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SWOT Analysis E-Learning Concepts Based Digitalization in Kepulauan Riau Province Border Area

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Abstrak

Kepulauan Riau merupakan salah satu provinsi di Indonesia yang berbatasan langsung dengan negara tetangga, sehingga perlu adanya optimalisasi dunia pendidikan di masa pandemi COVID-19. Sistem pembelajaran di Indonesia akhirnya menggunakan e-learning yang merupakan fasilitas pembelajaran dengan sistem online. Tujuan: Kondisi darurat ini membuat Provinsi Kepulauan Riau khususnya Dinas Pendidikan harus mengambil langkah strategis dalam sistem pembelajaran online agar lebih efektif dan efisien karena Kepulauan Riau termasuk dalam wilayah 3 T (Tertinggal, Terdepan, Tertinggal). Hal ini berdampak pada akses jaringan internet yang sulit diakses di daerah perbatasan. Penelitian ini berfokus pada pembelajaran digitalisasi menggunakan Digital Versatile Disk - Read Write (DVD-RW) dengan menggunakan analisis SWOT. Metode: penelitian dengan menggunakan data sekunder dan analisis menggunakan teknik pemodelan logika sebagai bentuk lain dari pencocokan pola untuk menganalisis permasalahan dalam analisis SWOT. Temuan: Hasil analisis menunjukkan bahwa matriks SWOT sangat mungkin diterapkan pada pembelajaran berbasis digitalisasi dengan menggunakan DVD-RW sehingga siswa dapat dengan mudah mengakses materi pembelajaran yang telah disediakan khususnya di daerah perbatasan. Kesimpulan: Analisis SWOT ini juga bertujuan untuk menutupi kekurangan dalam pembelajaran e-learning yang membutuhkan sistem online untuk melakukannya di setiap wilayah di Indonesia selama pandemi COVID-19.

Kata kunci

Digitisation, e-learning, border, analisis SWOT

Abstract

Kepulauan Riau is a province in Indonesia that borders directly with neighboring countries, so there is a need for optimization of the world of education during the COVID-19 pandemic. The learning system in Indonesia finally uses e-learning which is a learning facility with an online system. Objective: This emergency condition makes the Riau Islands province, especially the Education Office, have to take strategic steps in online learning systems to be more effective and efficient because of the Islands. Riau is included in the 3 T area (Disadvantaged, Frontier, Disadvantaged). This has an impact on access to internet networks

that are difficult to access in border areas. This research focuses on digitalization learning using Digital Versatile Disk - Read Write (DVD-RW) using SWOT analysis. Methods: research using secondary data and analysis using logical modeling techniques as another form of pattern matching to analyze forecasting in SWOT analysis. Findings: The results of the analysis show that the SWOT matrix is highly likely to be applied to digitalization-based learning using DVD-RW so that students can easily access the learning materials that have been provided especially in border areas. Conclusion: This SWOT analysis also aims to cover the shortcomings in e-learning learning which requires the online system to do so in every region in Indonesia during the COVID-19 pandemic.

Keyword

Digitization, e-learning, border, SWOT analysis.

Introduction

Kepulauan Riau is one affected by the pandemic COVID-19 thus entering the stage of the New Normal in accordance with the directives of the central government to be aware of any possible case, this is because Kepulauan Riau province which borders with neighboring countries are very sensitive to the spread COVID-19 (Setiawan & Mahadiansar, 2020). Kepulauan Riau Government through the Task Force for the Acceleration of Handling COVID-19 explained that as many as 6 regencies/cities met the requirements to implement the New Normal which is a COVID-19-free green zone such as Bintan, Tanjungpinang, Anambas Islands and Natuna. The conditions of the 6 regions are relatively under control so that it is feasible to implement the New Normal. However, to anticipate the spread of COVID-19, Tanjungpinang and Bintan do not use the term New Normal but the same policy applies to community activities in carrying out health protocols (Panama, 2020).

