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## The guidance website: Internet strategy implementation at the university in industrial 4.0 content

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### Abstract

Guidance and counseling are the processes of providing assistance to individuals or groups of individuals at every age stage so that the supervisor can understand and direct himself in accordance with the societal norms and the individual feels happy and effective in his behavior and builds his welfare. This study was carried out with the goals of developing web-based social media advice, implementing guidance web pages, overcoming obstacles and developing students' potential. The ADDIE development research technique was used for data analysis. According to the findings of internet-based online media about university assistance, the study sample consists of eighty different students enrolled at the university in North Sumatra and twelve students use the internet as a tutoring service. The students can easily use the website to solve the issues that they faced and it should be accessible to them at all times.

**Keywords:** Academic mentoring, ADDIE, Assessment, Guidance and counselling, Internet-based online media, Web-based social media advice.

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### 1. Introduction

The era of industry revolution 4.0 is an opportunity as well as a challenge for the gold generation in realizing projections about Indonesian gold in 2045. The industrial revolution is a trend in the industrial world that combines automation technology with cyber technology. In today's technological age, the rapid advancement of information technology without being hindered by space and time is a separate trend that is being loved by people living in the current millennial era. The progress of a nation is currently measured by the ability of its people to use scientific technology to increase productivity. This characteristic of society is known as a knowledge-based society. Each country is competing to integrate information and communication technology in all aspects of national and state life to build and cultivate a knowledge-based society [1-3].

The positive impact is that it is easier and cheaper to access information that we receive from anywhere. In addition, this convenience is accompanied by a negative impact such as access to information that is very freely available create which make it difficult for us to distinguish which information is true and which is just fabricated.

In this technological world, where more and more things are being digitized, people need to be updated with the latest technology since it is an essential part of the activities that are now taking place, especially in educational and professional advancement. Education uses technology to help students make better decisions about the career they will have in the future because the use of computers enables the use of tutoring services in addition to learning and has the ability to do so, it is reasonable to expect students to be engaged and interested in participating in the process of learning using computers.

Students play an important role in the accomplishment of national objectives. Students delay finishing their theses despite the fact that a thesis is one of the requirements for graduation. Similarly, students also face the challenge of experiencing a delay in their education as a result of having to complete their academic programs over the course of more than ten semesters. Students who have not rapidly adjusted to the academic culture of tertiary institutions where academic tasks are seen as more challenging problems than they were in high school are the root cause of the issue. Students often face issues in their personal, social, academic and professional lives because they are anxious about the future. This situation is similar to those students who are studying abroad. The intolerable mental strain and students' anxiety have an effect on daily life and cause academic tasks to be delayed [4].

In terms of the accreditation of higher education, a standard for measuring the level of quality is the percentage of students who do not graduate or do not graduate on time [5-7]. As a result, providing support to students is a highly essential service and one of the ways of providing this aid is through academic guardianship services or academic advice.

Students are given access to a service known as "academic advising" which acts as a way of bolstering their involvement, academics and success. Academic supervisors serve the purpose of facilitating social integration within the campus community [8]. According to Mu and Fosnacht [9] and Jamaludin, et al. [10], academic guardianship is the institutional interaction (professional advisors, lecturers) with students that aims to provide facilities for students to understand, develop, achieve personal realization, education and make better career choices as well as guide students to use university resources maximally. Academic advisors guide students to the appropriate field of study or courses, expected main learning outcomes and the effective use of learning resources at the university, including fulfilling other academic requirements to improve academic achievement and keep them on track until graduation. Academic advisors are also responsible for ensuring that students remain on track to graduate from college. Higher education institutions have a significant role to play in the academic difficulties that students face and the success that they achieve in their academic and professional careers. This role is known as "academic guardianship."

Everything that may be used to convey a message to students that stimulates their ideas, emotions, worries and willingness to comprehend them, guide them, make choices and solve issues that they will face in the future is considered "guidance material". Anything that may be used to deliver guidance, messages is considered to be part of the guidance medium with academic supervisors. If creative media is used in the classroom, then not only will students be more interested in guidance services but they will also learn more, be able to better retain what they have learned and improve their performance when it comes to carrying out tasks in accordance with the learning objectives.

