

Innovative Government Transformation in The Equalization of Teachers and Education Personnel

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Abstract

Keywords:
Education;
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Innovation;
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Personnel.

This study is about fulfilling national education standards through an information system for managing teachers and education personnel, namely the Innovation of Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) in Southeast Sulawesi Province and Electronic Innovation of Teachers and Education Personnel (e-GTK) in Gorontalo Province. PERAU GADIK is an information system for mapping and distributing civil servant teachers evenly electronically according to the rules and needs of education units. In contrast, e-GTK is an electronic-based management system to optimize teacher and education staff data provision. This study uses a qualitative approach with case studies. The data collection technique was done by interviewing, documenting, and observing. The supporting data was collected by tracing various sources of literacy reports, journals, books, scientific articles, and news. The result of PERAU GADIK is the availability of an electronic-based information system in the arrangement and equalization of teachers and education personnel according to needs so that the quality of education can be increased to meet national education standards. The result of e-GTK is the availability of data management applications for teachers and education personnel so that the Personnel Development Sector can more easily carry out analysis, mapping, and as a reference for drafting teacher management policies in the medium and long term.

Abstrak

Kata kunci:
Elektronik; Inovasi;
Kepegawaian;
Pendidikan;
Pengelolaan.

Penelitian ini membahas tentang pemenuhan standar nasional pendidikan melalui sistem informasi pengelolaan guru dan tenaga kependidikan, yaitu Inovasi Penataan dan Pemerataan Guru dan Tenaga Kependidikan (PERAU GADIK) di Provinsi Sulawesi Tenggara dan Inovasi Elektronik Guru dan Tenaga Kependidikan (e-GTK) di Provinsi Gorontalo. PERAU GADIK merupakan sistem informasi pemetaan dan pendistribusian guru PNS secara merata sesuai dengan aturan dan kebutuhan satuan pendidikan berbasis elektronik. Sedangkan e-GTK adalah sistem manajemen berbasis elektronik untuk mengoptimalkan penyediaan data guru dan tenaga kependidikan. Penelitian ini menggunakan pendekatan kualitatif dengan metode studi kasus. Teknik pengumpulan data dilakukan melalui wawancara, dokumentasi, dan observasi. Data pendukung dikumpulkan dengan menelusuri berbagai sumber literatur laporan, jurnal, buku, artikel ilmiah, dan berita. Hasil dari inovasi Penataan dan Pemerataan Guru dan Tenaga Kependidikan (PERAU GADIK) yaitu tersedianya sistem informasi berbasis elektronik dalam penataan dan pemerataan guru dan tenaga kependidikan sesuai dengan kebutuhan sehingga kualitas pendidikan dapat ditingkatkan untuk memenuhi standar pendidikan nasional. Hasil dari inovasi Elektronik Guru dan Tenaga Kependidikan (e-GTK) adalah tersedianya aplikasi pengelolaan data guru dan tenaga kependidikan sehingga Bidang Pembinaan Ketenagaan dapat lebih mudah melakukan analisis, pemetaan, dan sebagai acuan penyusunan kebijakan pengelolaan guru dalam jangka menengah dan jangka panjang.

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INTRODUCTION

Implementing development management that is solid, responsible, and adheres to the basic principles of government administration transparency, participation, and accountability is necessary for national development (I. Arifin, Juharyanto, Mustiningsih, & Taufiq, 2018; Ashari et al., 2023). To improve national development capabilities, the role of human resources produced by the education system will greatly determine the future and progress of the nation as an intelligent, civilized, and dignified nation to achieve progress and prosperity amidst interactions between nations (Syafaruddin, Susanti, & Hasana, 2021). The presence of teachers, school principals, students, and other educational stakeholders is one aspect that contributes to the achievement of quality education (Aalto, Tarnanen, & Heikkinen, 2019). Meanwhile, the instructor is one of the most important factors in achieving quality education. Teacher professionalism is an important aspect of improving educational quality since competent teachers produce good students (S. Arifin, Utama, Aryani, Prayitno, & Waston, 2023; Siregar, Mesiono, & Neliwati, 2022). Teachers must be distributed fairly and proportionally to provide a high-quality and egalitarian education.

