



Development of Curriculum Management Models in the Addiction Science Study Program

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ABSTRACT

Drug abuse among students is a worrying problem that can threaten the survival of nation. This study carried research design for the development of the Four D model is a model to develop learning devices. This method and model were chosen to develop addiction science education management that required to conduct feasibility, product validity, and trial. The development model based on curriculum management development referred to 4D development model, and referred to two quality requirements, namely valid and effective. This research objectives are to develop of curriculum management model for addiction science study program at IOHC INA Mojokerto, East Java, Indonesia. The quality of the Addiction Education Management Curriculum based on the final results had met the criteria "Very Good", so that it was appropriate to be applied and implemented as a product of developing curriculum management models in the addiction science study program at IOHC INA Mojokerto, East Java. The implication of this research is development of this curriculum is much needed to help nursing institutions to be more competent in the field of addiction science.

INTRODUCTION

In the hard power approach strategy, in the same period, the synergy built between the National Narcotics Agency of Republic Indonesia and the National Police, Nation Soldier of Indonesia, and Customs and Excise through law enforcement efforts has succeeded in uncovering 55,392 drug crime cases and 71,994 suspects, with drug evidence in the form of 42.71 tons of methamphetamine; 71.33 Tons of Marijuana; 1,630,102.69 Grains of Ecstasy; and 186.4 Kg of Cocaine. According to UNODC, in the 2010, world drug report indicated 149-272 million people used illegal substances, at least once in 2009 (Orock & Nicette, 2022; UNODC, 2020). Accordingly, 15-39 million people used illegal substances at problematic levels. This can be recognized from reports of the number of people who are reported to lead to substance dependence, the number of people who use substances by injection, and the number of people who use long-term substances in the form of opioids, amphetamines, and cocaine (Aronson et al., 2022; Peacock et al., 2019). Another problem was that 11-21 million people injecting themselves which impacted 18% of these people infected to HIV, and about 50% were hepatitis-C virus (Akiyama et al., 2020; Aronson et al., 2022; Crowley et al., 2019; Karimi et al., 2021).

Drug abuse among students is a worrying problem that can threaten the survival of nation. Indonesia has required a learning on drugs in the form of formal and non-formal education, seminars and workshops (Agustang & Adam, 2020; Tsoraya et al.,

2022; Widiastuti et al., 2020). Not many experts are involved in drugs, because this is a new science whose developments or trends change all the time, so that the development of addictive materials must always be updated (Fraser et al., 2018; Heilig et al., 2021; Seear et al., 2021). The management of learning on addictive materials is dynamic and follows any development. Drugs education should be included in the nomenclature of the Director General of Higher Education in Indonesia. To develop this education, expertise educators are needed. Unfortunately, there are only a few of students in Malaysia, Thailand, Australia, USA and Kenya (Kinyua, 2022; Scarlett, 2017; Shay, 2022; Shibalika, 2021). One of the universities that has a major in Addiction Science is Cyberjaya University College of Medical Science (CUCMS), Selangor, Malaysia, with an undergraduate education program equivalent to expertise, namely post diploma Addiction Science. At other universities, such as University Malaysia Sabah and University Sains Islam Malaysia, there only exists Master of Arts Counseling Substance Abuse. In Indonesia, drug education is part of other related educational trends, for example addiction counselors are in the counselor department at the psychology department (i.e., Atmajaya Christian University. Similarly, in Universitas Padjadjaran, a similar program also exists and included in the Family Medicine course (Prasetyo et al., 2019). Another is Parahita Kedhaton which carries out training by collaboration with National Narcotics Agency (Prasetyo et al., 2019).

At Institute of Health Science (IOHC) Indonesian Nurses Association (INA) Mojokerto, East Java, drug education is also provided for nursing students through some curriculum on physiology, pharmacology, therapy for substance use disorder, comorbid mental disorders, medical disorders-overview for addiction professionals, basic counselling skills for addiction professionals, assessment and interview therapy planning and documentation for addiction professionals, case management for addiction professionals, crisis intervention curriculum for addiction professionals, ethical standards for addiction professionals, and abuse disorders in family. Hence, the research objectives to developing the curriculum management in the addiction science study program, especially at IOHC INA Mojokerto.

RESEARCH METHOD

Research and development is a research method carried out to produce certain products to test the effectiveness of the product (Sugiyono, 2015, 2020). Research design for the development of the Four D model is a model to develop learning devices. This model was developed by Thiagarajan et al. (1974). This 4D development model consists of define, design, develop and disseminate (Fajariningtyas & Hidayat, 2019; Ulandari et al., 2019). The flowchart of the research method are likely in Figure 1.

