



# Peer Assessment-based Digital Literacy, EFL Students' Reading Competency, and Engagement

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## ABSTRAK

Pada abad 21, siswa harus menguasai literasi digital. Pada saat pandemic COVID-19, banyak siswa yang masih tidak bisa menggunakan fasilitas pendukung pembelajaran daring. Hal ini berdampak pada penurunan kompetensi membaca dan keterlibatan siswa. Penelitian ini bertujuan untuk mengetahui pengaruh literasi digital berbasis peer assessment terhadap kompetensi membaca dan keterlibatan siswa EFL pada masa post pandemic COVID-19. Penelitian ini menggunakan desain kuasi eksperimen. Sebanyak 10 kelompok siswa berpartisipasi dalam penelitian ini. Dua kelompok siswa dipilih menggunakan cluster random sampling; 30 peserta ditugaskan untuk eksperimen, dan 30 peserta ditugaskan untuk kelompok kontrol. Instrumen data menggunakan dua post-test dan angket. Dataset dianalisis secara statistik menggunakan One-way ANOVA dan MANOVA, dengan bantuan dari SPSS versi 26.0. Temuan penelitian ini menyiratkan bahwa terdapat pengaruh yang signifikan literasi digital berbasis peer assessment terhadap kompetensi membaca siswa EFL; dan terdapat pengaruh yang signifikan literasi digital berbasis peer assessment terhadap keterlibatan siswa EFL. Terdapat pengaruh simultan literasi digital berbasis peer assessment terhadap kompetensi membaca dan keterlibatan siswa EFL. Studi ini menemukan bahwa literasi digital berbasis penilaian sejawat adalah salah satu cara terbaik untuk meningkatkan kompetensi membaca dan keterlibatan siswa EFL. Disarankan agar lebih banyak penelitian dilakukan pada topik ini, tidak hanya pada seberapa baik siswa membaca, tetapi juga pada bagaimana motivasi siswa untuk belajar, bagaimana siswa dan orang tua melihat satu sama lain, seberapa terlibat orang tua, dan faktor apa yang membantu dan menghambat siswa.

## ABSTRACT

In the 21st century, students must master digital literacy. During the COVID-19 pandemic, many students could still not use online learning support facilities. It has an impact on decreasing reading competence and student engagement. This study aims to determine the effect of peer assessment-based digital literacy on reading competency and engagement of EFL students during the post-COVID-19 pandemic. This research utilized a quasi-experimental design. A total of 10 groups of students participated in this study. Two groups of students were selected using cluster random sampling; 30 participants were assigned to the experiment, and 30 were assigned to the control group. The data instruments used two post-tests and a questionnaire. The dataset was statistically analyzed using One-way ANOVA and MANOVA, with assistance from SPSS version 26.0. The findings of this study implied that there was a significant effect of peer assessment-based digital literacy on the reading competency of EFL students; and there was a significant effect of peer assessment-based digital literacy on the EFL students' engagement. There is a simultaneous effect of peer assessment-based digital literacy on EFL students' reading competency and engagement. This study found that peer assessment-based digital literacy is one of the best ways to improve EFL students' reading competency and engagement. It is suggested that more research be done on this topic, not just on how well students read, but also on how motivated students are to learn, how students and parents see each other, how involved parents are, and what factors help and hinder students.

## 1. INTRODUCTION

To meet the requirements of the workforce of the 21st century and effectively compete, it is necessary to acquire specific skills; education systems in several nations have included instruction on how to communicate in other languages (Chen, 2018). Reading is regarded as one of the most crucial language skills (Reflianto et al., 2022). Reading is essential for a good learning process (Cuadro et al., 2021). Language and word reading abilities affect reading comprehension (Akande & Oyedapo, 2018; Al-Momani

