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Research Article

Development of Web-Based Learning Cycle Base Experience Training Management Model

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Abstract

Management is a process to actualize the desired outcome; as a science, management is universal and uses a science frame. The research method that was used is Research and Development (R&D). The developed product is training management guidelines or E-Modul. The data source is 70 Physics Teachers from Physics MGMP Area II East Jakarta at 92 Senior High Schools or Vocational High Schools. The research procedure starts from the preliminary study stage, development stage, and evaluation stage. The sources of data were obtained from informants, documents, activities and validators. The data collection techniques used were interviews, questionnaires, and documentation, while the data analysis techniques used were quantitative and qualitative descriptive analysis. The results of this study are (1) developing a teacher training management model by analyzing the integrated needs of teachers and training providers, (2) developing a training module, applying learning cycle base experience training methods, also a post-evaluation follow-up; the web-based teacher training management model worth to be applied. Validation from experts, academics, media and practitioners regarding training model and module are 89.2 and 93 with perfect category. The results of the reaction evaluation to measure respondents' responses to the quality of the training implementation were considered good, with a total score of 1495. In the training evaluation, there was a significant change in the ability of the training participants before and after the training that was proved by the average score obtained by the training participants on the initial test was 66.48 and the post-test 92.04, with a difference of 25.56, the conclusion is that this development product can be used properly.

Keywords Learning Cycle, Training Management, Web.

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Introduction

Nowadays, the globalization era is known as the Industrial revolution 4.0 era that developed in the era of knowledge so that a very fast-changing in the world implicates on so many fields because information technology has become the basis of human life. Along with these developments, education is one of the concerns that is expected to prepare quality resources and compete globally in various developments in information technology. Education and Training Management is a knowledge field that must be taken by the person who is active in the education world and efforts to create a more established generation. According to Hasibuan (2009) explained that management is a science and an art that manages human resources use the process and other sources effectively in order to reach a specific outcome, while according to Afandi (2018) management is working with people in order to reach the organization's purpose by applying the planning, organizing, staffing, leading and controlling function. According to Griffin (1984) management involves coordinating and controlling other work activities to be done effectively and efficiently. Efficient means to get the most output from the minimum input possible, while practical is "doing the right things", which means doing the things that can help the organization reach its goals. According to Marquis, Huston, and Propst (1992) and Rizaldi et al. (2021), the first function of management is the planning function, the most critical stage and becomes a priority among other management functions. Weak planning can cause a failure in the management process. Based on some management definitions mentioned above, we can say that management is a subject that learns about a process in organizing human resources and other resources to reach the outcome effectively and efficiently (Choi & Kruis, 2020; Firmansyah & Maulana, 2021). Training talked about the theme regarding education management and training whether it is conceptual philosophical, a theory and basic concept of the importance of education and training in the development of Human Resources in educational institutions or methodological-empirical, which is designing a training programme, organizing and evaluating a training programme. Training is one of the most important tools in developing the quality of human resources. Even further with learning organization concept that is used by so many organizations in this information era. In practice, training management is always directly involved in every training activity where training activities are a continuous cycle of activities which according to Point is an analysis of training needs, planning training programme, preparation of training materials, implementation of training and training assessments (Hanrahmawan, 2012). Meanwhile Scannell and Donaldson (2000) stating that there are several steps that can be used in designing training programme, that are: (1) analyzing the needs, (2) deciding the training needs, (3) deciding the purpose and the standards, (4) developing training materials, (5) choosing learning methods and media, (6) conducting trials, (7) implementing training programs, (8) evaluating programs, and (9) revising programs. Education or training is an essential aspect of development. Training, education and development are defined as follows: Training is those activities that are designed to improve human performance on the job the employee is presently doing or is being hired to do. Education is those human resource development activities that are designed to improve the overall competence of the team member in a specified direction and beyond the job new held. Development is concerned with preparing the employees to move with the organization as it develops, changes, and grows (Austin, Oyedeji, & Tade, 2020; Laird, Holton, & Naquin, 2003). Training is often seen as an activity that is underestimated, even though training involves important activities and complex activities. Training activities are learning efforts organized by the government, non-governmental organizations, and companies to meet organisational needs and achieve goals. According to Ivancevich, Konopaske, and Matteson (2008), training is a systematic process to change the work behaviour of an individual or a group of employees to improve organizational performance. From the definitions mentioned above, training is a process to improve the competence of employees/teachers and train the abilities, skills, expertise, and knowledge of employees/teachers to carry out work effectively and efficiently to achieve goals in a company/school. Generally, the training seeks to prepare employees/teachers to carry out the currently being faced jobs. In the book Handbook Experiential Learning by Silberman

