

# Development of Mobile Application Social Guidance and Counseling for Junior High School

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**Abstract**—At this paper, we will present the development of mobile application Social Guidance and Counseling (GC) that called "m-NingBK: Social GC". The application is used for GC services that run on mobile devices. The application is designed specifically for Junior High School student. The methods are a combination of interactive multimedia approaches and educational psychology. Therefore, the design process is carried out three processes, which are digitizing of material social GC services, visualizing wisely and making interactive. This method is intended to make students not only hear and see but also "do" the virtual. There are five components used in multimedia applications "m-NingBK: Social GC" i.e. text, images / graphics, audio / sound, animation and video. Four menus provided by this application is the potential self, social, Expert System and about. The application is built using the Java programming language. This application was tested using a Smartphone with Android Operating System. Based on the test, people give rating: 16.7% excellent, 61.1% good, 19.4% adequate, and 2.8% poor.

**Keywords**—Expert Systems, Guidance and Counseling, mobile application, multimedia.

## I. INTRODUCTION

At the end of 2006, mobile phone users in Indonesia, there were 68 million. That is predicted that this figure will be even greater for 2010. Olli-Pekka Kallasvuo predicts that global mobile users will reach 4 billion in 2010 [1]. According to reports detikinet, the number of global mobile phone users at the end of 2008, the amount will be more than 50% of the world's population or more than 3.3 billion users [2]. On the other hand, the ring back tone service or a personal dial tone is now much in demand by mobile phone users in Indonesia. Likewise, wallpaper services, games, SMS info, etc. According Telkomsel Content Provider at the Gathering 2007, services have contributed content about 4% of the company's revenue. Telkomsel is currently working with 108 partners Content Provider (CP) brings together around 3000 types of content services. In Indonesia, CP number around 200 - 500. This still allows the potential opportunities with the birth of a new CP content innovation services are significant variables for the study [3].

Therefore, as part of the content capture innovation and service opportunities as well as one of concern will be the development of education in Indonesia, the author as a tutor / GC in the 4<sup>th</sup> Junior High School (SMP) Purworejo - Central

Java began in early 2008 proposed content services as a way to aid GC services indirectly by utilizing advances in Information technology (IT). The content service is approach developed by Multimedia Education.

Author also proposed mobile application for GC service because of mobile applications provide the advantage that can be accessed from anywhere and anytime. Development of content services on mobile devices can be done in various ways, for example using the programming language Java with J2ME [4], or use an application that aids Macromedia Flash Professional 8 and Adobe FlashLite 2.1 [5].

At this paper, social services counseling content that will be covered in and will run on phones with the Android operating system. The application is "m-NingBK: Social GC" is "embedded" in many types handset having android operating system.

## II. LITERATURE REVIEW

Mobile applications are defined as internet applications that fit very well in the mobile computing environment. The mobile computing can be viewed as an extension of distributed computing types adding mobility to host computers [6], [7]. Taxonomy of enterprise mobile applications as shown Fig. 1 in which mobile applications are classified into five categories [7], [8]:

- mobile broadcast (m-broadcast);
- mobile information (m-information);
- mobile transaction (m-transaction);
- mobile operation (m-operation);
- mobile collaboration (m-collaboration).

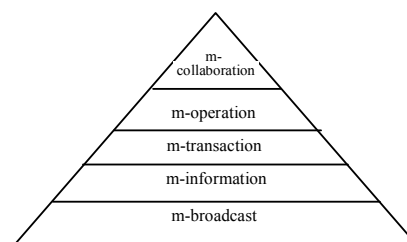


Fig. 1 A taxonomy of mobile applications [7] [8]

Starting from the classification in Fig. 1, a very important place in mobile application Social GC field takes the information mobile applications.

Counseling is a support service for students, either individually or in groups, in order to be self-sufficient and develop optimally, in the development of personal life, social

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life, study skills, and career planning, through various types of services and support activities, based on the prevailing norms. GC services in schools / “*madrasah*” is an effort to help the students in developing personal life, social life, learning, and career planning and development. GC services facilitate the development of learners, individual, group and or classical, in accordance with the needs, potential, talents, interests, developments, conditions, and the opportunities they have. This service also helps overcome the weaknesses and obstacles and problems faced by the students [9].

According The Winchester School Board (2006), Personal/Social Counseling – Counseling which assists students to develop an understanding of themselves, the rights and needs of others, how to resolve conflict and to define individual goals, reflecting their interest, abilities and aptitudes. Such counseling may be provided either (i) in groups in which generic issues of social development are addressed or (ii) through structured individual or small group multi-session counseling which focuses on the specific concerns of the participant(s) [10].

In other hand, Guidance is the total program or all the activities and services engaged in by an educational institution that are primarily aimed at assisting and individual to make and carryout adequate plans and to achieve satisfactory adjustment in all aspects of his daily life [11].

In particular, there are four areas of service which is a relief GC services provided to students so that students can find / understand the personal self, familiar environment, develop themselves, and plan for their future [12]. Four areas of the guidance is the guidance of a private field, the field of social assistance, tutoring field and field of career guidance. Personal guidance field, which aims to help students to recognize, find and develop personal faithful and devoted to God Almighty, independent, responsible, have a concept of self, accept and appreciate the unique traits and abilities themselves, as well as physically and mentally healthy .

When, for the field of social assistance aimed at helping students to get to know the surrounding social environment, which is based on socially ethical noble character and social responsibility.

Furthermore, the field of tutoring aimed at helping students to recognize and develop the attitudes and good study habits to master knowledge and skill according to study program to prepare junior high, continuing education a higher level.

