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ORIGINAL

The Effectiveness Of The Distance Learning Policy In The Riau Islands Province-Indonesia

La Eficacia De La Política De Educación A Distancia En La Provincia De Las Islas Riau-Indonesia

Diah Amalia[1], Febrina Wulandari[2], Alfonsa Dian Sumarna[2], Arif Darmawan[2]

[1]Batam State Polytechnic, Department Accounting. Batam, Indonesia.
[2]Batam State Polytechnic, Department Managerial Accounting. Batam, Indonesia.

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Corresponding author: Diah Amalia

ABSTRACT

Introduction: this study investigated the effectiveness of distance learning in the Riau Islands, employing a mixed-methods approach with a sequential exploratory design.
Method: the study was conducted in two phases: the first utilized a quantitative approach, and the second applied a qualitative method. The population consisted of tutors and students from the Open University of Batam (Indonesian: *Universitas Terbuka Batam*). Data collection methods included observations, surveys, interviews, and document analysis.
Results: the findings indicated that, based on the student survey, the effectiveness of distance learning was 74,68 %, categorized as effective. While the effectiveness indicators generally fell within the "effective" range, the implementation of distance learning in the Riau Islands had not yet reached the optimal percentage for the "effective" category. Several challenges impacted its effectiveness, including a low culture of independent learning among students, limited responsiveness of tutors outside class hours, and technical issues such as poor network connectivity and digital literacy barriers. Nonetheless, several supporting factors contributed to the effectiveness of distance learning, such as the innovative nature of the learning system, cost efficiency, and the flexibility that enabled students to engage in learning anytime and anywhere. Using the Context, Input, Process, and Product (CIPP) Model, the study framework focused on designing tutorial activities, tutorial activity units, the question bank, and assessment rubrics.
Conclusions: the variable indicators fall within the "effective" category, the implementation of distance learning for students in the Riau Islands has not yet reached the maximum percentage range for the practical category.

Keywords: CIPP Model; Effectiveness of Distance Learning Policies; Distance Learning in Accounting Courses.

RESUMEN

Introducción: este estudio investigó la efectividad del aprendizaje a distancia en las Islas Riau, empleando un enfoque de métodos mixtos con un diseño exploratorio secuencial.
Método: el estudio se llevó a cabo en dos fases: la primera utilizó un enfoque cuantitativo y la segunda aplicó un método cualitativo. La población estuvo compuesta por tutores y estudiantes de la Universidad Abierta de Batam (en indonesio: Universitas Terbuka Batam). Los métodos de recolección de datos incluyeron observaciones, encuestas, entrevistas y análisis de documentos.
Resultados: los hallazgos indicaron que, según la encuesta a los estudiantes, la efectividad del aprendizaje a distancia fue del 74,68 %, categorizada como efectiva. Si bien los indicadores de efectividad generalmente se

ubicaron dentro del rango "efectivo", la implementación del aprendizaje a distancia en las Islas Riau aún no había alcanzado el porcentaje óptimo para la categoría "efectivo". Varios desafíos afectaron su efectividad, incluida una baja cultura de aprendizaje independiente entre los estudiantes, una capacidad de respuesta limitada de los tutores fuera del horario de clase y problemas técnicos como una mala conectividad de red y barreras de alfabetización digital. No obstante, varios factores de apoyo contribuyeron a la eficacia del aprendizaje a distancia, como la naturaleza innovadora del sistema de aprendizaje, la rentabilidad y la flexibilidad que permitió a los estudiantes participar en el aprendizaje en cualquier momento y en cualquier lugar. Utilizando el modelo de contexto, insumos, procesos y productos (CIPP), el marco de estudio se centró en el diseño de actividades tutoriales, unidades de actividades tutoriales, el banco de preguntas y las rúbricas de evaluación.
Conclusiones: los indicadores variables caen dentro de la categoría "eficaz", la implementación del aprendizaje a distancia para los estudiantes en las Islas Riau aún no ha alcanzado el rango porcentual máximo para la categoría práctica.

Palabras clave: Modelo CIPP; Efectividad de las Políticas de Educación a Distancia; Educación a Distancia en Cursos de Contabilidad.