(2016), John Dewey states that successful experiential learning does not only involve learners in activities but also help learners bring out the meaning of these activities. Kujalova, p.1-4 In general, experiences are perceptions/impressions seen as something positive, impressive and unusual. It enriches our lives: it is something we acquire in the course of life that leads to the reconciliation of the internal and the external reality. Nevertheless, Experience per se does not necessarily mean that one learns. Making such Experience meaningful for learning through reflection is also an important step to carry out. Huxley stated that Experience is not merely what happens tous. More importantly, it is what we do with what happens to us. According to Kolb and Kolb (2017) it based its EL model on Lewin's version of the problem-solving model widely used in developmental organizations. Kolb proved that this model was very similar to the work of Dewey and Piaget. Kolb offers a four-stage Experiential Learning Cycle (EL Cycle); a) Concrete Experience (CE): Full involvement (learners) in new experiences here-and-now; b) Reflective Observation, observing reflectively against learners' Experience from many perspectives; c.) Abstract Conceptualization, Formulating or conceptualizing which integrates the results of observations (and reflections) of learners (towards Experience) into a logical theory (concept); d) Active Experimentation, testing theories to make decisions and solve problems.

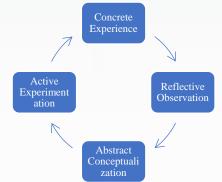


Fig 1. Experimental Learning Cycle Model Kolb

The experiential learning model is a learning model that can create a more meaningful learning process, where learners experience what they learn. Through this model, learners learn not only about mere material concepts. This is because learners are directly involved in the learning process to serve as an experience. The results of the experiential learning process do not only emphasize the cognitive aspects, also unlike behavior theory that eliminates the role of subjective Experience in the learning process. The knowledge that created from this model is a combination of understanding and transforming experience. From the description above, it can be concluded that the Experience Learning model is a learning model that pays attention to and focuses on the experiences that will be experienced and learned by learners. In developed countries, the provision of education using the web has become a choice and a necessity. This is because of technology support, both in administrative and organizing management, as well as in organizing training itself, provides considerable benefits in an effort to improve the quality and quantity of education. According to Sibero (2013) web is a system related to documents used as a medium to display text, images, multimedia, and others on the internet network. Meanwhile, according to Pahlevi (2013) in terminology, a website is a collection of site pages summarized in a domain or subdomain located on the World Wide Web (WWW) on the internet. Web is a collection of documents that are widely spread across several server computers around the world and are connected into one network through a network called the internet, almost 80% of internet services are websites. According to Sibero (2013) the web is "a system related to documents used as a medium to display text, images, multimedia, and others on the internet network". Meanwhile, according to Kustiyahningsih and Anamisa (2011), the web is "one of the services obtained by computer users connected to hypertext facilities to display data in the form of text, images, sound, animation, and others multimedia". The integration of the web for the development of training programs for teachers is in line with the opinion of (Khosrow, 2011; Turnipseed, 2005) that the reason for integrating technology into the education and training process is that there is a need to plan to learn that will motivate students to learn. Training designs are: (1) essential professions; (2) focuses on build and maintain efficient and effective human performance; (3) be guided by a performance model; (4) carried out systematically; (5) based on open systems theory; and (6) oriented to search and implement effective solutions. Based on some of the above theories, web-based training is severe but unique.

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What is meant here is that designing and implementing web-based training is not as easy as imagined. In addition to internet infrastructure, web-based training requires an instructor model that is specifically designed for training purposes. The instructional model is a vital component that determines the effectiveness of the training process. Based on the explanation above, the writer has conducted research: Development of a Web-Based Learning Cycle Base Experience Training Management Model.

Methods

This study uses a development research method because researchers want to produce effective products in physics teachers training. The approach used is qualitative. At the same time, the method used in this study is the Research and Development (R&D) method. According to Gall, Borg, and Gall (1996) R & D research in education includes ten steps:1) Research and Information Collecting include measurement of needs, a study of literature, research on a small scale, and considerations in terms of value. 2) Planning, which compiles a research plan including the capabilities needed to conduct research, formulating objectives to be achieved, design or research steps, and the possibility of testing in a limited scope. 3) Develop Preliminary Product includes learning materials, learning processes, and instruments evaluation (Borg & Gall, 1984).