Innovation in meeting national education standards through an information system for managing teachers and education personnel is an important issue in the current social and educational context (Akimov et al., 2023). In the era of globalization and rapidly developing technological transformation, the role of the education sector is becoming increasingly central in facing various challenges and social changes that affect society (Satispi, Rajiani, Murod, & Andriansyah, 2023). Fulfillment of national education standards is the main basis for ensuring that all citizens have access to and opportunities to obtain quality education. However, complex dynamics in society, including changing work patterns, a changing economic landscape, and the need for new skills, create significant challenges in maintaining the quality and relevance of education. In this context, innovation through the development of information systems for managing teachers and education personnel emerges as a key factor in facing these challenges (Kohli & Melville, 2019). The challenges of current social change are very diverse and complex. The technological revolution has changed the way we interact, how we work, and even how we learn (Brien, O'Brien, Costa, & Adamakis, 2022). Globalization has reduced the distance between countries, resulting in increasingly close intercultural relations. In addition, changes in the economy and increasingly complex job requirements make the need for new skills a priority. Society is increasingly diverse in terms of ethnicity, culture, and social background (Almadani, 2022).

Nationally, there are two major challenges in meeting minimal service requirements in the education sector: standards for educational buildings and infrastructure, and standards for instructors and education professionals (Annisa, Akrim, & Manurung, 2020). The criteria for teachers and education personnel, in particular, are not only quantitative but also equitable. The most obvious challenge is balancing the ratio and equal distribution of teachers (Ellis & Hogard, 2018). This is

happening in Southeast Sulawesi, where high schools (SMA/SMK) and special schools still lack teachers with civil servant status. The condition in Southeast Sulawesi Province is that many teachers are found in their favorite state schools or state schools in the city. Meanwhile, there is a serious shortage of teachers in rural or remote areas. This condition illustrates that there are excess teachers in a school and there are schools that lack teachers. The distribution of teachers is not by minimum needs, not by the ratio of teachers and students, schools, and regions. Seeing this problem, a strategy is needed to overcome it, one of which is by making innovations regarding the arrangement and distribution of teachers and education personnel. Southeast Sulawesi Province made a breakthrough in accelerating the distribution of teachers and education personnel, named PERAU GADIK (Arrangement and Equalization of Teachers and Education Personnel/ Penataan dan Pemerataan Guru dan Tenaga Kependidikan) (Provinsi Sulawesi Tenggara, 2022). Another problem in managing teachers and education personnel is the lack of valid data. One of the causes of the imbalance in teacher distribution is a lack of integration of the information system that has been built (Fatkuroji, 2017), which means that the Department of Education and Culture has not determined program policy interventions and management activities for Teachers and Education Personnel based on systemic and measurable analysis and mapping results. This is evident in the challenges that arise inside the Gorontalo Provincial Government. More than six years ago, the Gorontalo Provincial Government took over operation of SMA/SMK/Special Schools (SLB), which had previously been under the control of the Regency/City Government in the Gorontalo Province region. Various issues concerning the handover of personnel, which at the time numbered approximately 4,700 Teachers and Education Personnel consisting of Civil Servants and Non-Civil Servants in SMA/SMK/Special Schools throughout Gorontalo Province, automatically became the responsibility of the Gorontalo Provincial Government and undoubtedly had significant implications for the imposition of personal costs on the government.

Many studies have looked at staffing, including one conducted by Firmansyah 2018 on E-Master Service Innovation in the Regional Personnel Agency of East Java Province. E-Master Service Innovation is an innovation that simplifies and expedites personnel management while reducing bureaucracy. The E-Master service innovation at East Java Province's Regional Civil Service Agency involves the renewal of personnel administration services such as promotions, Taspen management, and transfers. The research results showed that E-Master service innovation has gone quite well, but the process is not yet perfect (Firmansyah, 2018). The research was conducted by (Hermanto, Suarantalla, & Sahdan, 2020) regarding the Application of the 0-1 Integer Linear Program to Prepare a Proposed Schedule for municipal police Pickets. According to the research findings, the 0-1 integer linear program combined with the Lindo software methodology may be used to tackle cyclical scheduling method difficulties. The cycle scheduling method is one of several methods for arranging municipal police (Satpol PP) work pickets. The research revealed that the proposed schedule is more optimal for optimizing assignment quality since it considers the existing workload and limits. In

