Student Engagement Models: Parental Support, Academic Self-Efficacy, and the Teacher-Student Relationship

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ABSTRACT

Student engagement is the basis for academic and social success in online learning. The study aimed to examine the measurement and structural models and empirically test the relationship between parental support, academic self-efficacy, teacher-student relationship, and student engagement. The number of research samples was 323 junior high school students in Cirebon City, coming from 4 schools (public and private) which were obtained by multistage cluster random. The instrument uses a scale of student engagement, parental support, academic self-efficacy, and teacher-student relationship. Data analysis using structural equation modeling (SEM) with LISREL 8.8 program. The results showed that the overall fit test of the student engagement model was fit: Chi-square (p) = 146.71 (.00), df = 59, RMSEA = .068, SRMR = .05; CFI = .99, NNFI = .99; GFI = .93. The student engagement model is supported by parental support, academic self-efficacy, and the teacher-student relationship. The findings have contributed to strategies for increasing student engagement through parental support, teacher-student relationships, and academic self-efficacy.

Keywords: Student Engagement Model, Parental Support, Academic Self-Efficacy

INTRODUCTION

The pandemic has changed the education system in Indonesia, such as online learning. The development of technology through applications such as Whatsapp, Zoom, Google Classroom, and Google Meet can be an alternative to distance learning. This is a new challenge and demand for students to be skilled in the use of technology. Student demands are increasing, so a variety of persistent stressors connected to academic demands are faced by students in secondary and higher education settings (Pascoe et al., 2020).

Online learning emphasizes assignments, less delivery of material, and less student and teacher engagement in discussions. Increased academic tasks can trigger stress, and academic stress can affect academic performance, motivation, and the risk of dropping out of school (Pascoe et al., 2020). The research found that the level of academic motivation in online schools is lower than in physical schools (Klootwijk et al., 2021). Research results show that competency achievement during online learning is lacking due to low motivation and inactivity in learning (Nur’aini et al., 2022).
The problem in online learning is related to student disengagement which is shown by lack of attention and participation in learning activities. Student disengagement can be characterized by not doing assignments, difficulty paying attention, inconsistent attendance, discipline problems, feelings of boredom, and disinterest in learning, as well as sadness, anxiety, frustration, and shallow strategy learning (Fredricks et al., 2019). Student disengagement leads to ineffective knowledge transfer, resulting in poor comprehension and a low ability to persevere in academic tasks. This leads to lower achievement, burnout, and dropout (Skinner, 2016).

Student engagement is essential in online learning which refers to student participation as an effort to absorb, understand, and apply knowledge. Student engagement is very important in academic and social success, such as academic achievement (Mun & Ahmad, 2019) and reducing juvenile delinquency (Putri et al., 2019). Student engagement is the active participation of students through academic activities and interpersonal interactions during learning. Student engagement is a multi-construct that includes behavioral (task time), emotional (enthusiasm in learning), and cognitive (self-regulation) engagement (Fredricks, 2022; Fredricks et al., 2004).

Most research involves reciprocity between the social context, which includes parents, teachers, and peers on student engagement. Bronfenbrenner's ecological theory views humans as active and developing individuals who are not only seen as tabula rasa influenced by the environment but reciprocal relationships through interactions between individuals and their immediate environment (Bronfenbrenner, 1979). In Bronfenbrenner's model, the microsystem contains student interactions with home and school, thus educating parents and teachers about student engagement.

Students do more activities and interact with their families, especially their parents as the main caregivers. Research shows that social support (parents, teachers, and peers) or parental support is related to student engagement (Galugu & Amriani, 2019; Nouwen & Clycq, 2019; Ryan et al., 2019). Parents who provide material and non-material support such as affection help students to be engaged in learning. In addition, parents have a role to play in developing academic self-efficacy, research results show that parental support affects academic self-efficacy (Nasution & Khairani, 2019; Nurmala & Fitriani, 2021).

