

Developing “Need Assessment Instrumentation” Application at the Laboratory of Educational Psychology and Guidance Counseling

Erwita Ika Violina¹, Nani Barorah Nasution², Mirza Irawan³

{erwitaika@unimed.ac.id¹, nanibarorah@unimed.ac.id², mirzairawan@unimed.ac.id³}

Faculty of Education, Universitas Negeri Medan, Medan, Indonesia

Abstract. This research is R&D (Research and Development) research. Research and development methods are research methods used to produce certain products, and test the effectiveness of these products. The research product designed in the research is the application "Website-Based Need Assessment Instrumentation" which is an application designed to meet the needs of the guidance and counseling laboratory using a website. The subjects of this research were guidance and counseling study program students who were selected using Random Sampling techniques. Data processing in this research uses the Quantitative Descriptive method. The creation of the Need Assessment Instrumentation Website Application gneedassessment.com has gone through gradual revisions in accordance with suggestions given by media experts, material experts, as well as data obtained from field trials. After carrying out the main field trials and operational field trials as well as data analysis at each trial stage, it can be concluded that the development of the Need Assessment gneedassessment.com Instrumentation Website Application is a superior final product to be used as a learning medium that can be used by Study Program students Counseling Guidance.

Keywords: Website Based Applications, Need Assessment Instruments, Educational Psychology and Guidance Counseling Laboratory.

1 Introduction

Based on the Regulation of the Minister of Education and Culture of the Republic of Indonesia Number 111 of 2014, it is stated that the guidance and counseling service process aims to help achieve a maximum, independent and complete counseling process which includes personal, learning, social and career aspects. Some strategies used by counselors are identifying student needs by carrying out needs assessments. Student needs-based assessments provide benefits to several professional counselors and counseling organizations. This can help counselors identify potential gaps in services and help improve their services so that all categories of groups can be served. The results of assessments based on student needs can be integrated into the broader counseling program evaluation process, thereby strengthening the quality of services offered to clients [2]. Service activities in guidance and counseling carried out based on the results of needs analysis can be realized in the form of more innovative programs. The indicators for needs analysis include the process of collecting, interpreting and synthesizing information so that it can be used as a reference in making decisions. Preparing

programs for guidance and counseling activities is a managerial step, so that the objectives can be measured in terms of quality

Achieving quality results will be if managed through a quality process, so that the Guidance and Counseling program is prepared by paying attention to management steps such as assessment, planning, organizing, implementing core and supporting services, and evaluation. [5] There are several instruments that are commonly used by Guidance and Counseling teachers and students in conducting needs assessments, including: the general Problem Uncovering Tool and the AUM PTSDL which were developed by Prayitno, et al in Komalasari [8], the Problem Checklist (DCM), Developmental Tasks Inventory and sociometry. There is a similarity between several of the instruments mentioned above, namely the type of instrument that is Paper Based Test. Ifdil, et al [6] updated the General AUM and PTSDL AUM by developing a computer-based data processing application program. The results of their research also found that processing with computer-based programs was more efficient than manual processing. However, there are several obstacles found in the field, namely: the distribution of applications is still relatively uneven, and there are also limitations in the number of computers that can install the application, so that currently there are still many guidance and counseling teachers and especially students who carry out data processing manually.

Manual data processing has several weaknesses, including: it is susceptible to human error, takes a long time, thus hampering the preparation of guidance and counseling programs. In the field, problems were also found due to difficulties in carrying out Need Assessments manually, resulting in guidance and counseling students not preparing programs or planning guidance and counseling services according to course bills. This of course has a negative impact on the quality of the services they provide because it is not in accordance with the clients' needs and conditions [10].