INTRODUCTION

Education is a structured process to develop an individual's character, competencies, and skills. It encompasses institutionalizing the learning process facilitated by educators within formal or non-formal institutions.[1] In Indonesia's geography and socio-economic conditions, distance learning has emerged as a viable solution to promote educational equity. The program ensures that learning remains accessible, as education is a fundamental human right that should be pursued throughout one's life.

Education is not limited to merely transmitting information or knowledge; it is fundamentally about creating an environment that enables learners to engage actively in learning. The core objective of education is for learners to learn and construct their knowledge. It is achieved through active engagement, where learners interact and communicate with others, reflecting on the knowledge gained from each learning activity. This process goes beyond instructors' simple content delivery and emphasizes cultivating learners' creativity and critical thinking. Learning is inherently reciprocal, involving continuous communication between instructors and learners.

Education is increasingly focused on broad-based learning resources, integrating several technological tools as supplementary aids to enhance the learning experience. These tools accelerate knowledge acquisition and expand the scope of information accessible to learners. Information and communication technology (ICT)-based learning has revolutionized traditional education by shifting from conventional face-to-face instruction to a media-supported model, integrating computers and the internet, subsequently giving rise to e-learning.

This digital transformation encourages continuous integration and improvement of management in order to adapt to new developing technologies.[2] This media-based learning approach allows learners to select educational materials aligned with their interests, fostering a more enjoyable, engaging, motivating, and stimulating learning experience. In general, students seek to enhance their knowledge without being hindered by financial constraints a goal that can be achieved through distance learning.

This mode of education provides an effective solution for individuals who wish to continue their studies but face time limitations due to professional commitments. Distance learning allows for greater flexibility by removing the constraints of fixed schedules. Furthermore, it provides students access to new knowledge that may not be readily available in traditional print media, such as textbooks commonly used in conventional learning methods emphasizing reading as the primary mode of instruction.

Batam, located on one of Indonesia's strategically positioned islands, has a robust industrial area supported by 13 optical fiber routes for data transmission and 30 industrial zones. State Polytechnic of Batam is the sole vocational higher education institution within the Batam, Bintan, and Karimun Free Trade and Port Area in Riau Islands Province. Beyond its location in a key national economic growth center, the polytechnic is situated in Indonesia's frontier region, directly bordering international waters.

The strategic plan for 2020-2024 of this institution outlines key policy directions and development strategies, focusing on expanding learning opportunities within industrial zones and the workplace environments of stakeholders. This approach aims to enhance access to education for the industrial workforce. Key initiatives include the implementation of flexible learning systems and schedules, as well as the promotion of collaborative courses designed to address the specific competency requirements of several industries. Emphasizes that vocational education, as a provider of skilled human resources, must be responsive to these evolving demands. In this context, vocational education that integrates distance learning methodologies offers an effective solution

for meeting Batam's growing need for a skilled workforce.

Based on the institution's strategic plan, the researchers are prompted to investigate the distance learning process implemented in the Riau Islands. This study aligns with the 2023 roadmap of the Center of Excellence (CoX) in Digital Business and Accounting, which prioritizes the development of literature reviews and feasibility studies in educational technology and pedagogical practices. The research specifically examines the implementation of distance learning, with the anticipated outcome being a set of policy recommendations that can guide the institution in shaping the future of vocational education.

