A Design of Web 2.0 Technology to Support Students in Guidance and Counseling Services

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Abstract *The purpose of this research was to develop Web 2.0 Technology, which is used to help the process of guidance and counseling on students. The industrial revolution 4.0 is an era where the development of technology is very influential in various fields, especially in guidance and counseling in schools. Guidance and Counseling teachers are required to develop their potential in guidance and counseling technology services. There are various kinds of technologies that can be used by guidance and counseling teachers; one of the technology is Web 2.0. Web 2.0 technology is a platform where students can interact, share, create, and so on. In this research, web 2.0 technology is designed in the form of a website with various features such as virtual counseling services, career analysis, interactive material about life, and so on. This study uses a research and development method, which is currently at the planning stage. Hopefully, through web 2.0, technology can make effective counseling and guidance services at this time.*

Background of study: Guidance and Counselling

Aims and scope of paper: Emerging Technology for Counseling Service, Cyber Counseling

Methods: RnD (Planning Stage)

Result: Design of Web 2.0

Conclusion: Hopefully, through web 2.0, technology can make effective counseling and guidance services at this time

Keywords: *Revolution industry 4.0, Guidance and Counseling, Web 2.0 Technology, Research and Development, Education*

I.   Introduction

The industrial revolution 4.0 continues to be the focus of various fields. The industrial revolution 4.0 became the era where technology and information were emphasized and became the focus of all fields. The 4.0 industry can be described as an era where everything focused on direct communication anywhere and anytime (Dami & Waluwandja, 2019). One area that felt the impact of the industrial revolution was education. Education must be able to change learning and teaching strategies in the industrial revolution 4.0, which became an era that

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is distracting and requires technology (Bimayu & Nopriadi, 2019). The biggest asset of a country is quality education. Education becomes a valuable asset if it runs well and produces quality human resources (Bhakti, et al, 2018).

Guidance and counseling, which is one part of education systems, is considered as an essential component to be developed to adjust the development of the times. Education can be channeled more broadly through technology. Developing information technology provides an excellent opportunity to get an education globally (Sari & Setiawan, 2018). In the era of the industrial revolution 4.0, guidance and counseling teachers need to change perspectives in service delivery to have a highly competitive and competent spirit (Indrawan & Cendana, 2019). Therefore, guidance and counseling need to pay attention to technology in the process of providing services.

However, in reality, many guidance and counseling teachers are not able to optimize existing technology. Meanwhile, the teacher is one of the keys to organizing guidance and counseling. The teacher is one of the keys in the administration of education (Hartini, et al, 2018). Successful education can be seen from the quality of the teacher (Akindutire & Ekundayo, 2012). Besides, Bhakti explained that teachers play an essential role in determining the vision and mission and objectivity in the education process so that teachers become a vital source for filling education through their performance, skills, and creativity (Bhakti, et al, 2019). The need for guidance and counseling teachers to learn technology as an effort to develop the most critical potential and focus at this time.

There are various kinds of technologies that can be developed by guidance and counseling teachers. The technology developed here is web 2.0 technology. Web 2.0 Technology is a platform that can create, save files, share, and so on, generally in the form of a comprehensive website. Web 2.0 compresses various kinds of resources that allow teachers and students to communicate and work together effectively, publish content, share images, audio, and video files (Khany & Boghayeri, 2015). Web 2.0 Technology emphasizes the material and components that can be delivered on a website. Through this research, web 2.0 technology will be developed with design, content, parts, and various features that support guidance and counseling services. This research uses research and development methods. The focus of this research is, what is the web 2.0 technology design that is suitable for guidance and counseling services following the current development? Through this research, it is expected to answer what technology needs to be developed in guidance and counseling services.

II.   Method

This study uses research and development (RnD) research methods. This research method was chosen because, at the end of this study, a product was composed of mature material. Research and development (Research and Development) method has a goal to produce products that are passed through various development processes (Mulyatiningsih, 2011). The RnD research consists of several stages of research, namely research planning, initial design, media making, limited trials, product revisions, large-scale trials, and product socialization and distribution. As for this research, it only reached the research planning and initial design stage. The stages of this research are as follows.