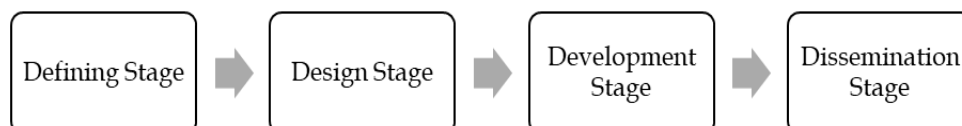


Figure 1. Research flowchart

This method and model were chosen to develop addiction science education management that required to conduct feasibility, product validity, and trial.

This 4D development consists of four components, namely:

1. Define

The definition stage is useful to determine and define the needs in the learning process and the development of addiction science management that will be planned by going through the stages revealed in 4D consisting of and collecting various information related to the products.

2. Design

In this design stage, we needed to get the problems in the preliminary study stage. Then, the design stage was carried out. The design stage aimed to design technical specifications and draft devices according to specifications that could produce a curriculum. With the method of preliminary studies and individual work, the writing of goods can be adjusted to specifications.

3. Develop

This expert validation was to validate the content of the material in quality. The results of the first draft of the problem formulation were validated by experts, so that the results were in the form of quality, implementation and effectiveness of addiction science education. After the instrument is tested, each item was re-evaluated, approved, and verified. Validation test was carried out on respondents or participants who had the expertise of model design experts.

4. Disseminate

The data collected on problem solving related to quality was tested using the one-shot case method, which later resulted in a quality and effective model. This development research was to improve the existing management model with a new management model which later be assessed for its implementation and effectiveness (Iljin et al., 2022; Lukin et al., 2019).

The population in this study were all staffs, lecturers and students at IOHC INA Mojokerto, East Java, as many as 120 people, consisting of 102 nursing students and 18 staff consisting of lecturers and employees. This research used purposive sampling technique to represent the desired population characteristics. For this reason, the sample taken was a group of nursing students with ability to represent the characteristics of their population. The class taken was the final semester consisting of 59 students, and 18 staffs and lecturers, so that 77 people as respondents were obtained. The research instruments used: curriculum design, learning design, student-centered learning, standardization of curriculum preparation, and curriculum quality standards.

RESULTS AND DISCUSSION

The development model based on curriculum management development referred to 4D development model as described previously, and referred to two quality requirements, namely valid and effective. The results obtained in each phase of curriculum management development are described as follows.

1. Development of Curriculum Management Model for Addiction Science Study Program at IOHC INA Mojokerto, East Jawa

Based on the AVE value of each variable exceeded >0.5 . For composite reliability results, it also had a high reliability above >0.7 , while the result of Cronbach's alpha exceeded the expected limit with a number >0.6 . Thus, all constructs had a good reliability in accordance with the required minimum value. Also, The Adjusted R Square obtained was 0.951 (95.1%), indicating that variations in the ups and downs of work readiness was explained by 95.1% by Addiction Science, Student-Centered

Learning, Learning Design, Curriculum Quality Standards and Curriculum Preparation Standards, while the remaining 4.9% was influenced by other factors that were not included in the model. Therefore, the value of R² was in the range of values from 0.936 to 0.986, so that the results of the calculation of R² indicated that R² was strong (the R² value of >0.9 was categorized as strong).

a. Defining Stage

1) Preliminary Analysis

The initial-late analysis aimed to identify the basic problems related to the curriculum management development model for the addiction science study program and the products resulting from this development. It could bring up facts and alternative solutions based on the formulation of the first problem, namely Curriculum Management of Addiction Science Study Program and its variables and the Implementation of Addiction Science Education Management and its variables (Brocke et al., 2020).

2) Student Analysis (Learner Analysis)

Analysis of students was carried out by observing the characteristics of students, including their abilities and experiences as individuals and groups which included academic abilities about knowledge of addiction science.

3) Task Analysis

This stage was to identify the main tasks that were carried out by students. The task analysis consisted of Core Competencies and Basic Competencies related to the material to be developed through the curriculum management of addiction science study program.

b. Design Stage

This stage was to design technical specifications and draft devices according to specifications which produced an addiction science curriculum.

c. Development Stage

This stage was to produce the final form of the curriculum model after going through revisions based on input from experts and data testing. The steps taken at this stage were as follows:

1) Content Validation Stage

Validation stage was carried out by the validator, where the results were in the form of quality, implementation and effectiveness of the addiction science study program. The results of the validation of the experts were used as the basis to revise the curriculum development model for the addiction science study program (Akiyama et al., 2020; Aronson et al., 2022; Chaudhary et al., 2019; Imamah & Susanti, 2021). From the results of the validator's assessment, a revision in the form of suggestions that would be a reference in improving the curriculum model developed had been obtained, valid and feasible to be used and tested in the field.