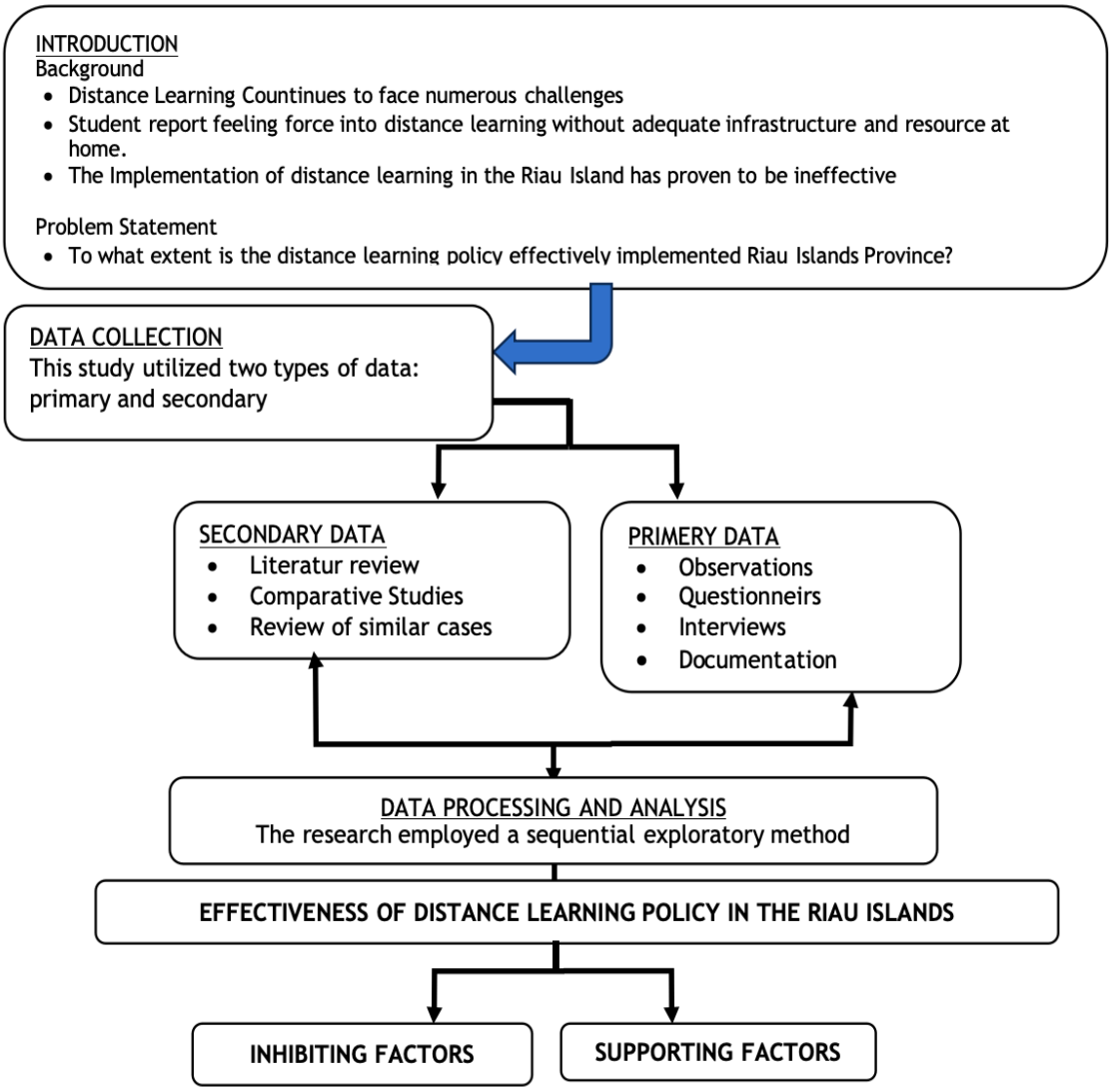

Figure 1. Conceptual Framework

METHOD

This study adopted a mixed-method research approach, employing a sequential exploratory design. The first phase utilized quantitative methods, while the second incorporated qualitative methods. The quantitative phase was designed to gather measurable data that could be descriptive, comparative, and structural. The qualitative phase, in turn, complemented and enriched the quantitative data, providing a more comprehensive and accurate picture of the research topic.[3]

This phase also facilitated the discovery of new insights, as qualitative methods are exploratory, often revealing aspects not captured by quantitative analysis. The research was conducted in the Riau Islands, focusing on the effectiveness of distance learning policies at the Open University of Batam. Specifically, the study evaluated the learning process between lecturers and students. The research population comprised lecturers and students. Given that the population size was not predetermined, an accidental sampling technique was applied within the Riau Islands region.

The research instruments developed for this study included observation, questionnaires, interviews, and documentation. Structured observations were systematically planned to specify what would be observed, along

with the timing and location of the observations. Surveys were administered through questionnaires employing a Likert scale. The interview instrument was designed to collect qualitative data, targeting lecturers and students. The interview schedule—consisting of a set list of questions—was employed during the interviews. The interviews followed a semi-structured format. Additionally, the documentation technique involved using a checklist to record predetermined variables.

