

# CIPP vs kirkpatrick in the evaluation of physics teacher competency development programs: literature study

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**Abstract.** This study aims to systematically review and analyze the results of research on CIPP and kirkpatrick models in the evaluation of physics teacher competency development programs. This literature review is specifically intended to determine the advantages and disadvantages of both evaluation models in the implementation of program evaluation. The research method uses systematic studies through four stages, namely; identification, selection, feasibility and inclusion. Search articles using the Google Scholar, ERIC, Sciencedirect and SpringerLink databases. Based on the results of the study found 1115 research articles that discuss the use of CIPP and Kirkpatrick models in the evaluation of competency development programs. The articles are mostly published in the form of proceedings and international journals and research comes from several countries. The final results showed there were 18 studies discussing the use of CIPP and Kirkpatrick models to evaluate competency development and training programs. Recommendations of the results of the study, in order to be able to combine two models namely CIPP and Kirkpatrick as an alternative evaluation model, the goal is to get an overview of the results of the evaluation of physics teacher competency development programs more comprehensively especially in the program that contains training components.

## 1. Introduction

Looking at the data of the National Examination report in High School in 2019 released by the Center for Education Assessment (Puspendik) shows that the average score in all subjects is still low. Average achievement of all subjects in Language Study Program 55.96, Natural Science Study Program 51.71 and Social Science Study Program 48.95 [1].

Furthermore, based on the report of the programme for International Student Assessment (PISA) 2018 studies show that Indonesia's ranking has decreased when compared to pisa results in 2015. The 2018 study assessed 600,000 15-year-olds from 79 countries every three years. This study compares each child's math, reading, and science performance skills. In the category of reading ability, Indonesia is ranked 74th. Indonesia's average score is 371, which is below Panama's average score of 377. Meanwhile, in the mathematics category, Indonesia is ranked 73rd with an average score of 379. Indonesia is above Saudi Arabia which has an average score of 373 [2].

Finally, a World Bank report released in August 2020 showed the reading ability scores of Indonesian students in the Programme for International Student Assessment (PISA) are projected to



decline as a result of the Covid-19 pandemic. The World Bank divides the scenario into three, namely the current scenario (4 months), the optimistic scenario (6 months), and the pessimistic scenario (6 months). In the current scenario, Indonesian students lose 11 points of reading ability. While the optimistic scenario loses 16 points and pessimists lose 21 points [3].

Realizing the condition, it takes a settlement effort to improve the quality of education. One of them is through improving the quality of teacher competence, because teachers as the main key in the success of education [1]. Teacher competence is a set of abilities consisting of knowledge, skills and behaviors possessed by teachers in carrying out professional tasks. Referring to the National Standard of Education (SNP) applicable in Indonesia teacher competencies include professional competencies, pedagogic competencies, social complement and personality complement. In complementary education teachers have an important role because it directly affects the process of learning and teaching activities.

Various efforts are made to improve teacher competence including empowerment of competency development programs through integrated coaching, coaching, training and independent learning. Through these efforts, it is expected to produce improvements and improvements in the achievement of student learning outcomes. To support that, effective management of development programs must be optimized, both related to the development of the teacher's own competence and the achievement of learning objectives [1–3].

Related to that, some research results found that the development of teacher competence through training has a significant impact on the effectiveness of learning [4]. Furthermore, in the results of the study on teacher training and competency development shows that teacher training that is implemented constructively can improve the development of the profession and competence of teachers [5]. Teacher competency development programs and training can be known for their effectiveness and have a better impact in improving the quality of education when the evaluation process is carried out.

The CIPP model is an evaluation framework that covers aspects of context, input, processes and products. CIPP can be used to evaluate formative and sumative. This model provides a holistic overview of each element evaluated and is expected to provide decisions that can be used for the continuity of a program [6–8]. Through research studies with cipp model can provide a complete picture of the implementer of teacher professional development program on web-based content development [9].

