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# ANALYSIS OF TEACHER NEEDS AND DISTRIBUTION IN INDONESIA: A LITERATURE REVIEW ON PLANNING THE NUMBER AND QUALITY OF EDUCATORS

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## ABSTRACT

*This study aims to analyze teacher needs, quantity planning, quality, and distribution in Indonesia through a qualitative literature study approach. Data were obtained from various scientific sources such as journals, policy reports, and official documents from the Ministry of Education, Culture, Research, and Technology. The analysis shows that teacher needs in Indonesia are not yet aligned with available positions, exacerbated by a wave of mass retirements that has increased the deficit in several regions. Teacher number planning faces major obstacles in the form of inaccurate data and weak coordination between agencies, resulting in recruitment not always reflecting actual needs in schools. In terms of quality, competency improvement programs such as certification and training have not consistently improved pedagogical performance, particularly in areas with limited access. Furthermore, teacher distribution remains unequal, with a concentration in urban areas and shortages in Frontier, Remote, and Disadvantaged areas. These findings emphasize that the issues of teacher quantity, quality, and distribution are interrelated and require an integrative policy approach. Consequently, the government needs to develop an integrated education data system, strengthen needs-based planning, and implement incentives and ongoing professional development programs to encourage equitable teacher distribution across Indonesia.*

**Keywords:** *Teacher Distribution, Teacher Needs, Teacher Number Planning, Teacher Quality*

## INTRODUCTION

Education has an important role in determining the direction of the nation's development. The success of a country in producing superior human resources is largely determined by the quality of its education system. In this context, teachers are one of the most decisive factors. Teachers do not only teach in the classroom, but also play a role in shaping the character,

values, and skills that students will bring to their daily lives. Thus, the availability of sufficient educators in terms of number, quality, and distribution is non-negotiable (Sutopo & Baswedan, 2020). Although the role of teachers is so important, Indonesia still faces fundamental problems related to the needs of teachers. Data Ministry of Education and Culture (2023) shows that by 2024 the shortage of teachers is projected to reach more than 1.3 million people, this is mainly due to the high number of teachers who enter retirement every year, on the other hand, the recruitment of new teachers through the CPNS and PPPK channels has not been fully able to cover this need. This condition results in a teacher's workload getting heavier and it is not uncommon for teachers to have to teach more than one subject, even outside their field of expertise.

Another problem that arises is the uneven distribution of teachers. Urban areas often experience an oversupply of teachers, while in remote, underdeveloped, and border areas, there is a shortage of teachers. For example, teachers in cities tend to be concentrated in specific areas of study, while schools in rural areas have a hard time getting teachers for core subjects such as math and science. This has an impact on the uneven quality of education in Indonesia, where students in urban areas are more fortunate because they have access to complete teachers, while students in rural areas have to study with limited educators (A. Hidayat, 2022). Apart from the number and distribution, the quality of teachers is also still a serious concern. The results of the Teacher Competency Assessment (AKG) show that many teachers have not reached the required competency standards. There are still many teachers who have difficulty mastering the material in depth and in implementing effective learning strategies. This shows that the problem of teacher quality is just as important as the problem of quantity (World Bank, 2019).

The quality of teachers is closely related to their ability to meet the demands of 21st century learning. Teachers are required to have adaptive pedagogic skills, mastery of learning technology, and the ability to guide students to have critical, creative, and collaborative thinking skills. But in reality, research shows that there is still a considerable gap between these demands and the real condition of teacher competence in the field (Puspitasari & Handayani, 2021). The government has made various efforts to improve this condition. One of them is by recruiting teachers through the Government Employees with Employment Agreements (PPPK) route. This recruitment is expected to overcome a considerable shortage of teachers. However, in its implementation, there are still many obstacles encountered. Budget problems, formation limitations, and selection bureaucracy make PPPK recruitment not fully effective (Kurniawati, 2018).

Another effort is the teacher redistribution policy to address the unequal distribution. This policy is fundamentally very important, but it often faces resistance. Many teachers are reluctant to be relocated to remote areas due to family reasons or socio-economic conditions. This shows that teacher distribution planning is not enough with regulations alone, but also requires an incentive approach so that teachers feel motivated to serve in areas where there is a shortage of educators (R. Hidayat, 2022). Ideal teacher needs planning should be based on accurate data and long-term projections. However, in practice, the policy of educators in Indonesia is often short-term and unsustainable. This causes the policies made to not be able to solve the root of the problem, but only a temporary solution (Kusumawati, 2019).