According to Istirahayu [7] Assessment is an effort to find out the abilities possessed, the obstacles or difficulties experienced, to find out the background to why the obstacles or difficulties arise and to find out what assistance is needed by the person concerned. Based on the data from the assessment results, an appropriate learning program for the child can be created. Need Assessment is the counselor's main and first job in creating a Guidance and Counseling Program. So, Need Assessment is the main key in the development of the next Guidance and Counseling Program. In implementing a counseling strategy, Need Assessment plays an important role in implementing the next strategy. According to Putro [13] the general stages in the counseling process include: Relationship Building (Rapport), Problem Assessment, Goal Formulation, Goal Selection, Strategy Selection, Strategy Implementation, Evaluation and Follow-up and finally Termination. It is clear as explained above that the assessment stage is a very important stage before determining goals in the counseling process.

According to Putri [12] the instrumentation application is a basic indicator for determining the type of service in the implementation of counseling guidance. According to Thorin in Muskarno [9] The aim of applying instrumentation in general is to obtain data about certain conditions of clients (students) such as basic potential, talents and interests, personal and environmental conditions and problems experienced. And the implementation of instrumentation application activities in collecting data about client (student) needs and problems can be carried out using various test and non-test instruments [11]. The urgency of need assessment in Guidance and Counseling, the need for an application that can make it easier for Guidance and Counseling students to carry out needs assessments and the unavailability of such facilities in the Guidance and Counseling laboratory has encouraged researchers to design a need assessment application in the Guidance and Counseling

laboratory so that it can be a means for students to assess needs. clients in preparing Guidance and Counseling programs both for course requirements and for School Field Experience activities [1].

2 Research Method

This research uses the Research and Development method which aims to produce certain products, and test the effectiveness of the products developed). Borg and Gall [3] define research development (R&D) as the process used to produce and validate a product being developed. There are several stages used, including gradually studying research findings on the product being developed, then entering the product design development stage, and carrying out field testing and making revisions based on the results of implementation in the field. By implementing a structured development pattern, this cycle will be repeated so that field test data will show that the product is suitable for long-term use. The research and development that will be carried out is to produce a website-based Need Assessment Instrumentation Application in the Counseling Guidance Laboratory of the Faculty of Education.

The following are the development stages in this research:

- a. The definition stage aims to: Front-end Analysis, Learner Analysis, Task Analysis and Concept Analysis.
- b. The design stage is the application is designed on a website with the following component menu:
 1. Login, this menu is used to log in as admin or participant.
 2. Home, contains a menu of four areas of Guidance and Counseling development, namely: Personal, Social, Career and Learning.
 3. The sub menu for the four Guidance and Counseling Development areas will contain several non-test instruments that will measure the client's conditions and needs in each area.
 4. The last sub menu is an analysis of the process of instrument results that have been filled in by students/clients.
- c. The development stage:
 1. Validation, namely testing the validity of the media and content in the application developed in this research, is carried out by experts in the field whose validity will be measured.
 2. Limited trials were carried out on 30 Guidance and Counseling students as research samples to determine the feasibility of the application being developed.
- d. The product dissemination stage is carried out to disseminate the product being developed so that it can be accepted by the public. To produce an appropriate product, you must use packaging that is flexible and easy for people to use.

3 Results and Discussion

3.1 Definition

3.1.1 Learning Application Needs Analysis

In the initial research stage, researchers collected data through interviews with several students. Refer on the results of the interview, researchers obtained information that students need a validated needs assessment application to facilitate the completion of course assignments and as a reference and tool in implementing the Introduction to Schooling Field program. Based on initial research conducted through interviews with Guidance and Counseling Faculty of Education students, it can be concluded that there needs to be an application consisting of various instruments in the four fields of guidance and counseling which can help students carry out needs assessments to analyze client needs so that students can develop proper Guidance and Counseling programs such as Instrument Needs Assessment application as well as a tool to help carry out implementing the Introduction to Schooling Field program. Based on this description, researchers conducted a literature study to study instruments that have been developed by experts in learning and career guidance and counseling, social fields and personal abilities.

3.2 Design

3.2.1 Preparation of Website Content and Materials

At this stage the researcher prepares the content and instrument application material needed as an assessment. The instruments used are test and non-test instruments, such as AUM and Questionnaires. The available instruments refer to the needs of four areas of guidance and counseling services.