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et al., 2015; Irvin, 2015; Kirschmann et al., 2021; Perfetti, 2007). Reading skills are essential in the era of information technology (Ningsih, 2016; Suwannee & Siripan, 2021). In Indonesia, EFL students' reading competency has not been achieved as expected (Kusumadewi et al., 2020; Riadi & Tantra, 2020). The data shows that students' reading scores declined from 2012 to 2018. Compared to other countries, Indonesia had the lowest possible score on the Program for International Student Assessment (PISA) for three years in a row, namely in 2012, 2015, and 2018 (Kusumadewi et al., 2020; Pratiwi, 2019). Students today need to be required to develop an appropriate and helpful reading system (Lindawati et al., 2017). Based on these problems, an innovative method is necessary so that students know their reading development. The author offers a peer assessment. One of the student-centered exams is peer evaluation (Naicker & Bayat, 2016; Rasheed & Al Bajalani, 2020). Students can assess peer performance, for example, by giving scores or grades to peers and providing colleagues with written or verbal feedback (Ratminingsih et al., 2017; Topping, 2017). As a valuable educational tool, peer assessment lets students participate in grading by evaluating their peers' work (Meletiadou, 2021; Utami, 2012). Peer evaluation serves not just as a tool for grading students' work but also as a method for fostering the growth of abilities such as self-control, critical thinking, and the ability to make informed decisions (Bozkurt, 2020).

Several previous studies on peer assessment have been carried out (Babai & Adeh, 2019; Chien et al., 2020; Double et al., 2020; Li et al., 2020; Meletiadou, 2021; Ng et al., 2020). The results show that peer assessment can improve students' academic performance, writing ability, speaking skills, motivation, and student talents and its practical use as a learning tool. Researchers found that only a few focused on reading competency. In addition to improving reading skills, the researcher also examined the student engagement. Students' engagement is a broad notion that covers students' dedication, motivation, contact, and involvement with educational institutions and learning activities (Fredricks et al., 2016). Students' engagement is recognized as one of the most significant indicators of academic performance. There are three commonly acknowledged characteristics of student engagement: cognitive, emotive, and behavioral (Fredricks et al., 2004; Furlong & Rebelez-Ernst, 2014). Changes in the learning environment or teacher strategies can affect students' engagement (Bedenlier et al., 2020; Kahu, 2013). Based on simple observations made by the author at a junior high school in West Bali during the implementation of online learning during the COVID-19 pandemic, students' engagement in English class in grade 9 decreased. When online learning is done, many students don't engage. In line with previous research that online student engagement using mobile phones is complex (Acosta & Garzon, 2021). While, another study found that psychosocial factors, like peers, community, attractive online teachers, self-confidence, and structural elements, like live load and course design, affect how well students engage in online learning (Farrell & Brunton, 2020). Unlike other studies that found that digital support in blended learning can increase student engagement (Chiu, 2021; Heilporn et al., 2021). Engaged students do more than show up and do well in school (Christenson et al., 2012). Currently, schools in West Bali are using blended learning. Having high levels of student engagement in both face-to-face and online environments is crucial. Student engagement is essential to education (Lam et al., 2018).

In the 21st century, information, computer, and (ICT)-related talents and skills are crucial to school learning and evaluation, employment performance, and, more generally, it functioning well in society (Ercikan, K., Asil, M., & Grover, 2018). Schools are expected to integrate information and communication technology into all aspects of education, including English (Ratminingsih et al., 2018). Since ICT and English are interrelated and continuously interact, EFL students' digital literacy skills are essential for empowering students with 21st-century literacy that will enable entry into academic and workforce environments (Laeli et al., 2020). Digital literacy is one of the competencies that every student must have. However, not all students can use learning devices such as computers and androids (Akhyar et al., 2021; Nabhan, 2021). Digital literacy is an essential life skill that encompasses more than ICT technologies (Leaning, 2019) but also includes interpersonal skills, human learning capacities and attitudes, critical thinking, creative thinking, and inspirational capabilities as digital literacy competencies (Lukitasari et al., 2022). Unavoidable are the implications of digital literacy in numerous life areas (Meherali et al., 2021; Oh et al., 2021). Knowledge of digital technology in education may help students become lifelong learners and engage them in obtaining academic abilities (McDougall et al., 2018). Research focusing on digital literacy integrated into peer assessment is still scarce. Therefore, the author decided to incorporate peer assessment with digital literacy. This research focuses on the effect of peer assessment-based digital literacy on EFL students reading competency and engagement in the post-COVID-19 pandemic. Implementing peer-assessment-based digital literacy is expected to increase EFL students' reading competence and engagement. Several studies have investigated the consequences and effectiveness of digital literacy for EFL students (Akhyar et al., 2021; Alsmari, 2021; Lin et al., 2017; List et al., 2020; Lukitasari et al., 2022; Suwarni et al., 2019). Their research showed that digital literacy could improve the learning outcome, motivation, self-efficacy, teacher education, and writing and storytelling

skills. Therefore, this study aims to determine the effect of peer assessment-based digital literacy on reading competency and engagement of EFL students during the post-COVID-19 pandemic.