Data Analysis

Data analysis simplifies the collected data, transforming it into a comprehensible and interpretable format. The research employed several techniques for data analysis, including validity and reliability testing and data processing. The study was conducted using descriptive statistical methods for the quantitative data. The researchers followed the steps outlined below.

Verification

The primary goal of verification was to (1) ensure the completeness of questionnaire responses, (2) evaluate the logical consistency of the answers, and (3) assess the consistency of responses across different questions. The researchers examined the completeness of the questionnaires and contacted respondents to see if discrepancies were detected to refine the answers and ensure the accuracy of the data.

Tabulation

Tabulation involved organizing the data by transferring the questionnaire responses into tables. Once the data was processed and validated, the researchers performed descriptive analysis, presenting the results in percentage form.

Analysis

The data analysis process involved interpreting the processed data in an easily understandable manner. The questionnaire, which served as the measurement instrument, utilized a Likert scale.

Table 1. Questionnaire Response Description

No.	Responses	Score	
		Positive Statement	Negative Statement
1	Always (A)	5	1
2	Frequently (F)	4	2
3	Occasionally (O)	3	3
4	Rarely (R)	2	4
5	Never (N)	1	5

The steps involved in performing descriptive analysis were as follows.

1. The frequency of responses from the completed questionnaires was calculated.
2. Once the frequencies were obtained, the percentage of each response was computed using the formula below.

$$P=f/N\times100\ \%$$

Where:

P = Percentage of responses
f = Frequency of respondent answers
N = Total number of responses

Concluding

This section provided the conclusion based on the analysis and interpretation of the data. After calculating the average score, it was then interpreted using the method outlined in the following tables.

Table 2. Interpretation of Percentages

No.	Intervals	Category
1	0–20 %	Very Ineffective
2	21–40 %	Ineffective

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3	41–60 %	Moderately Effective
4	61–80 %	Effective
5	81–100 %	Very Effective

Table 3. Interpretation of Learning Outcomes

No.	Intervals	Category
1	85–100	Very High
2	70–84	High
3	60–69	Moderate
4	51–59	Low
5	0–50	Very Low

Variable Measurement

A matrix was developed to detail the variables to be examined and analyzed, elaborated in the operationalization of variables as presented in table 4.

Table 4. Operationalization Matrix for Variables

Variable	Indicator	Sub-indicator	Measurement Scale
		Questionnaire for lecturers (24 items)	
Effectiveness of Distance Learning Policy in the Riau Islands	Establishing relationships and interactions with students	1) Presence in the online learning environment 2) Willingness to engage in online interactions with students 3) Creation of a supportive, warm, friendly, and conducive learning atmosphere 4) Ability and desire to design interactive content 5) Clear communication of learning expectations and goals 6) Proficiency in writing clearly and purposefully	Ordinal
	Encouraging active individual learning	1) Ability to design learning activities that engage individuals 2) Capability to develop interactive learning experiences 3) Utilization of students' prior knowledge and experiences 4) Willingness to innovate and adapt teaching methods 5) Exploration of student learning characteristics and styles	Ordinal
	Fostering cooperation and reciprocal relationships among students	1) Ability to design and facilitate discussions effectively 2) Encouragement of student participation in discussions 3) Promoting problem-solving skills among students 4) Willingness to lead and facilitate rather than simply teach 5) Creation of opportunities for students to form collaborative study groups	Ordinal
	Providing prompt motivation to students	1) Timely and accurate feedback to students 2) Evaluation of student performance throughout the learning process and upon completion 3) Willingness and ability to review and adjust teaching strategies based on student feedback and learning outcomes 4) Positive attitudes towards the use of technology in education and the learning process	Ordinal
	E-skills and commitment	1) Competence in using required technologies for teaching 2) Willingness to collaborate with instructional designers and technology experts in preparing diverse learning content 3) Ability to monitor student engagement and progress through technological tools 4) Prompt and effective responses to student e-mails	Ordinal
		Questionnaire for students (33 items)	
	Building relationships	1) Willingness to establish relationships and engage in interactions with lecturers	

