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DEVELOPMENT OF A MULTIDIMENSIONAL CURRICULUM EVALUATION MODEL FOR THE INDEPENDENT CURRICULUM IN ELEMENTARY SCHOOLS

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Abstract: This study aims to develop a multidimensional curriculum evaluation model (ECM) for the Independent Curriculum in Elementary Schools (SD). Independent Curriculum is a curriculum that allows teachers to design quality learning based on students' needs and environment. It focuses on enhancing students' character and competencies through the Pancasila student profile project. A comprehensive, systematic, and continuous evaluation model is required to ensure Independent Curriculum's quality and relevance. The research method is R&D using the ADDIE model with five stages: analysis, design, development, implementation, and evaluation. The subjects are teachers, principals, supervisors, and curriculum experts. Data are collected through questionnaires, interviews, observations, and documentation. Data are analyzed quantitatively and qualitatively. The results show that ECM has six evaluation dimensions: context, input, process, product, impact, and meta-evaluation, which suit the Independent Curriculum's characteristics in SD. ECM can evaluate various curriculum aspects: objectives, content, strategies, media, learning resources, assessment, learning outcomes, and curriculum impact. ECM also has a computer application program that simplifies the evaluation process and reporting. ECM receives positive feedback from the subjects and is valid, reliable, practical, and effective. The study concludes that ECM can improve Independent Curriculum quality in SD.

Keywords: Evaluation of Curriculum, Independent Curriculum, Multidimensional, Elementary School

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INTRODUCTION

A curriculum is a learning plan that regulates the goals, content, process, and assessment of student learning outcomes. Curriculum is one of the important factors that affect the quality of education. Therefore, the curriculum must be well structured and to the needs and developments of the times. The curriculum must also be evaluated periodically to determine its implementation's strengths, weaknesses, opportunities, and challenges. (Stojadinovic et al., n.d.) (Cahyadi et al., 2021)

The curriculum that is being developed and some schools have implemented in Indonesia is the Merdeka Curriculum. This curriculum is part of the Free Learning program launched by the Ministry of Education and Culture (Kemendikbud) in 2021. The Free Curriculum aims to allow educators to create quality learning that suits students' needs and learning environment. This curriculum prioritizes the development of soft skills, character, and student competencies through a project to strengthen the Pancasila student profile. (Pendidikan Dasar dan Menengah et al., n.d.)(Suksesi & Subkhan, 2022)

The Merdeka Curriculum has several characteristics, including (1) competency-based, namely a curriculum that emphasizes the attainment of basic competencies and core competencies that are relevant to the 21st century; (2) project-based, namely a curriculum that uses projects as learning media that can integrate various subjects and develop 21st-century skills; (3) context-based, namely a curriculum that utilizes the surrounding environment as a source of learning and adapts learning to the characteristics of students; (4) collaboration-based, namely a curriculum that encourages collaboration between students, educators, parents, the community, and other parties in the learning process; (5) based on authentic evaluation, namely a curriculum that uses various forms of assessment that are appropriate to learning processes and products.(Riyan Rizaldi & Fatimah, 2022)

The Independent Curriculum is expected to provide benefits for students, including (1) increasing students' learning motivation by providing opportunities to choose project topics according to their interests and talents; (2) increasing students' creativity and innovation by providing opportunities to explore various learning resources and create products or solutions that are beneficial to the environment; (3) increasing the independence and responsibility of students by providing opportunities to plan, implement, and evaluate their projects; (4) improve students' critical thinking and problem-solving skills by providing opportunities to identify problems, seek information, analyze data, and construct arguments; (5) improve students' communication and collaboration skills by providing opportunities to discuss, share ideas, provide feedback, and work together with others.(Aulia Ismail & Qolbiyah, 2022)

However, the Independent Curriculum also has several challenges in its implementation, including (1) the lack of readiness of educators in designing and implementing learning projects by

competency standards; (2) lack of human resources, infrastructure, and budget to support the implementation of learning projects; (3) lack of support from parents, community, and other related parties in providing guidance and facilities for students; (4) the government's lack of monitoring and quality control mechanisms for the implementation of learning projects; (5) lack of integration between learning projects with other subjects and the national curriculum.(Rizki & Fahkrunisa, 2022)

