

# Market Feasibility Study on “VNursLab” as a Nursing Learning Media

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## Abstract

Faculty of Nursing, Universitas Padjadjaran innovates by presenting virtual reality technology as a new learning media. Virtual reality technology is presented under the name “VNursLab” in which there are interactive 3D modules and simulations of virtual nursing procedures that are made to resemble procedure experiences in the real world. A feasibility test on the “VNursLab” virtual reality product is required prior to the use of “VNursLab” as a learning media. Recent studies show that the use of virtual reality as media for educating health care professional seems to be feasible with some limitation regarding device and familiarity with use of virtual reality. This study aims to describe the potential use of virtual reality “VNursLab” as nursing learning media by conducting a feasibility study using marketing mix methods. This research conducted using descriptive quantitative study design. The participant of this research is 30 representative of a nursing study institutions participating in Rapat Tahunan Anggota (RTA) of AIPNI region IV and total sampling as a sampling technique. The instrument used in this study was developed based on the marketing mix methods using 4 variables: Product, Price, Place, and Promotion. The feasibility study result showed that VNursLab received good feedback from its respondent as one of the intended markets with all variables receiving scores higher than 51% of the Likert Score. This study also finds that VNursLab needs to improve the marketing aspect so people can receive more information and also to be available in appropriate marketplace. Virtual reality “VNursLab” is feasible and has a good potential to be used as a new nursing learning method although it still needs some improvement.

**Keywords:** Feasibility study, Marketing Mix, Nursing Teachers, Virtual reality, VNursLab

## **Introduction**

The Nursing Bachelor Study Program is inseparable from the practicum activities that must be carried out by all students to be able to practice the skills that will be needed in carrying out work as a nurse. In this learning process, nursing students are required to be able to combine the theoretical understanding of the time when taking nursing procedures. Thus require an effective yet efficient learning process (Rachmatullah, 2020). The quality of the learning process can affect the achievements or success of a student in studying, where the quality learning process will maximize the learning outcomes of a student. Student learning outcomes are influenced by several factors including, learning motivation, teaching methods, teaching facilities and infrastructure, and learning media.

The application of technology can be an additional tool and facility for students to understand more about the material being taught, adding to the pleasant experience of learning so that learning becomes more interesting. So that the expected results of the learning process can be obtained (Najamuddin et al., 2020). One of the technologies that can be used in the nursing practicum learning process is the use of Virtual Reality. During the industrial revolution 4.0, rapid developments occurred regarding how technology visualized virtual objects, such as increasing resolution in videos and making animations made by humans look more real so that now humans can interact with the virtual world directly through virtual reality technology. Virtual reality is basically a virtual environment made by humans where the environment is made as if it is a real environment. In this cyberspace, humans can immerse themselves directly and can see around the virtual world, and can interact in it (Rauschnabel et al., 2022).

The application of virtual reality in nursing practicum is very feasible. By using virtual reality-based practicum learning, students can directly practice nursing actions in cyberspace that are made similar as the real world (Padilha et al., 2019). In order to facilitate its students with quality learning, the Faculty of Nursing, Universitas

Padjadjaran has developed a virtual reality platform and an internet-based learning module called “VnursLab”. In the early stages of its development, VnursLab presented 12 interactive 3D-based nursing actions and 3 VR-based actions and, in the future, VnursLab is targeted to develop with the availability of 70 nursing actions. To support and ensure the sustainability of VnursLab and ensure that VnursLab is appropriate to be used as a learning media that supports practical nursing procedures, a feasibility study will be conducted on VnursLab.

A feasibility study is an analytical method to measure the sustainability of a program. By conducting a feasibility study of a program its sustainability can be measured as how likely the program is to be successful. The feasibility study can also assist in identifying possible problems and possible issues with the program. Conducting a feasibility study cannot be separated from the marketing aspect, where the target market must understand or know the product that we are marketing. To be able to see the potential for use as a learning medium, VnursLab will analyze the marketing mix based on 4 variables, namely product, price, place, and promotion (4P). The use of 4P variables in a marketing strategy can also describe the reaction or feedback from the target market on the products offered.