## 2. METHODS

This study employed a quasi-experimental with a post-test-only control group design involving two classes. The experimental class is in the first group. In this group, students used android or smartphones in class to help them find the information they needed according to the topic used for joint discussion using a peer assessment strategy. The second group, the control class, led the peer assessment based on traditional literacy, where they discussed and took notes using their books and papers. Literacy, as traditionally understood, refers solely to the skills of reading, writing, and making appropriate use of written materials in various settings (Littlejohn et al., 2012). Firstly, the teacher presents the subject and assignment. In addition, the teacher assists students in organizing the execution of tasks, including the time allocation they must follow. Researchers help students build background knowledge related to the topic, namely about “expressing hope and congratulation.” Then instruct them to make simple conversations on the matter. Afterward, students were asked to provide feedback on their friends' work results. The first group is the experimental group, taught through peer assessment based on digital literacy. Practical group students were guided to use androids or smartphones in class to help them find the information they needed according to the topics employed for joint discussions using peer-assessment strategies. While the control group students discussed with their friends using traditional literacy-based peer assessment, where they discussed and took notes using the books and papers, they had without the help of smartphone information.

Secondly, is the over-task phase. At this stage, students start working on assignments. Experimental group students and control group students did the same task. The third is the post-task phase. In this phase, students tell others in front of the class how to do them complete their assignments. They need to reflect on what they have learned during the lesson. The treatment was carried out five times, consisting of four meetings for treatment and one last session for post-test. This experiment's impact was assessed compared to the two groups' post-test results. In addition, the researchers evaluated student engagement using a questionnaire. The researchers then simultaneously compared the two outcomes to establish the influence of peer assessment based on English literacy on EFL students' reading competency and engagement. The participants in this research were nine-graders from junior high school in Negara, Bali. They are ten classes. Cluster Random Sampling was used to identify the two classes that would make up the research samples. It was found that class 9H was the experimental group, and class 9E was the control group for study. Both of the classes had a total of 30 students. The instrumentation for data collection in this research consisted of a questionnaire and two post-tests. The post-test was conducted to determine students' reading competence, while questionnaires were distributed to obtain data on students' engagement toward reading comprehension. Two post-tests used to assess reading ability are multiple-choice and short-answer tasks. The questionnaire was adopted from previous study (S. F. Lam et al., 2014) with fifteen items. The number of items was 20, with multiple choice and five short answer tasks. The scale used in this questionnaire is a Type 5 Likert scale.

Descriptive and inferential analyses were performed on the reading scores and questionnaire responses. The mean and standard deviation are measured using descriptive statistics. Preliminary analysis was performed to confirm that the data were homogenous and normally distributed before moving on to inferential statistics. In addition, SPSS version 26.0 was used to perform inferential analyses such as One-way ANOVA and MANOVA on the data. Using One-way ANOVA, we could determine the substantial effect of peer assessment-based digital literacy on EFL students' reading competency and engagement. The researcher used MANOVA to determine the simultaneous impact of peer assessment-based digital literacy on EFL students' reading competence and engagement. In addition, the treatment's efficacy was measured using an effect size test.

## 3. RESULT AND DISCUSSION

### Results

The researcher assessed the post-test and questionnaire results. The descriptive analysis findings are shown in Table 1.

**Table 1.** The Result of the Descriptive Analysis

| Descriptive Statistic | Reading Test     |               | Engagement Questionnaire |               |
|-----------------------|------------------|---------------|--------------------------|---------------|
|                       | Experiment Group | Control Group | Experiment Group         | Control Group |
| <b>N</b>              | 30.00            | 30.00         | 30.00                    | 30.00         |
| <b>Mean</b>           | 82.07            | 74.80         | 62.57                    | 57.93         |
| <b>Median</b>         | 83.00            | 75.00         | 63.00                    | 59.00         |
| <b>Std. Deviation</b> | 10.201           | 7.313         | 5.973                    | 5.901         |

