



Behavioral Contract To Increase Social Science Learning Motivation During Covid-19 Pandemic

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Citation: Rahmat Hariyadi, Rasimin (2024), Behavioral Contract To Increase Social Science Learning Motivation During Covid-19 Pandemic, *Educational Administration: Theory and Practice*, 30(4), 8810-8818

Doi: 10.53555/kuey.v30i4.657

ARTICLE INFO

Article Submission

12 December 2022

Revised Submission

24 January 2023

Article Accepted

28 March

ABSTRACT

Previous research on the effects of shifting from an Islamic boarding school to a home study due to the COVID-19 pandemic is scarce. The transition may introduce novel challenges not heretofore explored, making this study one of the few, if any, to scrutinize the effects of studying at home in Islamic boarding schools during the pandemic. The study scrutinized behavioral contracts in Islamic boarding schools in Salatiga, Indonesia, to increase motivation for home study during the COVID-19 pandemic. A descriptive quantitative study was conducted on 4225 students from the city's Islamic boarding schools. A sample of 275 students was obtained through proportional random sampling, which was calculated by multiplying 55 indicators by 5. Path analysis was used to analyze the data in SPSS version 25. The findings revealed that behavioral contract had a positive and significant effect on motivation, learning activities, and learning achievement. It also shows the intervening role of motivation and learning activities in the relationship between the implementation of the behavioral contract and learning motivation. This study also proposes suggestions for future studies to help shape policies during online learning.

Keywords: Learning Consulting Services; Behavioral Contract; Learning Motivation; Covid-19 Pandemic; Zoom

Introduction

The COVID-19 pandemic has caused significant disruption in the education system, forcing students in Islamic boarding schools to return home and continue their studies via zoom. This transition from a highly structured and supervised environment to one with limited supervision and regulation poses a challenge to students' motivation and academic success. With this distance/online learning system, all parties in Islamic boarding schools, including students, teachers, and parents, experienced culture shock (Hayati, 2020). During this unprecedented period, an effective strategy that can sustain students' motivation and regulate their behavior is critical. Motivational strategies are required to keep students engaged in the learning process at home.

According to (Hollebeke et al., 2022), teaching methods, age, talents, and student attitudes, are all factors that influence the learning/teaching process. However, student attitude is the most influential in determining motivation among these factors because it is directly related to the educational environment (teachers, peers, and family) that surrounds students. Students' abilities and perspectives have deteriorated due to their lack of interest in learning and problem-solving, which has been exacerbated by the pandemic, causing students to miss out on socialization opportunities (Lippke et al., 2021; Mali & Lim, 2021; Rahiem, 2021). The absence of teacher feedback in task assessment also contributes to low student motivation (Wilson & Czik, 2016) along with factors such as student performance (Ling et al., 2021), self-efficacy (Camacho et al., 2021), inadequate foreign language skills (Bai & Wang, 2021), slow learning pace (Wu & Schunn, 2021), and limited interaction between students and teachers (Hornstra et al., 2021).

Various measures have been implemented by educational institutions and educators to keep students motivated during the Covid-19 pandemic. The behavioral contract has been widely implemented in schools

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around the world and presents a positive, goal-oriented approach to changing behavior. Several decades of research have revealed that using contract learning strategies has a positive effect on learners' motivation and behavior (Chyung, 2007). Learning with the behavioral contract is an intervention used by schools to help monitor and change student behavior. The behavioral contract is an educational intervention aimed at managing and modifying student behavior. This technique involves a written agreement between students and teachers or administrators which outlines students' behavior habits and the teachers' obligation to educate them (Strahun et al., 2013). Learning using a behavioral contract, is one of problem-based learning, and cooperative learning has received a lot of attention recently, especially as they deal with a paradigm shift from teacher-centered learning to student-centered learning (Shin, 2018). The behavioral contract has been proven to improve students' psychological strength (Tarihoran et al., 2020). If utilized correctly, behavioral contracts can effectively change children's behavior, monitor their progress administratively, and be a flexible and simple intervention tool for teachers (Anderson, 2002).