While the Kirkpatrick model conceptually provides a framework for evaluation of training programs based on four levels, namely reaction, learning, behavior and results. Despite frequent criticism, this model has reliability and credibility as an evaluation model that is still relevant [10]. Evaluation research with Kirkpatrick model on teacher development and training was able to clarify the perception of principal and supervisor trainees about the results of the training process. Kirkpatrick's evaluation model is also able to determine the strengths and weaknesses of the training process for the principal [11].

There are various studies conducted by practitioners from the academic and community worlds on the use of CIPP and Kirkpatrick models in evaluating competency development programs. The results of the study can be found in various portals journals, conferences, seminars and websites, both on a national and international scale. Contemporary studies of the use of CIPP and Kirkpatrick models in evaluation research can ideally be systematically collected for further analysis for the benefit of developing a more comprehensive model. The purpose of this study is to conduct a systematic literature review on the use of CIPP and Kirkpatrick models in evaluating teacher competency development programs.

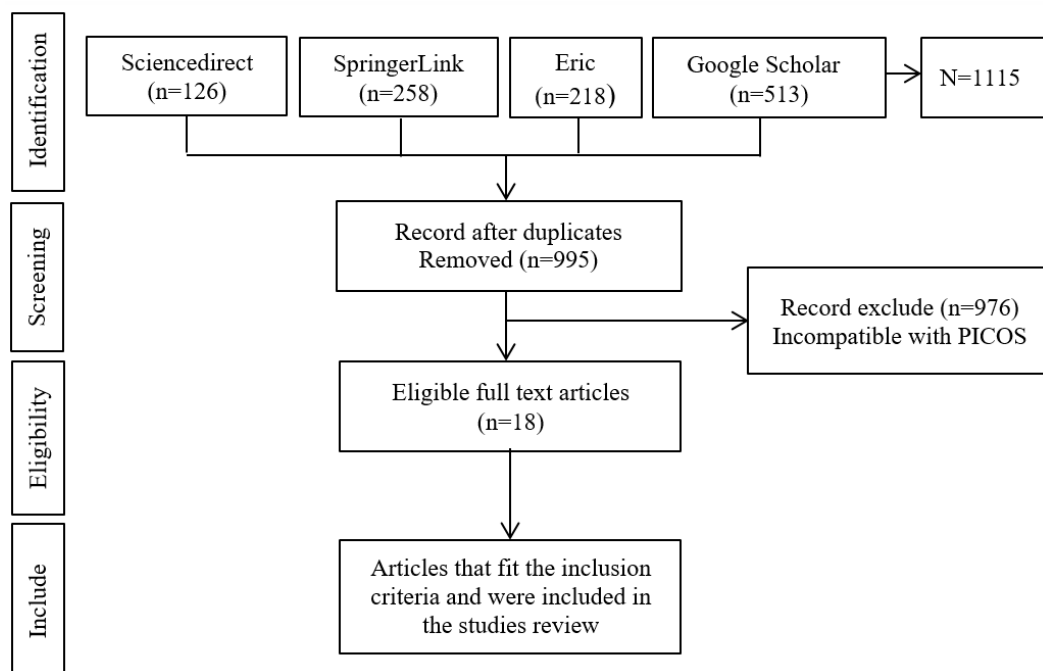
## 2. Methods

The method used in this study is systematic literature review with data source from indexed journal articles that have been indexed by ISSN (International Standart Serial Number) and published online website. Data retrieval is done by surfing the internet and through four stages, namely through the

process of identification, screening, feasibility and inclusion. First, at the identification stage, search, collection, recording and assessment of article data relevant to the research topic of five databases are often used in the search for references about program evaluation. The five databases are Google Scholar, ERIC, Sciencedirect and SpringerLink. The textual terms used as keywords in the article search are "teacher complementary development program", "training program", "CIPP evaluation model" and "Kirkpatrick evaluation model". Second, the screening stage, the use of inclusion criteria to limit time, keywords and language types. Articles used were published in 2010-2021. The articles are mostly used in proceedings and scientific journals, in English and Indonesian form and contain research topics relevant to the purpose of research, namely the use of CIPP and Kirkpatrick models in the evaluation of teacher complementary development programs. Search results are documented in a special folder on Mendeley software. Next, after creating a comparison process on file duplication, the relevant articles are organized in separate files.

