



Student's Literacy and Numeracy Skills in ombok Island, West Nusa Tenggara : Baseline Survey Innovation Based Gender Equality, Disability, and Social

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Abstract: This research aims to analyze the literacy and numeracy skills of students in ombok Island, West Nusa Tenggara based on gender, disability and social equality. The research approach uses a Mixed Method between qualitative and quantitative research with a survey method (cross-sectional). Data collection was carried out involving 2639 respondents from SD and MI students, school principals, teachers, parents, village representatives, and from TTIs. Survey data were obtained through questionnaires, document recording, and interviews. Furthermore, the data were analyzed qualitatively. This study's results show the lowest achievement is the numeration of female respondents in East Lombok Regency, 59.41. Achievements in the same aspect for Central Lombok Regency were higher, namely 62.97. For literacy skills, female respondents in Central Lombok also obtained a higher average (68.91) than female respondents in East Lombok Regency (66.93). The achievement of male respondents in Central Lombok Regency for literacy (69.08) looks lower than male respondents in East Lombok Regency (69.44). The same thing also happened to the average achievement in the numeracy aspect; Central Lombok Regency only got an average of 66.00, while East Lombok reached 66.44. In general, male literacy achievements were higher than women, while numeracy achievements were superior to female respondents from men's.

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Introduction

Literacy (reading) and numeracy (counting) skills are the foundation for lifelong learning and for an individual to participate fully in society (Jang, Jiang, Grabe, & Pai, 2019). This skill is expected to empower students to find meaning in what is learned, think critically and creatively, and fulfill and grow their best potential (Dunn & Hazzard, 2019). This can only be fulfilled if strengthening literacy and numeracy is applied to all areas of learning in an integrated manner (Nuryana, Suroyo, Nurcahyati, Setiawan, & Rahman, 2020).

Ministry of Education and Culture of the Republic of Indonesia (2017) defines literacy as knowledge and skills to read, write, search, browse, process, and understand information to analyze, respond to, and use written texts to achieve goals, develop understanding and potential and to participate in the social environment (Xiao, Barnard-Brak, Lan, & ..., 2019). Literacy helps students apply reading, writing, speaking, and listening skills in various fields of study (Purba & Girsang, 2021). In comparison, numeracy literacy is the ability to understand and apply mathematical concepts, processes, and skills to solve problems and make decisions in various situations, including real-life scenarios (Meir & Polinsky, 2021).

The government has endeavored to strengthen students' literacy and numeracy skills in a structured way, including in collaboration with non-government parties (Mubarok &



Anggraini, 2020). West Nusa Tenggara has been doing the same thing since 2018. It is essential to understand its achievements as a basis for developing other activities so that student's literacy and numeracy achievements in NTB can be maximized. Therefore, to get a comprehensive picture of the condition of literacy and numeracy skills of SD (Elementary School)/MI (Madrasah Ibtida'yah) students in Central Lombok and East Lombok Regencies, a baseline survey of students' basic literacy and numeracy was conducted (Ima Rahmawati Sushanti, Mustamin H. Idris, Baiq Harly Widayanti, Fariz Primadi Hirsan, Lukman Abdullah, 2018). The survey was conducted on six groups of respondents, namely: students, parents, teachers, school principals, LPTK (Educational Staff Education Institute), and the village government (Lukman, 2023).

To obtain valid and reliable research results related to the basic literacy and numeracy abilities of SD/MI students in the research area, a comprehensive understanding of all parties regarding the concept of literacy and numeracy itself, character education, inclusive education, and GEDSI (Gender Equality, Disability, and Social) issues is required. inclusions) (Belbes, Bandoy, Tan, Yazon, & Buenvenida, 2022). Likewise, the current and actual conditions of the research area, respondents' perceptions of the issues studied, and support from various parties regarding basic literacy and numeracy, especially during the Covid-19 pandemic (Lukman & Ilham, 2019). These detailed facts will be useful in considering INOVASI NTB to provide training that is right on target as needed.

Research Method

The research approach uses a Mixed Method between qualitative and quantitative research with a survey method (cross-sectional) (Wolf & McCoy, 2019). Data collection was carried out on July 14, 2021 - August 23, 2021, involving 2639 respondents from SD and MI students, school principals, teachers, parents, village representatives, and from TTIs. Survey data were obtained through questionnaires, document recording, and interviews involving 27 enumerators and observers. The process of collecting data by enumerators, besides using paper-based instruments, is also supported by the KoboToolbox application as an effort to accelerate the data entry process (Fakhrudin, Yamtinah, & Riyadi, 2017). Furthermore, the data were analyzed qualitatively using the Miles and Huberman approach (Shaleh, Zamroni, Mukminan, Ashadi, & Sudrajat, 2020).