According to (Wen & Skehan, 2021), four factors have a significant effect on learning motivation: activities involved in learning and teaching, the outcome of these activities, internal motivation rooted in the student's personal experiences and interests, and extrinsic motivation driven by external rewards and punishments. Contract learning is widely acknowledged to improve students' intrinsic motivation (Knowles & Knowles, 1986). Therefore, this study involves learning achievement and learning activities as the intervening variables of the study to delve deeper into the learning consultation services that employ behavioral contracts to enhance motivation for studying at home during the Covid-19 pandemic with the use of Zoom for an Islamic boarding school in Salatiga.

Despite contract learning has been recognized since the 1980s (Knowles & Knowles, 1986), there has been no study focusing on the implementation of behavioral contracts within the Islamic educational environment, and even less on their use during online learning amid the Covid-19 pandemic. Most previous studies tend to focus on students' self-regulated learning or students with special needs. Hence, this study adds to the body of knowledge by examining the effects of the transition from studying in an Islamic boarding school to studying at home as a result of the COVID-19 pandemic. The transition may present novel challenges not previously investigated, making this study one of the few, if any, to investigate the effects of studying at home in Islamic boarding schools during the pandemic.

RESEARCH HYPOTHESIS

When the behavioral contract is used effectively, it has the potential to change students' behavior and attitudes, especially in the academic setting. Students will become more engaged in their learning activities, motivated to work harder, and motivated to improve their performance as a result. Hence, this study seeks to explore the following hypotheses:

H1: Implementing behavioral contract during online learning has an effect on students' learning motivation.

H2: Implementing behavioral contract during online learning has an effect on students' learning activities.

H3: Implementing behavioral contract during online learning has an effect on students' learning achievement.

H4: Implementing behavioral contract during online learning has an effect on students' learning achievement through motivation as an intervening variable.

H5: Implementing behavioral contract during online learning has an effect on students' learning achievement through learning activities as an intervening variable.

Literature Review

The Effect of Behavioral Contract on Motivation

According to (Cooper et al., 2007), the behavioral contract in learning is typically a positive reinforcement intervention that outlines specific behaviors to be improved and inappropriate behaviors to be reduced in students, promoting positive conduct and enhancing motivation. This method is effective because it guides and evaluates students continuously. Furthermore, the behavioral contract allows students to confront complex practices and experiences, plan solutions, and participate in collaborative problem-solving (Chiou et al., 2015). The collaborative classroom environment promotes learning through problem-solving and sharing of results, requiring teachers and students to adapt to new roles (Choi, 2010). This shift gives students more responsibility for developing their social skills in addition to their academic abilities (Rasimin et al., 2024). The behavioral contract, when used correctly, can foster student's positive attitudes, encourage active learning, and inspire students to maintain positive behavior.

The Effect of Behavioral Contract on Learning Activities

Teachers may find it difficult to manage student behavior given that online learning limits the interaction between teachers and students. It is critical to have a solid understanding of various behavior management strategies to be prepared for these situations. The strategies employed should be research-based so that teachers can assess their effectiveness and have evidence to back up their actions. Research-based strategies also provide implementation guidance, making it easier for teachers to plan and implement the strategies in their classrooms. According to (Sugai & Horner, 2002), the use of behavioral contracts can help address a range of low-intensity to high-frequency behavioral issues faced by students. These contracts are effective interventions for students who may not respond well to traditional learning activities. This technique positively

affects students' discipline (Devi et al., 2021; Semma et al., 2023). It's worth mentioning that teachers can use this technique in schools where it hasn't been used before.

The Effect of Behavioral Contract on Students' Learning Achievement

According to (Scruggs et al., 2007), the use of behavioral contract in learning can have a positive effect on achievement. The idea is to create a formal agreement between students and teachers to change disruptive behavior and involve families in promoting positive behavior in the classroom. This, in turn, should lead to increased student engagement and ultimately, improved learning outcomes as desired by students, teachers, and parents. Each contract is tailored to the individual needs of each student, and the effectiveness of the technique may vary from student to student and for different behavior issues. To maximize success, educators must understand the key elements of forming a behavioral contract. According to (Kehle et al., 2000), student behavior is a major concern for the education community, administrators, and teachers. Poor behavior management can have a negative effect on learning outcomes and disrupt the learning environment. Disruptive behavior not only distracts others, but it also consumes classroom time, decreasing the amount of time available for academic instruction. As a result, student achievement may suffer.

