



# Optimization of Website and Mobile Based Applications Drug Counseling Media to Support the Anti-Drug Movement in Indonesia

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***Abstract:** The massive drug trafficking in Indonesia has threatened the resilience of society, especially the younger generation. Indeed, the government through the National Narcotics Agency has intensified various efforts to educate the community to raise awareness about the dangers of drugs in line with the increasing number of drug trafficking among the younger generation. The implementation of anti-drug counseling activities faces some obstacles such as the limited counseling personnel, time, and cost. Supporting the anti-drug movement becomes the obligation of all parties, especially academics to optimize the counseling website media in cooperation with related NGOs and to provide training on the use of the website as a personal counseling media that can be used anywhere and anytime.*

## Introduction

The National Narcotics Agency (BNN) has recorded that drug cases in Indonesia are very worrying to present. Drug abuse has become a latent danger that should be a concern. The young generation becomes one of the main targets of drug abuse so BNN together with the Indonesian Child Protection Commission (KPAI) explained that the number of drug use cases among teenagers reached 57% of the total drug abuse<sup>1</sup>.

Indeed, various prevention efforts, especially for the young generation have been made to present drug abuse, for example increasing counseling activities and socializing the dangers of drug abuse<sup>2</sup>. Counseling activities are regular efforts done by BNN with the assistance of Non-Governmental Organizations (NGOs) to anticipate drug abuse in the community, schools, campuses and government agencies.

<sup>1</sup> Kominfo Jatim. (2021, Juni 8). About 57 Percent of teenagers try taking drugs. | Department of Communication and Informatics of East Java Province. <http://kominfo.jatimprov.go.id/read/umum/sebanyak-57-persen-remaja-coba-pakai-narkoba>

<sup>2</sup> Rezeky Wahyudi. "Efforts to Prepare for Drug Abuse at MIN 1 Banjarmasin, Thesis." (2021). Universitas Islam Negeri Antasari.

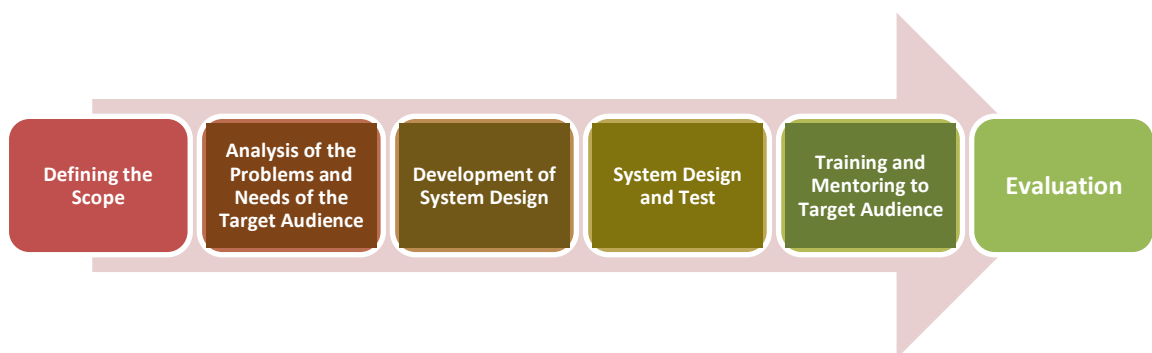
The implementation of anti-drug counseling activities faces many obstacles such as limited personnel of counseling workers, time, and cost. In line with regular activities performed by BNN and NGOs, increased mobility in carrying out anti-drug counseling activities requires technology in the form of websites and mobile applications by optimizing supporting features of anti-drug counseling media. By optimizing the website and mobile applications, counseling activities and information delivery become easy to do without place, time, and cost limitations.

This Community Service activity aims to assist in optimizing the website media to support counseling activities about information, prevention, and eradication of drug abuse and illegal drugs. The use of websites is also expected to provide support for counseling personnel in pursuing the anti-drug movement in Indonesia. Besides, the activity is expected to widen the counseling activities without depending on the number of counseling personnel and space.