addition, (Prabowo & Fanida, 2018) conducted study on innovation in personnel services at the Mojokerto City Personnel Agency using an Android-based Integrated Personnel Mobile Information System/ Sistem Informasi Mobile Kepegawaian Terintegrasi (Simoker) application. SIMOKER is a civil service innovation based on Android mobile apps that is useful for checking state public servants' personal data and increasing data validity. The research findings indicate that the Mojokerto City SIMOKER application is effective. Nevertheless, challenges persist, such as a lack of socialization, Simoker management team training, and Simoker application interface with other systems. However, the existing research emphasizes the special non-educational personnel service system for validating state civil apparatus personal data, the cyclical scheduling method (picket proposal schedule), promotions, Taspen management, and transfers. Meanwhile, this study places more emphasis on fulfilling national education standards through an information system for managing teachers and education personnel, namely the innovation of Arranging and Equalizing Teachers and Education Personnel (PERAU GADIK) in Southeast Sulawesi Province and the innovation of Electronic Teachers and Education Personnel/Elektronik Guru dan Tenaga Kependidikan (e-GTK) in the Province Gorontalo.

Previous research has lacked a focus on the education sector, particularly in terms of meeting national education requirements through innovative teacher and education personnel management. The purpose of this study is to look into the effectiveness of innovation in meeting national education standards using information technologies to manage teachers and education workers in the provinces of Southeast Sulawesi and Gorontalo. This study is important in determining how much innovation has contributed to the equitable mapping and distribution of instructors. Second, analyze the impact of innovation on improving the quality of learning and evaluate the success of information systems in managing teacher performance and encouraging participation. With a deeper understanding of the role of information systems in fulfilling national education standards and their impact on education at the regional level, this research is also considered important and relevant because it looks at the condition of public service information systems in Southeast Sulawesi and Gorontalo Provinces.

RESEARCH METHODS

This study employs a qualitative research approach using a case study methodology. A case study is a qualitative research method that examines human knowledge and conduct in relation to variances in values, beliefs, and scientific theories (Polit & Beck, 2004). A case study was chosen as the research approach in this study after examining a number of important factors. First and foremost, case studies are an excellent way to obtain a thorough grasp of complicated phenomena and specific circumstances in the field (Almadani, 2022). This study wants to analyze the innovation in the Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) in Southeast Sulawesi Province and the Electronic Teacher and Education Personnel (e-GTK) innovation in Gorontalo Province in the context of fulfilling national

education standards through an information system for managing teachers and education personnel. In the case of these innovations, qualitative and contextual aspects have a very important role. Case studies allow researchers to examine in depth the interactions between various elements that influence the success or challenges of the innovation. By interviewing relevant stakeholders, making observations, and analyzing relevant literacy sources, case studies can illustrate a more comprehensive context of how this innovation works in the field, what its impact is, and the obstacles faced.

The data was collected through documentation, interviews, and observations. Furthermore, supporting data is gathered by scanning a variety of literary sources, reports, journals, books, research papers, and news, which is then analyzed and described as identification outcomes. Preparing a case study entails various stages that aim to characterize occurrences or phenomena based on what occurs in the field. People provide written or spoken data, as well as observable behavior (Warsono, Qurniawati, Sitorus, & Fajar S., 2018).

This study was carried out as a form of effort to fulfill national education standards through an information system for managing teachers and education personnel, namely the innovation in the Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) in Southeast Sulawesi Province and the innovation of Electronic Teachers and Education Personnel (e-GTK) in Gorontalo Province. Data collection is also done by searching various sources, which are processed and described in narrative form according to data needs. The data used were the results of case study interviews contained in reports, journals, books, news and scientific articles containing the concepts studied.