Third, the feasibility stage, in the article that has been done duplication test then manually selected to hammer out a detailed assessment on the title and abstract to ensure conformity to the problem / population, intervention, comparative, outcome and study (PICOS) to determine the selected article. The four stages of inclusion, in the inclusion of selected articles are extracted and analyzed in order to extract information about the author, the year of publication, the origin of the country of the first author, the focus of the study, research objectives, research subjects, evaluation models and research results. The exclusion criteria are in articles that focus on general studies, such as theoretical studies and other fields unrelated to competency development.

Technical analysis is done with thematic approach and prepared based on theme analysis and poured in narrative writing. Article search results are presented in the form of flowcharts systematically in accordance with the research stage (PRISMA). The validity test of the research results was conducted by asking for opinions from a team of experts through limited discussions to review the results of the study and make defects for improvement. The following is the selection process of the article.



**Figure 1.** Article selection process

### 3. Result and Discussion

This literature study research was conducted through four stages, namely: identification, screening, feasibility and inclusion. Stages in the identification process are done by creating a framework according to PICOS in order (teacher competency development program, CIPP and Kirkpatrick evaluation model, alternative evaluation model as a solution and all studies). Keyword settings include the program of teacher competence development, CIPP and Kirkpatrick evaluation model, alternative evaluation model and inclusion criteria setting, as in the following table.

**Tabel. 1** Inclusion criteria

	Inclusion	Exclusion
Source	Google Scholar, ERIC, Sciencedirect, SpringerLink and Elsevier.	Databases and information other
Year	July 2010 - July 2021	Studies published before or after this period
Study Type	All types of studies	-
Language	English and Indonesian	Other languages
Intervention	CIPP and Kirkpatrick evaluation models	Interventions on other models
Size of Results	Alternative evaluation model	Other
Population	Teacher complementary development program	Other
Publication Type	Scientific journals and availability of documents in conferences (free of charge) and published through the study of education and social fields	Other publications and paid

Search the online database through the following procedure; search for articles on online databases using matching keywords; using Boolean logic through relevant conjunctions (and, or); and the use of logic in systematic studies is a program of physics teachers competence development AND CIPP, Kirkpatrick model AND alternative evaluation model. The number of journals and articles in this literature study is as follows.

**Table 2.** Journal selection results based on PICOS and text completeness

Source Article/Journal	Initial Amount	Duplicate	Incompatible with PICOS	Journal remaining
Sciencedirect	126	113	106	4
SpringLink	258	201	198	3
Eric	218	198	195	3
Google Scholar	513	483	477	8
	1115	995	976	18

Based on the table above, initially the number of articles that can be collected as many as 126 from Sciencedirect, 258 from SpringLink, 281 from Eric and 513 from Google Scholar in a systematic literature review of the 1115 articles selected, based on the PICOS framework there are 18 articles that fit the criteria and are subsequently included. The results of this study also showed that during the period 2010-2021 there were 18 publications of research articles on the use of CIPP and Kirkpatrick models in evaluating teacher competency development programs. The focus of comparative development in this research article varies from education and training programs, workshops and

induction programs. This study seeks information on the use of CIPP and Kirkpatrick evaluation models and which can be used for the development of a more holistic evaluation model in assessing teacher competency development programs. The distribution of research results covers several countries; Indonesia, Pakistan, United Kingdom, USA, Greece, Romania, Republic of Ireland, Turkey, Malaysia, Iran and China. Most of the research results come from Indonesia. There are several variations of critical notes from researchers related to the use of CIPP and Kirkpatrick models in the evaluation of teacher competency development programs.

Some critical notes are affirming the reliability of the evaluation model, identifying some of the weaknesses of the evaluation model operation and the idea of finding the interrelationship of the two evaluation models [10,12]. The following table describes the characteristics of the articles contained in the journal.