Tabel 1. Research Sample

Regency	School	Student	Headmaster	Teacher	Parent	Village Representative	LPTK	Amount
Central Lombok	23 (Grades 1-6)	1380	23	139	40	4	2	1588
	28 (Class 1-3)	840	28	84	80	17	2	1051
Total		2220	51	223	120	21	4	2639

At the elementary school level (Manu, Ewerling, Barros, & ..., 2019), research participants were randomly selected in each sample school by applying stratified random sampling with the strata described in Figure 2.1. The first layer is the classrooms in each class. In Central Lombok, there are 23 schools from grade 1 to grade 6 with a total of 1380 students, and in East Lombok, 28 schools from grade 1 to step 3 with a total of 840 students. All enumerators conducted the initial survey to obtain student profiles and perceptions of 2220 people, 223 teachers, 51 school principals, 129 parents, 21 village representatives, and 4 LPTKs (Educational Staff Education Institute) from 2 universities.



Qualitative data collection using a non-probability sampling method (Friederichs, Birkenstein, & ..., 2020). Two FGD groups, parents and village representatives, were carried out regarding the support of village representatives in supporting the success of the literacy and numeracy program (Lang, 2021). The main factors that cause students to develop literacy and numeracy skills. Support is needed by students with certain limitations in improving literacy and numeracy skills (Grasby, Little, Byrne, & ..., 2020). Perceptions of students, teachers, principals, parents, village representatives, and TTIs on the GEDSI issue (Atasoy & Güçlü, 2020).

A sampling technique was also applied to select critical informants representing village officials (Ramona & Supriatna, 2021). Four key informants were village representatives interviewed in Central Lombok District and 17 village representatives from East Lombok. As for critical informants from LPTKs, based on consultations with INOVASI NTB who were interviewed by LPTKs, in the Central Lombok Regency Area 2, people were interviewed by representatives from LPTKs at the University of Mataram and in the East Lombok Regency Area 2 people were interviewed by representatives from AIH LPTKs. In-depth interviews were conducted face-to-face with key informants from each LPTK.

Results and Discussion

Student Survey

Learning Activities During the Pandemic

Following government policies that were in effect during the pandemic so that people reduce crowds and physical contact, learning activities in schools were also limited. In semester 2 of the 2020/2021 Academic Year (Méndez, Hammer, Lopez, & Blair, 2019). Most students in Central Lombok and East Lombok Regencies studied at home for quite a long time. However, some students learn face-to-face at school. Schools in Central Lombok Regency carry out learning with two patterns: as many as 57% (out of 51 schools) carry out face-to-face meetings on certain days in rotation, and 43% of students attend school with reduced lesson hours. Meanwhile, in East Lombok Regency, in addition to using the first pattern (29%) and second (64%), 7% of schools also apply the learning pattern as it was before the pandemic (no reduction in study days or hours) by implementing the health protocol.

Tabel 2. Learning in Schools During a Pandemic

Learning Patterns	(n=1380)	East	
		Lombok (n=840)	Lombok
No school	72.4%	97%	81.7%
2-3 days per week	14.0%	2.7%	9.7%
4-5 days per week	12.5%	-	7.7%
One day per week	0.7%	-	0.5%
One time a month	0.1%	0.2%	0.2%
Two times a month	0.3%	-	0.2%

To support learning with the duration above, the teacher also makes various alternatives to continue conveying learning material to students. Most schools provide their students with reading books to take home. Teachers also deliver the subject matter to children in other ways (online, predominantly using the Whatsapp application) and routinely provide feedback on student learning outcomes. Some teachers directly deliver assignments at several agreed gathering points or directly to students' homes where they live within easy reach.

Another method taken is to explain the subject matter to the parents and guardians of the students (interviews with teachers at SD Negeri 1 Kuta, Saturday, August 14, 2021, at 10.14 in the Principal's room at SDN 1 Kuta).