The traditional method of tutoring which is more often referred to as "tutoring courses" is the focus of the tutoring service model that is still predominantly used in universities across Indonesia. With this approach, the academic supervisor takes the role of the more authoritative figure in the mentoring relationship. The dissemination of information and the provision of services can only now take place through the use of traditional forms of media such as signs and audio guides. It is possible to consider the various components of the media such as the signs, maps, posters and campus display publications as separate forms.

Therefore, it is vital to have media that is not only more appropriate but also visible and accessible to every student without diminishing the information in the guidance material. Students won't have any problem comprehending the counselling messages that are being sent to them. Students' ability to work online and their technical preparation may have an impact on their achievement [11]. As a result, it is essential to have media that is easily accessible and accepted by the students.

Children in elementary school, junior high school and even university are confronted with a wide variety of challenges. There is an immediate need for guidance and counselling services. Students face a variety of challenges, including mental health, difficulties with schooling, issues with coping strategies and other issues. These issues need the assistance of school counsellors who provide counselling services.

Through online counselling, the distribution of disease prevention brochures, websites, YouTube video tutorials, videos, short films, online discussions through WhatsApp groups and other methods, school counsellors improve the psychological condition of students and parents by reducing high levels of stress, anxiety, depression and other psychological conditions [12-14]. The electronic use of consultation videos may also be an effective means of resolving issues with students. The use of digital media enables counselling services to adapt to global difficulties and new issues [15].

The act of offering assistance to someone (often students) which is referred to as "guidance" may be carried out through a wide range of various services. In keeping with the spirit of the times, it is possible to carry out the provision of services at this time not just face-to-face but also through the use of the many forms of media or information technology that are now accessible. The purpose of this endeavour is to provide guidance in a manner that is both more interesting and not restricted to any particular setting while at the same time adhering to the aforementioned guiding principles and rules of behaviour.

As a result, the use of worldwide computer networks, including the internet as a viable medium for the development of guide services will be examined. When the historical background of the pre-existing issue is taken into consideration, the following concerns become more transparent: (1) Are the tutoring programs that are now offered to students the ideal ones for supporting students in conveying the challenges they are having in addressing problems? (2) Which non-traditional types of media have the potential to improve guide services? (3) Do you think that providing tutoring services over the internet is a more efficient method? (4) What kinds of efforts are made by the academic community to address the challenges that are experienced by students? (5) Using the internet as a resource how is the media for consulting services constructed? (6) When students use the internet, how does this affect the way that counselling services are delivered to them?

The difficulty associated with this research is restricted to the process of developing online media with the intention of assisting students studying at one of the state colleges located in North Sumatra. In the situation, we outlined the following problems: (1) What are the best practices for using the internet to develop online media that may be used in tutoring services? (2) What has been the surprising success of using web tutoring media for students at North Sumatra State University? (3) Are you surprised by how successful digital media coaching is in assisting students at North Sumatra State University in overcoming the problems they experience and developing their potential?

Following is a list of goals that the researcher has to accomplish. Beginning with the description of the issue that is being investigated: (1) Observing the efficacy of online guidance media in assisting students at state colleges in North Sumatra in overcoming the challenges they face and maximizing their potential. (2) Changing the implementation of guidance for web media at state universities in North Sumatra. (3) Knowing how to develop guidance web media using the internet. (4) Making changes to the implementation of guidance web media at state universities in North Sumatra. (5) Replacing the implementation of guidance web media at state universities in North Sumatra.

The goal of this study is to gather data and information that may be gained in confirming the confidentiality of the usage of tutoring services by making use of the internet network for students attending public institutions in North Sumatra during the academic year 2021- 2022. The following is a list of the potential advantages that might be derived from this research: (1) Learning delivery can be disseminated in a relatively short amount of time and can be accessed in various forms and without time restrictions. (2) Internet network media are expected to assist students in expressing the difficulties they face. (3) Media guidance services using the internet network are expected to make a positive contribution to education. (4) For researchers, as an encouragement to further improve. (5) Educational practitioners, particularly supervisory lecturers are able to comprehend the significance of the internet as a method of doing work. (6) Guidance service media may be used as an input in the process of using the internet network.