**Table 3.** Characteristics of the article

1 <sup>st</sup> Author	Country 1st Author	Research Objectives	Competency Development Program	Evaluation Model	Research Results
[12]	Romania	Review the new paradigm of Kirkpatrick's evaluation model in VET professional training for competency improvement.	Training in the form of short courses	Kirkpatrick	Kirkpatrick's evaluation model has many suitability in various training areas and provides an overview of training objectives.
[10]	Pakistan	Design and propose the design of cipp and Kirkpatrick's combined evaluation model in the teacher development and development program.	Competency development and training	CIPP & Kirkpatrick	There is a new strategy in the practice of evaluation of development and training programs, which emphasizes on detailed exploration of the context, objectives, financing, effective programs and outputs of the program.
[13]	Indonesia	Knowing the achievement of objectives and effectiveness of training program to improve teacher competence.	Teacher competency improvement training	CIPP	Evaluation research with CIPP model concludes that the implementation of training is declared successful from the aspects of context, input, process and product.
[9]	Turkey	Evaluating professional development programs in developing web-based content.	Professional development programs	CIPP	Development programs designed not through needs analysis and achievement of results are less than optimal because some aspects of inputs and processes do not meet the minimum criteria.
[14]	Indonesia	Evaluate teacher training programs (PPG).	Teacher training program	CIPP	In terms of context, inputs, processes and products show conformity in the assessment of PPG program implementation.
[15]	Indonesia	Discover the effects of online training in improving teacher PCK STEM competency.	Online competency development training	CIPP	The implementation of the training program shows the suitability of various aspects through the CIPP evaluation model.
[15]	USA	Evaluating training programs conducted by professionals.	Professional training	Kirkpatrick	The implementation of the training has not been able to develop and interpret well in stages 3 and 4.
[15]	USA	Evaluating the effectiveness and assessing the achievement of training program objectives.	Professional training	Kirkpatrick	Kirkpatrick's adapted model is very effective for evaluating training and education programs.
[16]	UK	Investigating the effects of	Teacher training	Kirkpatrick	Through evaluation with four stages can verify the usefulness of education and training programs in improving knowledge and competence.

1 <sup>st</sup> Author	Country 1st Author	Research Objectives	Competency Development Program	Evaluation Model	Research Results
[11]	Iran	the implementation of education and training programs.	Teacher education and training	Kirkpatrick	Kirkpatrick's model can describe the effectiveness of the workshop implementation from the process and behavior aspects of the participants.
[17]	Iran	Evaluating the effect of conducting workshops on teaching and learning methods.	Teaching and learning method workshops	Kirkpatrick	The demands of competency development needs encourage paradigm changes and evaluation implementation processes.
[18]	Ireland	Analyzing conceptual and contextual studies of education and training program evaluations.	Education and training programs	CIPP	There are obstacles in the implementation of training that can affect the effectiveness of training.
[19]	Malaysia	Reviewing the effectiveness of the training model with Kirkpatrick.	Training	Kirkpatrick	The implementation of the Kirkpatrick model was unable to answer some of the questions related to components in the induction program.
[7]	Greece	Testing the effectiveness of using kirkpatrick models to evaluate teacher induction programs.	Teacher induction program	Kirkpatrick	The evaluation results describe changes in year-over-year improvement and skills as well as changes in self-teaching.
[20]	USA	Evaluate teacher professional training programs in developing evidence-based learning instructionals.	Programming program professional teacher	Kirkpatrick	All stages of Kirkpatrick's training program showed good condition and in accordance with standards.
[21]	Indonesia	Analyzing stages in Kirkpatrick on character education trainees	Character education training program	Kirkpatrick	Training shows normal conditions on all context components, inputs and processes, while product components need improvement.
[21]	Indonesia	Evaluating tiered basic training in PAUD teachers.	Tiered training	Kirkpatrick	The evaluation results through the CIPP model provide a generally good and sufficient picture of the program results on the product.
[22]	Indonesia	Know the evaluation stage of teacher competency improvement training program.	Competency improvement training.	CIPP	The training program is not in accordance with evaluation standards because it only shoots two stages, namely the beginning and middle of the training.
[23]	Indonesia	Assess the development of the training program gradually.	Training programs	CIPP	
[24]	Indonesia			CIPP	