- a. Personal Area Instruments: Self-Concept, Self-Control, Self-Efficacy, Empathy, Self-Esteem, Self-Understanding, Self-confidence, Self-adjustment, Effective communication, Low self-esteem, etc.
- b. Social Sector Instruments: Consumer behavior, parenting patterns, attachment, social sensitivity, social relationships, social behavior, social emotions, aggressive behavior, bullying, relationships with peers, etc.
- c. Learning Field Instruments: Learning difficulties, learning concentration, learning boredom, learning behavior, learning facilities, learning time management, learning styles, academic stress, procrastination, learning motivation, learning difficulties, etc.
- d. Career Field Instruments: Career maturity, career planning, career expectations, career choice tendencies, etc.

3.2.2 Design of Web-based Applications

After designing the content and contents of the Need Assessment application, proceed with creating a website-based application.

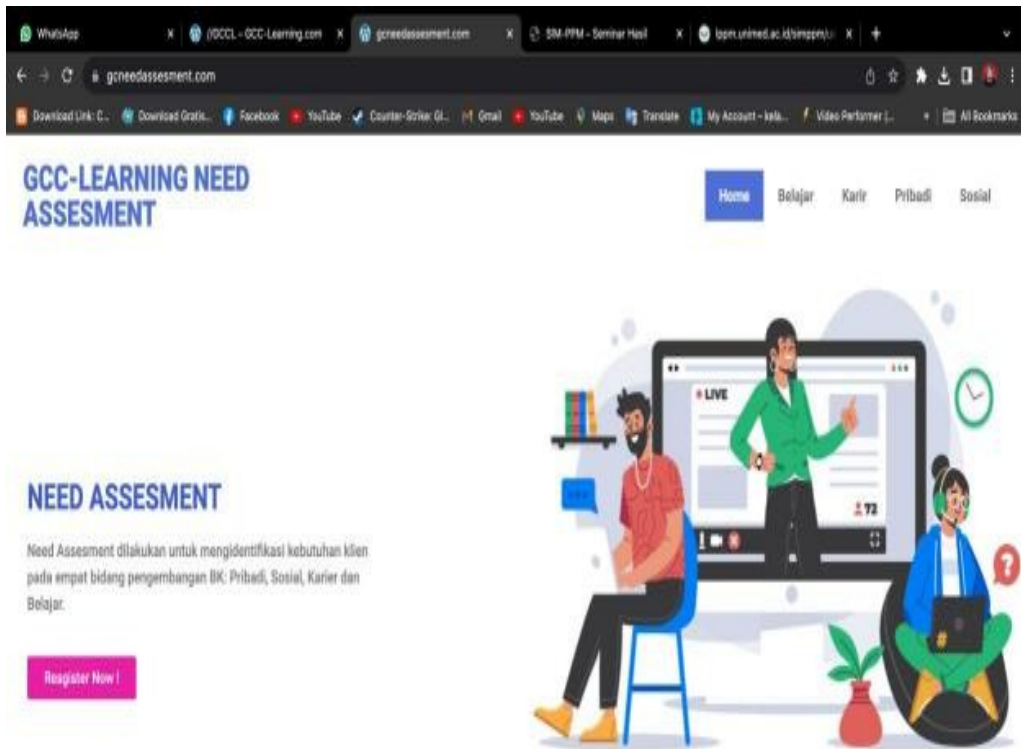


Fig. 1. Home View of the Application

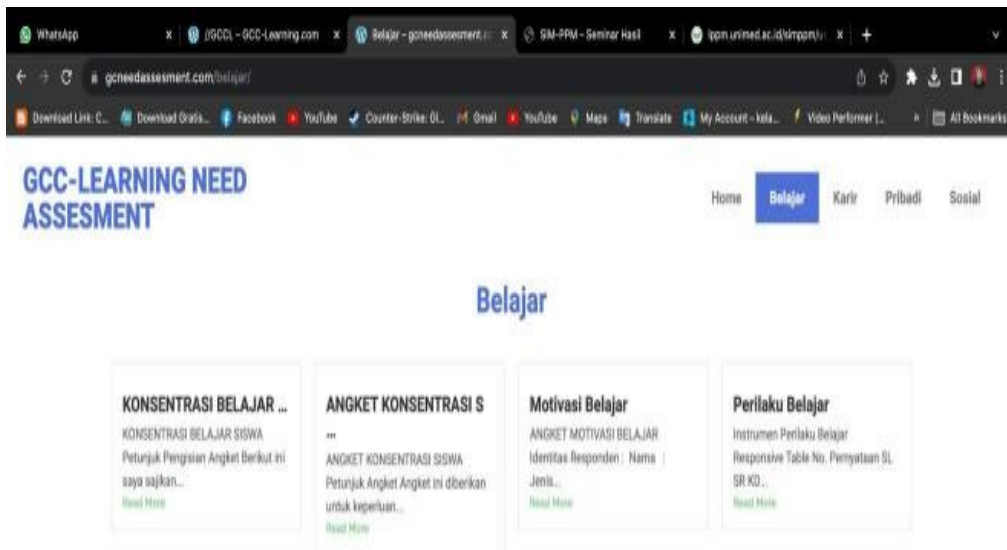


Fig. 2. Menu Display Contents of the Need Assessment Instrument Application

3.3 Develop

3.3.1 Media Expert Validation

The assessment and evaluation of the first draft of the development of the gneedassessment.com Need Assessment Instrumentation Website Application was carried out after the process of filling out a questionnaire and consulting with expert experts. Meanwhile, assessment and evaluation of the main field as well as operational field trials are carried out after the questionnaire filling process.

Media expert assessment data on the quality of the media products being developed. Media experts provide assessments on various things related to aspects of media quality specifically and in depth. The results of the media test assessment can be seen in table 1 below:

Table 1. Media Expert Validation Results

No	Assessment Aspects	Score	Category
1	Selecting font size	4	Very Good
2	Font Type Selection	4	Very Good
3	The accuracy of the color composition of the writing against the background behind	4	Very Good
4	Systematic presentation	4	Very Good
5	easy to use	4	Very Good
6	easy to understand	4	Very Good
7	proper to use	4	Very Good
8	Instructions for use are clear	4	Very Good
9	Instructions for use as a whole no confusing	4	Very Good
10	Consistency of words and sentences	4	Very Good
11	Layout consistency	4	Very Good
12	Suitability of text and image layout	4	Very Good
13	Use of page formats	4	Very Good