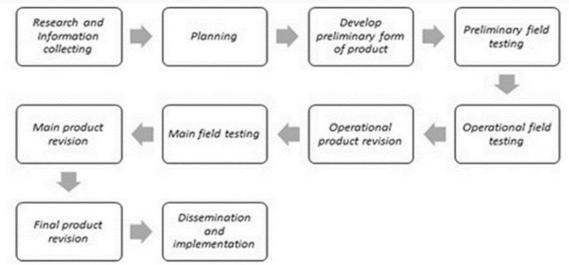


Fig.2: Research and Development steps according to Borg and Gall (1984)

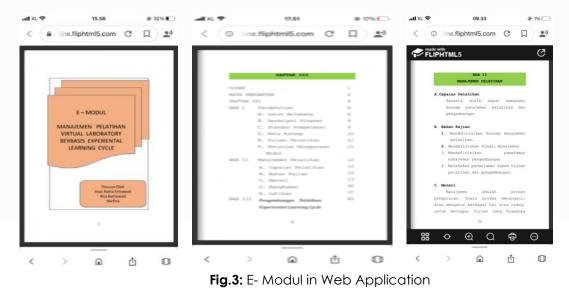
Preliminary Field Testing, testing was carried out with 6 to 12 test subjects. During the trial, observations were made, and questionnaires were distributed. 5) Main Product Revision is an improvement or refinement of trial results. 6) Main Field Testing, conducting a more comprehensive trial with 30 to 100 test subjects. Quantitative data on the appearance of respondents before and after using the model that tried out collected. The results of data collection were evaluated and, if possible, compared to a comparison group. 7) Operational Product Revision is a product refinement from the results of a more comprehensive field test. 8) Operational Field Testing, product testing carried out involving 40 to 120 subjects. Testing was carried out through questionnaires, interviews, and observations and analysis of the results. 9) Final Product Revision is a refinement based on input from field implementation tests. 10) Dissemination and Implementation is a stage to report the research results to professional meetings in journals and cooperate with publishers for publishing. The development stages above are broadly mapped into three, namely: (1) the pre-development stage, (2) the development stage, and (3) the model application stage. The pre-development stage for implementing the web-based Experience learning cycle includes preliminary study activities, including reviewing the theory, literature, relevant research results, and conducting field observations. The model development stage includes determining and designing a model for implementing the experiential learning cycle and presenting the model, including preparing an E-Module guide and instructions for implementing training. The implementation stage of the Webbased Experience Learning Cycle training management model includes validation, testing, evaluation and revision, and presentation of the final product/final model. The research was conducted at the physics studio (MGMP) region II East Jakarta to implement the observation analysis stage in ten schools, then continued by analysing the distribution of online questionnaires with respondent teachers who teach at MGMP Region II East Jakarta. The design stage until



conducting an expert review was carried out at the FKIP UHAMKA Jakarta Campus and Post-UNPAK Bogor. Research time is from March 2020 - March 2021. The data analysis technique was carried out using quantitative descriptive analysis according to the development procedure carried out. The data from the research results obtained from the media expert and the material experts, the responses of the physics teacher, and the training participants to the training application developed, in terms of software aspects, learning design aspects and communication aspects, changing the qualitative assessment to be quantitative with provisions that can be in the form of very bad, not good, adequate, good, and perfect statements converted into quantitative data with a scale of 5, namely scoring from 1-5. The qualitative data obtained in this study were expert validation data and the training participants' response data to the product. The newness of the development of training management that used, among others, is to see the effectiveness test of training and web application testing.

Results and Discussion

The results of development research are digital information media products on web-based training management for teachers. This digital information media contains the primary material of training management, the experiential learning cycle training model that combines text, images, videos and website links to enrich information according to the theme. The software that used based on HTML5, CSS and JavaScript. The training program that was carried out in the form of online training using zoom meetings, training information delivery was done with the material and Experience learning cycle models to improve understanding of training and can participate in efforts to improve the professional competence. The material used in implementing training management consists of projection material and media in the form of presentation materials presented using power points (ppt) and media in training modules and information books on training management, experience-learning cycle, phet simulation.



In addition to the training management system application to evaluate the quality of the system and determine whether the application made meets user needs, the analysis uses the SUMI method (software usability measurement inventory), namely by distributing questionnaires to 15 respondents with various educational and occupational backgrounds via google form to assess aspects of efficiency, affect, helpfulness, control and learnability. The SUMI questionnaire consists of 50 statements, where statements that lead to a more positive direction to the system are given a score of 4, 2, 0 for agree, do not know and disagree. Following is the table of training management applications.