Based on table 3 shows that cipp model tendency is used to evaluate complementary development programs whose form varies, namely: 1) Professional development programs. 2) Competency development training. 3) Workshop. While on the Kirkpatrick model the evaluation focus is more on: 1) Complementary improvement training. 2) Education and training programs for increased competence. 3) Induction program for teachers. In general, both evaluation models are able to uncover and describe the implementation of the development program in accordance with the stages and aspects of the evaluation model.

Referring to the article data in the table is also obtained information that both models have advantages and disadvantages according to the focus characteristics of the object evaluated. Cipp model has the advantage that it is suitable to evaluate the competency development program comprehensively, because evaluators can freely evaluate the program even though the program has not been started and at the same time can evaluate during the program [10]. Unlike the Kirkpatrick model, it does not provide evaluator flexibility to evaluate training programs and the evaluation process can be done only when the program is implemented. In the implementation of the CIPP model is also very suitable to be used to evaluate programs that have been designed and planned well, because it pays attention to aspects of context, inputs, processes and products of the program [9,13,19,21,26].

The shortcomings in the CIPP model of information coverage are focused on the information needed only by decision makers and are unable to dig deeper into the important issues of competency development programs, any information should refer to standards and there is no opportunity for wider interachievement alternatives. Another drawback of the CIPP model is that it is not able to dig deeper into training-based development programs such as cost aspects, training processes and assessment programs and implementation takes a relatively long time.

Kirkpatrick's model, meanwhile, has its advantages; coverage in the evaluation of competency development programs is more comprehensive because it covers aspects of knowledge, skills and attitudes of participants who are the subjects of the program [12,21]. Kirkpatrick's model is also very relevant to be used to vaccinate teacher competency development programs such as educational and training activities [11,12,17,18,22,27].

The shortcomings in the Kirkpatrick model depend heavily on all stages of the evaluation. When evaluated only in stages 3 and 4, the interpretation process cannot be developed properly, due to limitations of reference on the rationale of the program [16]. In addition, on this model is also very dependent on the setting of the implementation of the training program, if there are internal obstacles then it very easily affects the quality of the results of the program [7]. Lastly, the weakness of the Kirkpatrick model is that it pays less attention to the context and input aspects in the implementation of the program as well as the slowness of measuring results over a long period of time.

#### 4. Conclusion

The results of the study with systematic literature review showed that the last research article in 2021 and earlier in 2010. Geographically, the results of research from various countries in the Continent of Asia, Europe and Africa. Articles resulting from the publication of proceedings and international articles. The process in article search uses four databases namely; Google Scholar, ERIC, Scimedirect and SpringerLink are majority English speaking, which can be opened in full text and free of charge. The results of the study obtained as many as eighteen research articles that discuss the cipp and Kirkpatrick models in the evaluation of teacher competency development programs. The scope of development forms includes short training activities, professional development, induction programs, workshop programs, education and training. Recommendations of research results is necessary to develop and develop a mixed model in order to have a comprehensive focus of study.

#### Acknowledgement

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# CIPP VS KIRKPATRICK MODEL IN TEACHER COMPETENCY DEVELOPMENT PROGRAM EVALUATION: A LITERATURE STUDY

**Commented [HOHs1]:** The title of this paper is confusing. I suggest: "CIPP vs kirkpatrick in the evaluation of physics teacher competency development programs: literature study"

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## Abstract

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Keywords: CIPP Evaluation Model, Kirkpatrick Evaluation Model, Teacher Competency

## INTRODUCTION

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Related to that, some research results found that the development of teacher competence through training has a significant impact on the effectiveness of learning (Rahman et al., 2011). Furthermore, in the results of the study on teacher training and competency development shows that teacher training that is implemented constructively can improve the development of the profession and competence of teachers (Morais et al., 2005). Teacher competency development programs and training can be known for their effectiveness and have a better impact in improving the quality of education when the evaluation process is carried out.