Methodology

Research design

This study aimed to assess the effect of social science learning consulting services utilizing behavioral contract on student motivation to study at home during the COVID-19 pandemic via Zoom at Islamic boarding schools in Salatiga City. The study used a quantitative research design, revealing the underlying constructs through path analysis in SPSS version 25. The study's design was based on (Creswell, 2009), which states that descriptive-quantitative research seeks to examine the effect of exogenous variables, both collectively and individually, on endogenous variables. The data was gathered using a survey method, in which questionnaires were distributed to the research sample, and the collected information was then used to test hypotheses. Based on the sample size, the study obtained complete primary data, with all questionnaires filled out by respondents being fully completed, allowing the data to be analyzed without the need for correction or replacement of results.

Procedures

Teachers followed these steps to implement the behavioral contract:

Define targets: Before starting the contract, it is crucial to make sure that the target behavior falls within the student's abilities. The teacher will allocate time for a simple lesson to explain the expectations to the students and show them how to participate in the learning process. The teacher will demonstrate the desired behavior, give the students practice opportunities, and provide feedback as needed.

Pre-Correction of behavior: At the beginning of each learning session, the teacher will verbally remind the students of the contract objectives and briefly correct any behavior of interest. The teacher will also discuss other elements of the contract such as daily and weekly goals.

Evaluating progress and providing feedback: At the end of the session or during the contract term, the teacher will discuss the evaluation sheet with the students and fill it out together. Feedback will be provided, including praise and corrective feedback based on the student's progress.

Reward or repeat learning: If the students meet their daily goals, the teacher will reward them as stated in the contract. If not, the teacher will use this opportunity to re-teach the target behavior and provide additional practice and feedback.

Maintain Intervention: The teacher will continue this process until the students exhibit consistent improvement in their behavior.

Sample and Population

The study population included all of the Islamic boarding schools in Salatiga, Central Java, Indonesia, with a total of 4,225 students enrolled across all sub-districts and villages (Table 2). The sample size was determined by multiplying the number of indicators 55 by a number between 5 and 10, which in this study was multiplied by 5, yielding a sample of 275 students. The sampling method used was proportional random sampling, in which sample members were drawn at random from the population based on the proportions of each sub-district and village, obtaining a sample of 275 students (Table 1).

Table 1. Population and Sample by District

No	District	Madrasah Ibtidaiyah (Islamic Elementary School)	Population	Sample
1	Argomulyo District	4	1.193	78
2	Tingkir District	3	761	50
3	Sidomukti District	3	1.183	77
4	Sidorejo District	3	1.088	71

Source: BPS (<https://salatigakota.bps.go.id/indicator/28/53/1/madrasah-ibtidaiyah.html>)

Research data

The data sources are divided into two categories: primary data and secondary data. Surveys, observations, interviews, and questionnaires provide primary data. Secondary data comes from public documents from the Salatiga Central Bureau of Statistics, Salatiga Regional Planning and Budgeting Agency, Salatiga City in Figures 2020-2021, Open Data Jawa Tengah, and the Central Java Provincial Government ([linkhttps://reference.data.kemdikbud.go.id/](https://reference.data.kemdikbud.go.id/)), which provides the flagship programs of the Department of Education and Culture.

The data collection tool employed a questionnaire that was created with reference to previous researchers' theories, taking dimensions and indicators into account.

Table 2. Research Instruments

Variable	Dimension	Indicator	Scale
Behavioral Contract (X)	1.Connectivity	1.Make it easier for students to communicate	interval
		2.Can seek unlimited knowledge	interval
	2.Flexibility	3.Learning can be done anywhere	interval
		4.Online learning with flexible time.	interval
	3.Interactivity	5.Involves interaction between students	interval
		6.Subject matter and learning environment that can be done instantly and directly	interval
	4.Collaboration	7.Use of communication facilities	interval
		8.Online discussion to support learning	interval
	5.Expanding opportunities	9.Enriching learning materials	interval
		10.Expanding material for face-to-face meetings	interval
	6.Motivation	11.Curiosity of students	interval
		12.Students' determination in learning	interval
Learning Motivation (Y1)	1.Diligent in learning	1.Attendance at school	interval
		2.Take KBM in class	interval
		3.Study at home	interval
	2.Tenacious in the face of adversity	4.Attitude to adversity	interval
		5.Efforts to face difficulties	interval
		6.Habits in following lessons	interval
	3.Interest and keenness in learning	7.Enthusiasm in following KBM	interval
		8.Desire to excel	interval
		9.Qualifying results	interval
	5.Independent in learning	10.Completion of tasks or homework	interval
		11.Take advantage of opportunities outside of class hours.	interval
Learning Activities (Y2)	1.Complex Thinking	1.Use a variety of complex thinking strategies effectively.	interval
		2.Translating issues and situations into work steps with clear objectives.	interval
	2.Processing information (Information Processing)	3.Use a variety of strategies, information gathering techniques and various sources of information effectively.	interval
		4.Interpret and synthesize information effectively.	interval
		5.Evaluate information appropriately.	interval
		6.Identify the possibilities of obtaining additional benefits from the information.	interval
	3.Communicating Effectively (Effective Communication)	7.State / convey ideas clearly.	interval
		8.Can effectively communicate ideas to different types of audiences, in different ways for different purposes.	interval
		9.Produce quality work.	interval
	4.Working together (Cooperation/Collaboratio	10.Strive to achieve group goals.	interval
		11.Use interpersonal skills effectively.	interval