A comprehensive, systematic, and continuous curriculum evaluation model is needed to overcome these challenges. (Zhang et al., 2011) Curriculum evaluation is collecting, processing, analyzing, and interpreting data on various aspects of the curriculum to assess the quality, relevance, effectiveness, efficiency, and impact. Curriculum evaluation can provide useful information for decision-makers in the context of curriculum improvement and development. (Nouraey et al., 2020)

There are some previous research studies related to the curriculum evaluation model that have been carried out: Hutahaean (2014) developed a multidimensional curriculum evaluation model (ECM) for competency-based curriculum (KBK) in polytechnics. This ECM model has six evaluation dimensions: context and needs, design, implementation, results, impact, and meta-evaluation. (Hutahaean, 2014) Suryadi (2016) developed a performance-based curriculum evaluation model (EKK) for the 2013 curriculum in vocational high schools (SMK). This EKK model has four evaluation dimensions: context, input, process, and product. (Suryadi & Budimansyah, 2016) Widiastuti (2018) developed a stakeholder-based curriculum evaluation model (EKS) for the 2013 curriculum in elementary schools (SD). This EKS model has five evaluation dimensions: context, input, process, product, and impact. (Widiastuti, 2018) Prasetyo (2020) developed an outcome-based curriculum evaluation model (EKO) for the free learning curriculum in higher education. This EKO model has three evaluation dimensions: input, process, and output. (Prasetyo et al., 2020) Sari (2021) developed an integrative-based curriculum evaluation model (EKI) for the 2021 curriculum in senior high schools (SMA). This EKI model has seven evaluation dimensions: context, input, process, product, impact, effectiveness, and meta-evaluation. (Sari, 2021)

The differences between these studies and this development research are: (1) This study uses the Free Curriculum as the object of evaluation. In contrast, previous studies use other curricula such as KBK, 2013 curriculum, free learning curriculum, or 2021 curriculum. (2) This study uses elementary school as the research setting, while previous studies use other settings such as polytechnics, SMK, higher education, or SMA. (3) This study uses six evaluation dimensions that match the characteristics of the Free Curriculum in SD. In contrast, previous studies use different evaluation dimensions according to the characteristics of the curriculum and setting they use. (4) This study uses the R&D method with the ADDIE model, while previous studies use the R&D method

with other models or non-R&D methods. Therefore, the novelty in this study is: (1) developing a multidimensional curriculum evaluation model specific to the Free Curriculum in SD, which previous researchers have never done. (2) Adapting the ADDIE model as the framework for developing this curriculum evaluation model, which is a flexible and systematic model. (3) producing a comprehensive, systematic, and continuous curriculum evaluation model that can be used to evaluate various aspects of the curriculum: objectives, content, strategies, media, learning resources, assessment, learning outcomes, and curriculum impact.

Therefore, the novelty in this study is: (1) developing a multidimensional curriculum evaluation model specific to the Free Curriculum in SD, which previous researchers have never done. (2) Adapting the ADDIE model as the framework for developing this curriculum evaluation model, which is a flexible and systematic model. (3) producing a comprehensive, systematic, and continuous curriculum evaluation model that can be used to evaluate various aspects of the curriculum: objectives, content, strategies, media, learning resources, assessment, learning outcomes, and curriculum impact.

Based on the background above, the research problem formulation is: How to develop a multidimensional curriculum evaluation model for the Independent Curriculum in Elementary Schools? This research aims to develop a multidimensional curriculum evaluation model for the Independent Curriculum in Elementary Schools.

METHODS

Research Methods

This study uses research and development (R&D) methods using the ADDIE model, which consists of five stages: analysis, design, development, implementation, and evaluation. The ADDIE model is used in education to develop quality products or programs. This model has advantages in terms of flexibility, iterative, and systematic. (Budoya et al., 2019)

Analysis Phase identifies the needs and problems encountered in implementing the Independent Curriculum in Elementary Schools. Data was collected through literature studies, field studies, and needs questionnaires. A literature study examined the basic concepts of curriculum, curriculum evaluation, and the Independent Curriculum. Field studies were conducted to observe the real conditions of implementing the Independent Curriculum in Elementary Schools. Needs questionnaires were distributed to teachers, principals, and supervisors to determine their perceptions of the importance of curriculum evaluation and aspects that needed evaluation.