Apart from family, students interact more often with teachers at school. Teacher-student interaction helps students build relationships that refer to experience, feedback, and personal support ((Hofkens & Pianta, 2022; Pianta, 1999). Research shows that teacher-student relationships are related to student engagement (Geng et al., 2020; Pérez-Salas et al., 2021). The teacher-student relationship that students perceive has a positive effect on student engagement. Teachers have a role in helping students develop academic self-efficacy, research results show that the teacher-student relationship is a predictor of student academic self-efficacy (Daliri et al., 2021).

According to Bronfenbrenner (1979), development involves changes in a person's characteristics that are not temporary and do not depend on the situation. Students have different characteristics from each other physically and psychologically. The psychological characteristics of students related to academics are beliefs about individual abilities towards academic tasks which are known as academic self-efficacy. The results of the study show that academic self-efficacy predicts student engagement (Qudsyi et al., 2019; Salsabila & Kusdiyati, 2021). Students who have high academic self-efficacy tend to show engaging behavior in learning.
The theory of ecological development states that the core of ecological orientation is concerned with the progressive adjustment between the growing individual and his immediate environment and how this relationship occurs is mediated by forces originating from more remote areas in the larger physical and social environment (Bronfenbrenner, 1979). Self-efficacy serves as a mediator between context and student engagement (Reschly & Christenson, 2022). The results of the study indicate that academic self-efficacy mediates the relationship between social support from parents, teachers, peers, and others with student engagement (Yang & Wang, 2019).

Research has emphasized the importance of parental support, academic self-efficacy, and teacher-student relationships on student engagement. The research applies a model of student engagement based on Bronfenbrenner's ecological theory that involves the role of personal characteristics (academic self-efficacy) and social context (parental support; teacher-student relationship) in online learning. Personal and social context-based studies are needed to understand the role of supporting online learning, resulting in better engagement and learning. The study aimed to test the measurement and structural models and empirically examine the relationship between parental support, academic self-efficacy, teacher-student relationship, and student engagement.

**METHOD**

Population research is 17,999 students in junior secondary school with 323 research subjects coming from 4 schools (public and private) in Cirebon City. Subjects came from 2 public schools 175 (54%) and 2 private schools 148 (46%). Subjects consisted of 129 (40%) boys and 194 (60%) girls with an age range of 11-17 years and from grades 7-9. The sampling technique used is multistage cluster random, a technique for taking sample groups (element groups) followed by selecting elements within each of the selected groups to become sub-samples (Babbie, 2021).

Data collection was carried out online via the Google form, measurement using a Likert scale model which has 5 responses from Very Unsuitable (1)–Very Suitable (5). The research instrument consisted of a scale of student engagement, parental support, academic self-efficacy, and teacher-student relationship. The student engagement scale is based on multidimensional behavioral engagement, emotional engagement, and cognitive engagement (Fredricks et al., 2004). A parental support scale is based on multidimensional emotional support, instrumental support, informative support, and companionship support (Sarafino & Smith, 2011; Wills & Shinar, 2000). The academic self-efficacy scale is based on multidimensional levels, generality, and strength (Bandura, 1977). Teacher-student relationship scale is based on multidimensional closeness, conflict, and dependency (Pianta, 1999, 2001).

<table>
<thead>
<tr>
<th>Scale</th>
<th>Measurement model fit test</th>
<th>Validity</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Chi-square (p)/df</td>
<td>RMSEA ≤ .08</td>
<td>CFI ≥ .90</td>
</tr>
<tr>
<td>Student engagement</td>
<td>47.72 (.02) / 29</td>
<td>.045</td>
<td>.99</td>
</tr>
<tr>
<td>Parental support</td>
<td>174.36 (.00) / 70</td>
<td>.068</td>
<td>.99</td>
</tr>
<tr>
<td>Parental support (Mother)</td>
<td>487.36 (.00) / 71</td>
<td>.071</td>
<td>.98</td>
</tr>
<tr>
<td>Parental support (father)</td>
<td>195.23 (.00) / 72</td>
<td>.073</td>
<td>.99</td>
</tr>
</tbody>
</table>
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### Table