In principle, new terms that can adapt to life patterns are in the form of transformation to organize new lives and behaviors. In the development of the industrial revolution 4.0, people are required to keep up with existing technological developments, in other words the need to develop human resources and insights in the use of digitalization-based technology. In the application of the new normal, in various regions in Indonesia, one of the right steps in this situation is to utilize network technology and information technology for the development of learning systems in schools or colleges, namely by using a bold learning model (online) or an online learning model (OLM) between school or college (Dewi, 2020; Melania, 2020; Sadikin & Hamidah, 2020).



Figure 1 Indonesia's 3T Region on Mapping Communication Access

Source: indonesiabaik.id

The current problem can be overcome if there is strategic action that must be done in handling it, according to the picture above shows that Kepulauan Riau Province is very small compared to other provinces in mapping communication access in the 3T region after North Sulawesi Province. In accordance with these conditions, the current condition of technology and information in Kepulauan Riau Province is very worrying, one of which is the difficulty in accessing the availability of internet networks in the 3 T category area, (Disadvantaged, Foremost, Disadvantaged) in several districts in Indonesia that are not yet optimal, such as Natuna (Cahyo, 2018; Kusumawardhani, 2020). The Provincial Education Office as a stakeholder responsible for the education sector is able to provide good public services to the next generation (students/students) with the new normal era based on the 4.0 industrial revolution which is technology-based.

By using technology facilities that can be accessed, such as the zoom meeting application, google meet, and video conference that support these needs and activities, but in reality the use is not effective in education. A report from the Indonesian Child Protection Commission (KPAI) reveals the obstacles to distance learning (PJJ) experienced by teachers, students, and parents, including students who feel that they are burdened with higher tasks, while parents complain about access to internet quotas and other supporting facilities considering Indonesia's territory is quite extensive (Abidin et al., 2020; Listyarti, 2020). Even though Kepulauan Riau Provincial government has made efforts to provide telecommunication network providers to free internet quota to support online learning in the midst of the COVID-19 pandemic (Ogen, 2020).

It is certain that internet access is difficult because it is in a border area, in an emergency situation allows the Education Office to make learning programs using technology. using a DVD-RW which is in the form of learning materials from Elementary School (SD) to Senior High School (SMA) in order to adapt the learning methods during the COVID-19 pandemic. After describing the problems and conditions above, the researchers conducted an analysis using SWOT (Strengths, Weaknesses, Opportunities, Threats) as a tool to analyze the impact of COVID 19 in both developed and developing countries (Li, 2020; Longhurst et al., 2020; Wang & Wang, 2020), but the difference in this research is that SWOT is used in the concept of digitalization-based learning using the Indonesian border area in the Kepulauan Riau Province during the COVID-19 pandemic.

Academicians in understanding the concept of SWOT analysis (Strengths, Weaknesses, Opportunities, Threats), one researcher realized that it was difficult to trace the origin of the SWOT acronym (King, 2004). The SWOT theory according to (Wheelen & Hunger, 2012, p. 16) SWOT is a step to be able to identify internal and external factors that influence the achievement of organizational goals. The external environment contains variables of opportunities and threats that are outside the organization and are not things that can be controlled by the leadership of the organization in the near term. The organization's internal environment consists of the strengths and weaknesses variables that are within the organization itself and are usually not under the control of the organizational leadership in the short term. The SWOT analysis method is the right tool to find problems from 4 (four) different sides, where the application is that strengths are able to take advantage of an existing opportunity; how to overcome weaknesses that prevent profit, strengths to be able to face existing threats and how to overcome weaknesses that can make threats become real or create a new threat.

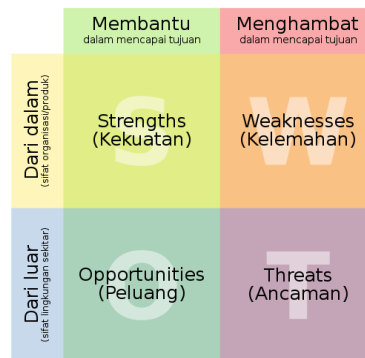


Figure 2 Matrix diagram in the analysis Strengths, Weaknesses, Opportunities, Threats
Source: (Humphrey, 1960)