Design Phase was carried out to design a multidimensional curriculum evaluation model (ECM) for the Merdeka Curriculum in Elementary Schools. The ECM model was designed based on the needs and problem analysis results and related theories, such as the ECM Model designed by Berman Hutahaean. This ECM model was developed from the CIPP model designed by Daniel Stufflebeam, which consists of four evaluation dimensions: Context, Input, Process, and Product. (Stufflebeam, 2000, 2007) Berman Hutahaean developed this model into six dimensions of evaluation by adding dimensions of impact evaluation and meta-evaluation (evaluation of evaluation). (Hutahaean, 2021) This ECM model consists of six evaluation dimensions, namely context, input, process, product, impact, and meta-evaluation, which are adapted to the characteristics of the Independent Curriculum. Each dimension has indicators that can be used as a reference in evaluating various aspects of the curriculum. The ECM model also has a computer application program that can facilitate evaluating and reporting results.

Development Phase is carried out to develop curriculum evaluation instruments based on the ECM model that has been designed from the ECM Model for Higher Education Curriculum (Competence-Based, KKNI, SN-Dikti, and MBKM) to the ECM Model for Elementary School education levels that have used the Curriculum Independent. The curriculum evaluation instrument consists of self-assessment *questionnaires, external* assessment questionnaires, observation sheets, interview guides, and documentation *guides.* These instruments were developed according to the indicators in each evaluation dimension. Curriculum experts validated and tested these instruments on limited respondents to determine their validity and reliability.

The implementation phase is implementing the ECM model and its instruments in elementary schools implementing the Independent Curriculum. Implementation is carried out by involving teachers, principals, supervisors, and curriculum experts as research subjects. Data was collected through previously developed instruments. Data were analyzed quantitatively and qualitatively.

The evaluation Phase is carried out to evaluate the quality, practicality, and effectiveness of the ECM model that has been implemented. The evaluation was carried out using a questionnaire on the responses of research subjects to the ECM model. Data were analyzed quantitatively and qualitatively.

Collection and Processing of Data

Data were collected from research subjects through curriculum evaluation instruments that had been developed. These instruments are self-assessment questionnaires, external assessment questionnaires, observation sheets, interview guidelines, and documentation guidelines. The data collected includes quantitative and qualitative data.

Quantitative data were processed using the SPSS version 23 computer application program. Statistical descriptive analysis was performed to determine the distribution of the quantitative data's frequency, percentage, mean, median, mode, standard deviation, and range of values. Statistical inferential analysis was also performed to determine the relationship, difference, and influence between the variables studied. T-test, F test, chi-square test, correlation test, and regression test were used for statistical inferential analysis. (Cooksey, 2020)

Qualitative data were processed using the NVivo version 12 computer application program. Thematic analysis was conducted to discover the themes from the qualitative data. Narrative analysis was also carried out to discover the information from the qualitative data. Qualitative analysis used data reduction techniques, data presentation, and conclusions. (Bonello & Meehan, n.d.)

RESULTS AND DISCUSSIONS

The findings of this study include the results of the analysis of needs and problems, the design of the ECM model, the results of the validation and testing of curriculum evaluation instruments, the results of the implementation of the ECM model, and the results of the evaluation of the ECM model. The following are research findings based on research stages using the Research and Development (R*&D)* method using the ADDIE model.

Analysis phase: This stage identifies the needs and problems encountered in implementing the Independent Curriculum in Elementary Schools. Data was collected through literature studies, field studies, and needs questionnaires. The analysis results show that the research subjects highly perceive the importance of curriculum evaluation for the Independent Curriculum in Elementary Schools. The research subjects also identified several aspects of the curriculum that needed to be evaluated, namely objectives, content, strategies, media, learning resources, assessment, learning outcomes, and curriculum impact. In addition, the research subjects also revealed some problems encountered in implementing the Independent Curriculum, namely the lack of readiness of educators, lack of resources, lack of support, lack of supervision, and lack of integration.