<table>
<thead>
<tr>
<th>Academic self-efficacy</th>
<th>98.01 (.00) / 69</th>
<th>0.069</th>
<th>0.99</th>
<th>0.04</th>
<th>0.98</th>
<th>0.95</th>
<th>0.59-0.80</th>
<th>0.91</th>
<th>0.48</th>
</tr>
</thead>
<tbody>
<tr>
<td>Teacher-student relationship</td>
<td>44.50 (.00) / 23</td>
<td>0.054</td>
<td>0.99</td>
<td>0.037</td>
<td>0.98</td>
<td>0.97</td>
<td>0.57-0.79</td>
<td>0.87</td>
<td>0.44</td>
</tr>
</tbody>
</table>

The results of the model fit test based on chi-square (p) and df values and the Goodness of Fit Index (GOFI) show that the measurement model of student engagement, parental support, academic self-efficacy, and teacher-student relationship shows a fit model. Determination of the validity measurement model based on loading factors ≥ 0.50 and reliability with composite reliability (CR) ≥ 0.70 and average variance extracted (AVE) ≥ 0.50 (Ghazali & Fuad, 2014; Hair et al., 2019). The AVE value is less than .50, based on reliability alone, researchers can conclude that convergent validity is sufficient (Fornell & Larcker, 1981).

The data analysis technique in this study used structural equation modeling (SEM) with the LISREL 8.8 program. Analysis with structural equation modeling (SEM) based on measurement models and structural models. The structural model deals with the relationship between variables.

### RESULT AND DISCUSSION

The results of the analysis with SEM through the LISREL 8.8 program show a structural model of the relationship between parental support, academic self-efficacy, and teacher-student relationship on student engagement. The structural model reveals two things, namely the results of the overall model fit test and the analysis of the causal relationship between variables. This study tested three structural models as follows:

**Figure 1. Structural model 1: parental support, teacher-student relationship, academic self-efficacy, and student engagement**

Note: DKO = parental support; RGS = teacher-student relationship; EDA = academic self-efficacy; KS = Student engagement

Based on the overall model fit test, the Chi-square value (p) = 146.71 (.00), df = 59, RMSEA = .068, SRMR = .05; CFI = .99, NNFI = .99; GFI = .93, so the model is declared a good or fit. The results showed that parental support was positively and significantly related to academic self-efficacy (t = 4.53 > 1.96) and student engagement (t = 4.81 > 1.96), and academic self-efficacy was positively and significantly related to
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Student engagement \( (t = 14.71 > 1.96) \), and teacher-student relationship was positively and significantly related to academic self-efficacy \( (t = 7.46 > 1.96) \) and not related to student engagement \( (t = .25 < 1.96) \). Parental support and teacher-student relationship variables accounted for 36% of the variance in academic self-efficacy. While the amount of variance explained by student engagement was 38%.

Figure 2. Structural model 2: parental support (mother), teacher-student relationship, academic self-efficacy, and student engagement

![Structural model 2](image)

Note: DKOI = parental support (mother); RGS = teacher-student relationship; EDA = academic self-efficacy; KS = Student engagement

Based on the overall model fit test, the Chi-square \( (p) = 147.43 (0.00) \), \( df = 59 \), \( RMSEA = .068 \), \( SRMR = .05 \); \( CFI = .99 \), \( NNFI = .99 \); \( GFI = .93 \), so the model is declared a good or fit. The results showed that parental support (mother) was positively and significantly related to academic self-efficacy \( (t = 5.15 > 1.96) \) and student engagement \( (t = 5.48 > 1.96) \), and academic self-efficacy was positively and significantly related to student engagement \( (t = 14.41 > 1.96) \), and teacher-student relationship was positively and significantly related to academic self-efficacy \( (t = 7.65 > 1.96) \) and not related to student engagement \( (t = .41 < 1.96) \). Parental support (mother) and teacher-student relationship variables accounted for 37% of the variance in academic self-efficacy. While the amount of variance explained by student engagement was 41%.
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Figure 3. Structural model 3: parental support (father), teacher-student relationship, academic self-efficacy, and student engagement