		2) Willingness to form online and offline connections with fellow students	Ordinal
		3) Ability to express opinions and ask questions effectively	
		4) Ability to articulate views in writing	
		5) Proficiency in utilizing online learning technologies	
		6) Willingness to engage with content actively	
		7) Ability to interact effectively with content	
	Ability to engage in flexible learning	1) Ability to access the learning environment at any time and from any location	Ordinal
		2) Capability to engage in active learning at appropriate times	
		3) Confidence in learning across various contexts and opportunities	
	Responsiveness and active participation	1) Willingness to participate in in-depth learning activities	Ordinal
		2) Readiness to actively engage in learning activities	
		3) Capability to participate actively in the learning process	
		4) Taking responsibility for self-directed learning	
		5) Demonstrating problem-solving skills	
	Motivation and feedback	1) Positive attitudes toward education and distance learning	Ordinal
		2) Strong motivation to learn	
		3) Achievement of educational goals	
		4) Comfort with asking questions when necessary	
		5) Seeking guidance from instructors	
		6) Engaging in discussions with peers	
		7) Ability to view instructors as facilitators of learning	
	Group activities	1) Preference for collaborative group or teamwork	Ordinal
		2) Ability to effectively participate in virtual group work	
	Learning activities	1) Active learning in distance education	Ordinal
		2) Interactivity in distance learning	
		3) Flexibility in distance learning	
		4) Satisfaction with the learning activities in a distance education setting	
		5) Satisfaction with the use of media/applications in distance learning	
	Evaluation	1) Initial evaluation during distance learning sessions	Ordinal
		2) Formative evaluation and direct feedback throughout the distance learning process	
		3) Summative evaluation after the distance learning experience	
		4) Satisfaction with the evaluation outcomes	

Source: Farajollahi, M. & Zarifsanaee, N.[4]

RESULTS AND DISCUSSION

This section presents the findings and discussions based on the research process, addressing the research questions. Table 5 summarizes the effectiveness of distance learning as measured by the student questionnaire.

Table 5. Percentage of Distance Learning Effectiveness for Students in the Riau Islands

Variable	Indicator	%	Category
Effectiveness of Distance Learning Policy in the Riau Islands	Questionnaire for students		
	Building relationships	73,62	Effective
	Ability to engage in flexible learning	73,76	Effective
	Responsiveness and active participation	75,89	Effective
	Motivation and feedback	76,17	Effective
	Group activities	75,96	Effective
	Learning activities	77,57	Effective
	Evaluation	69,79	Effective
Overall		74,68	Effective

Figure 2 illustrates the results obtained from interviews with tutors regarding academic performance in

accounting.