14	Provides focus of attention	4	Very Good
15	Makes the learning process easier	4	Very Good
16	Creating enthusiasm in the learning process	4	Very Good
17	Appropriate use of color	4	Very Good
18	The font size used	4	Very Good
19	Selection of the type of font used	4	Very Good
20	The images used make it easy to understand the content of the material	4	Very Good
	Amount		80
	Value		$80/80 \times 100 = 100$
	Category		Very Good

3.3.2 Material Expert Validation

Material expert assessment data on the quality of the media products being developed. Material experts provide assessments on various matters related to material quality aspects specifically and in depth. The results of the material test assessment can be seen in table 2.

Table 2. Material Expert Validation Results

No	Assessment Aspects	Score	Category
1	Suitability for purpose	4	Very Good
2	Conformity of content with the objectives to be achieved	4	Very Good
3	Suitability of content to material	4	Very Good
4	Suitability of media selection	4	Very Good
5	Suitability to learning needs	4	Very Good
6	Suitability to environmental conditions, supporting facilities and available time	4	Very Good
7	can help semester (second) students	4	Very Good
8	Easy to understand	4	Very Good
9	Students can measure the level of understanding of the information they work on	4	Very Good
10	Effectiveness of use as a student learning medium	4	Very Good
11	can be used as independent teaching material which makes things easier for teaching lecturers	4	Very Good
12	can help lecturers in delivering material	4	Very Good
13	Can reduce student boredom in learning	4	Very Good
14	Material can be tested for truth	4	Very Good
15	The material is appropriate to student needs and is current	4	Very Good
16	The depth of guidance and counseling management material can be used as a basis for practice in schools	4	Very Good
17	Contents of the application material for the career counseling program "gcnedassessment.com" can be useful for students and lecturers	4	Very Good
18	Usefulness of the material The career counseling program application "gcnedassessment.com" allows students to understand the material	4	Very Good
19	Application-based development of the Need Assessment Instrumentation Website Application	4	Very Good
20	gcnedassessment.com can attract interest development of the Need Assessment Instrumentation Website Application gcnedassessment.com can improve learning outcomes	4	Very Good
21	Every Application development application material	4	Very Good