**Method**

The method of community service activities was the development of training programs in the form of workshops and assistance in optimizing websites as anti-drug counseling media. Training and assistance on the utilization of the system are open to all stakeholders including BNN, Non-Governmental Organizations (NGOs) BUANA, government agencies, and educational institutions.

The development of the training program covered some stages as presented in the following figure:



*Figure 1. Method*

The initial stage was defining the scope of the system and analyzing the problems in the implementation of this PkM activity. Then, a more detailed analysis was carried out on the existing business processes in one of the NGOs, namely BUANA regarding the existing socialization system as input for the development of a new system. Then, the needs for the system from the initial to final stages were adjusted to the target audience.

The next stage was the design of data, process, and application modeling by

considering input from the target audience. It was continued by the process of developing and testing the application that has been designed.

The implementation stage started with an explanation of the general problem. It was followed by an explanation of the proposed solution to the participants in optimizing the developed website. The activity was done once and mentoring was done for 1 (one) month after the training. The evaluation was carried out at each stage but a thorough evaluation was carried out after training and mentoring activities to ensure that the target audience could independently utilize the developed system.

## Result

The process of community service activities was started with defining the scope and design of community service programs. This stage was implemented with partners so that the program can be in accordance with the problems and needs of the partners. This stage was to explore useful information in the development of digital media by interviewing and observing the Co-Founder and the daily leader of BUANA as BUANA representatives.

Based on the results of defining the scope, researchers analyzed the problems, impacts, and solutions. The results of this analysis were then discussed again with partners to get a common understanding regarding the findings of the problem and its impact. The findings are presented in the following table.

*Table 1. Analysis and Finding of Partners' Problems*

<b>Problems</b>	<b>Causes and Impacts</b>
Literacy on the dangers of drug abuse in the community is still low.	Many addicts start with the intention of trying to use the drug for fun
Some people have not considered information about the dangers of drugs important.	Reluctance to contact official institutions and to obtain information about drugs requires great effort.
Community's fear to make a report	Continuous drug distribution problems.
Community participation to solve drug distribution problems is low.	Activities involving the drug community rarely involve the community.

The next stage was the development of the system design based on the information obtained from the previous stage. System design development used

wireframe<sup>3</sup> and prototype<sup>4</sup> mechanisms. This stage was followed by the development and testing of the system. After being tested several times and involving BUANA as an expert who understands the content about the dangers of drugs, web and mobile applications as alternative media for drug counseling could be published online.