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## METHOD

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**Commented [HOHs4]:** How about the article selection process? Make it in the form of graphs/charts that are adequate and easy to understand

## RESULT

This literature study research was conducted through four stages, namely: identification, screening, feasibility and inclusion. Stages in the identification process are done by creating a framework according to PICOS in order (teacher competency development program, CIPP and Kirkpatrick evaluation model, alternative evaluation model as a solution and all studies). Keyword settings include the program of teachers competence development, CIPP and Kirkpatrick evaluation model, alternative evaluation model and inclusion criteria setting, as in the following table.

**Commented [HOHs5]:** results and discussion should be combined

**Tabel. 1** Inclusion Criteria

	Inclusion	Exclusion
Source	Google Scholar, ERIC, Sciedirect, SpringerLink dan Elsevier	Databases and other inforamsi
Year	Juli 2010 – Juli 2021	Studies published before or after this period
Study Type	All types of studies	-
Language	English and Indonesian	Other languages
Intervention	CIPP and Kirkpatrick evaluation models	Interventions on other models
Size of Results	Alternative evaluation model	Other
Population	Teacher complementary development program	Other
Publication Type	Scientific journals and availability of documents in conferences (free of charge) and published through the study of education and social fields	Other publications and paid

Search the online database through the following procedure; search for articles on online databases using matching keywords; using Boolean logic through relevant conjunctions (and, or); and the use of logic in systematic studies is a program of teachers competence development AND CIPP, Kirkpatrick model AND alternative evaluation model. The number of journals and articles in this literature study is as follows.

**Table.2** Journal selection results based on PICOS and text completeness

No	Source Article/Journal	Initial Amount	Duplicate	Incompatible with PICOS	Journal remaining
1	Sciedirect	126	113	106	4
2	SpringLink	258	201	198	3
3	Eric	218	198	195	3
4	Google Scholar	513	483	477	8
		<b>1115</b>	<b>995</b>	<b>976</b>	<b>18</b>

Based on the table above, initially the number of articles that can be collected as many as 126 from Sciedirect, 258 from SpringLink, 281 from Eric and 513 from Goole Scholar in a systematic literature review. ff the 1115 articles selected, based on the PICOS framework there are 18 articles that fit the criteria and are subsequently included. The results of this study also showed that during the period 2010-2021 there were 18 publications of research articles on the use of CIPP and Kirkpatrick models in evaluating teacher competency development programs. The focus of comparative development in this research article varies from education and training programs, workshops and induction programs. This study seeks information on the use of CIPP and Kirkpatrick evaluation models and which can be used for the development of a more holistic evaluation model in assessing teacher competency development programs. The distribution of research results covers several countries; Indonesia, Pakistan, United Kingdom, USA, Greece, Romania, Republic of Ireland, Turkey, Malaysia, Iran and China. Most of the research results come from Indonesia. There are several variations of critical notes from researchers related to the use of cipp and kirkpatrick models in the evaluation of teacher competency development programs.

Some critical notes are affirming the reliability of the evaluation model, identifying some of the weaknesses of the evaluation model opraionization and the idea of finding the interrelationship of the two

evaluation models (Moldovan, 2016; Muhammad Maqsood Khalid, 2012). The following table describes the characteristics of the articles contained in the journal.