RESULTS AND DISCUSSION

Policy Support in the Teacher and Education Personnel Management System

Good government management must be based on data/evidence and strengthen control of development implementation. The factor that encourages and accelerates the realization of good government management is the availability of quality data and information so that it can guarantee the creation of quality development planning and implementation for the welfare of the community. According to (Instruksi Presiden (Inpres) Nomor 3 Tahun 2003 concerning Kebijakan dan Strategi Nasional Pengembangan E-Government), a clean, transparent, and changeable government hopes to improve its ability to process, manage, channel, and distribute information and public services by leveraging advances in information technology. As a result, the government must immediately begin the process of transitioning to e-Government.

According to (Undang-Undang Republik Indonesia Nomor 23 Tahun 2014 tentang Pemerintah Daerah) explained that innovation is an important element in the administration of regional government. Innovation determines the high competitiveness of a region or country. The resulting innovation must follow the following principles: 1) increasing efficiency, 2) improving effectiveness, 3) improving service quality, 4) no conflict of interest, 5) being oriented to the public interest, 6) being carried out openly,

7) fulfilling appropriate values, and 8) the results can be accounted for and are not for one's own benefit. Furthermore, (*Peraturan Pemerintah Republik Indonesia Nomor 38 Tahun 2017 Tentang Inovasi Daerah*) states in Article 2 that regional innovation strives to improve government performance. Regional innovation goals are aimed at speeding the attainment of community welfare by improving public services, empowering and engaging the community, and strengthening regional competitiveness.

The arrangement and equalization of Civil Servant Teachers is an implementation of the mandate (*Peraturan Pemerintah Republik Indonesia Nomor 74 Tahun 2008 Tentang Guru dan Dosen*), which discusses that national development in the field of education should be an effort to enhance the life of the nation and improve the quality of Indonesian people that are faithful, devout, and have noble traits and master the fields of science, technology, and art in realizing an advanced, just, prosperous, and civilized society based on Pancasila and Constitution of the Republic of Indonesia of 1945. To ensure that access is expanded and distributed equally, that quality and relevance are improved, and that good governance and educational accountability can withstand changes in local, national, and global life, teachers and lecturers must be empowered and improved in a planned, directed, and sustainable manner (Fauzi, Imroatun, Jumaela, Rohmiyati, & Nasrudin, 2022). Teachers and lecturers play an important strategic role in national education development, thus they must be educated as reliable professionals. Teachers provide the most significant role in both formal and informal education (Idris, Trisnamansyah, & Wasliman, 2022).

Peraturan Pemerintah Republik Indonesia Nomor 9 Tahun 2003 concerning Wewenang Pengangkatan, Pemindahan, Dan Pemberhentian Pegawai Negeri Sipil considering that to carry out one of the functions of personnel management and to improve relations between the Government and the Provincial Regions and Regency/City Regions, as well as to encourage the role of Civil Servants as one of the elements that glue and unite the nation in the Unitary State of the Republic of Indonesia, it is necessary to re-arrange the provisions regarding authority to appoint, transfer and dismiss Civil Servants with Government Regulations. According to Article 12, the Central Civil Service Development Officer determines the appointment, transfer, and dismissal of Central Civil Servants in their environment in structural positions at echelon II and below, as well as functional positions at the same level. Officials can delegate some of their authority or empower other officials in their surroundings to make decisions about the appointment, transfer, and dismissal of Civil Servants in structural posts at echelon III and below, as well as functional positions at the same level.

The unequal distribution of teachers causes many regions to have a surplus and, conversely, a shortage of teachers (Ginoga, 2017). The problem of teacher distribution is not simple because teacher distribution is related to government policy, management of educational information systems, and overall supervision of various aspects that allow teacher shortages to occur in an area (Penning de Vries, Knies, & Leisink, 2022). The education department needs to carry out a comprehensive analysis and evaluation of the distribution of teachers by looking at the condition of the number of teachers based on

the map of teacher adequacy in the regions, regulating the distribution pattern based on the regional scheme of teacher distribution in the regions. The transfer of transfers of civil servant teachers needs to be suppressed to reduce the gap in the adequacy figure for civil servant teachers in the area (Talaumbauna, Anom, & Iswadi, 2023).