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│     Compile material used in Web 2.0 Technology for guidance  │
│                   and counseling services                     │
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┌─────────────────────────────────────────────────────────────┐
│  Design forms and components of Web 2.0 Technology for guidance│
│                   and counseling services                     │
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┌─────────────────────────────────────────────────────────────┐
│   Limited testing of Web 2.0 Technology through guidance and  │
│                counseling services in schools                 │
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┌─────────────────────────────────────────────────────────────┐
│   Analyze the results of trials and make revisions to Web 2.0 │
│      Technology to adjust guidance and counseling services    │
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│ Conduct large-scale trials and dissemination of Web 2.0 Technology│
│             for guidance and counseling services              │
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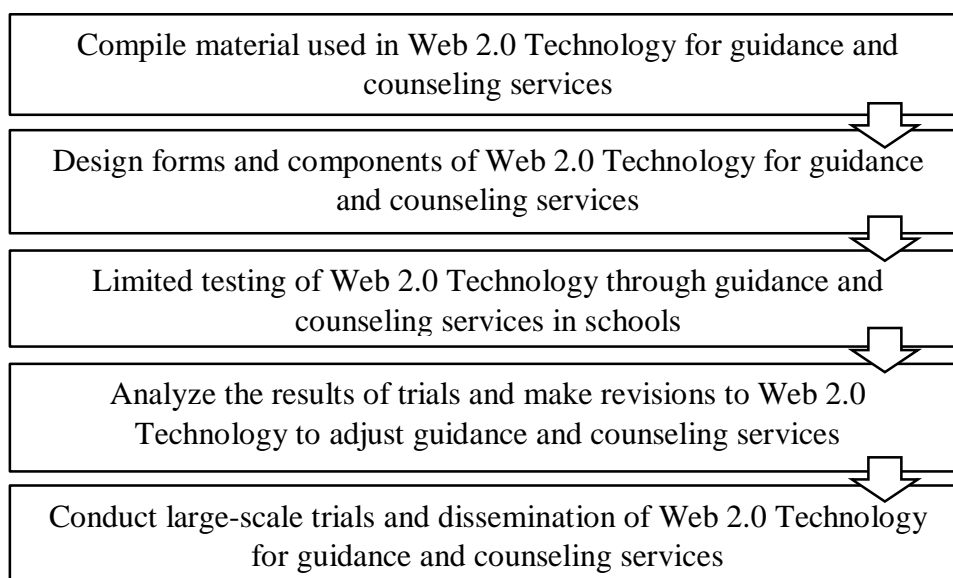
Figure 1 Research Steps of Web 2.0 Technology for Guidance and Counseling service

At the stage of arranging the material, all forms of guidance and counseling material are structured and use language that is easily understood by students. The source of the material obtained is obtained through reliable, valid literature. Besides, the content was also derived from an expert in the field of guidance and counseling. After that, the material is compiled and included in Web 2.0 Technology. The features that can be offered include virtual counseling, career planning, and career explorations, content related to daily life, or relating to personalities and the most intact material of social life. All of these materials are summarized and made interactive according to the definition of web 2.0 technology itself.

In the pilot phase, the object of the trial is the guidance and counseling teacher and students. Giving applications to guidance and counseling teachers is to find out how far the guidance and counseling teacher know web 2.0 technology and can use it. Then the provision of web 2.0 technology to find out what components need to be improved and need to be adjusted with students and to find out how effective guidance and counseling services through web 2.0 technology.

The trial results are the basis for making improvements to Web 2.0 Technology. There will be improvements to the media before being widely retested. After everything is finished, the next thing is to socialize the product and apply for a product patent.

III.   Result and Discussion

Current technology on guidance and counseling

Ongoing technological developments are always increasing with time. One of them is the internet, which has become a daily human need. The internet developed in virtual communication to support a population (Glasheen, et al, 2013). Of course, the internet can be utilized in education, one of which is guidance and counseling. The internet opens access for guidance and counseling to find out careers and provide services

widely without being hindered by geographical factors and physical limitations (Sampson, 1998; Sampson & Makela, 2014). There will not be a barrier to current guidance and counseling to develop more global guidance and counseling services.