22	The Instrumentation Need Assessment website gneedassessment.com is related to one another	4	Very Good
23	Clarity of material regarding the basic concepts of the Need Assessment Instrumentation Website Application gneedassessment.com	4	Very Good
24	Clarity of material regarding implementation	4	Very Good
25	Clarity of material regarding guidance and counseling in particular	4	Very Good
	Amount		10
	Value		$100/100 \times 100 = 100$
	Category		Very Good

3.3.3 Assessment and Evaluation of Main Field Trials

Product trials in the main areas were carried out after researchers revised the development of the gneedassessment.com Need Assessment Instrumentation Website Application based on suggestions and input from material experts and media experts. The results of student assessment of the development of the gneedassessment.com Need Assessment Instrumentation Website Application are as follows:

Table 3. Main Field Trial Results

No	Assessment Aspects	Score	Category
1	The presentation of the material is orderly	107	Very Good
2	The learning objectives are clear	104	Very Good
3	Instructions for use are easy to follow	99	Very Good
4	Illustrative examples make it easier to understand the content	97	Very Good
5	I'm interested in what's in the app	107	Very Good
6	The information presented is complete.	103	Very Good
7	Development of the Need Assessment Instrumentation Website Application based on the gneedassessment.com application is very interesting to use	100	Very Good
8	The writing on the Website Application Creation Application is clear	113	Very Good
9	Needs Assessment Instrumentation The language used is easy to understand	100	Very Good
10	The material presented is easy to understand	103	Very Good
11	There are instructions for use in the application	100	Very Good
12	The size of the letters used is appropriate	120	Very Good
13	The font used is correct	114	Very Good
14	Place pictures and illustrations according to the material.	100	Very Good
15	The font size used is too small	89	Very Good

16	The images used in this application are clear	91	Very Good
17	This display design is interesting	98	Very Good
18	The layout is correct	103	Very Good
19	I'm interested in learning this	120	Very Good
20	this makes it easier to learn	116	Very Good
21	I can study independently	110	Very Good
22	Activities become more effective if you use this	102	Very Good
23	Can foster enthusiasm for studying lecture material	105	Very Good
24	This content can increase my knowledge about career counseling guidance	105	Very Good
25	This content can train my abilities in determining my future career	115	Very Good
	Amount	10	
	Value	$100/100 \times 100 = 100$	
	Category	Very Good	

3.3.4 Assessment and Evaluation of Operational Field Trials

Operational field trials were carried out after revisions based on comments and suggestions from the main field trials. The assessment was carried out after the process of filling out a questionnaire regarding the development of the Need Assessment Instrumentation Website Application gneedassessment.com which was carried out on August 10 2023 for guidance and counseling students with a total of 90 students. The results of the student assessment of the development of the gneedassessment.com Need Assessment Instrumentation Website Application are as follows:

Table 4. Operational Field Trial Results

No	Assessment Aspects	Score	Category
1	The presentation of the material is orderly	500	Very Good
2	The learning objectives are clear	475	Very Good
3	Instructions for use are easy to follow	495	Very Good
4	Illustrative examples make it easier to understand the content	445	Good
5	I'm interested in what's in the app	475	Very Good
6	The information presented is complete.	435	Very Good
7	Development of the Need Assessment Instrumentation Website Application based on the gneedassessment.com application is very interesting to use	440	Very Good
8	The writing on the Website Application Creation Application is clear	455	Very Good
9	Needs Assessment Instrumentation The language used is easy to understand	480	Very Good
10	The material presented is easy to understand	470	Very Good
11	There are instructions for use in the application	480	Very Good