Meanwhile, after receiving the subject matter from the teacher, the students study independently at home, and some are assisted by their parents, siblings, friends, or other people. Things that are done during the learning process at home and a combination of the main things that students do can be listed in the following table:

Tabel 3. Online Learning Activities

Learning Patterns During a Pandemic	Attic (n=1380)	East Lombok (n=840)	Lombok
Studying in school	84%	91%	86%
Self-study using textbooks	84%	86%	84%
Study at home with the help of parents/guardians	79%	87%	82%
Study at the gathering point with the teacher and some other friends	81%	56%	71%
Book read by parent/guardian	84%	77%	68%
Study with the teacher who comes to the house	66%	44%	57%
Play Math/counting games or games	62%	49%	45%
Study at home with teachers using online methods (via zoom, google meet, WhatsApp, telephone, etc.)	37%	32%	35%
Self-study using study programs on television	15%	22%	17%
Self-study using websites, videos, and learning applications (Learning House, Teacher's Room, Your School, Quipper, Zenius)	9%	17%	12%
Self-study using study programs on the radio	43%	8%	6%

Students feel that the assignments given by the teacher are a lot for 88% of students. However, students do chores or read teaching materials provided by the teacher and return them to the teacher at a predetermined time. After doing the work or studying the subject matter given by the teacher, students return it to the teacher. According to most students, the assignments that have been collected are constantly checked by the teacher and get feedback. According to students' perceptions that teachers check student assignments by 86%. This condition certainly motivates students to continue studying while at home.

Students' Attitudes and Perceptions of Learning at School and Home

Since the pandemic, students' psychological conditions regarding school and learning have changed. When the limited face-to-face learning period was enforced, several students said they were happy to be back at school. Several other students admitted they were expected and even felt unhappy (Grotlischen, Buddeberg, Redmer, & ..., 2019).

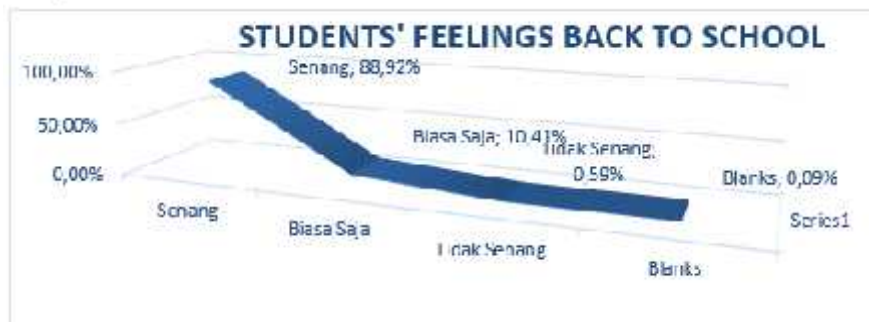


Figure 1. Feelings of Students Back to School

For students who feel happy going back to school for reasons of being able to meet friends again, it is easier to focus on studying and avoiding homework. It is easy to ask the teacher for help regarding lessons. In contrast, the reasons students were worried about returning to school were more dominated by feelings of laziness and having to travel to school again. In addition, students also feel insecure because they fear contracting Covid-19 and think there are many distractions when studying at school.

Principal Survey

School Resource Policy for Students

All schools in the baseline survey locations have been accredited with different accreditation predicates. As stated in the donut picture, it can be seen that only 12% of schools have obtained A accreditation (6 schools out of 51 schools surveyed). The most accredited predicates were grade B with a percentage of 71% or a total of 36 schools out of 51 schools. Meanwhile, as many as 17% of students (9 schools) received an accreditation rating at rank C. Many elements still need to be improved, improved, and maximized again in implementing education in academic units so that the accreditation rating obtained can achieve an even better predicate. For now, the accreditation rating illustrates the quality of education delivery in academic departments.

The total number of teachers teaching at 51 schools/madrasas is 652 teachers. Of these, 38% (249 people) were male teachers, and 62% (403 people) were female teachers with employment status dominated by honorary staff. 71% (463 people) of teaching staff are still in honorary positions. Thus, only 29% of educators have the status of Civil Servants. This also means that each existing school has an average of 12-13 teaching staff. The condition which is quite worrying is that out of 51 educational units, only 1 (one) school has a special accompanying teacher to oversee learning conducted by students with disabilities.