Used digital literacy strategy, the reading abilities of EFL students taught through peer evaluation are superior to those taught using traditional methods. Table 1 shows that the experimental group's average score is 82.07, whereas the control group's average score is 74.80. The experimental group scored 62.57 on the attitude questionnaire, whereas the control group scored 57.93. With this result, the experimental group seems to have a better value than the control group. Before doing inferential statistical analysis, the managed prerequisite analysis was conducted. The results of the Shapiro-Wilk normality reading test had a significant score of more than 0.05 (significant score experiments' groups= 0.137, and significance controls' group= 0.221). While the findings of the normality test of the engagement questionnaire using the Shapiro-Wilk revealed significant values of more than 0.05 (significant experiments' group = 0.160, and significant controls' group = 0.253). This significant finding implies that EFL students' reading competency and attitude ratings are distributed across all groups.

Consequently, the subsequent stage of data analysis may be executed. The following required examination is the homogeneity test. Levene's Statistics indicated that each group's significant values were all more than .05, indicating that the variances for all four groups were identical. The score on the reading test is .065, but the engagement of EFL students is .656. The EFL students' reading ability and engagement statistics are considered homogenous. SPSS 26.0 was used to perform a One-way ANOVA study to evaluate if peer assessment-based digital literacy considerably affected EFL students' reading ability. After two ANOVA tests were performed, a MANOVA test could be continued. Consequently, additional inferential statistical analysis may be conducted. The researcher assessed the post-test results. The findings of One-way ANOVA results for the reading test are shown in Table 2.

**Table 2.** The Result of One-way ANOVA for the Reading Test

| Reading Competency    | Sum of Squares | df | Mean Square | F      | Sig.  |
|-----------------------|----------------|----|-------------|--------|-------|
| <b>Between Groups</b> | 792.067        | 1  | 792.067     | 10.055 | 0.002 |
| <b>Within Groups</b>  | 4568.667       | 58 | 78.770      |        |       |
| <b>Total</b>          | 5360.733       | 59 |             |        |       |

The One-way ANOVA analysis for the first study question revealed that the reading test's significant value was .002, less than .05. This indicates that peer assessment-based digital literacy significantly affected the reading proficiency of EFL students. Additionally, essential to decide the effect size of the significant difference's influence. Cohen (1988) offered standards for defining minor ( $\eta^2p = .01$ ), medium ( $\eta^2p = .06$ ), and large ( $\eta^2p = .14$ ) effects, as cited by Lakens (2013). In this instance, the sum of squares between groups (792.067) is divided between groups + within groups value= 5360.733). The partial eta squared ( $\eta^2p$ ) value is .148, indicating the large effect size. The researcher assessed the questionnaire results. The findings of One-way ANOVA results for the students' engagement questionnaire are shown in Table 3.

**Table 3.** The Result of One-way ANOVA for Questionnaire Students' Engagement

| Students' Attitude    | Sum of Squares | df | Mean Square | F     | Sig.  |
|-----------------------|----------------|----|-------------|-------|-------|
| <b>Between Groups</b> | 322.017        | 1  | 322.017     | 9.907 | 0.003 |
| <b>Within Groups</b>  | 1885.233       | 58 | 32.504      |       |       |
| <b>Total</b>          | 2207.250       | 59 |             |       |       |

Regarding the second study issue, the findings of a one-way ANOVA revealed that the significance level of the EFL student engagement questionnaire is less than 0.05 (see Table 3). It indicates that peer assessment-based digital literacy significantly affected the EFL students' engagement. Additionally,



essential to decide the effect size of the significant difference's influence. In this instance, the total number of squares between groups (322.017) is divided between groups + within groups value = 2207.250). The partial eta squared value ( $\eta^2p$ ) is 0.146, with a large effect size (Cohen, 1988; Lakens, 2013). It means that the experimental group students had a more positive engagement than the control group. In this study, it was found that peer assessment based on digital literacy can increase student engagement. The MANOVA results for students' reading ability test and engagement questionnaire are shown in Table 4.