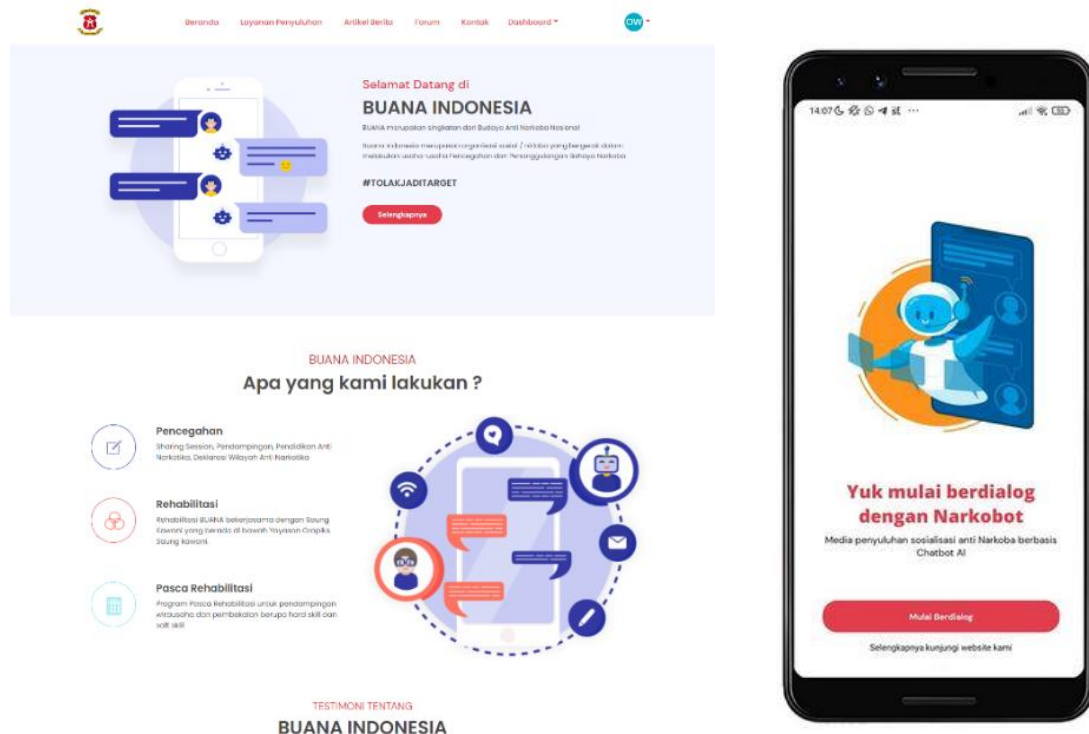


Figure 1. Websites and Mobile Applications for Supporting Drug Counseling

Web-based counseling media with the address [www.buanaindonesia.org](http://www.buanaindonesia.org) used the name of the partner which is intended to function as a company profile. Meanwhile, the mobile-based counseling media is called Narkobot. It is an android-based application for chatbot-based drug counseling media. Narkobot has been proposed to be published on Google's application-sharing service, PlayStore.

After the application was validated and approved for use, it was then continued with the planning stage of socialization and training on the use of web and mobile-based applications to partners by re-coordinating with the BUANA Daily Leader. The socialization and training were carried out on Saturday, August 13, 2022, at 10:00 at the Lokalima Cafe, Bandung City. The participants were 30 people consisting of 27 BUANA members, one representative of West Java Province BNN, and two representatives Bandung National and Political Unity Agency.

<sup>3</sup> Assistant Secretary for Public Affairs, "Wireframing" (Department of Health and Human Services, September 6, 2013), last modified September 6, 2013, accessed October 27, 2022, <https://www.usability.gov/how-to-and-tools/methods/wireframing.html>.

<sup>4</sup> "Prototype Model in Software Engineering," accessed October 27, 2022, <https://www.guru99.com/software-engineering-prototyping-model.html>.

The socialization and training were started with an explanation of the background of the problem by emphasizing the position of web and mobile-based applications as supporting media for drug counseling activities, not to replace counseling officers. Furthermore, the training materials cover the utilization of the web by discussing the basic web technology, and procedures to use the web such as changing displays, inserting images, inserting news articles, and even web maintenance.



*Figure 2. Socialization and Training on the Utilization of Digital Counseling Media*

Indeed, the government also supports this by sending the representative of the West Java National Narcotics Agency and Bandung National and Political Unity Agency to attend the training. This opportunity was used to sign a cooperation agreement between the Universitas Pendidikan Indonesia (UPI) in Cibiru and Nongovernmental Organizations (LSM) BUANA as a form of follow-up to the community service program.

The training ended with a friendly activity and a group photo session. The follow-up to this training was mentoring activities for BUANA that had been done on September 2<sup>nd</sup>, 2022, and if necessary, this event can be redone.



*Figure 3. Group Photo Sessions of Training Participants and Presenters*

**Discussion**

Based on the results of interviews and observations with BUANA representatives concerning the problems and their impacts, the solution design was obtained by conducting a literature study from some secondary sources as a strategic basis for solving

partner problems. Thus, it was decided to use web<sup>5</sup>-based applications and mobile chatbot<sup>6</sup> to support anti-drug counseling activities. The solution to the problem was adjusted to each problem found as well as the causes and impacts. The analysis of the solution is presented in the following table.