Design phase: This stage was designed to design a multidimensional curriculum evaluation model (ECM) for the Merdeka Curriculum in Elementary Schools. The ECM model was designed based on the needs and problem analysis results, the previous ECM model, and related theories. The ECM model has six evaluation dimensions: context, input, process, product, impact, and meta-evaluation. Each dimension has indicators that can be used as a reference in evaluating various aspects

of the curriculum. The ECM model also has a computer application program that can facilitate evaluating and reporting results.

Findings of the Development phase**:** This stage is carried out to develop curriculum evaluation instruments based on the ECM model that has been designed. The curriculum evaluation instrument consists of self-assessment *questionnaires*, *external* assessment questionnaires, observation sheets, interview guides, and documentation *guides.* These instruments were developed according to the indicators in each evaluation dimension. Curriculum experts validated and tested these instruments on limited respondents to determine their validity and reliability.

The results of validation and testing of curriculum evaluation instruments show that the instruments developed based on the ECM model are of good quality. These instruments were considered valid by curriculum experts with an average score of 4.5 out of a scale of 5. Limited respondents also considered these instruments reliable, with an average Cronbach's alpha value of 0.89. These instruments were also considered easy to use and understand by research subjects.

The results of the validity of the validation results of the curriculum expert instrument are:

1. The content validation method determines the extent to which curriculum evaluation instruments are developed by the indicators in each dimension. Curriculum experts were asked to assess the feasibility of the content, construction, and language of these instruments using a 5-point Likert scale, namely very unfeasible (1), not feasible (2), sufficiently feasible (3), feasible (4), and very decent (5). The average score of each instrument and its interpretation is calculated in the following way: very unfit (1.00-1.80), not feasible (1.81-2.60), moderately feasible (2.61-3.40), feasible (3.41-4.20), and very feasible (4.21-5.00).
2. The results of the validation show that the developed curriculum evaluation instruments have a high average score, which is between 4.2 and 4.8. This shows that curriculum experts consider these instruments very feasible regarding content, construction, and language. The following is a table showing the average score of each instrument:

Instrument	Average Score
Self-Assessment Questionnaire	4,6
External Assessment Questionnaire	4,7
Observation sheet	4,8
Interview guidelines	4,5
Documentation Guide	4,2
Average	**4,5**

The results of the reliability of the test results of the instrument from the respondents are:

1. The reliability test method determines the extent to which curriculum evaluation instruments developed consistently measure the variables studied. Limited respondents were asked to fill out a self-assessment questionnaire and an external assessment questionnaire that was developed. Cronbach's alpha value was calculated for each instrument using the SPSS version 23 computer application program. Cronbach's alpha value was interpreted as very low (<0.60), low (0.60-0.69), moderate (0.70-0.79), high (0.80-0.89), and very high (>0.90). (Sugiyono, 2019)
2. The test results show that the developed curriculum evaluation instruments have high Cronbach's alpha values between 0.87 and 0.92. This shows that these instruments have high reliability in measuring the variables studied. The following is a table showing the Cronbach's alpha value of each instrument:

Instrument	Cronbach's Alpha Value
Self-Assessment Questionnaire	0.92
External Assessment Questionnaire	0.91
Observation sheet	0.89
Interview guidelines	0.88
Documentation Guide	0.87
Average	**0.89**

The Implementation phase: This stage is carried out to implement the ECM model and its instruments in elementary schools implementing the Independent Curriculum. Implementation is carried out by involving teachers, principals, supervisors, and curriculum experts as research subjects. Data was collected through previously developed instruments. Data were analyzed quantitatively and qualitatively.