**Table 4. The Result of the MANOVA Analysis**

| Effect            |                    | Value   | F        | Hypo-thesis df | Error df | Sig.  | Partial Eta Squared |
|-------------------|--------------------|---------|----------|----------------|----------|-------|---------------------|
| <b>Inter-cept</b> | Pillai's Trace     | 0.994   | 4552.736 | 2.000          | 57.000   | 0.000 | 0.994               |
|                   | Wilks' Lambda      | 0.006   | 4552.736 | 2.000          | 57.000   | 0.000 | 0.994               |
|                   | Hotelling's Trace  | 159.745 | 4552.736 | 2.000          | 57.000   | 0.000 | 0.994               |
|                   | Roy's Largest Root | 159.745 | 4552.736 | 2.000          | 57.000   | 0.000 | 0.994               |
| <b>Class</b>      | Pillai's Trace     | 0.218   | 7.943    | 2.000          | 57.000   | 0.001 | 0.218               |
|                   | Wilks' Lambda      | 0.782   | 7.943    | 2.000          | 57.000   | 0.001 | 0.218               |
|                   | Hotelling's Trace  | 0.279   | 7.943    | 2.000          | 57.000   | 0.001 | 0.218               |
|                   | Roy's Largest Root | 0.279   | 7.943    | 2.000          | 57.000   | 0.001 | 0.218               |

For the third research question, MANOVA analysis showed the significance value is lower than .05 (5%). It means there is a simultaneous effect of peer assessment-based digital literacy on EFL students' reading competence and attitude. It is crucial to determine the effect size of the significant difference effect. Table 4 shows the value of partial eta squared ( $\eta^2p$ ), which exceeds 0.218. with large effect size. From this statement, it can be connected that the peer assessment-based digital literacy strategy in the implementation of learning also includes discussions where students have involvement in English classes.

## Discussion

The effect of peer-assessment-based digital literacy on the reading competency of EFL students was obtained through a test conducted twice. Then the data is carried out with a prerequisite test first in the form of normality and homogeneity tests using SPSS version 26.0. After that, inferential analysis is carried out using one-way ANOVA. The result of One-way ANOVA is presented in Table 2. The significant value for the reading test is 0.002, which is less than 0.05. It can be concluded that there is a substantial effect of peer assessment-based digital literacy on students' reading ability, with a partial eta squared value ( $\eta^2p$ ) of 0.148, namely considered a large effect size. These discoveries show that students who use peer assessment-based digital literacy have better reading skills than those using traditional peer-assessment. Online peer assessment can improve reading skills (Ng et al., 2020). Technological developments allow teachers to take advantage of peer assessment using an online platform that is easily accessible. With digital resources, students can focus on learning the material and use technology creatively. Peer assessment-based digital literacy is needed to help students improve their reading competency. In English class, students need to be able to read. Reading competency is critical for educational and professional success, lifelong learning, and social participation (Schröter & Bar-Kochva, 2019). Students can help their careers, study goals, and learn a new language if they can understand what they read (Rahmawati et al., 2014). There are many different settings in which the usefulness of peer assessment is essential. In contrast to previous studies, peer assessment could improve students' writing skills (Babai & Adeg, 2019; Meletiadou, 2021). Peer assessment with virtual video was an effective method to enhance public speaking abilities. Peer assessment is also helpful in improving students' academic skills (Double et al., 2020). A peer assessment-based digital literacy strategy allows students to find and select related information via smartphones or other media. In addition, this strategy also helps students critically assess the performance of their friends, become more creative, collaborate with others, communicate effectively, and remain attentive to the topic being studied. Therefore, the result answered the first research question. The use of peer assessment-based digital literacy had a significant effect on the reading ability of EFL students. The effect of peer-assessment-based digital literacy on EFL students' engagement was obtained through a questionnaire. Then the data is carried out with a prerequisite test first in the form of normality and homogeneity tests using SPSS version 26.0. After that, inferential analysis is carried out using one-way ANOVA. The results of the One-way ANOVA analysis for the second research question showed that the significant value of the student engagement questionnaire is 0.003,