12	The size of the letters used is appropriate	500	Very Good
13	The font used is correct	500	Very Good
14	Place pictures and illustrations according to the material.	480	Very Good
15	The font size used is too small	450	Very Good
16	The images used in this application are clear	410	Very Good
17	This display design is interesting	440	Very Good
18	The layout is correct	435	Very Good
19	I'm interested in learning this	445	Very Good
20	this makes it easier to learn	465	Very Good
21	I can study independently	486	Very Good
22	Activities become more effective if you use this	485	Very Good
23	Can foster enthusiasm for studying lecture material	440	Very Good
24	This content can increase my knowledge about career counseling guidance	432	Very Good
25	This content can train my abilities in determining my future career	445	Very Good
	Amount		11563
	Value		86,48
	Category		Good

3.4 Data Analysis

3.4.1 Media Expert Data Analysis

Just like material test experts, media testers, after validating the product being developed, provide suggestions and constructive criticism so that the media being developed is appropriate. The suggestions given by media testing experts are as follows:

- a. Improve the menu display to make it simpler and clearer regarding the contents of the development of the Need Assessment Instrumentation Website Application gneedassessment.com
- b. Improved the appearance of the application in mobile mode.
- c. Added video examples for each material.

3.4.2 Material Expert Data Analysis

After validation was carried out by material experts on the gneedassessment.com Instrumentation Website Application development application product, material experts provided comments and several suggestions on the product being developed. The following are comments or suggestions provided by material experts:

- a. Adding a pretest for each material in the gneedassessment.com Need Assessment Instrumentation Website Application development application so that you can compare the development of students' understanding before and after accessing the gneedassessment.com Need Assessment Instrumentation Website Application development.
- b. Make several case examples or applications in daily life and also as a prospective counselor.

- c. Addition of description of objectives to be achieved in each materia

3.4.3 Main Field Trial Data Analysis

In this main field trial, students who have used the Application product develop Website Applications

Instrumentation Need Assessment gneedassessment.com provides comments and suggestions. In general, the suggestions and comments given are good, including:

- a. The gneedassessment.com Instrumentation Need Assessment Website Application development application is very good for guidance and counseling students and is suitable for operational field testing.
- b. Students become more understanding of the concept and implementation

3.4.4 Analysis of Operational Field Trial Data

- a. Students provide input so that this media can be further developed and disseminated.
- b. According to students, what was presented was good and really provided useful knowledge for them about using the gneedassessment.com Need Assessment Instrumentation Website Application.

3.4.5 Product Revision

Based on the results of the assessment and evaluation, there are several parts that need to be revised in accordance with the input and suggestions submitted, this is based on input from media experts.

3.4.6 Level of Effectiveness Regarding Research Products

The assessment was carried out using a questionnaire regarding the level of effectiveness of developing the Need Assessment Instrumentation Website Application gneedassessment.com for 30 guidance and counseling students. The results are as follows:

Table 4. Results of Assessment of the Level of Effectiveness of Application Development

No	Assessment Aspects	Score	Category
1	The presentation of the material is orderly	120	Very Good
2	The learning objectives are clear	115	Very Good
3	Instructions for use are easy to follow	115	Very Good
4	Illustrative examples make it easier to understand the content	120	Very Good
5	I'm interested in what's in the app	115	Very Good
6	The information presented is complete.	117	Very Good
	Amount		702
	Value		97,5
	Category		Very Good

4 Conclusion

Based on the results presented, it can be concluded that (1) At the definition stage, the researcher has designed the application concept, (2) The definition stage continues with designing the content of the needs assessment instrument application as a form of means and reference for students in the demands of courses and activities to introduce the PLP school field.

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