Another aspect that must also be considered in the VnursLab program is the role of nursing teachers as nursing education staff themselves. By conducting a feasibility study on nursing educators, we can see and identify whether VnursLab is feasible and can be used as a new teaching facility and media in practical nursing procedures learning. Also, by conducting a feasibility study on the nursing lecturers themselves, researchers can have an overview of the needs and also the interests of nursing educators for new teaching media in the form of 3D Interactive Modules and virtual reality in the VnursLab program. So that nursing educators become one of the aspects that must be considered in conducting a feasibility study on the VnursLab program. The aim of this study is to understand the feasibility of VNursLab as nursing practice education media amongst nursing educators.

## Research Method

Research is conducted by descriptive research methods, namely methods that aim to describe a phenomenon. The data collected is primary quantitative data, which will then be measured using a calculation test tool to draw conclusions from the data obtained. The variables that will be used in this study are the four variables contained in the marketing mix method, namely product, price, place, and promotion to describe the feasibility and potential of using virtual reality “VNursLab” as a practicum learning medium for nursing lecturers. This research will use a univariate data analysis method carried out on each variable. Then, the frequency and percentage will be analyzed in accordance with the Linkert scale scoring to describe the role of each variable.

Respondents characteristics of this study is an active nursing educator from accredited institution. The population in this study included all participants at the Annual Member Meeting (RTA) of AIPNI Regional IV of West Java Province in Pangandaran, West Java. The research participants present in the RTA were representatives or leaders of 25 different nursing educational institutions to be sampled using the total sampling technique.

This study use a questionnaire as the

instrument consisting of four parts, the first part contains questions about the demographic data of the respondents, the second part is a preliminary question, the third part was the main part of the questionnaire which discussed the potential use of Virtual Reality “VNursLab” as a nursing learning media using the marketing mix variables, The fourth is a closing question. The questionnaire will be given after the respondent was exposed to information about virtual reality “VNursLab” and/or tried virtual reality “VNursLab” directly. First, prospective respondents were given informed consent and asked for their consent to participate in the study. Then, respondents will be introduced and/or tried to the virtual reality “VNursLab”. After being introduced participant then given questionnaire as data collection. Data collected then analysed using descriptive quantitative method to describe the feasibility of VNursLab as nursing education media. This study has obtained a letter of ethical testing from the Ethics Committee of the Faculty of Nursing, Universitas Padjadjaran No. 1005/UN6.KEP/EC/2022.

## Results

Based on data collection, conducted on 30 valid respondents obtained the following result:

**Table. 1 Preliminary Question**

Preliminary Question	Result	Frequency	Percent
Did you know about VNursLab Plus before?	Yes	22	73.3%
	No	8	26.7%
	Don't Know	8	26.3%
How do you know About VNursLab Plus?	Friends or Relation	7	23.3%
	Professional Organization	12	40.0%
	Others	3	10.0%

Based on table 1, most of the respondents already knew about the VNursLab quantified with 22 (73.3%) respondents knowing and 8 (26.7%) respondents didn't. Mainly respondents are known from the professional organization ranging at 12 out of 30 (40%) respondents, while “friends” and “others” resulted only in 10 out 30 (33.3%) and respondents who did not know still at 8 (26.3%).

**Table. 2 Result of Product Variable**

Questions of Product	Scale	Frequency	Percentage	Score
VNursLab Plus Designed to provide better learning	Neutral	1	3.3%	79%
	Agree	29	96.7%	
Content presented by VNursLab Plus helps me learn comprehensively through simulation technology	Neutral	3	10%	78%
	Agree	27	90%	
Device used by VNursLab Plus is understandable	Neutral	5	16.7%	76%
	Agree	25	83.3%	
VNursLab Plus changed my way of learning from book references to technology references	Neutral	3	10%	78%
	Agree	27	90%	

Table 2 is showing the results of the product variable. On product variable respondent mostly shows positive feedback on VNursLab by agreeing with the statement given. 79% of respondents agree that VNursLab can provide a better learning and changes the way they learn from books. The device used by the VNursLab is also understandable and the simulation given will help to learn comprehensively.