The authority of the Regency/City Government regarding the transfer of educators and education personnel has been regulated in (Peraturan Menteri Pendidikan Nasional Republik Indonesia Nomor 20 Tahun 2010 tentang Norma, Standar, Prosedur, dan Kriteria di Bidang Pendidikan) adapted to (Peraturan Pemerintah Republik Indonesia Nomor 38 Tahun 2007 concerning Pembagian Urusan Pemerintahan Antara Pemerintah Pemerintahan Daerah Provinsi Dan Pemerintahan Daerah Kabupaten Kota) where one of the points states that "educators and educational staff appointed by the government or regional government can be transferred between districts, cities, between sub-districts, or between educational units for reasons of educational unit needs." The 2011 Joint Ministerial Decree (SKB) 5 technical guidelines regulate the pattern of structuring and distributing civil servant teachers. These technical guidelines mandate that local governments verify teacher data and analyze teacher needs in each educational unit. Next, provide a teacher map that informs about the strengths and/or weaknesses of civil servant teachers in their area, to be followed up immediately if there is a shortage or need for teachers through a system of recruiting, placing and transferring teachers between educational units based on Technical Instructions.

Information System Innovation for Management of Teachers and Education Personnel

Innovation for the Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) is an information system for mapping and distributing PNS teachers electronically and evenly according to the rules and needs of educational units. The result of PERAU GADIK's innovation is that an electronic-based information system is available for structuring and distributing teachers and education personnel according to needs to improve the quality of education in Southeast Sulawesi to meet national education standards. PERAU GADIK changed the distribution pattern of teachers and civil servant education personnel from manual or conventional methods to an electronic system.

One effort to improve the quality of education in Southeast Sulawesi is by structuring and evenly distributing civil servant teachers between educational units and districts/cities. The aim of creating PERAU GADIK is to improve the quality of education and create a Teacher or Education Personnel (GTK) mapping system, which can be used as a reference in making GTK distribution policies. So that there will be an acceleration of the arrangement and distribution of PNS teachers (SMA/SMK and SLB) throughout the Southeast Sulawesi Province. The benefits of the PERAU GADIK innovation include the following: First, it can be used as a reference for the Southeast Sulawesi Provincial Education and Culture Office to find out the real number of teachers and the strengths and weaknesses of teachers in each educational unit. Second, ease of

decision-making for regional civil service supervisors (BKD) to carry out GTK mutations based on needs. Third, creating a sense of justice for both students and GTK in obtaining educational services and facilities in educational units.



Figure 1. Perau Gadik logo.

Electronic Innovation for Teachers and Education Personnel (e-GTK) is a management system based on information technology (electronics) to optimize the provision of data for teachers and education personnel. The result of the Electronic Teacher and Education Personnel (e-GTK) innovation is that an application for data management for teachers and education personnel is available so that the Personnel Development Sector can more easily carry out analysis mapping and serve as a reference for drafting teacher management policies in the medium and long term. Management of Teachers and Education Personnel leads to efforts to organize, map, and control distribution and guidance, starting from teacher qualification standards, competency standards for teachers and education personnel, increasing teacher competence and professionalism, career development, fulfilling welfare, fulfilling the ratio of teachers to students as well as respect and protection teachers and education personnel who must be cumulative.

The aims of the e-GTK innovation include: First, in the short term, it can create an information system for managing data for high school/vocational school/special school teachers and educational staff in Gorontalo Province. Second, in the medium term, it can realize cross-sector coordination and management in managing teachers and high school/vocational school/special school education personnel in Gorontalo Province. Third, in the long term, realize the formulation and implementation of management policies for SMA/SMK/Special School teachers and educational staff in Gorontalo Province systematically and measurably using e-GTK. The benefits of e-GTK innovation include: First, for the Leadership Team, through e-GTK, the duties and functions of managing SMA/SMK/Special School Teachers and Education Personnel are optimal in

helping the leadership team. Second, it can improve performance for the Department of Education, Culture, Youth and Sports and the field of personnel development through e-GTK. Meanwhile, other technical Regional Apparatus Organizations that partner with the e-GTK Education and Culture Service are very helpful in obtaining data and information.