Note: DKOA = parental support (father); RGS = teacher-student relationship; EDA = academic self-efficacy; KS = Student engagement

Based on the overall model fit test, the Chi-square (p) = 134.92 (.00), df = 59, RMSEA = .063, SRMR = .047; CFI = .99, NNFI = .99; GFI = .94, so the model is declared a good or fit. The results showed that parental support (father) was positively and significantly related to academic self-efficacy (t = 2.90 > 1.96) and student engagement (t = 2.81 > 1.96), and academic self-efficacy was positively and significantly related to student engagement (t = 15.25 > 1.96), and teacher-student relationship was positively and significantly related to academic self-efficacy (t = 8.51 > 1.96) and not related to student engagement (t = .98 < 1.96). Parental support (father) and teacher-student relationship variables accounted for 33% of the variance in academic self-efficacy. While the amount of variance explained by student engagement was 31%.

In addition to the direct causal relationship, this study analyzes the indirect causal relationship, academic self-efficacy as a mediator in the relationship between parental support, teacher-student relationship, and student engagement. Following are the results of the indirect causal relationship analysis in the table below:

<table>
<thead>
<tr>
<th>No</th>
<th>Path</th>
<th>Estimate</th>
<th>t-value</th>
<th>Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Parental support → Academic self-efficacy → Student Engagement</td>
<td>18</td>
<td>4.36</td>
<td>Significance</td>
</tr>
<tr>
<td>2</td>
<td>Teacher-student relationship → Academic self-efficacy → Student Engagement</td>
<td>31</td>
<td>6.71</td>
<td>Significance</td>
</tr>
<tr>
<td>1</td>
<td>Parental support (mother) → Academic self-efficacy → Student Engagement</td>
<td>19</td>
<td>4.89</td>
<td>Significance</td>
</tr>
<tr>
<td>2</td>
<td>Teacher-student relationship → Academic self-efficacy → Student Engagement</td>
<td>29</td>
<td>6.81</td>
<td>Significance</td>
</tr>
</tbody>
</table>

Table 2. Indirect effect
The findings showed that academic self-efficacy partially and significantly mediated between parental support; parental support (mother); and parental support (father) with student engagement (t = 4.36; 4.89; 2.85 > 1.96). Academic self-efficacy fully and significantly mediates between teacher-student relationships and student engagement (t = 6.71; 6.81; 7.52 > 1.96). The coefficient of determination in each structural model, which is 70%, 71%, and 68% of the variance of student engagement is explained by parental support (mother; father), academic self-efficacy, and teacher-student relationship, and the rest is explained by other factors.

DISCUSSION

Student engagement is the key to success in online learning. Student engagement is necessary to understand learning material, students must be actively involved in hard work that produces conceptual and practical understanding by paying attention, focusing, trying, contemplating, and being diligent with their academic work (Skinner, 2016). Student engagement is an effort to develop student's academic and social abilities.

According to Bronfrenbrenner's ecological theory (1979), individuals develop through reciprocal relationships between individuals and the environment. Based on this theory, student engagement is the result of interaction between individuals and the environment. Family, school, and peers are the closest environment and it is more frequent and easy to interact with students.

Family, school, and peers have a role to play in the engagement of students in online learning. Bronfenbrenner (1979) states that activities, roles, and interpersonal relationships are the basis of the microsystem. Parents in the family system as the basic structure that plays a role in providing support for students can be involved in online learning. The results of this study and previous studies consistently show that social support (parents, teachers, and peers) and parental support are related to student engagement (Galugu & Amriani, 2019; Nouwen & Clycq, 2019; Ryan et al., 2019). These findings indicate that students will engage in online learning when students feel that their parents provide support.