Variable	Dimension	Indicator	Scale
	n)	12.Demonstrated ability to perform multiple roles effectively.	interval
		13.Strive to maintain group cohesiveness.	interval
	5.Effective reasoning power (Effective Habits of Mind)	14.Self Discipline (Self-Regulation)	interval
		15.Critical Thinking (Critical Thinking)	interval
		16.Creative Thinking (Creative Thinking)	interval
Learning Achievement (Y3)	1.Cognitive	1.Knowledge	interval
		2.Comprehension	interval
		3.Application	interval
		4.Analysis	interval
		5.Synthesis	interval
		6.Evaluation	interval
	2.Affective	7.Paying attention (Receiving/Attending)	interval
		8.Responding (Responding)	interval
		9.Living Value (Valuing)	interval
		10.Organizing/Connecting	interval
		11.Internalizing Value	interval
	3.Psychomotor	12.Reflex Movement	interval
		13.Skills	interval
		14.Perceptual Ability	interval
		15.Physical Ability	interval
		16.Skill Moves	interval

Data analysis

The model was evaluated in this study using SPSS version 26 software to determine the extent of influence of exogenous variables on endogenous variables as well as the effect of intervening variables on both exogenous and endogenous variables. The analysis results can be interpreted by looking at the R2 and T values. The study also looked at the indirect effect of exogenous variables on endogenous variables by looking at intervening variables.

Results

Data Validity and Reliability

The results of the validity test of Behavioral Contract (X1), Learning Motivation (Y1), Learning Activities (Y2), and Learning Achievement (Y3) show that each item has $r_{count} > r_{table}$ and is positive with a value of $sig < 0.05$. Thus, all items are declared valid. Meanwhile, the results of the reliability test of Behavioral Contract (X1), Learning Motivation (Y1), Learning Activities (Y2), and Learning Achievement (Z) show that the Cronbach's alpha value for X1 is 0.876, Y1 is 0.732, Y2 is 0.698, and Z is 0.855. Thus, it can be concluded that the research instrument is reliable because their values are greater than 0.6.

Classical Assumption Test

The first step in the classical assumption test is the normality test. The results of the normality test are presented in (Table 3).

Table 3. Kolmogorov-Smirnov One-Sample Normality Test Results

Variable	Significance	Description
X	0.078	Normal
Y1	0.085	Normal
Y2	0.455	Normal
Z	0.435	Normal

All significance values are greater than 0.05 so it can be concluded that the normality assumption is met. The next test is the linearity test. The results of the linearity test are depicted in (Table 4).

Table 4. Linearity Test Results

Variable	F	Significance	Description
X against Y1	9.231	0.000	linear
X against Y2	7.541	0.001	linear
X against Z	8.345	0.000	linear
Y1 against Z	10.342	0.001	linear
Y2 against Z	8.349	0.000	Linear

From the linearity test, the entire significance value for the linear model is less than 0.05. So, it can be said that the assumption of linearity of the structural model has been fulfilled. Lastly, the results of the heteroscedasticity show that the dots spread randomly, do not form a clear pattern, and are spread both above and patterned, the number 0 (zero) on the Y axis, then there is no heteroscedasticity in the research model.

Hypothesis Testing

The relationship between variables is considered to have a positive and significant effect if the t-count value is higher than the t-table value and the significant t-value is less than 0.05.

H1: The implementation of behavioral contract during online learning has an effect on students' learning motivation.