No	Nam e	Learnability	Effect	Helffulnes	Control	Efficiency
1	А	30	30	55	55	80
2	В	35	35	60	25	75
3	С	30	35	65	30	80
4	D	30	40	60	30	80
5	E	25	55	60	35	80
6	F	25	70	65	35	70
7	G	30	70	70	40	80
8	Н	30	100	75	100	95
9	1	30	100	80	80	90
10	J	25	100	90	90	90
11	Κ	30	70	85	85	85
12	L	25	70	75	85	85
13	М	100	35	80	80	85
14	Ν	100	35	100	100	90
15	0	100	40	75	75	80
Averc	ige	43	59	73	63	83

Table 1.

The Evaluation of the training management system application (WEB)



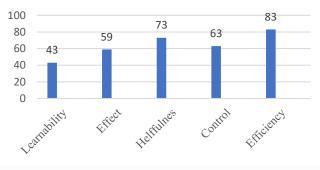


Fig 4. Evaluation Results of A Training Management System Application Using SUMI

Based on the results of the questionnaires (Fig. 4) SUMI, it is known that in all categories of usability and global scores, there are still scores below the average score of 50, namely in the Learnability category, which only reaches the score of 43. While for the average, score in the Efficiency category is 83, Affect is at 59 and helpfulness on a score of 73 and control is 63. The measure of user satisfaction based on the SUMI method is taken from the average value; if it is more than the average value, it is included in the criteria for being quite satisfied or satisfied, while below-average is included in the criteria for less satisfied. From the results of the SUMI questionnaire conducted, of the five aspects assessed, 4 (four) aspects scored above the average of 50, while one aspect scored below the average. However, it can be said that users are quite satisfied in accessing and operating the media training management system application. To carry out the analysis using the Training Management method by distributing questionnaires to 30 respondents who have teacher education background via Google Form to assess aspects of training needs, training participants, training materials, training methods and evaluation. The questionnaire consists of 54 statements, where statements that lead to a more positive direction to the system are given a value of 5, 3, 1 for responses that strongly disagree, disagree, less disagree, agree and strongly agree. Here is the table for the distribution results of training management.



Table	2.
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Results of The Distribution of Training Management

Aspects	Percent age (%)	Conclusion
Training Needs	65,5	The dimension of training needs is quite good (65.5%) organizational goals, employee competency development, new policies and tasks, and improving poor performance.
Training Participan	69,25	The dimensions of the training participants are quite good (69.25%), but there are still problems, especially those related to the low competence of the trainees, leadership and abilities, promotions, needs of participants, positions of
ts		trainees, teaching experience, educational background and participants training through objective selection.
Training Materials	67,33	The training material is Good Enough (67.33%), but there are still problems, especially those related to low: training materials that can be applied in the implementation of tasks, training objectives that must be clearer, training materials can improve skills and knowledge, training materials which must be tailored to the needs of the work.
Training Methods	69,33	The dimensions of the training material are quite good (69.33%), but there are still problems, especially those related to low: the training methods being taught or used, training methods that support more proactive participants, variations in methods, training materials that provide simulated problem solving, mastery
		of the material provided can be mastered well, creating an active and communicative atmosphere.
Training Evaluation	68,94	The training evaluation dimension is quite good (68.94%), but there are still problems, especially those related to low: work productivity, contribution in helping to carry out work, improving career, job competency, more confidence in completing work, improving skills and workability, increased motivation to work and apply new knowledge.

Based on the results of the management training questionnaire conducted via a google form, 5 out of 5 aspects values are above average. However, it can be said that users feel good enough in accessing and operating the Training Management application. The effectiveness and feasibility test results show that the response of participants in assessing the Training Management application is very positive and reaches a percentage value of 80.2% with the criteria "Very Good". According to Widiyanto and Prasilowati (2015), a website design is attractive if its content and appearance can attract internet users to visit the website, and the attractiveness of website design has a positive and significant impact on users perceptions. Thus, it can be said that the developed Training Management application is considered attractive and feasible to use. Based on the results of the SUMI questionnaire, there are 4 (four) aspects that score above average (50 up), so it can be said that users are "quite satisfied" in accessing and operating the training management system application because it is user-friendly and can add new knowledge. This is following the opinion of Barnes and Vidgen (2003), which states that the quality of use (usability) includes the ease to learn the website, easy to understand, easy to browse, ease of use, the attractiveness of the website, pleasant interface, has good competence and provides a new fun experience. The opinion of Sloman (2017) states that all factors, namely easy-to-use, perceived benefits and attitudes affect decisions in using technology. So it can be concluded that the ease of use of the training management system application is one of the attractions for users to access the application. Meanwhile, based on Hake R.R. assessment of the Training Management application meets the criteria "Effective Enough" to use.