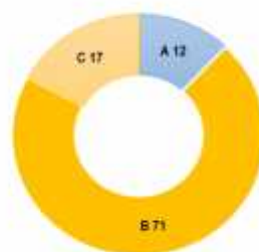


Figure 2. School Accreditation Data

The implementation of education in schools for the last two years has experienced profound shifts in various aspects, including learning activities. The Covid-19 pandemic is alleged to be the leading cause of this change in conditions. Each individual is expected to

adjust to the way of life per the health protocols set by the government to break the chain of transmission of Covid-19. The world of education is no exception, including the daily lives of students and educators in the school area. Many teaching and learning activities are adjusted, including the use of the curriculum. Education units must change the learning curriculum used with learning conditions (Purpura, Napoli, & King, 2019). However, not all schools do this. There are still many schools that still need to differentiate between the use of the curriculum before and during the Covid-19 pandemic.

Before and during the pandemic, the number of users of the 2006 curriculum (KTSP/Educational Unit Level Curriculum) was minimal; only two schools used it before the pandemic and are no longer employed at this time (Barham, Ihmeideh, Al-Falasi, & ..., 2019). The use of this curriculum before the pandemic was still carried out in 4 madrasas in East Lombok Regency, which was integrated with the 2013 curriculum. This practice was no longer carried out during the pandemic. Academic units (East Lombok and Central Lombok) predominantly use the 2013 curriculum, although currently, the trend is decreasing. Before the pandemic, it was used by 47 schools/madrasas, and during the pandemic, it was only used by 36 schools/madrasas.

Principals of schools/madrasas in 12 education units prefer directing educators to use the emergency (particular) curriculum issued by the Ministry of Education and Culture or the Ministry of Religion. Meanwhile, 6% of school principals directed educators to use an independent curriculum (mapping of competency targets was carried out independently by the education unit or the teacher).

Table 4. Use of the Curriculum Before and During the Pandemic

Type of Curriculum	Before the Pandemic			Pandemic Period		
	Attic (n=23)	Lotim (n=28)	Lombok	Loft (n=23)	Lotim (n=28)	Lombok
Curriculum 2006 (KTSP)	8%	-	4%	-	-	-
Curriculum 2013	92%	89%	91%	69%	71%	71%
Combined curriculum (2006 and 2013)	-	11%	6%	-	-	-
Emergency Curriculum (Special) issued by the Ministry of Education and Culture or the Ministry of Religion	-	-	-	26%	22%	23%
Independent Curriculum (Mapping of competency targets is carried out independently by the teacher or school)	-	-	-	5%	7%	5%

Not only has the use of the curriculum experienced a shift, but school learning activities have also undergone adjustments. It is carried out using several approaches according to directions from the government to pay attention to health protocols to anticipate the spread of Covid-19 (Ahmed, 2019).

Teacher Perceptions Survey

Teacher Performance in Literacy and Numeracy

Two types of tests are given to determine the teacher's ability in literacy and numeracy. The two tests were adapted from the TIMSS & PIRLS International Study Center by the Indonesian Ministry of National Education's Center for Research and Development. The average score on the test can be seen in table 5 below.

Table 5. Average Test Results for Teachers' Ability in Literacy and Numeracy

Master's ability	Central Lombok (n=139)			East Lombok (n=84)			Lombok (n=223)		
	I	P	J	I	P	J	I	P	J
Literacy	69.08	68.91	8.99	9.44	6.93	8.18	9.26	7.92	8.59
Numeration	60.00	62.97	1.49	0.44	9.41	9.93	0.22	1.19	0.71

The teacher's literacy and numeracy test average scores generally showed unsatisfactory results (Mann, Singh, Dabas, & ..., 2019). The average result for teacher literacy is 68.59, while for numeracy, it is even lower, namely 60.71. Furthermore, if observed by the district, the literacy achievements for teachers in Central Lombok and East Lombok districts did not differ significantly, only by 0.8 points. This means that teachers' literacy skills are balanced based on the community. Meanwhile, Central Lombok Regency is superior to numeracy achievements, with an average of 61.49, then East Lombok Regency with an average teacher numeration of 59.93. This condition is different when examined based on the gender of the respondent.

The lowest achievement is the number of female respondents in East Lombok Regency, 59.41. Achievements in the same aspect for Central Lombok Regency were higher, namely 62.97. For literacy skills, female respondents in Central Lombok also obtained a higher average (68.91) than female respondents in East Lombok Regency (66.93). The achievement of male respondents in Central Lombok Regency for literacy (69.08) looks lower than male respondents in East Lombok Regency (69.44). The same thing also happened to the average achievement in the numeracy aspect; Central Lombok Regency only got an average of 66.00, while East Lombok reached 66.44. In general, male literacy achievements were higher than women, while numeracy achievements were superior to female respondents from men.