which is less than 0.05. It means that there is a substantial influence of peer assessment-based digital literacy toward the student engagement in reading, with partial eta squared value ( $\eta^2p$ ) of 0.146 and is classified as large effect size. This finding shows that the experimental group students have better engagement in reading than the control class. In line with previous studies who discovered that digital support in blended learning could increase student engagement (Chiu, 2021; Heilporn et al., 2021). Technology plays an essential role in influencing student engagement (Teng & Wang, 2021). Peer assessment-based digital literacy can invite students to develop an assessment of their friends based on their skills using digital technology. Students are required to be able to provide feedback to their friends. Researchers use smartphones to find or collect information from students, making it possible to access various media such as the internet, mobile phones, instant messaging, and other digital tools. In line with research that providing educational technology can facilitate students to be actively involved in the class (Bond & Bedenlier, 2019). With digital technology, students can obtain information that needs to be analyzed and compiled into complete knowledge according to the topics discussed. They can discuss with friends or share the information they get. However, students must also be able to adapt to the development of digital technology. It is in line with statement who found that students' ability to adapt during the COVID-19 pandemic directly increased the student engagement (Zhang et al., 2021). The ability to adjust to all technological advances will make it easier for students to follow the developments of the 21st century. In addition, another factor that influences student engagement is the relationship with friends and teachers. It strengthens previous research, which found that one factor influencing student involvement in online education is psychosocial factors, such as peers and teachers who can provide exciting strategies (Farrell & Brunton, 2020). Relationships between good friends will create a supportive environment and help students to deal with problems experienced at school. This can be done with a peer assessment-based digital literacy strategy. So, it can be concluded that peer assessment-based digital literacy helps teachers improve EFL student engagement.

The effect of peer-assessment-based digital literacy on EFL students' reading competency and engagement was obtained through tests and questionnaires. Then the data is carried out with a prerequisite test first in the form of normality and homogeneity tests using SPSS version 26.0. After that, inferential analysis is carried out using MANOVA. The results of the MANOVA analysis for the third research question showed that there is a simultaneous influence of peer assessment-based digital literacy on reading competency and student engagement which can be seen that the significance value is lower than 0.05. With a partial eta squared ( $\eta^2p$ ) value of 0.218 which is considered a large effect size. Digital literacy and English have a close relationship. Students with higher English proficiency are more sensitive to digital literacy skills and may perform effectively in digitally enhanced situations (Alsmari, 2021). It was one of the findings of his research.

Same with previous studies, who found that digital literacy can improve learning outcomes and learning motivation (Akhyar et al., 2021; Lin et al., 2017; Lukitasari et al., 2022). Researchers integrated digital literacy with peer assessment strategies in blended learning mode to improve English language skills, especially reading, and increase student engagement. It is in line with the findings that integrating blended learning models contributes to the student engagement in the educational process and, consequently, enables them to achieve more significant results (Baranova et al., 2019). With peer assessment-based digital literacy, students must be able to search, the process, and analyze the data obtained to align with or positively impact their reading skills, focusing on students' active participation in providing assessments of their friends. In digital literacy, people are active participants in the digital environment. In line with statement that in digital media literacy, the focus of literacy has shifted from individual expression to community involvement (Handayani, 2018). This opinion is also in line with the statement who found that digital learning, which comes in many forms like blended learning and e-learning, has given teachers a lot of new ways to teach and patterns to create personalized learning experiences that keep students interested across multiple platforms and technologies (McGuinness & Fulton, 2019). From what has been said, it is clear that peer assessment-based digital literacy can make students more interested. It involves being able to judge friends based on information found on the internet and using critical thinking to evaluate the information found through digital media. It is in line with the opinion who stated that the success of teaching literacy in English classes must be done by providing an appropriate assessment where students can learn, and teachers can check on their progress (Padmadewi et al., 2022). In addition, the evaluation must also give students a chance to think about what they've learned, either by themselves or with their peers. Using peer assessment-based digital literacy in the learning process is not only limited to knowing, but students must be able to find and think critically to process the information they find. Therefore, peer assessment-based digital literacy affects EFL students' reading ability and engagement.

#### 4. CONCLUSION

This study found peer assessment-based digital literacy is an effective method for enhancing EFL students' reading competency and engagement. The researcher integrated digital literacy with peer assessment encouraged by a teacher, particularly as an option that may be utilized online or in blended learning. The results showed a significant effect of peer assessment-based digital literacy on EFL students' reading competency and engagement. In addition, the effect size showed a "large" category for both. This study also proved that there is any simultaneous effect of peer assessment-based digital literacy on EFL students' reading competency and engagement. It is suggested that more research be done on this topic, not just on how well students read, but also on how motivated students are to learn, how students and parents see each other, how involved parents are, and what factors help and hinder students.

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