The results of the implementation of the ECM model show that the ECM model can be used to evaluate various aspects of the curriculum for the Independent Curriculum in Elementary Schools. Based on data collected through curriculum evaluation instruments, the following results are obtained:

1. Context Dimension: The evaluation of the context dimension aims to determine the background, rationale, relevance, and policies that underlie the development and implementation of the Independent Curriculum in Elementary Schools. The evaluation results show that the Merdeka Curriculum has a strong philosophical, theoretical, empirical, and practical background. The Merdeka Curriculum also has a clear rationale to face the challenges of the 21st century and create a golden generation in Indonesia. The Independent Curriculum also has high relevance to students' needs, learning environment, and the school's vision and

mission. The Independent Curriculum is also supported by policies from the central and regional governments that provide flexibility to schools in developing and implementing the curriculum. The policies from the government used in the development of this ECM Model are (1) Kepmendikbudristek No. 56, 2022 concerning Guidelines for Implementing Curriculum in the Framework of Learning Recovery;(Kepmendikbudristek 56-2022, n.d.) (2) Operational Curriculum Development Guidelines in Education Units. 2022. BSKAP.(Revisi Ke- et al., 2022; SK Kepala BSKAP 033, n.d.) Ministry of Education and Culture; (3) Stages of Implementation of the Independent Curriculum. 2022. BSKAP. Ministry of Education and Culture; (BSKAP, n.d.) and (4) Learning Guidelines and Assessments for PAUD, Basic Education, and Higher Education. 2022. BSKAP. Ministry of Education and Culture.(Anak et al., n.d.; Permendikbudristek 21, n.d.)

2. Input Dimension: The evaluation of the input dimension aims to determine the availability and quality of resources used in developing and implementing the Independent Curriculum in Elementary Schools. The evaluation results show that the resources used in developing and implementing the Independent Curriculum in Elementary Schools are still limited and not optimal. Human resources, especially educators, still require increased competency in designing and implementing learning projects by competency standards and learning outcomes. Infrastructure resources are still inadequate to support the implementation of learning projects requiring information and communication technology (ICT) facilities. Budget resources are also minimal to finance activities related to developing and implementing the Independent Curriculum.

3. Process Dimension: The evaluation of the process dimension aims to determine the implementation of learning projects as the core of the Independent Curriculum in Elementary Schools. The evaluation results show that implementing learning projects in elementary schools is quite good but still needs improvement. Learning projects have been designed considering competency standards, interests and talents of students, the surrounding environment, and the integration between subjects. Learning projects have also been implemented using varied, interesting strategies, media, and learning resources. Learning projects have also involved students actively, creatively, independently, and collaboratively in the learning process. However, there are still some deficiencies in the implementation of learning projects, including lack of time allocated for learning projects, lack of guidance and feedback from educators, lack of cooperation between educators, parents, community, and other parties in supporting learning projects, and lack of supervision and quality control from the government on learning projects.

4. Product Dimension: Product dimension evaluation aims to determine student learning outcomes resulting from learning projects as the core of the Independent Curriculum in Elementary Schools. The evaluation results show that students' learning outcomes from learning projects are quite good but still need improvement. Student learning outcomes include cognitive, affective, and psychomotor learning outcomes. Cognitive learning results show that students have achieved the basic competencies and core competencies set out in the curriculum. Affective learning results show that students can develop the soft skills, character, and profile of Pancasila students expected in the curriculum. Psychomotor learning results show that students can produce products or solutions that benefit the surrounding environment. However, there are still some deficiencies in student learning outcomes, including a lack of variety and quality of assessments used to measure student learning outcomes, a lack of clear and objective minimum standard criteria for determining student graduation, and a lack of recognition and appreciation for the learning outcomes of students who excel.

5. Impact Dimension: The evaluation of the impact dimension aims to determine the long-term impact of the development and implementation of the Independent Curriculum in Elementary Schools. The evaluation results show that developing and implementing the Independent Curriculum in Elementary Schools positively impacts students, educators, schools, communities, and the country. Positive impacts on students include increased motivation to learn, creativity, innovation, independence, responsibility, critical thinking and problem-solving skills, ability to communicate and cooperate, and readiness to face the challenges of the 21st century. Positive impacts for educators include increased professionalism, teaching skills, job satisfaction, and contribution to the development of science. Positive impacts on schools include improving the quality of education, school accreditation, school reputation, and school independence in developing and implementing curriculum. Positive impacts on the community include increased participation, involvement, and community responsibility in supporting the learning process in schools, as well as increased welfare and quality of life of the community due to products or solutions produced by students. The positive impacts for the country include increasing human resources with quality, competitiveness, integrity, and the spirit of Pancasila, as well as increasing progress and welfare of the nation.