Conclusion

Based on the results of research and development of a web-based Experience learning cycle management model, the factual model of teacher training management that has been held so far is in the good enough category, which includes: (1) teacher competence with a reasonably good category with an average score of 65.5; (2) the competency of the training instructor is in a



suitable category with an average score of 72.25; (3) the training material is quite good with an average of 67.33; (4) the training method is quite good with an average score of 69.33; and (5) the evaluation of the training was quite good with an average score of 68.9, and the teacher's need for teacher training was very important, namely 65.5%. Implementation of training management is carried out through; first, training management planning is designed based on needs analysis, secondly training organization and organization enriched with Experience learning cycle training management, training time organization, facilitator/instructor role and task organization and training resource organization; Third, the implementation of the developed webbased training management model has shown effectiveness in obtaining training results that are supported by systematics and relationships between adaptive components, so that facilitators can implement them as learning resources and participants in making efforts to develop their competencies, and fourth; evaluation of training management using the types of tests, namely pre-test and post-test. Thus it can be concluded that the web-based Training Management Development is feasible to use and is able to improve the professional competence of physics teachers. This is also supported by the data from the research and discussion that have been described previously.

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Dr. Imas Ratna Ermawati, M.Pd - Development of Web-Based Learning Cycle Base Experience Training Management Model

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Abstract

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Introduction

Nowadays, the globalization era is known as the Industrial revolution 4.0 era that developed in the era of knowledge so that a very fast-changing in the world implicates on so many fields because information technology has become the basis of human life. Along with these developments, education is one of the concerns that is expected to prepare quality resources and compete globally in various developments in information technology. Education and Training Management is a knowledge field that must be taken by the person who is active in the education world and efforts to create a more established generation. According to Hasibuan (2009) explained that management is a science and an art that manages human resources use the process and other sources effectively in order to reach a specific outcome, while according to Afandi (2018) management is working with people in order to reach the organization's purpose by applying the planning, organizing, staffing, leading and controlling function. According to Griffin (1984) management involves coordinating and controlling other work activities to be done effectively and efficiently. Efficient means to get the most output from the minimum input possible, while practical is "doing the right things", which means doing the things that can help the organization reach its goals. According to Marquis, Huston, and Propst (1992) and Rizaldi et al. (2021), the first function of management is the planning function, the most critical stage and becomes a priority among other management functions. Weak planning can cause a failure in the management process. Based on some management definitions mentioned above, we can say that management is a subject that learns about a process in organizing human resources and other resources to reach the outcome effectively and efficiently (Choi & Kruis, 2020; Firmansyah & Maulana, 2021). Training talked about the theme regarding education 47 phagement and training whether it is conceptual philosophical, a theory and basic concept of the importance of education and training in the development of Human Resources in educational institutions or methodological-empirical, while is designing a training programme, organizing and evaluating a training programme. Training is one of the most important tools in developing the quality of human resources. Even further with learning organization concept that is used by so many organizations in this information era. In practice, training management is always directly involved in every training activity where training activities are a continuous cycle of activities which according to Point is an analysis of training needs, planning training programme, preparation of training materials, implementation of training and training assessments (Hanrahmawan, 2012). Meanwhile Scannell and Donaldson (2000) stating that there are several steps that can be used in designing training programme, that are: (1) analyzing the needs, (2) deciding the training needs, (3) deciding the purpose and the standards, (4) developing training materials, (5) choosing learning methods and media, (6) conducting trials, (7) implementing training programs, (8) evaluating programs, and (9) revising programs. Education or training is an essential agreet of development. Training, education and development are defined as follows: Training is those activities that are designed to improve human performance on the job the employee is presently doing or is being hired to do. Education is those human resource development activities that are designed to improve the overall competence of the team member in a specified direction and beyond the job new held. Development is concerned with preparing the employees to move with the organization as it develops, changes, and grows (Austin, Oyedeji, & Tade, 2020; Laird, Holton, & Naquin, 2003). Training is often seen as an activity that is underestimated, even though training involves important activities and complex activities. Training activities are learning efforts organized by the government, non-governmental organizations, and companies to meet organisational needs and achieve goals. According to Ivancevich, Konopaske, and Matteson (2008), training is a systematic process to change the work behaviour of an individual or a g49 up of employees to improve organizational performance. From the definitions mentioned above, training is a process to improve the competence of employees/teachers and train the abilities, skills, expertise, and knowledge of employees/teachers to carry out work effectively and efficiently to achieve goals in a company/school. Generally, the training seeks to prepare employees/teachers to carry out the currently being faced jobs. In the book Handbook Experiential Learning by Silberman