Perceptions of Inclusive Education

Perceptions About Inclusive Education

Teachers in Central Lombok and East Lombok districts state that all children have the right to be educated in the same school regardless of their social, economic, and physical background. Realizing this, 92.13% of the teaching staff in Central Lombok Regency and 93.14% of East Lombok Regency made an effort to increase the participation of Children with Special Needs and students who experience other functional learning difficulties. The dominant good things that teachers and educational institutions do are (1) further understand the potential and obstacles that students experience in developing themselves; (2) adapt school facilities to the needs of ABK; (3) improve the quality of inclusive learning in schools; (4) involve parents in the decision-making process about how to educate their children,

Furthermore, as many as 75% of teachers have never attended any education or training on handling ABK. Only 14% of teachers attended seminars, and the rest (11%) chose to leave their answers blank. For teachers who have attended education or training (seminar) on handling ABK, the things that are done to help ABK at school are (1) providing exceptional guidance; (2) adjusting learning methods; (3) providing more manageable tasks; (4) approach students' parents; (5) spending extra time or extra time and (6) adapting teaching materials and approaches to the potential of students with special needs.

From the narrative of the school principal, it is known that the number of schools in the two districts that currently have ABK that can be said to be inclusive schools is

negligible. Only 43% (10 schools) in Central Lombok District and 28% (8 schools) in East Lombok District. So that the total number of inclusive schools in the two survey districts is only 35%, it is also known that not all of the schools in question made adjustments to facilities and infrastructure to facilitate ABK activities. Of the ten schools in Central Lombok Regency, only 6 (26%) made simple adjustments, and in East Lombok Regency, only 4 (out of 8 inclusive schools).

Table 6. Conditions of Inclusive Education

Description	Central	East	Lombok
	Lombok	Lombok	
Number of Inclusive schools (There are ABK)	43% (n=23)	28% (n=28)	35% (n=51)
Disability-friendly infrastructure	26% (n=23)	14% (n=28)	19% (n=51)
Number of Special Guidance Teachers	16% (n=139)	12% (n=84)	14% (n=223)

The limited number of schools providing inclusive education and the minimal adjustments made by schools to accommodate the interests and needs of ABK is also exacerbated by the minimal number of teachers who have received exceptional guidance on ABK. This certainly impacts teachers' ability and skills in dealing with ABK in their schools. Based on teachers' statements, only 14% (32 out of 223 teachers) had attended training on ABK, 16% (22 people) from Central Lombok Regency, and 12% (10 people) from East Lombok Regency. Of course, this is one of the reasons why the handling of ABK in schools could be more optimal. Schools that carry out inclusive education should have accompanying teachers specially trained to attend ABK learning.

Teaching Practice

Implementation of learning. To support online learning, teachers use online learning methods or systems (Google Classroom, Learning House, Teacher Room, Your School, Quipper, Zenius, my smart choice, etc.), call students, send study instructions via short messages (SMS or WhatsApp chat), and other ways. The teacher chooses approaches and methods to support the success of the learning process, as visualized in the following two graphs.

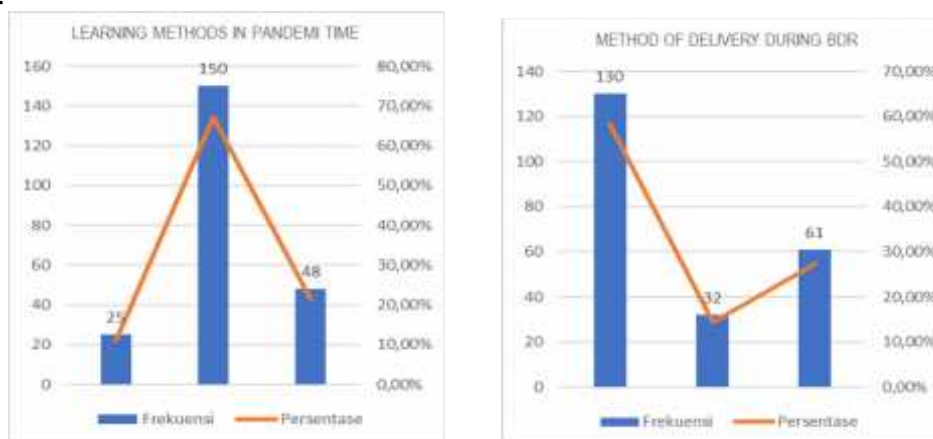


Figure 3. Learning Approaches and Methods during a Pandemic

Based on the two graphs above, it can be stated that during the pandemic period in Central Lombok Regency and East Lombok Regency, the learning process used the Home Learning (BDR) approach of 11.21%, Mixed Online and Offline 67.26%, and Face-to-Face Learning in school by 21.52%. Meanwhile, the most dominant method used during BDR was: face-to-face learning with an offline form at 58.30%, an online way at 14.35%, and no answer at 27.35%. This means that most schools will continue to carry out offline learning at school as long as the BDR period is determined.