The SWOT matrix is a very important tool in helping organizational leaders in developing four strategies: the Strengths-Opportunities strategy, the Weaknesses-Opportunities strategy, the Strengths-Threats strategy, and the Weaknesses-Threats strategy (Wehrich, 1982). Then to match internal and external factors is the most difficult thing in making a SWOT matrix because it requires good judgment. In the SWOT analysis, this paper also adds Dunn's theory of forecasting to strengthen the descriptions of S, W, O and T (David, 2011, p. 178). Forecasting theory provides a prospective vision of policy outcomes, as well as enlarges the capacity for understanding, control, and community guidance. Forecasting focuses based on expert judgment, on historical traces, or on economic models that meet the needs of the times technically. but prone to errors based on wrong or unreasonable assumptions, depending on the analyst who makes forecasting. Forecasting also has an effect that the institutional incentive system does not detect; and on the complexities of policy issues in areas ranging from health, welfare and education to science, technology and the environment (Dunn, 2018: 119).

Forecasting has principles on the form, function and performance of forecasting in policy analysis which emphasizes a series of criteria for assessing the strengths and limitations of various forecasting tools. Forecasting can also compare and differentiate in its analysis such as extrapolative, theoretical, assessment and its role in producing information about expected policy results. Forecasting in policy analysis is a set of procedures to make information about the state of society prepared for the future based on current and previous information by focusing on a phenomenon. Three main principles that need to be considered, namely:

Extrapolation is an estimate based on the projection of current trends and historical future needs. Projections often raise questions about the validity of conclusions based on information produced by extrapolating past to future trends, for example, through time-to-time series analysis. Projections are sometimes complemented by arguments from regional or central authorities. for example the opinion of experts makes projections. Prediction is forecasting based on a theoretical explanation of why past trends have an impact in the future. Predictions can also be supplemented with estimates based on the authority of the experts. Expert assessment is forecasting based on professional experience and the authority of people who are considered to have special abilities to predict future conditions in society. Informal assessment is achieved through a process of intuition, which tends to happen quickly, automatically, and easily felt (Kahneman, 2003).

Method

This research is a qualitative research with a case study approach. states that qualitative research is methods to explore and understand meanings that come from social or humanitarian problems. Case study research with an exploratory approach. It also explains more details in describing a phenomenon (Creswell, 2014). Data analysis using a logical model is developed collaboratively, that is, when researchers and informants who implement the program being studied work together to define a logical model (Nesman et al., 2007).

The use of a logical model consists of matching empirically observed events with theoretically predicted events. Conceptually, researchers can consider logical modeling techniques as another form of pattern matching. To be at the forefront of developing logical models as an analytical technique that first promoted the idea of a logical model, tracing events when public program interventions were intended to produce a specific outcome or sequence of results (Wholey, 1979).

Result and Discussion

SWOT Analysis of The Use of Digitization in Border Areas

The SWOT analysis on improving the education system focuses on Senior High Schools (SMA) in the 3T (Frontier, Disadvantaged, Underdeveloped) area which is directly shaded



Kepulauan Riau provincial government in order to provide breakthroughs in educational services. The breakthrough applied was the learning of students and teachers using the Digital Versatile Disk - Read Write or known as DVD-RW. The following will be discussed in detail regarding the study of strengths, weaknesses, opportunities (opportunities), and threats (threats) which can be explained as follows:

1. Strength Analysis

This analysis highlights elements of strength possessed by organizations that can have a positive influence. The organization can analyze what are the advantages of a program, the advantages of the program, and the uniqueness of the program that differentiates it from other companies. Student learning for material will be stored in a DVD-RW which will be approved for implementation, so the strength of the researcher's analysis is the ease with which students repeat the subject matter using DVD-RW; This means that this power is expected to elementary to high school students throughout the Kepulauan Riau province that DVD-RW can be used again by playing back on a DVD Player.



Figure 3 One Example of A DVD-RW Disc that Can be Used

Source: Tokopedia, 2020

Furthermore, the price is cheap and easy to get; This means that DVD-RW is not rare because of course electronic shops sell DVD-RWs with prices starting at 6,000 (IDR), - to 13,000, (IDR) - thousands per chip. This makes researchers believe that the government can afford an affordable price and can easily be duplicated in large quantities some of the materials that are needed, from elementary school to senior high school (SMA). Furthermore, the digitalization learning method using DVD-RW can be reproduced on the contents according to the school's needs so that the DVD-RW is carried out by teachers in remote border areas so that the Kepulauan Riau Provincial Education Office can adjust to areas in need.