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(2016), John Dewey states that successful experiential learning does not only involve learners in activities but also help learners bring out the meaning of these activities. Kujalova, p.1-4 In general, experiences are perceptions/impressions seen as something positive, impressive and unusual. It enriches our lives: it is something we acquire in the course of life that leads to the reconciliation of the internal and the external reality. Nevertheless, Experience per se does not necessarily mean that one learns. Making such Experience meaningful for learning through reflection is also an important step to carry out. Huxley stated that Experience is not merely what happens tous. More importantly, it is what we do with what happens to us. According to Kolb and Kolb (2017) it based its EL model on Lewin's version of the problem-solving model widely used in developmental organizations. Kolb proved that this model was very similar to 7 work of Dewey and Piaget. Kolb offers a four-stage Experiences here-and-now; b) Reflective Observation, observing reflectively against learners' Experience from many perspectives; c.) Abstract Conceptualization, Formulating or conceptualizing which integrates the results (53) bservations (and reflections) of learners (towards Experience) into a logical theory (concept); d) Active Experimentation, testing theories to make decisions and solve problems.





The experiential learning model is a learning model that can create a more meaningful learning process, where learners experience what they learn. Through this model, learners learn not only about mere material concepts. This is because learners are directly involved in the learning process to serve as an experience. The results of the experiential learning process do not only emphasize the cognitive aspects, also unlike behavior theory that eliminates the role of subjective Experience in the learning process. The knowledge that created from this model is a combination of understanding and transforming experience. From the description above, it can be concluded that the Experience Learning model is a learning model that pays attention to and focuses on the experiences that will be experienced and learned by learners. In developed countries, the provision of education using the web has become a choice and a necessity. This is because of technology support, both in administrative a 43 organizing management, as well as in organizing training itself, povides considerable benefits in an effort to improve the quality and quantity of education. According to Sibero (2013) web is a system related to documents used as a medium to display tes images, multimedia, and others on the internet network. Meanwhile, according to Pahlevi (2013) in terminology, a website is a collection of site pages summarized in a domain or subdomain located on the World Wide Web (WWW) on the internet. Geb is a collection of documents that are widely spread across several server computers around the world and are connected into the network through a network called the internet, almost 80% of internet services are websites. According to Sibero (2013) the web is "a system related to documents used as a medium to display text, images, multimedia, and others on the internet network". Meanwhile, according to Kustiyahningsih and Anamisa (2011), the web is "one of the services obtained by computer users connected to hypertext facilities to display data in the form of text, images, sound, animation, and others multimedia". The integration of the web for the development of training programs for teachers is in line with the opinion of (Khosrow, 2011; Turnipseed, 2005) that the reason for integrating technology into the education and training process is that there is a nee 19 o plan to learn that will motivate students to learn. Training designs are: (1) essential professions; (2) focuses on build and maintain efficient and effective human performance; (3) be guided by a performance model; (4) carried out systematically; (5) based on open systems theory; and (6) oriented to search and implement effective solutions. Based on some of the above theories, web-based training is severe but unique.

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What is meant here is that designing and implementing web-based training is not as easy as imagined. In addition to internet infrastructure, web-based training requires an instructor model that is specifically designed for training purposes. The instructional model is a vital component that determines the effectiveness of the training process. Based on the explanation above, the writer has conducted research: Development of a Web-Based Learning Cycle Base Experience Training Management Model.

Methods

This study uses a development research method because researchers want to produce effects products in physics teachers training. The approach used is qualitative. At the same time, the method used in this study is the Research and Development (R&D) method According to Gall, Borg, and Gall (1996) R & D research in education includes ten steps:1) Research and Information Collecting include measurement of needs, a study of literature, research on a small scale, and considerations in terms of value. 2) Planning, which compiles a research plan including the capabilities needed 35 conduct research, formulating objectives to be achieved, design or research steps, and the possibility of testing in a limited scope. 3) Develop Preliminary Product includes learning materials, learning processes, and instruments evaluation (Borg & Gall, 1984).