## **2. Method**

This research was carried out at a public university in North Sumatra from June to August 2021-2022. The following steps were taken: (a) Analysing and evaluating the need for academic advising services through the use of the internet. This is accomplished by exploring student responses and input about the type of guidance services they have received up to this point. (b) Designing the format or form of media services using the internet network. (c) Developing media with considerations for the effectiveness of technology, content and services. (d) Implementation which refers to the application of the developed media. (e) Evaluating which refers to the assessment of the developed media to determine how successful it is through the use of group testing (small group trials, large group tests, comparing the developed media with forms of services that are carried out without service media).

Product trials are an essential phase in the process of acquiring a variety of information in the industry that is helpful in the development of high-quality goods. Knowing whether the developed product is in accordance with the wishes of product users or without testing it, the resultant product will have deficiencies including the following: (a) it is disappointing because the product does not meet user needs. (b) There are materials or displays that are either missing or not necessary but there is no opportunity for feedback to be revised later on.

In this trial, the trial design, the test participants, the devices for data collection and the analysis of the results are explained. It is necessary to conduct tests on products that have been generated in the early stages in order to get data on the quality of the media that has been developed for guidance services to be provided to students at universities. The results from the trials were reviewed and used as the foundation for improving and refining the product. It has been verified in the past by subject matter and media specialists and it is anticipated that the product trial will be able to assess both the empirical and theoretical aspects of product quality. The purpose of the material expert review is to establish whether or not the material that has been created follows the norms of preparation in line with the fundamental competencies. The purpose of the media expert evaluation is to establish whether or not the multimedia that has been created is suitable for usage.

In the context of this development, the data collection instrument also functions as an evaluation instrument to evaluate the product that has been generated. The following is a list of the devices that were used in this investigation for data collection: (1) a student questionnaire expressed a sense of comfort in expressing the problems that were experienced, the time required to get responses from academic supervisors, the form of information that was available in the media and the quality of communication that was provided and (2) expert advisers, academic supervisors and media experts who were sent questionnaires were asked to respond to questions concerning the problem-solving methods contained in the media, the steps for the implementation of guidance and the form of problem-solving. The questionnaires also examined how much computer information technology was used in guidance services.

### 3. Results and Discussion

#### a) Results

The following steps of the procedure were carried out using guide service media: In the first step of this development activity, a need analysis will be carried out at one of the public universities in North Sumatra during the academic year 2021-2022. This involves the distribution of questionnaires to eighty students at the university. Prior to this, socialization was carried out during which the definitions and benefits of academic guidance services were outlined ensuring that respondents had an overview of the statements included in the distributed questionnaire. The first week of June 2021 was spent carrying out the responsibilities associated with this activity. Based on the findings of the questionnaires that were distributed it was discovered that 100% of students stated that they needed media as part of the guidance process so that their activities could be carried out and that it was also more effective to do it face-to-face.

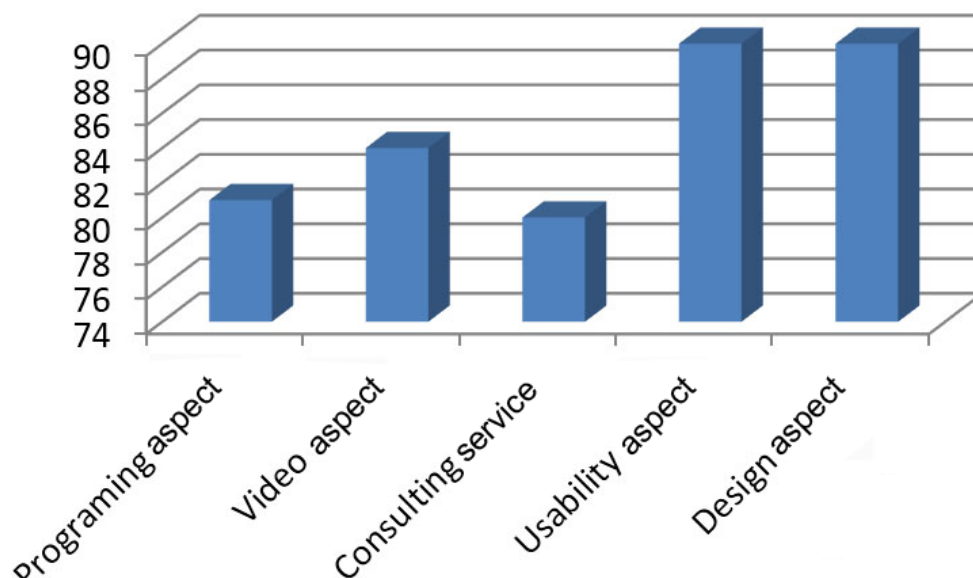
The media for the product website has been produced in order to get comprehensive data used as a material for product updates. To produce a guidance website product that is used for students at a public university in North Sumatra, some aspects that become material for product revision include several components: feasibility, presentation, graphics and language. This product is used by the students at the university. The steps of product testing are carried out in the following manner: (1) material expert validation, (2) media expert validation, (3) the first version of the modification, (4) the individual or one-on-one assessment, (5) analysis, (6) the second round of revision, (7) the evaluation of the small group, (8) assessment of the results of the field experiments, (9) investigation, (10) finished product. The product's efficacy will be evaluated after the completion of this final product.