Parents have a role in providing guidance, learning facilities, appreciation, and praise that can increase motivation (Fikriah & Rukmana, 2020), this is a form of parental support that can help students reduce procrastination in online learning (Azizah & Rukmana, 2022). In addition, forms of parental support that can be provided in online learning include accompanying children in learning, supervising, providing facilities, providing motivation, recognizing learning difficulties, and directing and assisting with homework (Barger et al., 2019; Novianti & Garzia, 2020; Nugroho et al., 2021). Joint learning activities between parents and children provide a fun learning experience for students. Unfortunately, most of the joint learning activities between parents and children are carried out by mothers, these findings indicate that there is a difference in the effect of parental support on mothers and fathers and student engagement.

The results showed that parental support for mothers has a greater influence than fathers. In my previous research, mothers contribute more to student engagement in school (Wang et al., 2019). The parenting role still places the mother with more responsibility than the father. Not that fathers do not have a role, fathers have a role with active involvement through play activities, physical activity, spending time,
relationship with their mother, teaching children, and emotional support (Shears et al., 2022). The role of the father as a breadwinner makes the figure of a father who is busy working, making it difficult to spend time.

Mothers and fathers have the same responsibility in parenting by spending time together through learning activities and joint activities. Activities that bring parents and students closer can encourage social and emotional development and increase student motivation and academic engagement (Barger et al., 2019). The willingness of parents to provide support, take the time, and provide affection can be felt by students so that the learning atmosphere at home becomes warm and safe.

Parents who provide a warm, responsive, supportive home environment that encourages exploration, stimulates curiosity, and provides play and learning materials accelerate children's intellectual development (Schunk & Dibenedetto, 2016). Parents who provide opportunities, experiences, and encouragement to children to succeed in academics are an important source of self-efficacy. The results of the study show that parental support can increase academic self-efficacy (Nasution & Khairani, 2019; Nurmala & Fitriani, 2021).

These findings indicate that parental support has a positive impact on academic self-efficacy. The statement is that social support (parents, teachers, close friends, and classmates) is decisive in increasing academic self-efficacy (Saefudin et al., 2021). The role of the family as a model that exemplifies ways to overcome difficulties and persistence strengthens self-efficacy (Schunk & Dibenedetto, 2016). Parents who provide encouragement and support can be felt by students so that students can be more persistent in completing academic assignments.

The engagement of students is increasingly complex in the relationship of more than one environment. Bronfenbrenner (1979) says that the same individual being involved in activities in more than one place is the basis of interconnection, for example, students are engaged at home and school. During online learning, students interact directly with parents and teachers.

Previous research has revealed that the teacher-student relationship is correlated with student engagement (Geng et al., 2020; Pérez-Salas et al., 2021). In contrast to the findings of this and other studies which show that the teacher-student relationship does not affect student engagement (Kang et al., 2021). Bronfenbrenner (1986) said that the family is more powerful in producing change, and parental support has more influence on student involvement than the teacher-student relationship.

The teacher-student relationship is difficult to establish during online learning, the teacher's concern in helping students understand the material is limited to communication through non-verbal (written) channels. Teachers not only convey information and help students to synthesize new understandings, but they also communicate their level of expertise, their level of attention to student learning, and other important information needed in building relationships (Kanasa, 2016). Communication is important for establishing and building good relationships that not only teach but also convey more complex understandings to students. Good relationships are an important part of the educational process, and because they are more easily formed in face-to-face settings (Kanasa, 2016).

In addition, the opportunity to interact with schools, teachers, and other students is one of the main advantages of face-to-face education for students (Chiu, 2022). Teachers cite one drawback of online education as the lack of connection with students (Polat et al., 2021). The online learning format creates feelings of discomfort regarding the limitations and even loss of interaction between educators and students.
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(Sitompul, 2020). Students have little opportunity to connect or connect with teachers in online learning.