Furthermore, 21st century teachers are required to have increasingly complex competencies. They must master technology-based learning, be able to adjust teaching strategies to the character of students, and act as agents of change in schools. Majid (2020) emphasized that without improving the quality of teachers, even an increase in the number of teachers will not have a significant impact on the quality of education. Therefore, quality planning must go hand in hand with quantity and distribution planning. By looking at these various problems, it is clear that the analysis of teacher needs in Indonesia must be seen as a very strategic issue. This analysis includes not only how many teachers are needed, but also how the quality of teachers is improved and how their distribution can be done equitably. This literature review aims to provide a comprehensive overview of teacher needs analysis, teacher number planning, teacher quality planning, and distribution of teachers.

Theoretically, this research contributes to strengthening the study of educational human resource management by highlighting the relationship between the dimensions of teacher needs, quality, and distribution in the framework of national education planning. Practically, the results of this research can be a reference for the government and education stakeholders in designing policies for recruitment, training, and equitable distribution of teachers based on the real needs of schools.

## **RESEARCH METHODS**

This study uses the literature study method (literature review) with a descriptive qualitative approach. According to Zed (2014), literature studies are a series of activities related to the method of collecting library data, reading, recording, and processing research materials. In this study, data were obtained from books, journal articles, research reports, and official policy documents relevant to the issue of the need for educators, planning the number, quality, and distribution of teachers in Indonesia. Data analysis was carried out using content analysis techniques (content analysis), as explained by Krippendorff (2018), which is the process of systematically interpreting text to find meanings, patterns, and relationships between concepts. The results of the literature synthesis are presented in descriptive-analytical form to provide a comprehensive picture of the condition of teachers in Indonesia as well as offer recommendations for improvement in the planning and distribution of educators.

## **RESULTS AND DISCUSSION**

### **1. Analysis of Teacher Needs in Indonesia**

The need for teachers is a very fundamental aspect in the national education system because it is directly related to the quality of the learning process. Teachers are the main actors who determine the success of knowledge transfer, character building, and skill development of students. Therefore, the analysis of teacher needs is an important part of education management in order to ensure the availability of educators in accordance with the number of students, subjects, and regional conditions. According to Hendarman (2017), the needs of teachers in Indonesia are still facing complex problems. On the one hand, there is a surplus of teachers in urban areas, especially in favorite public schools, while on the other hand there is a shortage of teachers in remote and underdeveloped areas, especially at the elementary and junior high levels. Based on data Ministry of Education and Culture

(2023), Indonesia is still experiencing a shortage of around 780 thousand teachers at various levels of education. This inequality is clearly seen from the distribution of ASN PPPK formations in 2022, where more than 60% of the need for new teachers comes from remote districts.

In addition, the data Ministry of Education and Culture (2021) It also shows that in the last five years Indonesia has faced the threat of a large teacher deficit due to high retirement rates, it is estimated that every year more than 70,000 teachers enter retirement age, while new teacher recruitment is not able to cover this need. This is exacerbated by the large number of LPTK graduates who are not absorbed into ASN teachers due to limited formation. As a result, the number of honorary teachers is increasing, which then raises new problems related to welfare and teaching quality (Wahyudi, 2020). Another problem that arises is the mismatch between the qualifications of teachers and the subjects taught. Not a few teachers teach subjects outside their field of study due to the limited number of educators at the school. This phenomenon occurs in rural areas and 3T, where schools must continue to run the curriculum even though they do not have teachers according to their fields. This condition has negative implications for the quality of learning, because teachers who do not have the appropriate scientific background tend to have difficulty in teaching the material in depth (Suryana, 2019).

UNESCO (2016) emphasized that the analysis of teacher needs should be based on the projected number of school-age children. If there is no planning based on demographic projections, the country will continue to face a shortage of teachers. For example, the increase in the number of students in primary education due to the population explosion must be balanced with the recruitment of new teachers so that the teacher-student ratio remains ideal. In Indonesia, the ideal ratio of teachers to students is set at 1:20 for elementary school and 1:30 for junior high school. However, the reality is that there are still many schools that have ratios that are far above standard, especially in remote areas (Ministry of Education and Culture, 2020). The needs of teachers are also not only seen in terms of quantity, but also in terms of quality. According to Tilaar (2015) Qualified teachers are those who have pedagogical, professional, social, and personality competencies. Therefore, the analysis of teacher needs must include two dimensions: (1) the number of teachers needed according to the ratio of students, and (2) the quality of teachers in accordance with competency standards. Without paying attention to the quality aspect, the increase in the number of teachers will only solve administrative problems but not significantly improve the quality of education (Mustofa & Suryani, 2021).