Survey Results Village government School Program Involving Village Administration

Cooperation between parties and integration in programs and activities is a prerequisite for the smooth development process, including in the field of education down to the level of the education unit. At the basic education level, the academic team is expected and able to build a harmonious, cooperative relationship with the nearest government authority where the education unit is located. Of course, in this case, what is meant is the village-kelurahan government. So far, many programs have been managed by the village government, including supporting the implementation of education. Activities are intended to increase comfort, welfare, and service to the community so that the community can enjoy development directly and evenly.

The village-kelurahan government (50%) so far (especially in the last two years) has had a good relationship with education providers within the working area. The school often invites the village government to attend various activities, including holding deliberations.

Table 7. Form of the Village Program in the Field of Education

No	Program-Activity Name	Attic (n=4)	Lotim (n=17)	Lombok
1	Smart home construction	0	6%	3%
2	Procurement of Foreign Language courses	0	6%	3%
3	Construction of school buildings (PAUD and foundations)	0	12%	6%
4	Village infrastructure development and community empowerment	0	12%	6%
5	Reading coaching through the village library	0	18%	9%
6	Dissemination of health problems	0	18%	9%
7	Free scholarships to improve student abilities	25%	0	13%
8	Tourism village development	50%	0	25%
9	There are no programs	25%	29%	27%

Among the activities managed by the village government, several activities support the development of education in the village (Guarnieri, Crocetta, Massetti, & ..., 2019). For example, building smart houses, providing foreign language courses, and building educational infrastructure, especially for the PAUD (Early Childhood Education) level. (Kripalani, Heerman, Patel, Jackson, & ..., 2019), management of the village library, as well as providing scholarships for outstanding students and students from low-income families. Program decisions are made based on community proposals through the Musrenbang (development plan deliberations) mechanism at the village level because that is what the community needs. Planning activities at the village level are carried out in stages from the hamlet level by involving the community, including teachers in the village, but as representatives themselves, not school representatives.

Table 8. School Activities Involving Village Government

No	Program-Activity Name	Attic (n=4)	Lotim (n=17)	Lombok
1	Monthly study	-	6%	3%
2	AD/ART discussion	-	6%	3%
3	Musrenbang RKPDes every year	-	6%	3%
4	Discussion of handling Covid 19	-	6	3%
5	School committee activities	-	12%	6%
6	Discuss activities together	25%	-	13%
7	Class increase/graduation of students	-	29%	15%
8	There aren't any	75%	35%	55%

Parties actively involved in activities are generally from the education unit (teachers, students, and employees), the village government (representatives or other elements based on invitations received from the school), and the surrounding community if the activities carried



out are cooperation. However, almost all respondents (95% of 21 respondents) agreed that coordination and collaboration with schools are essential according to their respective duties and functions

Conclusion

The conclusion from the results of this research is that the lowest achievement is the numeration of female respondents in East Lombok Regency, 59.41. Achievements in the same aspect for Central Lombok Regency were higher, namely 62.97. For literacy skills, female respondents in Central Lombok also obtained a higher average (68.91) than female respondents in East Lombok Regency (66.93). The achievement of male respondents in Central Lombok Regency for literacy (69.08) looks lower than male respondents in East Lombok Regency (69.44). The same thing also happened to the average achievement in numeracy; Central Lombok Regency only got an average of 66.00, while East Lombok reached 66.44. Male literacy achievements were generally higher than women, while numeracy achievements were superior to female respondents from men's.

Recommendation

Recommendations for policy making for the West Nusa Tenggara government, namely increasing literacy for women in West Nusa Tenggara, especially in East Lombok and Central Lombok, then for schools that are reached so that education in West Nusa Tenggara can be evenly distributed, especially in East Lombok and Central Lombok and especially for women so that literacy increases, especially digital literacy.

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