Table 5. Hypothesis 1

Variable	Beta	T	Sig t	Description
Behavioral Contract (X) → Learning Motivation (Y1)	0.812	4.513	0.000	Significant
table	= 1.650413			
Adjusted R Square	= 0.469			
R Square	= 0.492			

The partial effect of the Behavioral Contract (X) on Learning Motivation (Y1) was analyzed. The t-count for Behavioral Contract (X) is 4.513, greater than the t-table (1.650413) with a significance value of 0.000, which is less than 0.05, indicating a positive and significant effect of Behavioral Contract (X) on Learning Motivation (Y1). The results of the regression calculation show that the coefficient of determination (adjusted R-square) obtained is 0.469, meaning that 46.9% of the variation in Learning Motivation (Y1) can be explained by Behavioral Contract (X), while the remaining 53.1% is influenced by other variables not included in the research model.

H2: The implementation of behavioral contract during online learning has an effect on students' learning activities.

Table 6. Hypothesis 2

Variable	Beta	T	Sig t	Description
Behavioral Contract (X) → Learning Activities (Y2)	0.692	6.557	0.001	Significant
table	= 1.650413			
Adjusted R Square	= 0.462			
R Square	= 0.487			

The partial effect of the Behavioral Contract (X) on Learning Activities (Y2) was analyzed. The t-count for Behavioral Contract (X) is 6.557, greater than the t-table (1.650413) with a significance value of 0.000, which is less than 0.05, indicating a positive and significant effect of Behavioral Contract (X) on Learning Activities (Y2). The results of the regression calculation show that the coefficient of determination (adjusted R-square) obtained is 0.462, meaning that 46.9% of the variation in Learning Activities (Y2) can be explained by Behavioral Contract (X), while the remaining 53.8% is influenced by other variables not included in the research model.

H3: Implementing behavioral contract during online learning has an effect on students' learning achievement.

Table 7. Hypothesis 3

Variable	Beta	T	Sig	Description
Behavioral Contract (X) → Learning Achievement (Z)	0.475	4.437	0.000	Significant
table	= 1.650413			
Adjusted R Square	= 0.681			
R Square	= 0.693			

The effect of the Behavioral Contract (X) on Learning Achievement (Z) was analyzed. The t-count for Behavioral Contract (X) is 4.437, greater than the t-table (1.650413) with a significance value of 0.000, which is less than 0.05, indicating a positive and significant effect of Behavioral Contract (X) on Learning Achievement (Z). The results of the regression calculation show that the coefficient of determination (adjusted R-square) obtained is 0.681, meaning that 68.1% of the variation in Learning Achievement (Z) can be explained by Behavioral Contract (X), while the remaining 41.9% is influenced by other variables not included in the research model.

Table 8. Indirect Effect

Effect of	Beta	R Square	Adjusted R Square	R	Sig T
X, Y1, Y2→Z	0.438; 0.734; 0.721	0.695	0.673		0.000; 0.001; 0.000

H4: Implementing behavioral contract during online learning has an effect on students' learning achievement through motivation as an intervening variable.

Based on the results of the analysis of the effect of X through Y1 on Z, the direct effect given by X to Z is 0.438. While the indirect effect of X through Y1 on Z is the multiplication between the beta value of X against Y1 with the beta value of Y against Z, namely: $0.812 \times 0.734 = 0.596$. Thus, the total effect given by X to Z is the direct effect plus the indirect effect, namely: $0.596 + 0.438 = 1.034$. The value of the direct effect is 0.438 and the indirect effect is 0.596, which means that the indirect effect value is greater than the direct influence value, these results indicate that X through Y1 indirectly has a significant effect on Z. The results of the analysis show the coefficient of determination (adjusted R²) of 0.673 which means that the behavioral contract contributes to learning achievement through learning motivation of 67.3% while the remaining 32.7% is influenced by other variables not included in the model.

H5: Implementing behavioral contract through Zoom meeting has an effect on students' learning achievement through learning activities as an intervening variable.