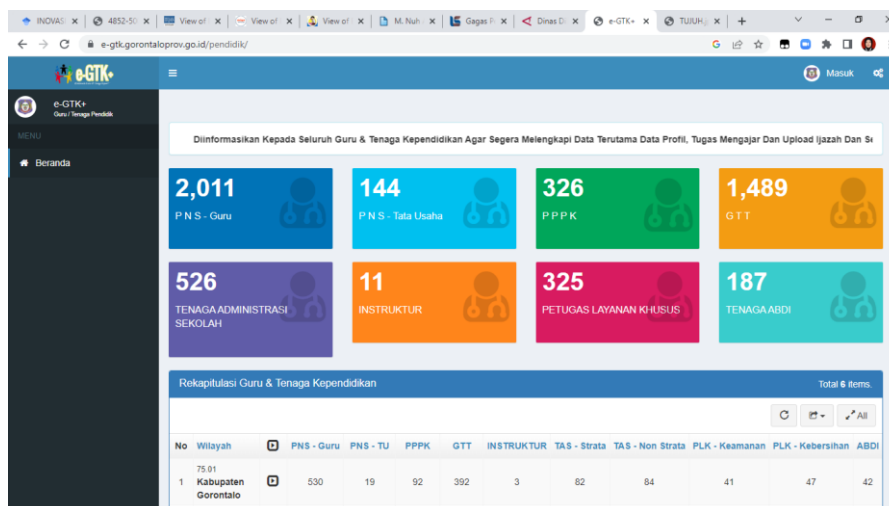


Figure 2. Website Based e-GTK Application: <https://e-gtk.gorontaloprov.go.id/pendidik/>

Implementation of Information Systems for Management of Teachers and Education Personnel

Based on news sources on the website <https://sultra.antaraneews.com/> on Monday, September 20 2021. The Southeast Sulawesi Education and Culture Service made an innovation for the Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) to map and distribute state civil servant teachers in an orderly manner evenly by the rules and needs of the educational unit (Senong, 2021). Based on basic secondary education data (Dapodikmen), The number of schools within the scope of the Southeast Sulawesi Province Education and Culture is 416 public and private schools, with a total need for civil servant teachers of 10,914 people, but there are 9,598 teachers. The most teachers are in Muna Regency and Kendari City, while other districts still lack teachers.

In general, the number of teachers accumulates in district capitals, while there is still a shortage in remote areas. The condition of the teacher workforce is greater in favourite state or state schools in the city, while there is a shortage of teachers in rural or remote areas. This clearly illustrates that there are too many teachers in a school, and some schools have a shortage of teachers. PERAU GADIK's innovation is transferring or reassigning teachers and electronic system teaching staff based on specific considerations. PERAU GADIK's innovation is an information system for the arrangement and distribution of teachers and state civil apparatus education personnel, which can be used easily, practically, quickly and accurately. It is hoped that with this

innovation, good quality education can be achieved through an even distribution of teachers and education personnel.

According to the news source <https://lenterasultra.com/>, teacher distribution through PERAU GADIK was carried out on March 7 2022, in two cities, namely Kendari City and Baubau City, as a concrete step to improve the quality of education evenly (Redaksi, 2022). So that in the future it is hoped that all schools will be the same in terms of the quality of learning and the teachers or teaching staff in each school. Through the PERAU GADIK application, teachers in Southeast Sulawesi are mapped based on their place of residence. So not only are students accepted through a zoning system, but teachers are also placed through a zoning system based on their place of residence.



Figure 3. Head of the Education and Culture Service Launching the PERAU GADIK Application

The others are based on news sources on the website <https://gorontalo.antaranews.com/> Gorontalo Governor Rusli Habibie inaugurated the establishment of State High School 8, which was accompanied by the launch of the Electronic Teacher Education Personnel (e-GTK) application and the 2022 online New Student Registration (PPDB) application in the hall of SMA 1 Gorontalo on Tuesday, 10 May 2022 (Mano, 2022). The formation of SMAN 8 Gorontalo aims to improve the quality of education in the region by accommodating the flow of new students from the eastern region of Gorontalo City to Kabila Bone District in Bone Bolango Regency. The total number of students who will be accepted at SMAN 8 via PPDB online is 144 people, and for the time being, they are still occupying the SMA 1 Gorontalo City building.