2. *Weaknesses Analysis*

Every program has its weaknesses. This can have a negative effect on the program to be implemented. Therefore the Education Office needs to know what weaknesses the program has so that it can be used as material for improvement. To find out what weaknesses the program has, the Education Office that proposes a policy on the program usually knows better what the proposed program is lacking. In addition, it is able to analyze what will happen in the future. The weaknesses of DVD-RW digitization learning can be described, including that DVD-RW is still considered ancient digitization; this means that technological developments will return to ancient digitization which are considered to have limited internet network access in the 3T area in the Kepulauan Riau Province.

The return of technology in the past has made the 3T region not yet receiving special attention by the central government. Furthermore, students lack supporting facilities (TV and DVD Player); Learning to digitize DVD-RW in its application in the 3T area, of course some parents do not have a TV and DVD player because some of the 3T region's people have an economy below average. Furthermore, the education office in the 3T region will have minimal quality of supporting facilities and infrastructure.

3. *Opportunities Analysis*

External opportunity analysis is very important for a program because this will determine the development of the program in the future. In this case, the Kepulauan Riau Provincial Education Office must see what opportunities exist and what developments are in line with companies that can help companies develop more. This becomes a challenge for stakeholders to try to be able to survive and be accepted by the community for the program. Usually this opportunity occurs from external factors. The opportunities that will occur in the implementation of the DVD-RW digitalization learning program include Learning Renewal Innovations in the Education Sector; innovation in learning renewal in the new normal era in education is very much needed.

This is because students in the 3T area cannot use technology optimally, so with the DVD-RW digitization learning, it can be used in emergency situations. Furthermore, stakeholder participation in digitization; the participation of stakeholders is able to



provide good cooperation through Kepulauan Riau Provincial Education Office so that the opportunities for digitizing DVD-RW digitalization can be implemented optimally.

4. *Threats Analysis*

External threat analysis includes what things might be faced by the DVD-RW digitalization learning program that could hinder the development of stakeholders in education. Kepulauan Riau Provincial Education Office looks at what threats exist in order to determine whether the program can survive or not. Analysis of threats that occur, including a number of individuals digitizing as a business field; meaning that it is not an open secret when a regional government policy program has the potential to have an interest beyond the performance of the appointed stakeholder. Then the risk of damage and defects in distribution to 3T areas; The 3T area in question focuses on Anambas and Natuna districts, the threat of damage and distribution defects could potentially cause damage because the conditions Kepulauan Riau region in distribution are more difficult to maintain in good condition.

DVD-RW Digitalization Learning Strategy in the SWOT Matrix

This strategy is based on a research analysis in accordance with the conditions during the COVID-19 pandemic. This strategy focuses on harnessing all strengths in the success of the DVD-RW digitalization learning program in the 3T area. Strategy Strengths - Opportunities (SO) in the form of increased student participation in digitalization learning; this means that this strategy has become the main target that students have the obligation to take part in digitization learning in the 3T area. then increased concern in the field of education; This means that this target can have an impact on all elements in Kepulauan Riau so that their involvement and participation in maintaining education can be felt by the next generation.

Weaknesses Strategy - Opportunities (WO) on the Addition of Quality Education for facilities and infrastructure; This strategy focuses on developing human resources for both teachers and stakeholders involved in the digitalization learning program. Then Establish cooperation (public-private); This strategy is needed so that the efficiency of public budgeting and government performance can be properly assisted. The Strengths - Threats (ST) strategy focuses on increasing the media as public openness; The media strategy is useful for gaining the trust of the Riau Island community to get positive assumptions so that the implementation of the program can run well. There needs to be actors to oversee the DVD-RW digitalization

learning program; a monitoring strategy in order to maintain digitalization learning so that obstacles that will occur can be overcome by a team formed by the local government.