From the result of the product variable shown above, the score of each question is above 51%. Meaning that the respondents showed good feedback on the product aspect of VNursLab. So, it can be concluded that the respondents as nursing teachers agreed VNursLab can possibly be a new learning media for nursing study.

**Table. 3 Result of Price Variable**

Questions of Price	Scale	Frequency	Percentage	Score
Price of VNursLab Plus should be affordable and not more expensive than similar products	Neutral	2	6.7%	78%
	Agree	28	93.3%	
Price of VNursLab Plus should be commensurate with the learning simulation technology	Neutral	4	13.3%	77%
	Agree	26	86.7%	
I am willing to pay more for the VNursLab Plus because of the learning simulation technology	Disagree	1	3.3 %	68%
	Neutral	15	50 %	
	Agree	14	46.7 %	

Table 3 is showing the result of the price variable. Respondent shows high anticipation regarding the price variable. Most of the respondents (78%) agree that VNursLab should be affordable and commensurate with the technology and content it offers. But 50% of respondents remain neutral when it comes to the decision to pay more for the product.

From the result of the price variable, we can see all score is above 51% of the Likert score. Meaning that the respondents showed good feedback on the price aspect of VNursLab. It can be concluded that the respondent as a nursing teacher agreed that the price of VNursLab should be affordable and commensurate with the technology it presents. Although, question number 3 shows that the respondents might have second taught about using or buying the VNursLab if the price is high on the market.

**Table. 4 Result of Place Variable**

Questions of Place	Scale	Frequency	Percentage	Score
I am willing to pay more for the VNursLab Plus because of the learning simulation technology	Disagree	5	16.7%	70%
	Neutral	5	16.7%	
	Agree	20	66.7%	
F i n d i n g information about VNursLab Plus is very easy	Disagree	3	10%	70%
	Neutral	9	30%	
	Agree	18	60%	
VNursLab Plus uses integrated technology that suits my learning	Neutral	7	23.3 %	75%
	Agree	23	76.7 %	
I hope VNursLab Plus can be sold on the marketplace	Disagree	1	3.3%	77%
	Neutral	2	6.7%	
	Agree	27	90%	

Table 4 is showing the result of the place variable. 70 % of Respondents show that finding information about VNursLab is relatively easy and most of them already knew that VNursLab is offering learning simulation technology and 75% consider VNursLab will suit their learning objective. Respectively amount (90%) of respondents also hope VNrusLab to be sold in the available marketplace.

As the result shows, the place variable also shows scores higher than 51% of the Likert score. Meaning that the respondents showed good feedback on the place aspect of VNursLab. It can be concluded that the information on VNursLab Plus is well dispersed among the nursing teachers.

**Table. 5 Result of Promotion Variable**

Questions of Promotion	Scale	Frequency	Percentage	Score
I've seen VNursLab advertisements in any media	Disagree	9	30%	61%
	Neutral	10	33.3%	
	Agree	11	35.7%	
V N u r s L a b Plus promotion explains the learning simulation technology product clearly	Disagree	3	10%	71%
	Neutral	7	23.3%	
	Agree	20	66.7%	
I see VNursLab Plus as a product that uses learning simulation technology	Disagree	1	3.3 %	75%
	Neutral	5	16.7 %	
	Agree	24	80%	

I am more interested in buying VNursLab Plus with technology that makes learning easier for me	Disagree	1	3.3 %	75%
	Neutral	5	16.7 %	
	Agree	24	80%	
I don't mind buying high-priced products with learning simulation technology compared to low priced but not using any technology	Disagree	2	6.7%	72%
	Neutral	8	26.7%	
	Agree	20	66.7%	
I am even more interested in buying VNURS LAB PLUS products after seeing the promotion about learning simulation technology	Neutral	9	30%	74%
		21	70%	

Table 5 is showing the results of the promotion variable. Advertisement of VnursLab is still hardly seen by the respondents since the statement only received a 68% score. But most of the respondents knowing the VNursLab and the technology it offers, making the respondents interested after seeing the information about VR technology used by VnursLab. Respondents were also willing to pay the price of technology VNursLab offers by receiving a 72% Likert score.