The problem of teacher needs is also greatly influenced by geographical factors. Urban areas are generally more likely to attract teachers due to their good accessibility, well-equipped facilities, and greater career development opportunities, in addition, urban areas offer a higher quality of life, including access to healthcare, transportation, and education for teachers' families. On the other hand, remote areas have difficulty in getting teachers due to limited infrastructure, transportation facilities, and inadequate school facilities. This results in educational inequality in Indonesia, where students in remote areas do not receive the same quality educational services as students in big cities (Syamsul, 2018). In addition, the analysis of teacher needs must also consider the development of educational technology. According to Anwar (2021), the presence of digital technology in

learning can affect the pattern of teacher needs. The online learning model or blended learning makes the role of teachers no longer just as material presenters, but as facilitators and guides in the learning process. Therefore, the needs of teachers in the future are not only calculated based on the number of students, but also the ability of teachers to master information and communication technology (ICT) to support learning.

## **2. Teacher Number Planning**

Planning the number of teachers is one of the crucial aspects of education management, because it is directly related to the effectiveness of the learning process in schools. The unbalanced number of teachers, both advantages and disadvantages, can have an impact on the overall quality of education. According to Tilaar (2016), the planning of educators must consider the real needs of the school, the development of the number of students, and the minimum service standards set by the government. Therefore, the determination of the number of teachers cannot be done haphazardly, but must be based on accurate data. In the Indonesian context, teacher planning often faces serious challenges related to the dynamics of the number of students and distribution imbalances. For example, there are schools that experience a shortage of teachers in certain subjects, while in other schools there is an oversupply of educators (A. Hidayat, 2020). This shows that there is a mismatch between the recruitment system and the actual needs in the field. The government has actually tried to improve this condition through mapping the needs of teachers based on Basic Education Data (Dapodik), which allows for more precise decision-making (Ministry of Education and Culture, 2021). However, its implementation still faces obstacles especially in remote areas, where data is often inaccurate or updated late.

In addition, the planning of the number of teachers also cannot be separated from demographic factors and teacher retirement patterns. According to Susanto (2019), many schools are facing teacher vacancies due to the massive wave of retirements, while the recruitment process is not going fast. This condition has the potential to reduce the quality of learning, especially in schools with a limited number of teachers. Therefore, careful planning needs to take into account the projected long-term needs of educators so that there is no teacher crisis in the future. Furthermore, the planning of the number of teachers must be in line with the direction of national education development. As affirmed by Yuliani (2020), education policy must refer to the equal distribution of learning opportunities by ensuring the ratio of teachers to students according to standards. In Indonesia, the ideal standard teacher-student ratio is 1:20 for elementary school and 1:15 for junior high school/high school (Permendikbud, 2017). However, the reality is that there are still many regions that have a ratio far from this number, either because the number of teachers is too small or vice versa, too much. This shows that the existing policies have not been fully effective in the field.

Digitalization and technological developments also bring its own challenges in planning the number of teachers. With the development of online-based learning, the need for teachers may not only be calculated quantitatively, but also consider the teacher's ability to manage digital classrooms. According to Princess (2021), digital transformation in education demands more flexible planning, as the presence of teachers can be strengthened by technology, but cannot be completely replaced. Thus, the government needs to

anticipate this paradigm change in preparing a plan for the needs of educators in the future. From these various dynamics, it can be understood that teacher planning is a complex issue that requires a holistic approach. Not only calculating the number of teacher needs per school, but also having to consider demographic factors, regional distribution, technological developments, and long-term projections of the education system. Careful planning will help achieve the efficiency of educational human resources, while improving the quality of education services more evenly throughout Indonesia. This planning can be realized through strengthening an integrated teacher data system, mapping needs based on the teacher-student ratio in each region, and cross-agency coordination between the central and regional governments in determining teacher formation and placement. In addition, the implementation of needs-based policies (*need-based planning*) and the use of information technology in educator management is also a solution to ensure a more balanced distribution and quality of teachers (Bappenas, 2022).

### 3. Teacher Quality Planning

In addition to the number of teachers, the quality aspect is also the main focus in the planning of educators. Qualified teachers are not only able to master the subject matter, but must also have pedagogical, personality, social, and professional competencies as regulated in the Law Number 14 of 2005 concerning Teachers and Lecturers. Thus, teacher quality planning includes efforts to improve competence and professionalism so that educators are able to respond to the challenges of 21st century education. According to Darling-Hammond (2017), teacher quality is the most significant factor that affects student achievement compared to other factors, including infrastructure and curriculum. This shows that the quality of teachers is non-negotiable, and should be a top priority in educational planning. In Indonesia, teacher quality improvement has been carried out through various programs, such as teacher certification, the Sustainable Professional Development Program (PKB), and the Driving Teacher Program. However, the implementation of these programs still faces challenges, including low teacher participation, limited training facilities, and unequal opportunities to improve competencies (Susanto, 2020).