The determination of the outcomes of the analysis conducted by content experts and online media specialists on each component of the overall evaluation is accomplished by computing the average score obtained in each category. Following the completion of the evaluation, the findings were examined in order to establish the practicability of having an extension made for the website. The following is a description of the average proportion of the findings from the evaluation carried out by subject matter experts and media experts on the advice websites:

**Table 1.**  
Average percentage of assessment results on media guidance website by media experts.

No.	Categories	Average percentage	Criteria
1	Programming aspect	81%	Good
2	Video aspect	84%	Good
3	Consultation service aspects	80%	Good
4	Usability aspect	90%	Very good
5	Design aspect	90%	Very good
Average score		85%	Good

In Table 1, the media expert evaluates the website guidance based on five aspects: programming, video, consulting feasibility, usability and design which show an average percentage of 81% on the programming aspect, 84% on the video, 80% on consulting services, 90% on usability and 90% on design aspects. Overall, these 5 aspects are included in the "good" category which means that the guidance website media can meet the demands of guidance needs. The average percentage of material expert research results is shown in Figure 1 in the following bar chart:



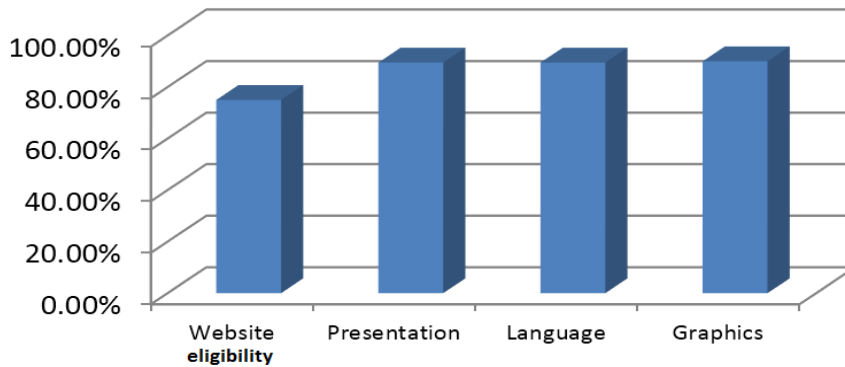
**Figure 1.**  
Empowerment score chart diagram of guidance website media.

**Table 2.**

The percentage of assessment results on media guidance website in material experts.

No	Categories	Average presentation	Criteria
1	Website eligibility	75%	Good
2	Presentation	89.50%	Very good
3	Language	89.50%	Good
4	Graphics	90%	Very good
Average score		86%	Good

In Table 2, the material expert evaluates the website guidance media strategy based on four aspects: the website feasibility aspect, the presentation aspect, the linguistic aspect and the graphic aspect. The average percentage of each assessment is 86.00% on the website feasibility aspect, 89.5% on the presentation aspect. 89.5% in the linguistic aspect and 90.00% in the graphic aspect. All were included in the “good” category which means that the guidance website media can meet the demands of guidance needs. The average percentage of material expert assessment results can be seen in Figure 2.