*Table 2. Proposed Solutions to Partner’s Problems*

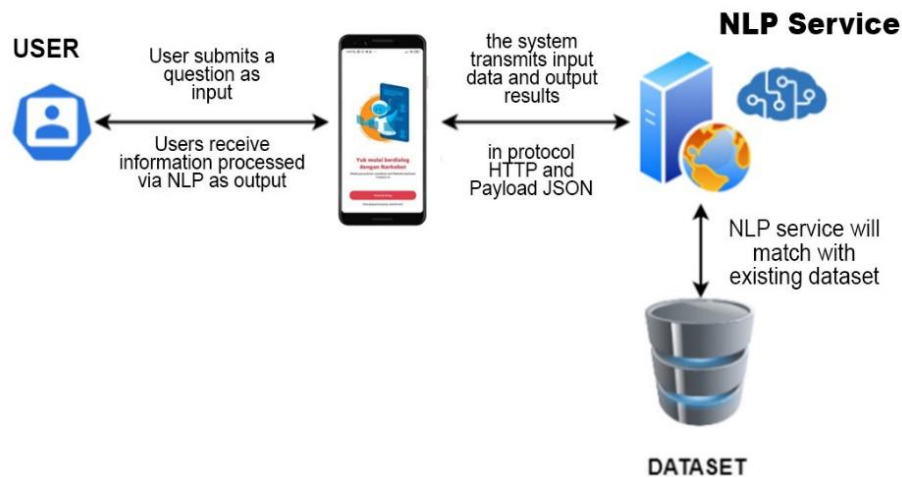
<b>Problems</b>	<b>Causes and Impacts</b>	<b>Solution Design</b>
Literacy on the dangers of drug abuse in the community is still low.	Many addicts start with the intention of trying to use the drug for fun	Web and mobile-based applications contain the usual materials for counseling.
Some people have not considered information about the dangers of drugs important.	Reluctance to contact official institutions and to obtain information about drugs requires great effort.	Developing web and mobile-based applications for helping the public easily get information about the dangers of drugs.
Community’s fear to make a report	Continuous drug distribution problems.	Loading information on reporting procedures and collaborating with BUANA for consulting services about the dangers of drugs
Community participation to solve drug distribution problems is low.	Activities involving the drug community rarely involve the community.	Containing information on the Prevention and Eradication of Abuse and Illicit Trafficking of Narcotics and Narcotics Precursors (P4GNPN) programs

Development of chatbot-based extension media used Natural Language Processing (NLP) technology. NLP has the advantage of understanding input in everyday language. The application of NLP technology to chatbots support the interactive aspects of the face-to-face counseling model presented through mobile devices with the addition

<sup>5</sup> Dina Mardiana and Daniar Chandra Anggraini, “The Effectiveness of Utilising Web-Learning Media Towards Islamic Education Learning (PAI) Outcome in The Era of Industrial Revolution 4.0,” *International Journal of Innovation, Creativity and Change* 8, no. 1 (2019): 80–96; Brandyn D. Lau et al., “Effectiveness of Two Distinct Web-Based Education Tools for Bedside Nurses on Medication Administration Practice for Venous Thromboembolism Prevention: A Randomized Clinical Trial,” *PLOS ONE* 12, no. 8 (August 16, 2017): e0181664.

<sup>6</sup> Suhni Abbasi and Hameedullah Kazi, “Measuring Effectiveness of Learning Chatbot Systems on Students Learning Outcome and Memory Retention,” *Asian Journal of Applied Science and Engineering* 3, no. 2 (June 26, 2014): 251–260; Mauro de Gennaro, Eva G. Krumhuber, and Gale Lucas, “Effectiveness of an Empathic Chatbot in Combating Adverse Effects of Social Exclusion on Mood,” *Frontiers in Psychology* 10 (2020), accessed October 27, 2022, <https://www.frontiersin.org/articles/10.3389/fpsyg.2019.03061>.

of supporting the private nature of mobile devices and can be accessed at any time. The system design of the counseling media application can be seen in the following figure:



*Figure 1. System Design*

The development of counseling media, Narkobot, highly depends on the program database. The database is built with a question-and-answer context system using the 5W + H thinking approach. The "What" aspect covers definitions of drugs, forms of drugs, examples of drugs, drug classes, etc. The "Why" aspect covers the causes of people using drugs, the dangers of drugs, drug cases, etc. The "Where" aspect covers the location where the drugs were found, the place for consultation, the place to report, etc. The "Who" aspect covers perpetrators of distribution, drug targets, figures, etc. Aspects of "When", covers the history, commemoration of the anti-drug day, special cases of allowed drugs, etc. The last, the "How" aspect covers community participation, ways to avoid drugs, help victims, etc.