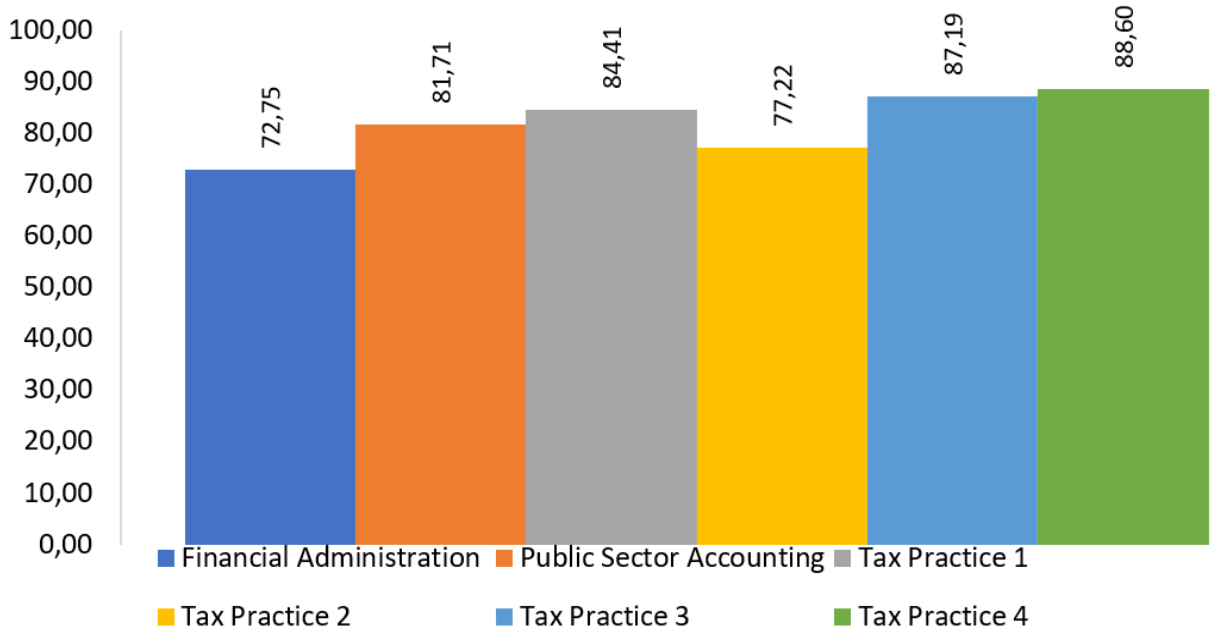

Figure 2. Average Grade Distribution for Accounting Courses

This study aims to evaluate the effectiveness of distance learning in accounting courses. Based on the research findings and discussion, it can be concluded that the effectiveness of distance learning, as indicated by the student questionnaire, achieved a percentage of 74,68 %, categorizing it as effective. Although all seven variable indicators were classified as effective, students identified several challenges and barriers in their participation in distance learning. The intensity of student and tutor interactions in distance learning for accounting courses has diminished. Student respondents highlighted it during interviews, where three out of 10 students reported difficulty reaching their tutors outside class hours for discussions. This issue stemmed from tutors also working at other institutions. Active interaction between students and tutors was only experienced during scheduled class sessions. As a result, students felt they had limited opportunities to engage with their tutors outside of these sessions. Consequently, students reported challenges in verbal communication and feeling awkward and constrained when speaking with others in the learning environment.

The ability to implement flexible learning in accounting courses, with a percentage of 73,76 %, was still categorized as "effective." It indicates that students perceived a certain level of flexibility in engaging with distance learning for accounting courses. Distance learning in accounting is supported by information technology. When students opt for distance learning, they are expected to be well-prepared, including having the necessary technological tools, being ready for self-directed learning, and possessing other competencies that contribute to achieving learning objectives. Responsiveness and active participation, with a percentage of 75,89 %, fall within the "effective" category. The students demonstrated effective responsiveness and active participation. It can be attributed to the fact that the responsiveness and involvement of students at the Open University of Batam are significantly influenced by the media used for learning. Therefore, it is essential to design learning experiences that actively engage students. Digital learning is a combination of delivering content through technology no matter the geographic location, increasing accessibility and breaching the equality gap in education.[5] Digital transformation in universities can be the accumulation of all changes and approaches done by the universities to be able to apply technology optimally. The process includes various strategic planning, building trust, elaborating ideas/innovations, reinforcing all parties involved, as well as developing knowledge, collaboration, and organizational action.[6]

Motivation and feedback, with a percentage of 76,17 %, also fall within the "effective" category. It suggests that students' ability to self-motivate or receive feedback is functioning effectively. The results indicate that, while motivation and feedback processes are still effective, they do not match the level of effectiveness observed in face-to-face interactions. 75,96 % of group activities are categorized as "effective." Group activities serve as a key indicator of the effectiveness of distance learning. These activities are crucial to learning, providing opportunities for deeper comprehension and encouraging active student engagement. However, interviews revealed that many students faced challenges organizing group activities due to difficulties coordinating schedules outside class hours. The finding were in accordance with Zaheer's finding which found that Results of the study reveal that the time constraints, official restrictions, irregular contacts and technology are the

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main issues faced by supervisors. Whereas student and supervisor interaction, diversity, perceptions, virtual communities and academic collaboration are the biggest challenges for the supervisors in distance learning. Lastly, it is found that students' attitude and supervisors' mindset are the key success factors in distance research supervision.[7,8,9,10]

Learning activities, with a percentage of 77,57 %, are also categorized as "effective." These activities encompass the various tasks students engage in during distance learning, and they serve to gauge students' satisfaction with the distance learning experience, particularly in the context of accounting courses. Effective online learning is an online teaching and learning process that increases the number of research publications, prioritizes certain principles, and is designed from a prototype, theory, ethics as well as assessments that are based on the quality teaching and learning design.[11] Evaluation, with a percentage of 69,79 %, falls within the "effective" category. The evaluation processes carried out by students were deemed adequate, as the evaluations were successfully implemented. It highlights the importance of continuous assessment throughout the learning process as a component of effective teaching and learning.