**Tabel. 3** Characteristics of the article

No	First Author	Country First Author	Research Objectives	Competency Development Program	Evaluation Model	Research Results
1	(Moldovan, 2016)	Romania	Review the new paradigm of Kirkpatrick's evaluation model in VET professional training for competency improvement.	Training in the form of short courses	Kirkpatrick	Kirkpatrick's evaluation model has many suitability in various training areas and provides an overview of training objectives.
2	(Muhammad Maqsood Khalid, 2012)	Pakistan	Design and propose the design of cipp and Kirkpatrick's combined evaluation model in the teacher development and development program.	Competency development and training	CIPP dan Kirkpatrick	There is a new strategy in the practice of evaluation of development and training programs, which emphasizes on detailed exploration of the context, objectives, financing, effective programs and outputs of the program.
3	(Umam & Saripah, 2018)	Indonesia	Knowing the achievement of objectives and effectiveness of training program to improve teacher competence.	Teacher competency improvement training	CIPP	Evaluation research with CIPP model concludes that the implementation of training is declared successful from the aspects of context, input, process and product.
4	(YURDAKUL et al., 2014)	Turkey	Evaluating professional development programs in developing web-based content.	Professional development programs	CIPP	Development programs designed not through needs analysis and achievement of results are less than optimal because some aspects of inputs and processes do not meet the minimum criteria.
5	(Bukhori Dalimunthe et al., 2020)	Indonesia	Evaluate teacher training programs (PPG).	Teacher training program	CIPP	In terms of context, inputs, processes and products show conformity in the assessment of PPG program implementation.
6	(Ipa et al., 2021)	Indonesia	Discover the effects of online training in improving teacher PCK STEM competency.	Online competency development training	CIPP	The implementation of the training program shows the suitability of various aspects through the CIPP evaluation model.
7	(Kennedy et al., 2014)	USA	Evaluating training programs conducted by professionals.	Professional training	Kirkpatrick	The implementation of the training has not been able to develop and interpret well in stages 3 and 4.
8	(Alsalamah & Callinan, 2020)	United Kingdom	Evaluating the effectiveness and assessing the achievement of training program objectives.	Teacher training	Kirkpatrick	Model Kirkpatrick yang diadaptasi sangat efektif untuk mengevaluasi program pelatihan dan pendidikan.

9	(Mahmoodi et al., 2019)	Iran	Investigating the effects of the implementation of education and training programs..	Teacher education and training	Kirkpatrick	Through evaluation with four stages can verify the usefulness of education and training programs in improving knowledge and competence.
10	(Heydari et al., 2019)	Iran	Evaluating the effect of conducting workshops on teaching and learning methods..	Teaching and learning method workshops	Kirkpatrick	Kirkpatrick's model can describe the effectiveness of the workshop implementation from the process and behavior aspects of the participants.
11	(McNamara et al., 2010)	Republic of Ireland	Analyzing conceptual and contextual studies of education and training program evaluations.	Education and training programs	CIPP	The demands of competency development needs encourage paradigm changes and evaluation implementation processes.
12	(Saad & Mat, 2013)	Malaysia	Reviewing the effectiveness of the training model with Kirkpatrick.	Training	Kirkpatrick	There are obstacles in the implementation of training that can affect the effectiveness of training.
13	(Grammatikopoulos et al., 2013)	Greece	Testing the effectiveness of using kirkpatrick models to evaluate teacher induction programs.	Teacher induction program	Kirkpatrick	The implementation of the Kirkpatrick model was unable to answer some of the questions related to components in the induction program.
14	(Mazur & Woodland, 2017)	USA	Evaluate teacher professional training programs in developing evidence-based learning instructional.	Programming program professional teacher	Kirkpatrick	The evaluation results describe changes in year-over-year improvement and skills as well as changes in self-teaching.
15	(Fatimah, 2017)	Indonesia	Analyzing stages in Kirkpatrick on character education trainees	Character education training program	Kirkpatrick	All stages of Kirkpatrick's training program showed good condition and in accordance with standards.
16	(Christy, n.d.)	Indonesia	Evaluating tiered basic training in PAUD teachers.	Tiered training	CIPP	Training shows normal conditions on all context components, inputs and processes, while product components need improvement.
17	(Ngadi & Anu, 2020)	Indonesia	Know the evaluation stage of teacher competency improvement training program.	Competency improvement training.	CIPP	The evaluation results through the CIPP model provide a generally good and sufficient picture of the program results on the product.
18	(Mote, 2017)	Indoensia	Assess the development of the training program gradually.	Training programs	CIPP	The training program is not in accordance with evaluation standards because it only shoots two stages, namely the beginning and middle of the training.