The teacher-student relationship has a greater influence on students to develop academic self-efficacy than parental support. Teacher-student relationship can be established outside of the learner through personal teacher care such as being patient, listening to student complaints, and providing motivation. Accurate and encouraging feedback from teachers helps academic self-efficacy (Woolfolk, 2021). In addition, these findings and previous research show that the teacher-student relationship can increase academic self-efficacy (Daliri et al., 2021). The teacher-student relationship felt by students makes students tend to be able to survive in completing academic assignments.

These findings reveal that the teacher-student relationship is more influential in increasing academic self-efficacy. The teacher can show personal concern by being patient, respectful, harmonious, and willing to listen to students’ problems and personal problems (Woolfolk, 2021). The results of the study show that teachers who care and provide feedback increase self-efficacy (Sökmen, 2021).

Academic self-efficacy is not about something you think you can do well, but about thinking positively or negatively about certain tasks (Whitaker, 2019). Students who have high academic self-efficacy will think positively about the tasks given as a challenge so that students will be better able to face academic demands. These findings and previous research show that academic self-efficacy influences student engagement (Qudsyi et al., 2019; Salsabila & Kusdiyati, 2021; Zhao et al., 2021). Academic self-efficacy plays an important role for students to become resilient, persevere, and engage longer in online learning.

In addition, academic self-efficacy acts as a mediator in the relationship between the social context (parents, teachers) and student engagement. Research has focused more on the social contextual conditions (parents, teachers, peers) that encourage engagement and less on the psychological processes (self-efficacy) that mediate its effects (Skinner et al., 2022). These findings suggest that academic self-efficacy partially mediates the relationship between parental support and student engagement.

These findings support previous research that academic self-efficacy acts as a mediator in social support with student engagement (Yang & Wang, 2019). Parental support has an impact on academic self-efficacy, which in turn has an impact on student engagement. When parents provide more support to students, it encourages students to develop academic self-efficacy. Students who feel more able to face and complete academic tasks, students will be more engaged in online learning.

The teacher-student relationship has an impact on academic self-efficacy, which in turn has an impact on student engagement. The teacher-student relationship is established by providing many opportunities for the teacher-student to connect, as well as the teacher-student relationship is felt by providing support and encouragement so that students can develop academic self-efficacy. Students who feel more able to face and complete academic tasks, students will be more engaged in online learning.

The implications of this research can be considered as a strategy to increase student engagement in online learning. Strategies help students to engage in learning that involves parents, teachers, and personalities. Parents can develop parenting by providing more positive support during online learning, making learning more
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interesting and fun. Teachers can develop more interactive learning and help students who have difficulties in online learning.

Students need psychological resources from parents and teachers to develop academic self-efficacy, thus ultimately helping students to be interested in learning and engage in online learning. Parents and teachers reinforce students to encourage student's participation in online learning. Students can develop academic self-efficacy by looking at previous experiences, observing others, and creating mood-altering strategies.

This research is limited to the social context of parents and teachers, further research can consider other social contexts that can influence student engagement. Second, less proportional between the sample size in each sub-sample. Third, the measurement models of student engagement, academic self-efficacy, and teacher-student relations have AVE values of less than 0.5 indicating that, on average, more error remains in the items than variance is shared with the latent factors on which they load.

CONCLUSION
This research contributes to Bronfenbrenner's ecological theory regarding student engagement as a result of interactions between students and their immediate environment such as parents and teachers. Parents and teachers are sources of support and encouragement in increasing student engagement. Parental support felt by students can guide students to be actively engaged in learning. Online learning has an impact on the lack of opportunities to connect between teachers, the teacher-student relationship that is established in learning does not have an impact on students being engaged. However, the teacher-student relationship can be established more effectively through personal care such as being patient, listening to student problems, and helping students develop academic self-efficacy so that in the end students can survive and engage in online learning.

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AUTHOR CONTRIBUTION STATEMENT
K & EP collaborated on the research concept, K wrote the original draft and EP reviewed the manuscript.

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