Farmer	75.88	5.712	181
	Private employees	80.11	3.904	200
	Government employees	81.28	3.677	124
	Entrepreneur	80.00	6.000	11
Low	Farmer	66.33	.577	3
	Private employees	71.78	3.507	18
	Government employees	84.30	2.136	30
	Entrepreneur	77.29	4.803	197

Attitudes and Perceptions of Teachers, Parents, and Students Towards the Implementation of the Learning Model

Teachers, parents, and students generally tend to show attitudes and perceptions that are interested/agree with implementing a teacher-parent partnership-based learning system (Table 6). All are

Figure 3. Competence graph based on parent profession in the economic status level group



interested and agree on learning system implementation based on the determined trend level category. The interested/agree category of attitude is Ideal Score = 119 < Observation Mean Scores < Ideal scores = 139.40, and the perception category is Ideal Score = 105 < Observation Mean Scores < Ideal Score = 129). Interested/agree based on Ideal mean Score + .5 Sd < mean Observation Score < Ideal mean Score + 1.5 Sd.

The students' attitudes average Score is 139.40, falling into the interested/agree category (119 < 139.40 < 147), and the average Score of perception is 124.60, falling into the interested/agree category (105 < 124.60 < 129). The average Score for parental attitudes is 136.92, falling into the interested/agree (119 < 136.92 < 147), and the average perception Score of 121.85 fall into the interested/agree category (105 < 121.85 < 129). The teachers' attitude average scores = 139.03 fall into interested/agree (119 < 139.03 < 147, and perception scores = 114.69 (105 < 114.69 < 129).

Table 6. Participant's attitudes and perceptions

	n	Minimum	Maximum	Mean	Std. Deviation
Students_Attitude	899	100	163	139.40	15.120
Students_Perception	899	93	150	124.60	13.998
Parents_Attitude	899	90	167	136.92	18.208
Parents_Perception	899	86	149	121.85	15.956
Teachers_Attitude	36	102	159	139.03	17.157
Teachers_Perception	36	95	145	114.69	16.820

Teacher and Parent Partnership

The teacher-parent communication intensity describes the partnership that occurred. Based on the recordings obtained, the parents who are civil servants and private sector employees with the highest power compared to other groups. The discussions between the teacher and parent are dominant and related to the form of assistance that parents could do in helping their child when doing their child's homework.

DISCUSSION

The research findings show that learning with parents involved in the partnership with teachers is better than learning without parental involvement, in line with Ertem & Gökalp (2020). It shows that the association between teachers and parents in learning gives good results. Collaboration and synergy between teachers and parents that took place during learning activities turned out to be very instrumental in understanding. The teachers' and parents' synergy and collaboration be improved to get better results through intensive communication, as suggested by Lau & Ng (2019).

Implementing the learning in public and religious-based schools showed results that were not significantly different. It illustrates that the teachers at the two schools are competent in managing knowledge, establishing communication, and interacting with parents well. Collaboration and synergy between teachers and parents are the determinants of achieving learning objectives, as stated by Daniel et al. (2016) and Park et al. (2017). The interaction of teachers, students, and parents that is not limited by distance and time because it takes place virtually becomes a support for the achievement of learning outcomes, as stated by Vigo-Arrazola & Dieste-Gracia (2019) and Ekornes & Bele (2021). Such conditions allow parents to carry out their roles through parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community, as stated by Ihmeideh et al. (2020). It is convincing because the support from the attitudes and perceptions of teachers, parents, and students towards the implemented learning is high. So the gap between the learning process and learning outcomes is resolved, as stated by Marschall & Shah (2020) and Stroetinga et al. (2019). Thus, the teacher-parent partnership-based learning system is appropriate for all schools.

Different parental education levels seem to play a role in determining learning outcomes based on van Houdt et al. (2019) and Wang et al. (2020). The participants' learning outcomes looked different. The learning outcomes of the participants with parents who graduated from higher education were better than those with parents who graduated from high school. The intensity of involvement of the two groups in learning is different because parents of higher education graduates have more experience using computers or Android-based communication tools than high school graduates. They can use computers more often during college to be more active in learning (Lerner et al., 2022). Based on that, the conclusion is that education is more effective when parents have more computer experience. Civil servants and private employees work in the office so that they have more significant opportunities to be involved in learning to use computers.

Testing the learning outcomes of the participant groups based on the type of parental occupation shows that the type of parental occupation determines learning outcomes, in line with the findings of Baxter & Kilderry (2022) and Krolkowski et al. (2020). The learning outcomes between groups were significantly different. The participants' group of civil servants' parents showed the highest results among the groups, followed by groups of private employees, private employees, entrepreneurs, and farmers. However, the participant group of farmers and self-employed parents showed that the learning outcomes were not significantly different. This condition can be caused by the intensity of parental involvement in learning, as stated by Daniel et al. (2016). The time for the farmer and self-employed groups to get involved was less than that for the civil servant and private employee groups.

Testing learning outcomes in groups of participants based on various levels of parents' economic status shows that the parent's financial status level also determines learning outcomes, in line with Qi & Wu's statement (2020). The group of parents with moderate economic levels showed significantly

different results from the group of parents with low economic levels but not the parents' group with high financial levels. It is possible to their lifestyle because the higher the economic status level, the less time they spend with their families (Huikari et al., 2021). On that basis, the parents' financial status level is essential in determining the form of their involvement in learning. The study showed that the participants' group of parents with moderate economic levels showed higher results than others. Parents partnering with teachers in education are more suitable for civil servants at all levels of their financial status. However, civil servants are not significantly different, judging from the type of work and parents' education levels. The more significant impact is on, the higher education graduates of the self-employed group.

LIMITATION

The investigation of learning based on the teacher-parent partnerships system is limited to the elementary schools' condition in Indonesia according to the school types, the parent's education level, the parents' work types, and the parents' economic status level. Coincidentally, none of the parents had high financial status as entrepreneurs in implementing the learning system. Therefore, it is necessary to conduct future research involving several variables that may determine the success of the learning implementation. These include the impact of teacher, parent, and student gender on learning and group attitudes based on where they live.

ACKNOWLEDGMENT

The authors thank the teachers, parents, and students willing to participate in this research. In particular, UNIMED for funding this research (Grant No. 082/UN33.8/PPKM/PT/2021).

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