2) Empirical Test Stage

The final stage of this development research was the respondent's trial with the assessment covering aspects of curriculum design, learning design, student-centered

learning, standardization of curriculum preparation, curriculum quality standards and addiction science. The results of this test were in the form of a quality management model that are effective in its implementation.

d. Dissemination Stage

The development product produced at the end of this stage was in the form of quality and effective curriculum management models and tools for the addiction science study program, so that the implementation of these models and tools becomes a new, more qualified and effective curriculum management in the IOHC INA Mojokerto, East Java.

2. The Implementation of Addiction Education Management at IOHC INA Mojokerto, East Java

When carrying out the development process, we certainly paid attention to the level of quality and effectiveness of the curriculum management model product used in the dissemination process. To measure this stage, we used questionnaire. Table 1 shows the results of the final trial of the curriculum management model product for the addiction science study program at IOHC INA Mojokerto, East Java.

Table 1. Results of curriculum design.

Variable	Indicators	Grid Items	Percentage (%)
Curriculum Design (X1)	Graduation profile assignment	1, 2, 3	0.91
	Graduation profile ability	4, 5	0.90
	Graduation learning achievement	6, 7, 8	0.91
	Formation of courses	9, 10	0.88
	Selection of study materials	11, 12, 13, 14	0.88
	Determination of courses	15, 16, 17	0.88
	Determination of the course credits	18, 19	0.92
	Preparation of courses	20, 21, 22	0.90
Total Percentage (%)			0.90

Table 1 shows the questionnaire distributed to 75 respondents, the results of curriculum design with 8 indicators (22 questions) obtained a total percentage score of 0.90%, and indicated that the average respondent answered "Very Good/Strongly Agree" on the indicators. Therefore, the analysis of the results of curriculum design development was included in "Very Appropriate" category for application (81-100% interval).

Table 2. Learning design results.

Variable	Indicators	Grid Items	Percentage (%)
Design	Course learning achievements	23, 24, 25	0.90
Learning (X2)	Lesson plan (per semester)	26, 27	0.90
	Learning process	28, 29	0.88
	Learning assessment	30, 31, 32	0.90
	Assessment instrument	33, 34	0.90
	Assessment procedure	35, 36	0.89
	Implementation of the assessment	37, 38, 39	0.89
	Rating Report	40, 41	0.89
Total Percentage (%)			0.89

Table 2 shows the results of the learning design with 8 indicators (19 questions) obtained a total percentage score of 0.89%, indicating the average respondent answered "Very Good/Strongly Agree" on the indicators. Therefore, the analysis of the results of the development of learning designs was included in "Very Appropriate" category for application (81-100% interval).

Table 3. Student-centered learning outcomes.

Variable	Indicators	Grid Items	Percentage (%)
Learning that centered on students (X3)	Forms and methods of learning	42, 43	0.88
	Mixed learning	44, 45, 46, 47	0.89
Total Percentage (%)			0.89

Table 3 shows student-centered learning outcomes with 2 indicators (6 questions) obtained a total percentage score of 0.89 indicating the average respondent answered "Very Good/Strongly Agree" on the indicators. Therefore, the analysis of the results of student-centered learning development was in "Very Eligible" category to apply (81-100% interval).

Table 4. Standardization of curriculum preparation.

Variable	Indicators	Grid Items	Percentage (%)
Standardization	Curriculum content	48, 49, 50	0.92
Curriculum Preparation (X4)	Curriculum forms	51, 52, 53, 54	0.91
Total Percentage (%)			0.92

Furthermore, Table 4 shows the results of standardization of curriculum preparation with 2 indicators (7 questions) obtained a total percentage score of 0.92%, indicating the average respondent answered "Very Good/Strongly Agree" on the indicators, so that the analysis on the results of the development of standardization of curriculum preparation was in "Very Eligible" category to apply (81-100% interval).

Table 5. Curriculum quality standards.

Variable	Indicators	Grid Items	Percentage (%)
Quality Standard	Curriculum evaluation	55, 56, 57	0.90
Curriculum (X5)	Curriculum quality	58, 59, 60, 61, 62	0.89
Total Percentage (%)			0.90

Table 5 shows the results of the curriculum quality standard with 2 indicators (8 questions) obtained a total percentage score of 0.90%, indicating the average respondent answered "Very Good/Strongly Agree" on the indicators. Therefore, the analysis of the results of developing curriculum quality standards was in "Very Appropriate: category (81-100% interval).