Of course, not only looking at existing technology but also looking at what needs the guidance and counseling teacher needs to develop guidance and counseling services. School counselors need to look broadly at the service so that they can develop the potential of students (Kumara, et al, 2019). Expanding teachers' thinking and perception patterns of guidance and counseling is one of the main assets for developing guidance and counseling services. The teacher needs to create a clear learning process to stimulate students to learn more effectively and dynamically to achieve their goals (Ahmadi, 2010). Besides, teachers always need to learn and be creative and be able to use information technology in the learning process of students (Indrawan & Cendana, 2019). Therefore, technology is required by teachers, especially guidance and counseling, so that the services provided are useful and can provide services in their entirety.

Web 2.0 Technology in education

Web 2.0 Technology is one platform that is always accessible to everyone, especially for students. The website-shaped platform will facilitate students in accessing knowledge. According to Zhang, the website becomes one of the ideal media in providing material to students (Zhang, 2006; Sari & Setiawan, 2018). In addition, sites that are said to be web 2.0 technology are websites that offer various features. Web 2.0 is the second generation of web development and is designed with a variety of communication facilities, and information security in sharing and collaboration in the web world (Harris & Rea, 2019). Web 2.0 technology allows students to create, share, collaborate, and publish their work on the internet (Liu & Tai, 2016). Web 2.0 technology provides opportunities for students to be able to create and share content and interactions with others through the internet (Obando, et al, 2017). Thus web 2.0 technology has more comprehensive and developing features.

Currently, various places have been said to be web 2.0 technology. Several types of websites 2.0 technology already exist, include wikis, blogs, podcasts, social networking, and virtual world [18]. Even so, several sites provide inaccurate information or just offer less comprehensive content. Supposedly, the actual web 2.0 technology is a web that reinforces academic abilities. Web 2.0 has been used in various types of learning subjects, which are used to look for improved academic performance [21]. Therefore, a teacher, especially in guidance and counseling, needs to utilize the full function of web 2.0 fully.

Web 2.0 Technology for Guidance and Counseling Services

In this research, web 2.0 Technology in guidance and counseling will focus on two essential aspects, namely preventive activities and responsive activities. Preventive activities such as guidance activities provided to students contain a variety of materials needed at this time, for example: related to emotional control, self-control skills, drug prevention and free direction material, articles related to social interaction, career exploration, and so on. The content is entered into the web and presented interactively. The forms submitted on the website can be in the form of pictures, games, short content, quotes, or in the form of simple games. Material is obtained from journals, books, or persons who are experts in their fields.

Then for the responsive services, there are several menus. This section focuses on counseling which is carried out in advance assessment related to the problem. Here will be categorized what areas are the problem, whether personal, social life, career readiness or career planning, or academic issues. From the results of the assessment will be known what needs to be done and what solutions are offered. As for students who determine the solution, because all problems are resolved by student decisions. then, next, students will plan the steps they will take, here is provided a form which will help students to determine their steps. If students are still experiencing difficulties or want to talk about the problem in more detail, then there is virtual counseling in the form of chat boot which helps students to communicate directly with a counselor.

Two focus of the website will still be developed and adjusted to the needs of existing students. Other than that, components can be removed or replaced if they do not comply with the existing conditions. The materials compiled here are actual material that often appears in the community. Following is the initial draft of website material that will be provided in web 2.0 technology for guidance and counseling services.

Table 1 Content of Web 2.0 Technology to Guidance and Counselling Services

Focus Website	Field	Material	Forms of activity
Preventive (Guidance)	Personal Ability	• Emotion Management • Creativity • Problem Solving • Self-Planning	Material Video, Text, Games, Quiz
	Social Environment	• Environmental adaptation • Communication and public speaking • Collaborative Ability • Empathy	Material Video, Text, Chat Boot, Quiz
	Academic	• Time management • Learning management • Hone academic ability • learning	Long Term Personal Project Task, Video Materials, Text

		strategies	
	Career Explorasis	• Career understanding • Knowing various careers • Know the conditions for obtaining a particular career • Development of skills according to the desired career	Video Materials, Personal Project Tasks, Forms, Text
Responsive (Counseling)	Personal problems	• Stress • Emotion management • Self-management	Chat Boot, Assessment Form, Personal Monitoring
	Social life	• Bullying • Promiscuity • Facing the environment's pressures	Chat Boot, Assessment Form, Environment Task
	Academic problems	• Learning achievement problems • Academic behavior	Chat Boot, Assessment Form, Personal Monitoring, Project Task
	Career planning	• Determine Career • Career suitability with self	Chat Boot, Assessment Form, Personal Project Task