Figure 4. Governor Rusli Inaugurates the Establishment of State High School 8 Gorontalo

One of the flagship programs of the Gorontalo provincial government is improving the quality of education in line with the national program with efforts to improve the quality of education, such as increasing GTK salaries and providing free education. Supported by the Head of the Gorontalo Province Education, Culture, Youth and Sports Service, Wahyudin Katili, with the launch of e-GTK, which aims to make the teacher database more valid. So that it can overcome the problem of wide coverage of SMA/SMK in terms of data on teachers and education personnel, the Head of Teachers and Education Personnel, Siti Maria Lahidjun, initiated this application. Meanwhile, the online PPDB application has also been updated to be more transparent and is expected to meet the expectations of all people in Gorontalo Province.

Table 1 Analysis of Policy Support in the Teacher and Education Personnel Management System

Policy Support	Context/Description	Implications for Innovation
Presidential Instruction Number 3 of 2003 Concerning National Policy and Strategy for E-Government Development	Encourage the government to use information technology for better public services and transparency.	Stimulate the government to carry out a transformation towards e-Government and apply information technology in the management of teachers and education personnel.
Law Number 23 of 2014 concerning Regional Government	Emphasizes the importance of innovation in regional government administration.	Encourage the development of innovations such as PERAU GADIK and e-GTK to improve the quality of education and equal distribution of teachers in the regions.
Government Regulation Number 38 of 2017	Directing regional innovation to improve government	Providing a legal basis for the implementation of innovations such as PERAU GADIK and e-

concerning Regional Innovation Law Number 14 of 2005 concerning Teachers and Lecturers	performance and community welfare. Emphasizes the important role of teachers in national development.	GTK in order to improve the quality of education. Supporting innovation concepts such as PERAU GADIK which aims to map and distribute teachers evenly.
Government Regulation Number 9 of 2003 concerning the Authority to Appoint, Transfer and Dismiss Civil Servants	Establishes processes for civil servant appointment, transfer, and dismissal.	It is the legal basis for the regulation and transfer of teachers in innovations such as PERAU GADIK and e-GTK.
Mapping Needs for Teachers and Education Personnel	Uneven distribution of teachers, shortage of teachers in certain areas.	Encourage the development of innovations such as PERAU GADIK to map and distribute teachers evenly.
Implementation of PERAU GADIK Innovation	Improving educational excellence by distributing and arranging instructors equally.	Producing an electronic information system for the arrangement and distribution of teachers and education personnel.
Implementation of e-GTK Innovation	Improving the quality of data management for teachers and educators.	Optimizing teacher and education personnel data management through information technology-based systems.
Education Policy in Gorontalo Province	Improving the quality of education and teacher management.	Supporting the implementation of e-GTK innovation to overcome obstacles in managing teacher and education personnel data.

Table 1 analyses policy support in the teacher and education personnel management system and its implications for innovations such as PERAU GADIK and e-GTK. Each policy support has a context that promotes innovation to improve educational quality and teacher distribution in the region. This innovation is being pushed by national and municipal policies that promote the use of information technology and improve government performance in the education sector.

The analysis above illustrates the implementation of two information system innovations for managing teachers and education personnel in Southeast Sulawesi and Gorontalo Province, namely PERAU GADIK and e-GTK. These two innovations have the main objectives of mapping, distributing, and optimizing data management for teachers and education personnel and improving the quality of education and equality of teachers in the region.

In the context of digital innovation theory, this innovation represents efforts to apply information technology in human resource management in the education sector (Bisri, Muid, & Khamim, 2023; Mainuddin, Tobroni, & Nurhakim, 2023). This involves

using electronic-based information systems for mapping, distribution, analysis and decision-making regarding teachers and education personnel (Nurulloh, Aprilianto, Sirojuddin, & Maarif, 2020). Adopting this innovation reflects the concept of adoption in which local governments and educational institutions adopt new technology, in this case, electronic information systems, to overcome existing problems in managing teachers and education personnel.