Based on the results of the analysis of the effect of X through Y2 on Z, the direct effect given by X to Z is 0.438. While the indirect effect of X through Y2 on Z is the multiplication between the beta value of X against Y2 with the beta value of Y against Z, namely: $0.692 \times 0.721 = 0.498$. Then the total effect given by X to Z is the direct effect plus the indirect effect, namely: $0.498 + 0.438 = 0.936$. The direct influence value is 0.438 and the indirect effect is 0.498, which means that the indirect effect value is greater than the direct influence value, these results indicate that X through Y2 indirectly has a significant influence on Z. The results of the analysis show the coefficient of determination (adjusted R²) of 0.673 which means that the behavioral contract contributes to learning achievement through learning activities of 67.3% while the remaining 32.7% is influenced by other variables not included in the model.

Discussion

Teaching methods that strengthen student motivation are more relevant than ever. As (Kehle et al., 2000) points out, student behavior is a major concern for educators, administrators, and communities. Inadequate behavior management can inhibit learning achievement and the development of a positive and productive learning environment. Hence, addressing learning problems requires a description of students' motivation for learning, particularly in the context of an online learning environment.

Behavioral contracts have been shown to improve learning motivation. Multiple studies support this, including the work of (Cooper et al., 2007), who argue that behavioral contracts are a positive reinforcement intervention that promotes good behavior and increases motivation by outlining a list of targeted student behaviors to be improved and inappropriate behavior to be reduced, which will foster positive behavior and increase motivation. (Guay et al., 2021) observe that students assign different meanings and attitudes to academic activities, which influence their motivation and energy (Kőszegi, 2014) implies that behavioral contract is closely related to intrinsic and extrinsic motivation. In contrast, a study conducted by (Chyung, 2007) that students' online behavior was not a predictor of their motivational status despite age and gender differences in their online behavior.

In this regard, a behavioral contract is ideal because it allows for ongoing guidance and evaluation of students. Students learn in a collaborative classroom setting by problem-solving and sharing results, which requires teachers and students to play different roles (Choi, 2010). Learning the behavioral contract also encourages students to participate in complex practices, plan solutions, and conduct collaborative research (Chiou et al., 2015). This is because the problem-solving process in learning behavioral contract through cooperative learning promotes the acquisition of social skills as well as academic skills. (Obiekezie et al., 2016), on the other hand, emphasizes the importance of engaging and immersive learning activities in achieving learning objectives and promoting better learning. By taking into account the student's level of experience and learning goals, interesting learning activities can transform a dull learning module into a meaningful experience. Storytelling, gamification, virtual learning, augmented reality, and other tools can be used to create engaging

learning activities while reducing the cognitive load for learners.

Previous research, such as (Scruggs et al., 2007), has supported the effectiveness of the behavioral contract on learning achievement. A formal written agreement between students and teachers to change disruptive behavior and promote positive behavior in the classroom, with family involvement, leads to increased student involvement and, ultimately, improved learning achievement. Behavioral contracts are tailored to the needs of each individual student, and the success of a strategy may differ depending on the student and the behavior issue. Educators can improve their chances of success by understanding the key components of a behavioral contract.

The online learning environment presents a number of challenges, including the difficulty in monitoring student behavior and keeping students motivated to study. In such cases, behavioral contracts between teachers and students are critical for facilitating communication and interaction during online learning. This is supported by (Noviyanti, 2021) who discovered that using learning contracts can streamline the online learning process and foster a successful virtual educational environment. According to (Noviyanti, 2021), one of the most commonly imposed regulations concerns students' compliance with instructors' directives during online classes.

Based on these experts' insights, the researcher concludes that properly structured and executed behavioral contract have the potential to change students' behavior and attitudes, particularly in academic settings. This will increase student engagement and motivation, resulting in improved performance and a positive effect on the student's family and community. Teachers can easily implement this technique since the template for learning contract can be found online.

Conclusion

Some conclusions were drawn from the results and discussion of this study. First, there is a positive and significant effect of behavioral contract on learning motivation. Second, there is a positive and significant effect of behavioral contract on learning activities. Third, there is a positive and significant effect of behavioral contract on learning achievement. Fourth, indirectly, there is a positive and significant effect of behavioral contract on learning achievement through learning motivation. Fifth, indirectly, there is a positive and significant effect of behavioral contract on learning achievement through learning activities at home during the Covid-19 pandemic using zoom among Islamic boarding school students in Salatiga, Indonesia. This study suggests that using behavioral contract can improve student's positive attitudes, promote active learning, and motivate students to maintain good behavior. However, this study has some limitations, such as being limited to a single location and only investigating a small number of variables. As a result, future research should broaden its scope and investigate more variables in order to help shape educational policies.

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