## DISCUSSION

Based on table 3 shows that cipp model tendency is used to evaluate complementary development programs whose form varies, namely: 1) professional development programs. 2) competency development training. 3) workshop. While on the Kirkpatrick model the evaluation focus is more on: 1) complementary improvement training. 2) education and training programs for increased competence. 3) induction program for teachers. In general, both evaluation models are able to uncover and describe the implementation of the development program in accordance with the stages and aspects of the evaluation model.

Referring to the article data in the table is also obtained information that both models have advantages and disadvantages according to the focus characteristics of the object evaluated. Cipp model has the advantage that it is suitable to evaluate the competency development program comprehensively, because evaluators can freely evaluate the program even though the program has not been started and at the same time can evaluate during the program (Muhammad Maqsood Khalid, 2012). Unlike the Kirkpatrick model, it does not provide evaluator flexibility to evaluate training programs and the evaluation process can be done only when the program is implemented. In the implementation of the CIPP model is also very suitable to be used to evaluate programs that have been designed and planned well, because it pays attention to aspects of context, inputs, processes and products of the program (Mazur & Woodland, 2017; McNamara et al., 2010; Powell & Conrad, 2015; Umam & Saripah, 2018; Yurdakul et al., 2014).

The shortcomings in the CIPP model of information coverage are focused on the information needed only by decision makers and are unable to dig deeper into the important issues of competency development programs, any information should refer to standards and there is no opportunity for wider interachievement alternatives. Another drawback of the CIPP model is that it is not able to dig deeper into training-based development programs such as cost aspects, training processes and assessment programs and implementation takes a relatively long time.

Kirkpatrick's model, meanwhile, has its advantages; coverage in the evaluation of competency development programs is more comprehensive because it covers aspects of knowledge, skills and attitudes of participants who are the subjects of the program (Mazur & Woodland, 2017; Moldovan, 2016). Kirkpatrick's model is also very relevant to be used to vaccinate teacher competency development programs such as educational and training activities (Alsalamah & Callinan, 2020, 2021; Fatimah, 2017; Heydari et al., 2019; Mahmoodi et al., 2019; Moldovan, 2016).

The shortcomings in the Kirkpatrick model depend heavily on all stages of the evaluation. When evaluated only in stages 3 and 4, the interpretation process cannot be developed properly, due to limitations of reference on the rationale of the program (Kennedy et al., 2014). In addition, on this model is also very dependent on the setting of the implementation of the training program, if there are internal obstacles then it very easily affects the quality of the results of the program (Saad & Mat, 2013). Lastly, the weakness of the Kirkpatrick model is that it pays less attention to the context and input aspects in the implementation of the program as well as the slowness of measuring results over a long period of time.

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## CONCLUSION

The results of the study with systematic literature review showed that the last research article in 2021 and earlier in 2010. Geographically, the results of research from various countries in the Continent of Asia, Europe and Africa. Articles resulting from the publication of proceedings and international articles. The process in article search uses four databases namely; Google Scholar, ERIC, Sciencedirect and SpringerLink are majority English speaking, which can be opened in full text and free of charge. The results of the study obtained as many as eighteen research articles that discuss the cipp and Kirkpatrick models in the evaluation of teacher competency development programs. The scope of development forms includes short training activities, professional development, induction programs, workshop programs, education and training. Recommendations of research results is necessary to develop and develop a mixed model in order to have a comprehensive focus of study.

**Commented [HOHs6]:** explain about "CIPP vs kirkpatrick in the evaluation of physics teacher competency development programs" from the discussion presented



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**PENDAHULUAN** Salah satu strategi peningkatan mutu pendidik PAUD yang telah diberlakukan selama ini melalui pengembangan gugus . Upaya peningkatan mutu pendidik seperti yang dipersyaratkan dal. 1(2), 30–43.
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