**Figure 2.** Empowerment score bar diagram of counselling guidance website media bar.

**Table 3.**

Frequency of results of guidance using website media.

No	Categories	Frequency	Percentage
1	Interest:		
	Interested	72	90%
	Is not interested	8	10%
	Total score	80	100%
2	Use:		
	Use	68	85%
	Do not use	12	15%
	Total score	80	100%

In Table 3, the media evaluates the website’s guidance based on two aspects: interest and use category. The average percentage of each assessment is: interested (72 respondents with 90%), not interested (8 respondents with 10%) and using website media (68 respondents with 85%), not using (12 respondents with 15%) which means the guidance using website media can meet the demands of guidance needs.

In one of the public universities in North Sumatra, there was an increase in the percentage of students who had attended junior high school guidance before the existence of web media as a means for students to get guidance services by means of face-to-face guidance. This means that students are required to meet with academic supervisors and discuss problems directly. In the course of the previous month, beginning in June 2021 and continuing through August 2021, a total of 567 students at the university of which only ten students (1.76 percent) went to the academic supervisor to consult with them about the challenges they were facing with their assignments and final assignments. However, as a result of the research and development that went into the website media as a way for students to acquire guidance services, there are now more students who use the online media in a constructive way.

After the researcher had socialized the use of the website, particularly with the students and registered each student as a member of the website, he assumed that the students would be very interested in using the website and indeed, they did appear to be very interested in using the website. The percentages of students who have used various forms of online media as a guidance service are broken down below by both the number of students and the sorts of issues they face.

**Table 4.**  
The frequency of students in using web media.

No.	Student name	Consultation date	Consultation contents
1	SF	2 <sup>nd</sup> June 2021	A video statement is displayed on the website
2	AD	13 <sup>th</sup> June 2021	Would like to meet with the academic counsellor for consultation regarding problems that arise.
3	FM	8 <sup>th</sup> August 2021	Problems with friends (Bullying problems for parents)
4	KP	12 <sup>th</sup> August 2021	Problems with classmates
5	FG	20 <sup>th</sup> August 2021	Problems with the subject of academic counselling
6	PT	20 <sup>th</sup> August 2021	Sustainability of the students' university
7	SW	21 <sup>st</sup> August 2021	Desire to quit university
8	KJ	25 <sup>th</sup> August 2021	Problems as class students
9	HKH	28 <sup>th</sup> August 2021	Effective learning tips
10	BO	28 <sup>th</sup> August 2021	Feeling depressed in students
11	MR	29 <sup>th</sup> August 2021	Problems of students with their parents
12	AS	29 <sup>th</sup> August 2021	There are issues with some of the children's instructors whom the youngsters do not like.

Table 4 explains the students' feelings about their problems with friends at the university including numbers 3, 4, 8, 10 and 12 followed by their academic counsellors' problems including numbers 2 and 5 and also the consultation regarding problems that arise except for the numbers above.

#### b) Discussion

Every student goes through their own unique struggles. It is essential that counselling and guidance services be improved. The academic, emotional, social and professional challenges that students face are the types of problems that might occur. School counsellors are trained experts that provide assistance to students in the form of individual counselling as well as group therapy and other counselling services. The provision of counselling services as a means of addressing the issues that are being faced by students is one measure that may be taken. In this age of globalization, school counsellors definitely need the support of technology in order to react to the difficulties and possibilities presented by electronic media in the field of counselling services [16]. It is essential that counsellors have a solid understanding of the fundamentals and considerations involved in the use of digital technology as a medium for counselling services. Recommendations for counselling services to be provided during a crisis include the use of social media or other forms of electronic media as a channel for healing anxieties, rehabilitation efforts and post-crisis interventions [17, 18]. It is essential that school counsellors use the information and abilities they possess about the utilization of social media as a medium for counselling services [19-22].

In order to achieve this goal, the development of a website offering media consulting services was carried out. As a direct result of further development, the designated expert will either carry out the necessary research or verify the outcomes of the task. The outcomes of the validation were used to assess whether or not it would be possible to conduct further field testing with lead media goods. According to the website strategy and the criteria for media development, all of the requirements for the newly developed website's design have been satisfied.