As the result shows, the promotion variable also shows scores higher than 51% of the Likert score. Meaning that the respondents showed good feedback on the promotion aspect of VNursLab. It can be concluded that the information of VNursLab Plus is well advertised and the virtual simulation technology is attracting people to use the product. Although, it can be seen from question number one that the VNursLab Plus should cover more media for advertising. Based on the findings show that VNursLab still needs improvement in marketing and advertising aspect, since most of the respondents know it from professional organization and just 61% percent of the respondent have seen advertisement in media. Respondent also show concern regarding the price of VNursLab only 46.7% willing to pay more for the product.

## Discussion

This study describes the feasibility and potential use of virtual reality “VNursLab” as nursing learning media by conducting a feasibility study of nursing teachers. The study result shows good feedback from the respondents and the use of virtual reality technology in learning media increase the interest of the respondents in using VNursLab.

## Product

VNursLab offers virtual reality, which is a state-of-the-art technology it offers a new experience of learning. VNursLab can also eliminate the limitation of conventional

teaching media such as textbooks or demonstrational videos which still has a limitation due to their 2D characteristics. Respondents as nursing teachers would accept and recommend this teaching format as a good knowledge transfer tool. According to Klemm, P et al (2021) virtual reality also offers a safe educational tool. The virtual environment in VNursLab simulates the real-world experience when the user performs a nursing procedure while it reduces the risk of injury compared to direct practice in a laboratory.

## Price

Respondent shows high anticipation

regarding the price of VNursLab and shows acceptance and interest in the VNursLab because of the technology used. The price of VNursLab should be intended not to be higher than other similar VR or educational products. Price is becoming a consideration for the respondent to use or buy. If the price is too high, they will still not use VNursLab regardless of the technology and learning opportunity it offers. The main part that will probably cost the most is the VR equipment itself, current VR equipment if compares to the conventional teaching media device is relatively far more expensive. Mainly it is because VR needed more advance and powerful computing devices and the VR goggle. With the continuous development of VR devices, many brands offer a variety of prices and features so that customer has their own choice to use the affordable device for them. Klemm, P et al (2021) also mention that the price of VR devices would affect the potential use of VR in healthcare education when the price of VR is continuing to decrease and becoming more affordable the use of teaching purposes may increase in the coming years.

### **Place**

Besides the high acceptance and potential, VNursLab still has some limitations. In our country, there are not many marketplaces that can accommodate VR as a teaching media other than the VR marketplace focusing on games. This can be a limitation for VNursLab to spread information about VR as teaching media. VNursLab still relies on its own to spread information by using websites, social media, and direct promotion to intended customers. According to Johnston, E. et al (2018) and Philip, L. et al (2017) no publicly available marketplace for an educational purpose VR can limit its potential since there is no place for people to search for it and currently available marketplace for VR as gaming purposes can overburden the knowledge of the educational VR application.

### **Promotion**

Promotion of VNursLab still need to be improved as the result shows that respondents

still know from relation and friends also professional organization. Išoraitė, M. (2016) explain that promotion can be a critical aspect while marketing a product. Promotion need to be spread wider using social media and other advertising method so that information of VNursLab can reach intended market and even other people that not the intended market.

### **Conclusion**

In conclusion study shows that the virtual reality “VNursLab” has decent potential and is feasible to be used as a nursing learning media. It can be seen from the study result that all the variables received good feedback from the respondents. Despite the result shown by this study, there are some problems “VNursLab” might encounter later on. First, the price offered by VNursLab is expected to be not high or still “commensurate” with the technology and content presented by VNursLab. The targeted customers might still choose the older learning media to be used if the price of the VNursLab is too high. Second, the market availability of VNursLab is still limited, and not all of the targeted customers know about VNursLab which can affect the marketing of VNursLab. Last, VNursLab needs to expand more on advertising by using a variety of media and making more active advertisements such as interactive social media posts, so that VNurslab can be known by the target customer.

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