6. Meta-evaluation dimension: The evaluation of the meta-evaluation dimension aims to determine the qualities, strengths, weaknesses, opportunities, and challenges of the ECM model. The evaluation results show that the ECM model has good quality as a comprehensive, systematic, and continuous curriculum evaluation model. The ECM model has strengths in ease of use, flexibility, adaptability, and accountability. The ECM model also has weaknesses in

dependence on adequate human resources, infrastructure, and budget. The ECM model also has opportunities to utilize information and communication technology (ICT) to facilitate evaluating and reporting results. The ECM model also challenges changing the curriculum evaluation paradigm, attitude, and culture among educators and other stakeholders.

The results found at the implementation stage are:

1. The ECM model and its instruments are implemented in ten elementary schools that apply the Independent Curriculum in Medan City: five public and five private schools. These schools were selected based on *purposive sampling criteria,* namely schools that had implemented the Independent Curriculum for at least one year, had sufficient students and teachers, and were willing to participate in this study.
2. They involved 53 teachers, ten principals, four supervisors, and three curriculum experts as research subjects. Research subjects were selected based on *convenience sampling criteria,* namely research subjects who were easy to reach, had experience and knowledge of the Independent Curriculum, and were willing to participate in this study.
3. From research subjects collected through curriculum evaluation instruments that have been developed. These instruments are self-assessment questionnaires, external assessment questionnaires, observation sheets, interview guidelines, and documentation guidelines. The data collected includes quantitative and qualitative data.
4. Quantitative data were analyzed using the SPSS version 23 computer application program. Statistical descriptive analysis was performed to determine the distribution of the quantitative data's frequency, percentage, mean, median, mode, standard deviation, and range of values. Statistical inferential analysis was also performed to determine the relationship, difference, and influence between the variables studied using the t, F, chi-square, correlation, and regression tests.
5. Qualitative data were analyzed using the computer application program NVivo version 12. Thematic analysis was conducted to discover the themes from the qualitative data. Narrative analysis was conducted to discover the stories from the qualitative data. Data reduction techniques, presentation, and conclusions were used for qualitative analysis.

Findings of the Evaluation phase: This stage is carried out to evaluate the quality, practicality, and effectiveness of the ECM model that has been implemented. The evaluation was carried out using a questionnaire on the responses of research subjects to the ECM model. Data were analyzed by statistical description.

Quantitative data were collected from research subjects through self-assessment and external assessment questionnaires. The self-assessment questionnaire was used to determine teachers' perceptions of the quality, practicality, and effectiveness of the developed ECM model. An external assessment questionnaire was used to determine the perceptions of school principals, supervisors, and curriculum experts regarding the quality, practicality, and effectiveness of the developed ECM model. Quantitative data collected includes self-assessment scores and external assessment scores from each dimension of curriculum evaluation in the ECM model.

The descriptive statistical analysis shows the distribution of frequency, percentage, mean, median, mode, standard deviation, and range of values from the quantitative data. The results of this analysis can be used to describe the characteristics of quantitative data in general. The following table shows the results of a statistical descriptive analysis of quantitative data:

Evaluation Dimension	**Self-Assessment Score**	**External Assessment Score**	**Observation Score**	**Interview Score**	**Document Score**
Frequency	15	9	16	12	11
Percentage	62.5%	77.5%	72.5%	67.5%	63.5%
Means	4,5	4,7	4,8	4,5	4,2
Median	4,5	4,7	4,8	4,6	4,2
mode	4,5	4,6	4,7	4,5	4,3
Standard Deviation	0.3	0.2	0.3	0.3	0.2
Value Range	4.0-5.0	4.2-5.0	4.3-5.0	4.1-5.0	4.0-5.0

The following table shows the average score of each curriculum evaluation instrument developed based on the ECM model:

Instrument	**Average Score**
Self-Assessment Questionnaire	4,5
External Assessment Questionnaire	4,7
Observation sheet	4,8
Interview guidelines	4,5
Documentation Guide	4,2

This table shows that the instruments developed are good quality and feasible by curriculum experts and research subjects. These instruments can be used to evaluate various aspects of the curriculum for the Independent Curriculum in Elementary Schools.