Although the variable indicators fall within the "effective" category, the implementation of distance learning for students in the Riau Islands has not yet reached the maximum percentage range for the practical category. In practice, several challenges persist for students, including the following: (a) A low culture of self-directed learning among students in the Riau Islands; (b) Tutors' limited responsiveness outside of class hours; (c) Technical issues, including network connectivity and digital literacy. However, the program organizers have taken steps to facilitate the smooth operation of distance learning and ensure the learning objectives are met. Key supporting factors include as follows. (a) The innovative aspects of the learning system, such as virtual libraries, instructional videos provided through MS Teams links, learning modules sent from the university to students' homes, the learning machine system, and the Open University practice website; (b) Cost efficiency; (c) Flexible learning opportunities enable students to study at any time and location. The study by Kumalasari reveals that factors affecting distance learning in faculties include the availability of learning equipment, internet connection speed and stability, and a conducive learning environment. Problems with learning devices, unstable internet connections, and a lack of support from lecturers also contribute to difficulties in distance learning.[11]

Technology creates various challenges to humans in many aspects of life, including education. The finding were in accordance with Zuhairi's finding which found that UT has proved to be effective in large scale operations providing services to the citizens within the national boundaries and need to expand further to accommodate more citizens living globally. Adapting swiftly to the new fashions of teaching and learning in digital age to reach larger number of students will be one of the major challenges for institution.[12,13,14] The instructional design process involves the identification the learners' needs, definition of instructional objectives, design of assessment, and design teaching and learning activities to ensure quality instruction. Distance students are prepared to develop independent learning capability, motivate themselves to learn and engage themselves in learning activities that make them persistent and successful in learning.[15,16,17,18,19] Walberg's educational productive theory suggests that a person's learning happiness is influenced by personal attributes, school environments, family and community environments, and peer learning environments.[20]

The finding different people must lead technological innovations, preserving the humanitarian aspect of education and informal social learning. Online educators should engage students in communication, interaction, collaboration, and cooperation, integrating inquiry, discovery, and problem-solving approaches. A blended approach, combining synchronous and asynchronous learning, and live face-to-face sessions is recommended.[21,22] Most of the students preferred to read printed self learning materials than digitally.[23]

CONCLUSIONS

This highlights the effectiveness of distance learning policies, inhibiting factors, and supporting factors in the Riau Islands. The variable indicators fall within the "effective" category, the implementation of distance learning for students in the Riau Islands has not yet reached the maximum percentage range for the practical category. In practice, several challenges persist for students that is (a) A low culture of self-directed learning among students in the Riau Islands, (b) Tutors' limited responsiveness outside of class hours, (c) Technical issues, including network connectivity and digital literacy.

However, the program organizers have taken steps to facilitate the smooth operation of distance learning and ensure the learning objectives are met. Key supporting factors include: (a) The innovative aspects of the learning system, such as virtual libraries, instructional videos provided through MS Teams links, learning modules sent from the university to students' homes, the learning machine system, and the Open University practice website, (b) Cost efficiency, (c) Flexible learning opportunities enable students to study at any time and location.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHORSHIP CONTRIBUTION

Conceptualization: Diah Amalia, Arif Darmawan.
Data curation: Febrina Wulandari.
Formal analysis: Alfonsa Dian Sumarna.
Research: Diah Amalia.
Methodology: Alfonsa Dian Sumarna.
Project management: Arif Darmawan.
Resources: Diah Amalia, Febrina Wulandari.
Software: Febrina Wulandari.
Supervision: Diah Amalia.
Validation: Arif Darmawan.
Display: Alfonsa Dian Sumarna.
Drafting - original draft: Diah Amalia.
Writing - proofreading and editing: Diah Amalia.