Preliminary Field Testing, testing was carried out with 6 to 12 test subjects. During the trial, observations were made, and questionnaires were distributed. 5) Main Product Revision is an imp[32]ement or refinement of trial results. 6) Main Field Testing, conducting a more comprehensive trial with 30 to 100 test subjects. Quantitative data on the appearance of respondents before and after using the model that tried out collected. The results of the collection were evaluated and, if possible, compared to a comparison group. 7) Operational Product Revision is a product refinement from the real s of a more comprehensive field test. 8) Operational Field Testing, product testing carried out involving 40 to 120 subjects. Testing 28 as carried out through questionnaires, interviews, and observations and analysis of the (40 ults. 9) Final Product Revision is a refinement based on input from field implementation tests. 10) Dissemination and Implementation is a stage to report the research results to professional meetings in journals and cooperate with publishers 14 publishing. The development stages above are broadly mapped into three, namely: (1) the pre-development stage, (2) the development stage, and (3) the model application stage. The pre-development stage for implementing the web-based Experience learning cycle includes preliminary study activities, including reviewing the theory, literature, relevant research results, and conducting field observations. The model development stage includes determining and designing a model for implementing the experiential learning cycle and presenting the model, including preparing an E-Module guide and instructions for implementing training. The 14 plementation stage of the Webbased Experience Learning Cycle training management model includes validation, testing, evaluation and revision, and presentation of the final product/final model. The research was conducted at the physics studio (MGMP) region II East Jakarta to implement the observation analysis stage in ten schools, then continued by analysing the distribution of online questionnaires with respondent teachers who teach at MGMP Region II East Jakarta. The design stage until

conducting an expert review was carried out at the FKIP UHAMKA Jakarta Campus and Post-UNPAK Bogor. Research time is from March 2020 - March 2021. The data analysis technique was carried out using quantitative descriptive analysis accordin 45 the development procedure carried out. The data from the research results obtained from the media expert and the material experts, the responses of the physics teacher, and the training participants to the training application developed, in terms of software aspects, learning design aspects and communication aspects, changing the qualitative assessment to be quantitative with provisions that can be in the form of very bad, not good, adequate, good, and perfect statements converted into quantitative data with a scale of 5, namely scoring from 1-5. The qualitative data obtained in this study were expert validation data and the training participants' response data to the product. The newness of the development of training management that used, among others, is to see the effectiveness test of training and web application testing.

Results and Discussion

The results of development research are digital information media products on web-based training management for teachers. This digital information media contains the primary material of training management, the experiential learning cycle training model that combines text, images, videos and website links to enrich information according to the theme. The software that used based on HTML5, CSS and JavaScript. The training program that was carried out in the form of online training using zoom meetings, training information delivery was done with the material and Experience learning cycle models to improve understanding of training and can participate in efforts to improve the professional competence. The material used in implementing training management consists of projection material and media in the form of presentation materials presented using power points (ppt) and media in training modules and information books on training management, experience learning cycle, phet simulation.



In addition to the training management system application to evaluate the quality of the system and determine whether the application made meets user needs, the analysis uses the SUMI method (software usability measurement inventory), namely by distributing questionnaires to 15 respondents with various educational and occupational backgrounds via google form to assess aspects of efficiency, affect, helpfulness, control and learnability. The SUMI questionnaire consists of 50 statements, where statements that lead to a more positive direction to the system are given a score of 4, 2, 0 for agree, do not know and disagree. Following is the table of training management applications.

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Table 1.

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The Evaluation of the training management system application (WEB)

No	Nam	Learnability	Effect	Helffulnes	Control	Efficiency
	е	· · ·				
1	A	30	30	55	55	80
2	В	35	35	60	25	75
3	С	30	35	65	30	80
4	D	30	40	60	30	80
5	E	25	55	60	35	80
6	F	25	70	65	35	70
7	G	30	70	70	40	80
8	Н	30	100	75	100	95
9	1	30	100	80	80	90
10	J	25	100	90	90	90
11	К	30	70	85	85	85
12	L	25	70	75	85	85
13	М	100	35	80	80	85
14	Ν	100	35	100	100	90
15	0	100	40	75	75	80
Avero	ae	43	59	73	63	83