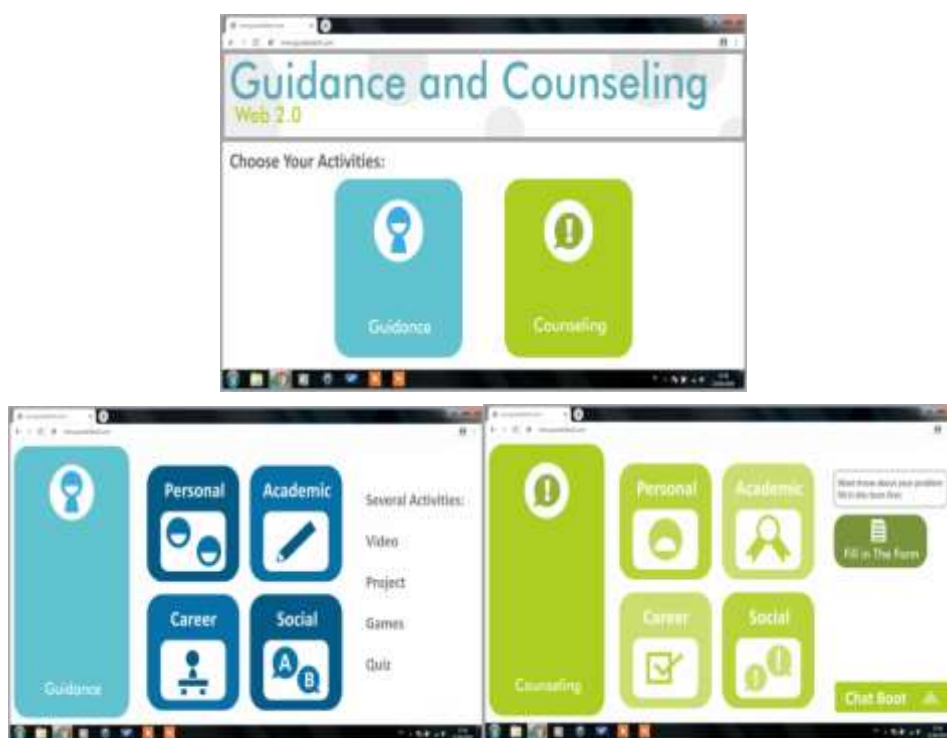There are the initial designs on the website's display.

Figure 2 First Design of Web 2.0 Technology for Guidance and Counseling Service

The initial appearance begins with the selection of activities, whether guidance or counseling. If students choose guidance, students will select the fields according to their wishes, and students will follow the activities according to their options. In contrast to counseling, here, students need to fill out an assessment form that is already available. The results of the assessment will be known to students, and then students will conduct treatment by selecting an area from the results of the evaluation. If students are still confused, students can contact the counselor via chat boot. On the other hand, if students can already find out the problem, students can immediately press the field button according to the problem. The activities in each field can be in the form of assignments, projects, choice of problem solutions, and so forth.

This whole website can be realized if there are several parties involved. The experts, developers, and researchers also need to work together to be able to patent the website design and website creation. Then, the need for support from several parties such as schools or institutions which want to work together to use this application or for the process of reviewing application development going forward. Besides, the need to buy a domain to be able to patent a website that is created.

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IV. Conclusion

It is crucial for guidance and counseling teachers to continue optimize their competence in the field of technology. The industrial revolution 4.0 requires a variety of things to involve technology and information in a particular area of guidance and counseling. As for various kinds of media or technology that can be utilized, one of them is Web 2.0 Technology. Being a technology that is not limited to ordinary websites, Web 2.0 emphasizes a variety of functions that can be used. In this research, the site is designed to enable students to interact with the

guidance and counseling teacher, overcome the problem by carrying out various activities on the website, participate in enumeration or guidance activities, and so forth. Of course, at this stage, Web 2.0 Technology is still in the form of design and initial design, so that material and material adjustments to the situation and conditions are carried out until now. Of course, for the website to be realized, several parties need to work together. Hopefully, when Web 2.0 Technology is complete, it can make the existing guidance and counseling services more effective.

Acknowledgments

Author Contributions Statement

This study reveals the design for effective cyber counseling. Website design is based on literature from various sources. We hope this research can be a reference for practitioners in providing website-based counseling services (B.A).

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