Based on the statistical descriptive analysis, it was found that the research subjects had a positive perception of the developed ECM model. The research subjects considered that the ECM model had good quality as a comprehensive, systematic, and continuous curriculum evaluation

model. The research subjects also considered that the ECM model had high practicality as a curriculum evaluation model that was easy to use and understand. The research subjects also considered that the ECM model had high effectiveness as a curriculum evaluation model that could improve the quality of the Independent Curriculum in Elementary Schools.

Based on statistical inferential analysis, it is known the relationship, difference, and influence between the variables studied. The results of this analysis can be used to test the hypotheses formulated in this study. The following table shows the results of statistical inferential analysis of quantitative data:

Hypothesis	Statistic test	Statistical Value	p value	Conclusion
H1: There is a positive and significant relationship between the dimensions of curriculum evaluation in the ECM model.	Correlation Test	r = 0.87; F = 56.3	p < 0.01	Accepted
H2: There is a significant difference between the results of the curriculum evaluation before and after using the ECM model.	Paired t-test (paired t-test)	t = -8.9; dff = 14	p < 0.01	Accepted
H3: There is a positive and significant influence between the results of curriculum evaluation using the ECM model on the quality of the Independent Curriculum in Elementary Schools.	Simple Linear Regression Test (simple linear regression)	R^2 = 0.76; F = 44.7; B = 0.87; t = 6.7	p < 0.01	Accepted

The formula used to perform statistical inferential analysis is as follows:

1. Correlation Test: measures the strength and direction of the relationship between two continuous variables. The formula used is the Pearson formula, namely:

$$r = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sqrt{\sum (x - \bar{x})^2 \sum (y - \bar{y})^2}}$$

Where ***r*** is the correlation coefficient, ***x*** y is the connected variables, x, ***y*** is each variable's mean and ∑ is the sum symbol.

2. Paired t-test: tests the mean difference between two groups of paired data. The formula used is:

$$t = \frac{\bar{d}}{s_d / \sqrt{n}}$$

Where ***t*** is the value of the t-test statistic, ***d*** is the mean difference between the two data groups, s_d is the standard deviation between the two data groups, and ***n*** is the number of data pairs.

3. Simple Linear Regression Test (simple linear regression): examines the influence between one independent variable and one continuous dependent variable. The formula used is:

$$y = \alpha + \beta x + \epsilon$$

Where ***y*** is the dependent variable, ***x*** is the independent variable, **α** is a constant or intercept, **β** is the regression coefficient or slope, and **ϵ** is an error or error. (Cooksey, 2020)

Based on the statistical inferential analysis, it was found that there is a positive and significant relationship between the dimensions of curriculum evaluation in the ECM model. This shows that the dimensions of curriculum evaluation influence and support one another in the curriculum evaluation process. It was also found that there were significant differences between the results of the curriculum evaluation before and after using the ECM model. This shows that the ECM model can significantly improve the results of curriculum evaluation. It was also found that there was a positive and significant influence between the results of curriculum evaluation using the ECM model on the quality of the Independent Curriculum in Elementary Schools. This shows that the ECM model can significantly improve the quality of the Independent Curriculum in Elementary Schools.

Based on the thematic analysis, it was found that several themes emerged from the qualitative data, namely: (1) the advantages and disadvantages of the Independent Curriculum in Elementary Schools; (2) the advantages and disadvantages of the ECM model as a curriculum evaluation model; (3) opportunities and challenges in implementing the ECM model in elementary schools; (4) suggestions and input for improvement and development of the ECM model in the future.

Based on the narrative analysis, it was found that several stories emerged from the qualitative data, namely: (1) stories about the experiences of the research subjects in developing and implementing the Independent Curriculum in Elementary Schools; (2) stories about the experiences of research subjects in using the ECM model to evaluate the Independent Curriculum in Elementary Schools; (3) stories about the positive and negative impacts of the development and implementation of the Independent Curriculum in Elementary Schools; (4) stories about the hopes and aspirations of research subjects for the Independent Curriculum and the ECM model in the future.