Table 6. Addiction science results.

Variable	Indicators	Grid Items	Percentage (%)
Addiction Science (Y)	Y1	1	0.92
	Y2	2	0.87

Variable	Indicators	Grid Items	Percentage (%)
	Y3	3	0.89
	Y4	4	0.89
	Y5	5	0.86
	Y6	6	0.91
	Y7	7	0.88
	Y8	8	0.85
	Y9	9	0.85
	Y10	10	0.90
	Y11	11	0.84
	Y12	12	0.82
	Y13	13	0.86
	Y14	14	0.86
	Y15	15	0.84
	Y16	16	0.87
Total Percentage (%)			0.87

Table 6 shows that the results of addiction science in Table 6 with 16 questions obtained a total percentage score of 0.87%, indicating the average respondent answered "Very Good/Strongly Agree" on the indicators, so that the analysis on the results of the development of addiction science was included in "Very Appropriate" category (81-100% interval).

2. Development of Curriculum Management Model for Addiction Science Study Program at IOHC INA Mojokerto, East Java

In this section, we presented form of tools used as learning (mastery of addiction science/addiction science), especially guidelines for educational institutions through addiction nursing education services in Indonesia, to produce addicted nurses graduates according to national and global competency.

a) Curriculum Management of Addiction Science Study Program at IOHC INA Mojokerto, East Java

The process of developing a curriculum management model using Thiagarajan's modified 4-D development model consists of four stages, namely *defining*, *designing*, *developing*, and *distributing*. The stages carried out were started from the initial analysis to identify the basic problems related to the curriculum management development model for the addiction science study program and the products resulting from this development. Next, we did an analysis on students to identify their characteristics, abilities, and experiences as individuals or groups which include academic abilities regarding knowledge of addiction science (Hyytinen et al., 2018; Yildiz-Durak, 2019).

The initial design stage was in the form of technical specification design activities, draft devices according to specifications that could later produce a curriculum. The next step was to calculate the average assessment data from expert lecturers (validators) in each aspect of the question points as well as calculating the total average score of the assessment, and compare it with the assessment criteria. Based on the observations from the validation process and the feasibility of the theoretical description above, the results of the empirical test of curriculum development can be described as follows:

- a. Curriculum Design had produced some indicators: (1) determination of graduation profile, (2) ability of graduation profile, (3) achievement of graduation learning, (4) formation of courses, (5) selection of learning materials, (6) determination of courses, (7) determination of the course credits, and (8) preparation of courses which obtained an average value of 3.72 (Very Good/Strongly Agree), with an average percentage of 0.90% (Very Eligible), so that the curriculum design was valid and feasible to use. It is can be inferred that quality of Addiction Education Management Curriculum obtained from the analysis of learning design, standardization of curriculum preparation and quality standards of curriculum results was valid and suitable for use in the addiction science study program of IOHC INA Mojokerto, East Java.
- b. Learning Design resulted some indicators: (1) subject learning achievements, (2) learning plans (per-semester), (3) learning processes, (4) learning assessments, (5) assessment instruments, (6) assessment procedures, (7) assessment implementations, and (8) assessment reports which obtained an average value of 3.72 (Very Good/Strongly Agree), with an average percentage of 0.89% (Very Eligible), so that the learning design was valid and feasible to use.
- c. Student-Centered Learning obtained an indicator: forms and methods of learning which obtained an average value of 3.70 (Very Good/Strongly Agree), with an average percentage of 0.89% (Very Eligible), so that student-centered learning was valid and appropriate to use. Quality of Addiction Learning Curriculum obtained from the analysis of student-centred learning and learning design results was valid and suitable to be applied in the addiction science study program of IOHC INA Mojokerto, East Java.
- d. The Standardization of Curriculum Preparation obtained an indicator: curriculum content and forms of curriculum mix obtained an average value of 3.81 (Very Good/Strongly Agree), with an average percentage of 0.92% (Very Eligible), so that the standardization preparation of the curriculum was valid and appropriate to use. The Curriculum Quality Standards obtained an indicator: curriculum evaluation and curriculum quality obtained an average value of 3.73 (Very Good/Strongly Agree), with an average percentage of 0.90% (Very Eligible), so that the curriculum quality standard was valid and proper to use. The Addiction Science obtained an average value of 3.62 (Very Good/Strongly Agree), with an average percentage of 0.87% (Very Eligible), so that science of addiction was valid and feasible to use. Hence, Quality of Addiction Learning Evaluation Curriculum obtained from the analysis of curriculum design, learning design, student-centered learning, standardization of curriculum preparation, curriculum quality standards and addiction science results Was valid and suitable to be applied in the addiction science study program of IOHC INA Mojokerto, East Jawa. It is known from the assessment and classification criteria, it is able to accommodate the overall curriculum management model that is feasible to use.