Table 1 SWOT Matrix

Internal	Strengths (S) Ease of Students Repeating Learning Material Cheap and easy to get Easy to duplicate in large quantities	Weaknesses (W) DVD-R is still considered ancient digitization Students lack supporting facilities (TV and DVD Player)
External	S-O strategy Increase Student Participation in Digitalization Learning (S1, O1) Increasing High Concern for Education (S1, O2)	W-O Strategy Improving Education Facilities and Infrastructure and Quality (W2, O2) Establish cooperation (Public-Private) (W1, W2, O1, O2)
	S-T strategy The role of media as public information disclosure (S1, S2, S3, T1, T2) Supervision of the DVD-RW digitalization learning program (S2, T1)	W-T strategy Strengthening Internal External Control (W1, T1, W2, T2)
	Opportunities (O) Learning Renewal Innovations in the Field of Education Stakeholder participation in digitization	
	Threats (T) A number of individuals digitizing themselves as a business field Risk of Damage and Defects Distribution to 3T areas	

Source: Researcher Processed Data 2021

Weaknesses - Threats (WT) strategy with the need for the Latest Innovations digitalization learning program; This strategy requires the latest innovation in digitalization learning programs even though they use ancient methods, Kepulauan Riau Provincial Education Office can involve a team of experts in the field of technology so that innovation is a form of developing revolution 4.0. the most important thing is the form of cooperation with legal institutions; This strategy is an effort to anticipate gaps in the preparation and implementation of the digitalization learning program, although there is already a supervisory team that has been previously mentioned, the role of legal institutions is also very important to be involved.

Alternative Strategies in the Digitalization Learning Program

After analyzing using the SWOT analysis method, the strategy in the form of alternatives or options from several further policies is through tools that must be used as an effort to make the digitalization program of high school student learning through DVD-RW successful. alternative strategic indicators in formulating to anticipate the policy so that it can be accepted by students and teachers so as not to cause conflict during the new normal. The alternative strategic indicators include:



1. Strengthening media promotion; meaning that the role of the government is able to socialize the program with existing technology, such as social media which is the responsibility of several stakeholders as a benchmark and community consideration for the program so that the Provincial Education Office is able to provide input on the accompaniment of positive opinions and facts related to the program. implemented.
2. The role of stakeholders in technical preparation in the field: meaning that stakeholders are able to coordinate well by Kepulauan Riau provincial education office so that in implementing the program in accordance with emergency conditions that must comply with rules and regulations that must be prepared in real time so as not to blame legal norms in the region nor the center.
3. Community empowerment; The community in question is figures, ulama, NGO organizations, academics and the private sector so that they can work together well in Kepulauan Riau in increasing the participation of teachers and students as actors in the learning digitization program using DVD-RW. This is very important so that the level of public trust in the program can run as planned according to the needs of the 3T region.
4. Stakeholders involved are also required to report the planning, implementation and evaluation of the DVD-RW digitalization learning program for SD to SMA to Kepulauan Riau Provincial Education Office so that the program is verified with the capacity in its field as a consideration for Kepulauan Riau Provincial Education Office to make efficient and effective decisions in selecting the most needed stakeholders.

Conclusion

Basically, digitalization learning using DVD-RW is a series that must be implemented by the 3T area in Kepulauan Riau . In perspective, the researcher wants to say that in the industrial revolution 4.0, you must adjust the conditions that exist in the application of the new normal. Kepulauan Riau Provincial Education Office is able to activate its function as a form of policy breakthrough that has been planned and implemented in accordance with the wishes of the community to be part of the new hopes for the COVID-19 pandemic in the field of education in the Indonesian border area. Of course, coordination and communication between stakeholders who are directly related to the Kepulauan Riau Provincial Education Office are obliged to maintain harmony so that the wheels of government can carry out various

applicable innovations.

In a very emergency situation, all stakeholders are able to provide input on policies decided by Kepulauan Riau Provincial Education Office and in dealing with problems during the COVID-19 pandemic. Then the strategy on ST, WT, SO and WO as a tool for formulating policies whose analysis is clearly broken down so that all possibilities occur can be accounted for by Kepulauan Riau Provincial Education Office. In this case, it means having to prepare everything that might happen in the present and future in order to save the nation's generation in areas that cannot access the internet network so that the DVD-RW users are very useful for the border areas of Kepulauan Riau in particular.

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