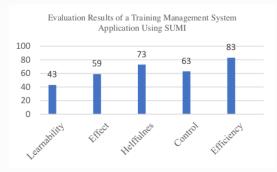


Fig 4. Evaluation Results of A Training Management System Application Using SUMI

Based on the results of the questionnaires (Fig. 4) SUMI, it is known that in all categories of usability and global scores, there are still scores below the average score of 50, namely in the Learnability category, which only reaches the score of 43. While for the average, score in the Efficiency category is 83, Affect is at 59 and helpfulness on a score of 73 and control is 63. The measure of user satisfaction based on the SUMI method is taken from the average value; if it is more than the average value, it is included in the criteria for being quite satisfied or satisfied, while below-average is included in the criteria for less satisfied. From the results of the SUMI questionnaire conducted, of the five aspects assessed, 4 (four) aspects scored above the average of 50, while one aspect scored below the average. However, it can be said that users are quite satisfied in accessing and operating the media training management system application. To carry out the analysis using the Training Management method by distributing questionnaires to 30 respondents who have teacher education background via Google Form to assess aspects of training needs, training participants, training materials, training methods and evaluation. The questionnaire consists of 54 statements, where statements that lead to a more positive direction to the system are given a value of 5, 3, 1 for responses that strongly disagree, disagree, less disagree, agree and strongly agree. Here is the table for the distribution results of training management.

Table 2.

Results of The Distribution of Training Management

Aspects	Percent age (%)	Conclusion
Training Needs	65,5	The dimension of training needs is quite good (65.5%) organizational goals employee competency development, new policies and tasks, and improving poor performance.
Training Participan ts	69,25	The dimensions of the training participants are quite good (69.25%), but there are still problems, especially those related to the low competence of the trainees, leadership and abilities, promotions, needs of participants, positions o trainees, teaching experience, educational background and participant training through objective selection.
Training Materials	67,33	The training material is Good Enough (67.33%), but there are still problems especially those related to low: training materials that can be applied in the implementation of tasks, training objectives that must be clearer, training materials can improve skills and knowledge, training materials which must be tailored to the needs of the work.
Training Methods	69,33	The dimensions of the training material are quite good (69.33%), but there are still problems, especially those related to low: the training methods being taugh or used, training methods that support more proactive participants, variation in methods, training materials that provide simulated problem solving, master of the material provided can be mastered well, creating an active and
		communicative atmosphere.
Training Evaluation	68,94	The training evaluation dimension is quite good (68.94%), but there are sti problems, especially those related to low: work productivity, contribution in helping to carry out work, improving career, job competency, more confidence in completing work, improving skills and workability, increased motivation to work and apply new knowledge.

Based on the results of the management training questionnaire conducted via a google form, 5 out of 5 aspects values are above average. However, it can be said that users feel good enough in accessing and operating the Training Management application. The effectiveness and feasibility test results show that the response of participants in assessing the Training Management application is very positive and reaches a percentage value of 80.2% with the criteria "Very Good". According to Widiyanto and Prasilowati (2015), a website design is attractive if its content and appearance can attract internet users to visit the website, and the attractiveness of website design has a positive and significant impact on users perceptions. Thus, it can be said that the developed Training Management application is considered attractive and feasible to use. Based on the results of the SUMI questionnaire, there are 4 (four) aspects that score above average (50 up), so it can be said that users are "quite satisfied" in accessing and operating the training management system application because it is user-friendly and can add new knowledge. This is following the opinion of Barnes and Vidgen (2003), which states that the quality of use (usability) includes the ease to learn the website, easy to understand, easy to browse, ease of use, the attractiveness of the website, pleasant interface, has good competence and provides a new fun experience. The opinion of Sloman (2017) states that all factors, namely easy-to-use, perceived benefits and attitudes affect decisions in using technology. So it can be concluded that the ease of use of the training management system application is one of the attractions for users to access the application. Meanwhile, based on Hake R.R. assessment of the Training Management application meets the criteria "Effective Enough" to use.



Based on the results of research and development of a web-based Experience learning cycle management model, the factual model of teacher training management that has been held so far is in the good enough category, which includes: (1) teacher competence with a reasonably good category with an average score of 65.5; (2) the competency of the training instructor is in a

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suitable category with an average score of 72.25; (3) the training material is guite good with an average of 67.33; (4) the training method is quite good with an average score of 69.33; and (5) the evaluation of the training was quite good with an average score of 68.9, and the teacher's need for teacher training was very important, namely 65.5%. Implementation of training management is carried out through; first, training management planning is designed based on needs analysis, secondly training organization and organization enriched with Experience learning cycle training management, training time organization, facilitator/instructor role and task organization and training resource organization; Third, the implementation of the developed webbased training management model has shown effectiveness in obtaining training results that are supported by systematics and relationships between adaptive components, so that facilitators can implement them as learning resources and participants in making efforts to develop their sympetencies, and fourth; evaluation of training management using the types of tests, namely pre-test and post-test. Thus it can be concluded that the web-based Training Management Development is feasible to use and is able to improve the professional competence of physics teachers. This is also supported by the data from the research and discussion that have been described previously.

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