b) The Implementation of Addiction Education Management at IOHC INA Mojokerto, East Java

When carrying out the process on students' analysis, we concerned on the level of effectiveness of curriculum model development products used in the learning process. To measure this, we used questionnaires. At this stage, data on the effectiveness of learning were obtained through the respondent's questionnaire sheet (Andriyani &

Suniasih, 2021; Hyytinen et al., 2018; Wachyuni & Kusumaningrum, 2020). The resulting data were calculated from the indicators along with the question grid items, so that the following description can be obtained that the results of the implementation of the addiction science management curriculum model with exogenous variables (dimensions): curriculum design stage, learning design stage, student-centered learning, standardization of curriculum preparation, curriculum quality standards obtained an average total score of 3.72 (Very Good/Very Agree), with an average total percentage of 0.89% (Very Eligible), so that the implementation of the addiction science management curriculum model was valid and feasible to use. Also, the results of student responses to the addiction science management curriculum model was seen from the results of student-centered learning variables and addiction science, where the average total score was 3.66 (Very Good/Strongly Agree), with an average total percentage of 0.88 % (Very Eligible), so that students' responses to the addiction science management curriculum model were valid and suitable to use.

The results of the staff response to the addiction science management curriculum were seen from the results of the curriculum design variables, learning design, standardization of curriculum preparation, and curriculum quality standards obtained an average total score of 3.75 (Very Good/Strongly Agree), with a total average percentage an average of 0.90% (Very Eligible), so that staff response to the addiction science management curriculum was valid and feasible to use. Hence, it is make some Some suggestions can be given as consideration for Addiction Science Study Program at IOHC INA Mojokerto East Java based on the analysis: In compiling and developing a curriculum, a university must refer to the Indonesian National Qualifications Framework (INQF) and the National Higher Education Standards (Jatmika & Faraz, 2018; Nugroho et al., 2021; Nurso & Supriyadi, 2019; Rosmaladewi et al., 2020; Suratmi et al., 2018). The concept developed by the Directorate General of Learning and Student Affairs begins with establishing a graduate profile which is translated into the formulation of Graduate Learning Outcomes. The description of learning outcomes in the INQF contains four elements, namely elements of attitudes and values, work ability, scientific mastery, and authority and responsibility. Based on Law Number 12 of 2012 concerning Higher Education, curriculum preparation is the right of universities, but it must refer to the national standard. Broadly speaking, the curriculum as a design consists of four elements, namely learning outcomes, study materials, learning processes to achieve, and assessment. The development of quality and effective addiction management curriculum management is much needed to help nursing institutions to be more competent in the field of addiction science, one of which is as an addiction counselor, so that it will have a global impact to implement the real world of promotive, preventive and rehabilitative actions against drugs (Desi et al., 2021; Kabouha & Elyas, 2015; Kadek et al., 2020; Karim et al., 2021; Papadakis et al., 2020).

CONCLUSION

The quality of the Addiction Education Management Curriculum based on the final results had met the criteria "Very Good", so that it was appropriate to be applied and implemented as a product of developing curriculum management models in the addiction science study program at IOHC INA Mojokerto, East Java, Indonesia. Some suggestions for future research can be given as consideration for Addiction Science Study Program at IOHC INA Mojokerto East Java: (1) For the institution of the Ministry of Higher Education and its staff, this study had proven the results of a

development model product that was believed to be scientifically correct. Therefore, this finding was expected to be implemented as one of the foundations/guidelines and considerations for the opening of the addiction science department and perfecting its curriculum, so that it could be a reference for the College of Health Sciences to educate and add guidelines for the drug addiction counselor profession in promotive, preventive and rehabilitative efforts in drug addiction cases; (2) For educators (staff and lecturers), this study could help to expand the curriculum of study programs with specifics on addiction to drugs, their complications and side effects, as well as attract users to get rehabilitation, so that they could break the supply chain and drug abuse and thus cases of death as well as crime could be minimized; (3) For students, this study was expected to be able to develop their knowledge, so that they could utilize competencies in the field of addiction science studies.

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