In the digital era, the quality of teachers is also measured by their ability to integrate technology into the learning process. According to Prasojo & Riyanto (2020), teachers who are not digitally literate will find it difficult to adapt to online and blended learning models. Therefore, teacher quality planning is not enough to focus only on content mastery, but must also pay attention to digital literacy, 21st century skills, and collaborative skills. In this way, teachers can become facilitators of learning that are relevant to the needs of students in the era of the industrial revolution 4.0. In addition to the skill aspect, teacher quality planning must also consider professional motivation and commitment. According to Kurniasih (2019), although many teachers have obtained certifications, not all have shown improved quality of performance. This indicates that certification is not necessarily an absolute indicator of quality, but needs to be accompanied by continuous coaching and an effective monitoring system. The government needs to emphasize the development of a professional work culture for teachers, so that

quality improvement is not only an administrative formality but really has an impact on learning practices.

Another important factor in teacher quality planning is the welfare and appreciation of the teaching profession. Research by Revelation (2018) It shows that teachers who receive deserved awards, both in the form of salary and career development, have higher performance compared to teachers who feel less appreciated. This means that quality improvement cannot be separated from the welfare aspect. If the welfare of teachers is guaranteed, then their motivation to continue to improve quality will also be higher. Furthermore, teacher quality planning also needs to adjust to the local context. For example, teachers who work in remote or border areas require additional competencies such as adaptability, creativity in utilizing limited learning resources, and sensitivity to local culture (Syahrial, 2021). Therefore, the strategy to improve the quality of teachers cannot be uniform, but must be adjusted to the specific needs of each region.

#### **4. Teacher Distribution**

The distribution of teachers is an aspect that is no less important than the number and quality of teachers. Although Indonesia has a relatively adequate number of teachers nationally, the main problem faced is the uneven distribution between regions. According to the data Ministry of Education and Culture (2020), there are urban areas that experience an excess of teachers, while in remote and border areas there is still a shortage. This inequality causes the quality of education services to be uneven, so that students in certain regions have lower learning opportunities than students in other regions. According to Mustaghfiroh (2017), the unbalanced distribution of teachers is not only a technical problem, but also reflects the weak planning and governance system of educators. This is due to several factors, including teachers' resistance to mutation policies, limited facilities in remote areas, and the lack of incentives offered by the government for teachers who are willing to be placed in locations with difficult access. As a result, most teachers prefer to work in big cities that are considered more promising in terms of career and welfare.

The government has actually made various efforts to overcome the problem of teacher distribution, such as the Frontline Teachers (GGD) program, as well as special allowance incentives for teachers in 3T (disadvantaged, frontier, and outermost) areas. This program is expected to reduce the gap in the quality of education between regions. However, research by Noble (2019) It shows that the effectiveness of the policy is still limited, because many teachers after the assignment period ends choose to move back to their home areas. This shows that the distribution of teachers cannot only be overcome by placement policies, but must also be accompanied by strategies to improve welfare, career development, and provide supporting facilities in the assignment area. In addition, the problem of teacher distribution is also related to the mismatch between the teacher's educational background and the field being taught. According to Hartati (2021), not a few teachers are forced to teach subjects outside their expertise due to the limited number of educators in certain schools. This condition has an impact on the quality of learning, because teachers do not fully master the material. Therefore, the distribution of teachers is not only a matter of distributing the number evenly, but also must pay attention to the suitability of the field of expertise with the needs of the school.

Equitable distribution of teachers is also closely related to the achievement of the Sustainable Development Goals (SDGs), especially in the pillar of inclusive and quality education. According to UNESCO (2018), the equitable distribution of teachers is an important condition to ensure equity in access to education. Without an equitable distribution, the gap in education quality between regions will widen, which in turn has an impact on increasing social inequality. In the context of policy, the equitable distribution of teachers requires an integrated data-based planning system. The use of Basic Education Data (Dapodik) can be an important instrument in mapping the needs of educators in each region more accurately. However, as expressed by Nurhadi (2020), the use of Dapodik still faces obstacles, especially related to delays in data input by schools and lack of integration with the planning system at the regional level. Therefore, data system optimization is an important step so that teacher distribution can be carried out more effectively and fairly.

## CLOSING

This study concludes that the problems of teacher needs, quality, and distribution in Indonesia are still interrelated and require integrated handling. The need for teachers is not in line with the available formations, while the wave of pensions and distribution inequality have further exacerbated the shortage of educators in a number of regions. The competency improvement programs that have been implemented have not fully affected learning practices, especially in areas with limited access. Therefore, improvements to the teacher management system need to be carried out through needs-based planning, integration of education data, and incentive policies to encourage equitable distribution of teachers in all regions.

This study has limitations because it only uses a literature review approach, so the analysis is based on secondary sources and does not include empirical data in the field. In addition, limitations in the availability of data and variations in context between regions can affect the generalization of findings. Therefore, further research is recommended to conduct empirical studies with quantitative and qualitative approaches at the regional level, in order to describe the needs and distribution of teachers more accurately. Further research can also examine the effectiveness of teacher management policies based on differences in the characteristics of regions and educational units.

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