The evaluation was done on the innovation of counseling as the object of socialization and training using a questionnaire. The questionnaire was distributed to participants after the socialization and training. The questionnaire covered participants' assessment of the value of the usefulness and ease of use/operation of web media and mobile-based applications for supportive counseling. The aspect of usability and convenience becomes a product evaluation parameter to identify the views and feedback from BUANA on the developed media. This web and mobile application product will be used later by BUANA to support their activities in educating the public about the dangers of drug abuse.

Based on the results of the questionnaire, all of the participants (100%) stated that the usefulness of the innovative product of drug counseling media was very suitable. Thus, it can be concluded that all participants considered the developed innovative products to have useful values.

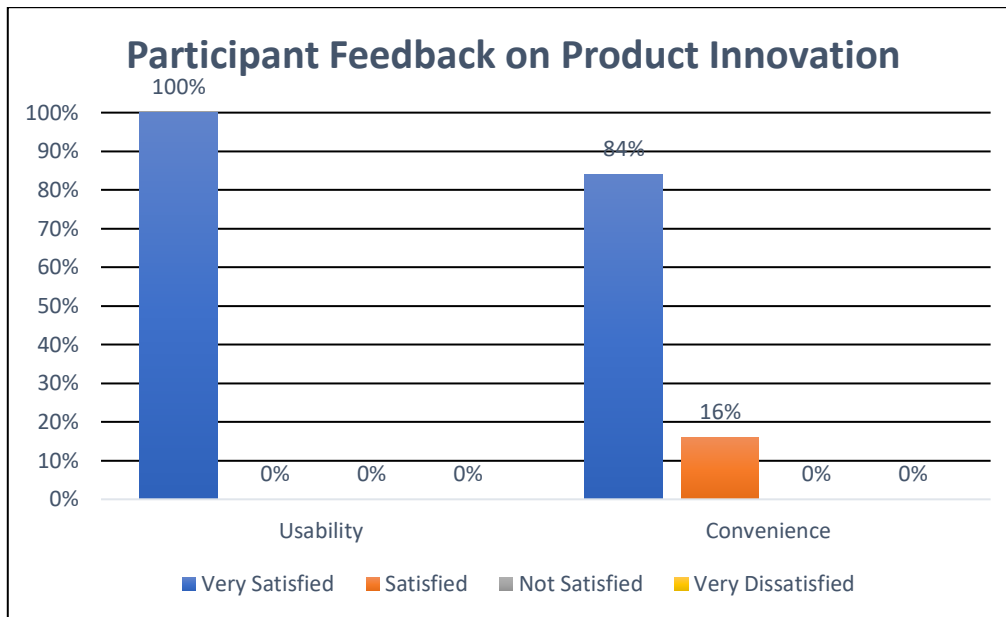


Figure 2. Participants' Evaluation of the Innovation Product for Drug Counseling Media

Then, questionnaires were also used to assess the level of ease of participants in operating the developed applications. Indeed, the training materials are completed with an understanding of website management techniques, such as techniques for packaging the homepage display and inserting text-based content, images, and videos. Based on the results of the questionnaire, 84% of participants considered that the developed application was easy to use. The ease of operating this media is an important point as this product will be used by BUANA for supporting drug counseling activities.

## Conclusion

The Community Service Activity Program in the form of optimizing drug counseling media based on website and mobile application has been successfully carried out as one of the real actions of academic support for government and community efforts to solve the dangers of drugs. Innovation is presented through digital media to support the implementation of counseling carried out by partners, BUANA. Most of the participants give positive responses to the presence of digital media to support counseling activities and to the implementation of the training that considered very useful and easy to use.

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