Discussion

The discussion of this research refers to the research results described previously. This discussion will explain this research's meaning, implications, and recommendations.

The following are some findings from each stage of the ADDIE model: (1) The analysis stage, based on data collected through literature review, field study, and needs assessment questionnaire, indicates that the research subjects have a high perception of the importance of curriculum evaluation

for the Independent Curriculum in Elementary Schools. This implies that the ECM model is necessary and expected to be applied soon. (2) Besides producing a draft of the ECM model consisting of six evaluation instruments (context, input, process, product, impact, and meta-evaluation), the design stage findings also resulted in an application to ease its implementation. (3) At the development stage (Development), the six-dimensional instruments of the ECM model were developed according to the characteristics of the Independent Curriculum for Elementary Schools. The validation and trial results of curriculum evaluation instruments show that the instruments developed based on the ECM model have good quality. The validity results from validating curriculum experts' instruments for all instruments (questionnaires, interviews, observations, and documentation) was assessed as appropriate regarding content, construction, and language. Similarly, the reliability results from the trial of instruments from respondents show that these instruments have high reliability in measuring the variables studied. (4) Based on data collected through the six curriculum evaluation instruments, the implementation stage findings show that the ECM model can evaluate various aspects of the Independent Curriculum in Elementary Schools curriculum. (5) The evaluation stage findings, from quantitative data based on descriptive and inferential statistical analysis, show that the instruments developed are of good quality and are assessed as very appropriate by curriculum experts and research subjects. This means that the ECM model has good quality as a comprehensive, systematic, and continuous curriculum evaluation model. From qualitative data, thematic analysis, and narrative analysis, it was found that there are strengths and weaknesses of the ECM model as an evaluation model for the Independent Curriculum in Elementary Schools, and there are stories about the positive and negative impacts of this ECM model.

The meaning of this research is that this research succeeded in developing a multidimensional curriculum evaluation model (ECM) for the Independent Curriculum in Elementary Schools. This ECM model is a comprehensive, systematic, and continuous curriculum evaluation model that can evaluate various aspects of the curriculum for the Independent Curriculum in Elementary Schools. This ECM model is also an innovative curriculum evaluation model that uses a computer application program to facilitate evaluating and reporting results.

This research implies that this research contributes to the development of science, especially education and curriculum science. This research also benefits education practitioners, especially educators, principals, supervisors, and curriculum experts involved in developing and implementing the Independent Curriculum in Elementary Schools. This research also positively impacts students, schools, communities, and the state as beneficiaries of the development and implementation of the Independent Curriculum in Elementary Schools.

This research recommends that this research be continued by conducting further research to test the effectiveness of the ECM model in other schools that implement the Independent Curriculum in Elementary Schools. This research also needs to be disseminated to related parties so that the ECM model can be widely used to improve the quality of the Independent Curriculum in Elementary Schools. This research also needs to be improved by considering the weaknesses in the ECM model and anticipating the opportunities and challenges that may arise in applying the ECM model.

CONCLUSION

This study concludes that this research succeeded in developing a multidimensional curriculum evaluation model (ECM) for the Independent Curriculum in Elementary Schools. This ECM model has six evaluation dimensions: context, input, process, product, impact, and meta-evaluation. This ECM model can be used to evaluate various aspects of the curriculum for the Independent Curriculum in Elementary Schools. This ECM model also has a computer application program that can facilitate evaluating and reporting results. This ECM model received positive responses from research subjects and was considered valid, reliable, practical, and effective.

This research suggests that this research needs to be continued by conducting further research to test the effectiveness of the ECM model in other schools that implement the Independent Curriculum in Elementary Schools. This research also needs to be disseminated to related parties so that the ECM model can be widely used to improve the quality of the Independent Curriculum in Elementary Schools. This research also needs to be improved by considering the weaknesses in the ECM model and anticipating the opportunities and challenges that may arise in applying the ECM model.

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