This study on product development is being done with the intention of constructing a product in the form of a media website that can be used to make the mentoring process more efficient. Internet technology enables communication and engagement in smart spaces as well as smart parking and the delivery of smart education in an appropriate manner to students [23]. Then, aspects were modified and improved based on the results of data analysis and experiment, in addition to feedback from subject matter experts, tutoring website media experts and students using this web tutoring site media. Its goal is to conceal some of the features of the product production process that are most common to all businesses. The value of the variable that indicates the typical content found in an online learning environment is more than enough to meet one's expectations. In this research, evaluations were carried out on a variety of programming components, video aspects, consultation service aspects, usability aspects and learning website media strategy design features.

All forms of technology and media are linked to the internet in order to facilitate the process of providing effective counselling services by bringing together school counsellors and students for online sessions. This mode of providing counselling services is also often referred to as "cyber counselling". Client satisfaction is the yardstick by which the effectiveness of cyber counselling is evaluated [24] and practitioners who provide remote counselling services should have a high level of technical competence in order to be successful [25].

The answer to the questionnaire submitted to the website expert revealed that 86% of respondents believed the website media may be used because it satisfied the criteria and requirements for creating website media. The fact that website design professionals have awarded the media on the website a score of 87.1 out of 100 suggests that the media can be used successfully on the website since it has been produced in such a manner and fits the requirements for the website design mix. Eighty-three percent of the material experts on the website replied positively to the media on the website suggesting that it is appropriate for usage. This is because the website delivers content and delivery criteria that are in line with standards for engaging with students. In light of the guidelines and evaluation assessment, it is possible to draw the conclusion that the data presented above demonstrates that the utilization of website media is more effective in improving

student guidance. This conclusion can be reached by paying attention to the guidelines and evaluation criteria. It is possible to assert that the facts demonstrate that the use of online media is more successful.

The conclusions of the research project based on data processing indicate that the mean outcome of website recommendations provided to students was a score of 12.1 which corresponds to an 80.6% success rate. However, the instructions delivered without making use of the content found on learning websites totalled 10.8 or 71.7 percent. According to these results, the proposals chosen for usage on selected websites are both feasible and effective when applied to the process of enhancing consulting activities.

When students are presented with counselling using material from the guidance website, it is much simpler for them to comprehend [26]. This is due to the fact that the utilization of media websites makes it simpler for students to counsel and vent which results in each student no longer having difficulty finding answers to the issues that they are facing [27]. In addition, the content can be obtained on the internet is quite valuable since it can be accessed at any time by students who need instructions. This makes the content very useful.

This investigation into the creation of media websites and the assessment of product reviews includes a number of drawbacks including the following: (1) During the academic year 2021-2022, a group of eighty students participated in an evaluation of the websites of various media products as part of a limited trial. As the evaluation in this research was not very comprehensive, it is conceivable that the results are still impacted by a variety of other factors. The sample employed in the study has to be representative in order for the results of the research to be applicable to a wider range of contexts. (2) Clarification of online production materials with respect to the available resources and infrastructure, particularly video facilities controlled by academics. This will make it more difficult for academics to develop material for websites. (3) The readiness of students to follow internet media is distinct from the direct media that students typically complete during guidance. This unpreparedness of students may be solved by developing a website devoted to advice and making it available to them so that it can be used as a tool to assist them in solving the issues that they are facing. This website should be accessible to them at all times.

#### 4. Conclusion

Based on the findings and discussion of the study on the issue of media development for the website of the guidance service, the following conclusion may be drawn: (1) The students have a significant need for the establishment of the advice website media in order to carry out consultations. The search results from the distributed questionnaires found that 100% of students stated that they required a guidance website so that it could be used as a more effective means of consultation without the necessity of meeting face-to-face with the guidance teacher. (2) According to the findings of the individual tests, the advice website media should be included in the good criterion. 81% is on the programming aspects, 84% is on the video aspects, 80% is on the consulting elements, 90% is on the usability aspects and 90% is on the design aspects, so that they are viable to use and develop in the process of learning. (3) According to the results of the exam and the replies of the students in the field trials, it was found that the frequency of students who showed interest in using the website media for guidance services was 56 students (70%). Additionally, prior to the media website socialization, 65 students (81.1%) used or made the use of media website.

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