The benefits resulting from this innovation are very significant for local governments and educational institutions. By adopting an electronic information system, teacher and education staff data management can be done more efficiently and accurately. This system helps in needs analysis, distribution and decision-making regarding teacher transfers and distribution (Arnold, Söbke, & Reichelt, 2019). Support from various policy levels, both national and regional, is visible in the implementation of innovation. For example, the Law on Regional Government and the Law on Teachers and Lecturers provide the legal basis for the development and implementation of this innovation.

This innovation also aligns with the concept of E-Government Transformation, where information technology encourages improvements in public services, transparency and administrative efficiency. This directs the government's transformation towards using technology in human resource management in the education sector (Banmairuroy, Kritjaroen, & Homsombat, 2022). Apart from the benefits of education, this innovation also has potential for regional development. With equal distribution of teachers and education personnel, remote areas can benefit from better access to education, which evenly improves education quality (Anwar, Rahman, Nurwahidin, Sutrisno, & Saputra, 2023).

However, on the other hand, implementing digital innovation also faces challenges. Technical and human resource challenges in operating new information systems are important issues. Apart from that, changes in culture and habits from manual management to electronic systems can also be an obstacle that needs to be considered and overcome. In this case, several alternatives can be formulated.

First, training and improving skills are crucial steps. Providing comprehensive training to employees and related staff on using new information systems and improving technical skills, such as data analysis, will reduce technical obstacles. This will provide higher effectiveness in utilizing the system (Amzat, 2022). Second, education and socialization have an important role. Educational campaigns directed at all relevant parties, including teachers, education personnel and administration, will help explain the benefits of innovation (Santoso, Badarudin, & Annur, 2021). Overcoming the fear of changing culture and old habits through good understanding will help reduce resistance to change. Third, establishing a technical support team is an effective solution. By forming a team that is skilled in handling operational and technical problems that may arise when using a new information system, users will feel supported and helped (Kemp & Cochern, 1994). This team will provide guidance, troubleshoot problems, and answer questions as they arise.

In addition, support to adopters must also be provided. Incentives such as rewards or recognition can motivate users to overcome obstacles and adopt the new system. Finally, understanding the long-term benefits of this innovation needs to be emphasized (Suntana & Priatna, 2023). Communicating that this change is an investment in a better and more efficient educational future will strengthen the intention to overcome the challenges in this innovation process (Chen, 2023). With an approach that includes training, education, technical support, user participation, and gradual implementation, technical, cultural, and cultural challenges in implementing digital innovation can be overcome.

CONCLUSIONS

The management of teachers and education personnel in Gorontalo Province does not yet have a strategic management design and is not optimal enough to improve organizational quality and performance. Teacher management is still oriented towards routine needs related to honorariums, promotions, scholarships, and several other routines that are still carried out manually. Problems in the education sector also occur in Gorontalo Province, namely the absence of valid data in determining program policy interventions and management activities for Teachers and Education Personnel by the Education and Culture Office; in this case, it is not based on the results of analysis and mapping results that are systemic and measurable. Therefore, the innovation for the Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) was created in Southeast Sulawesi Province, and the innovation of Electronic Teachers and Education Personnel (e-GTK) in Gorontalo Province. Innovation for the Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) is an information system for mapping and distributing PNS teachers evenly by the rules and needs of educational units electronically. Electronic Innovation for Teachers and Education Personnel (e-GTK) is a management system based on information technology (electronics) to optimize the provision of data for teachers and education personnel.

The result of the innovation in the Arrangement and Equalization of Teachers and Education Personnel (PERAU GADIK) is that an electronic-based information system is available for the arrangement and distribution of teachers and education personnel according to needs so that the quality of education can be increased in meeting national education standards. The result of the Electronic Teacher and Education Personnel (e-GTK) innovation is that an application for data management for teachers and education personnel is available so that the Personnel Development Sector can more easily carry out analysis mapping and serve as a reference for drafting teacher management policies in the medium and long term.

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