Finally, the field of career guidance which aims to help students recognize and develop the potential of themselves through the mastery of knowledge and skills, understand the environment and the education sector as an effective environmental work, and develop values positive attitudes to prepare themselves to participate in community life.

GC Services in JHS based GC Service Unit [12]-[14]. Concretely is formulated through the steps as shown in Fig. 2. The ministry also noted that the framework intact GC refer servicing strategy, especially in information services, media development and access to information and technology. Also the basic services component of the program is GC, and individual planning services, especially education and career

planning (Fig. 3).

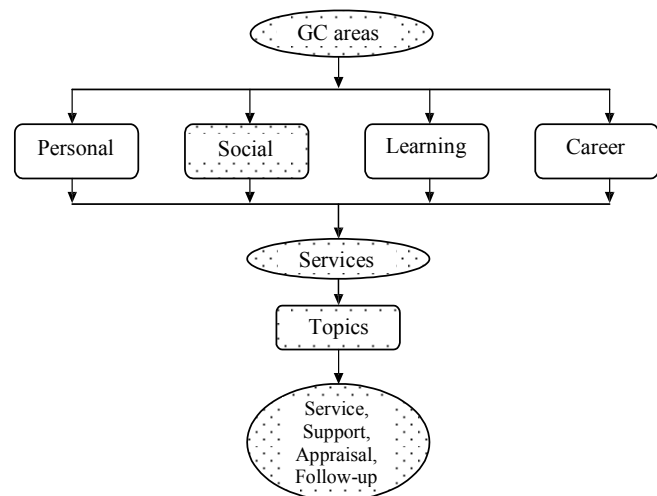


Fig. 2 Guidance and Counseling Areas

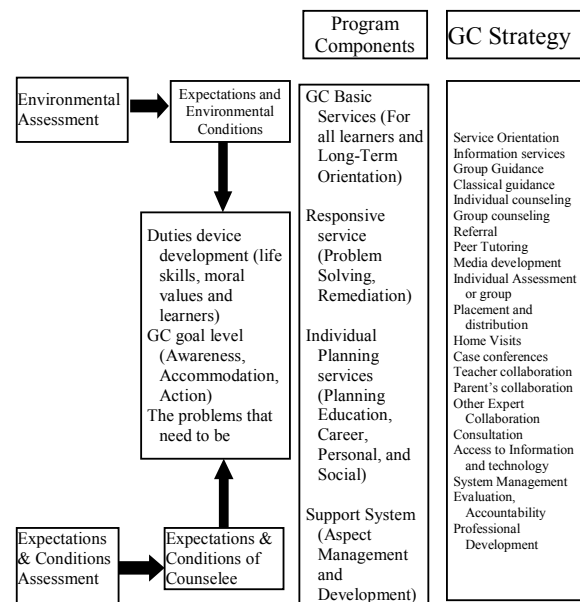


Fig. 3 Whole GC Framework [12], [13]

### III. RESEARCH METHOD

The m-NingBK application is designed as a GC service indirectly and is expected to be used outside of school hours. The main target users of these applications are Junior High School students throughout Indonesia.

The m-NingBK application contains four fields of guidance is the guidance of a personal, social, learning and career (Table I). However, in this paper, which only covered one area of social assistance field. Therefore, applications are made called "m-NingBK: Social GC". Field of social guidance is deliberately chosen so that junior high school students do not face difficulties in interacting and hanging out with friends expected. For designing the application, the material is taken

from student hand out [14], [15].

TABLE I  
GC CONTENT SERVICE AREAS WHICH WILL BE DEVELOPED IN THE APPLICATION OF M-NINGBK

Personal	Social	Learning	Career
<ul style="list-style-type: none"> <li>Understand yourself (strengths and weaknesses).</li> <li>Organize daily activities.</li> <li>Learning is responsible for the day-to-day life.</li> <li>Acceptance of yourself physically and develop our potential.</li> <li>The rules and credit points</li> </ul>	<ul style="list-style-type: none"> <li><b>Same-sex relationships</b></li> <li><b>Opposite sex relationships</b></li> <li><b>Ethics relationships with peers, parents and teachers.</b></li> </ul>	<ul style="list-style-type: none"> <li>Overview How to Learn</li> <li>Method of reading SQ4R (Survey, Question, Read, Recite, Record &amp; Review).</li> <li>How to learn effectively and efficiently:               <ul style="list-style-type: none"> <li>- How to registering.</li> <li>- How to memorize.</li> <li>- Increasing the concentrations studied.</li> </ul> </li> <li>Reviewing the results of the test / report cards semester's value and ways to increase it.</li> <li>Motivation to learn (for what the school).</li> <li>Facing Tests:               <ul style="list-style-type: none"> <li>- Preparation faces replications / test.</li> <li>- When faced with replications / test.</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>Recognize your own potential through the acquisition of knowledge and skills</li> <li>Reviewing the test results interests and abilities.</li> <li>Develop self-potential through the acquisition of knowledge and skills,</li> <li>Understand the environment               <ul style="list-style-type: none"> <li>- Education (high schools information and make decisions about high school) and</li> <li>- Jobs sector</li> </ul> </li> <li>Develop the values of positive attitudes to prepare themselves to participate in community life.</li> </ul>

#### A. Conceptual Perspective

The main purpose application development "m-NingBK: Social GC" is to be used as a tool and a means of guidance services at the Junior High School level. "M-NingBK: Social Guidance" is a multi-function electronic applications are "embedded" (installed) on a mobile device that is android based phones. This application is easy to use and is expected to junior high students.

#### B. Design Perspective

The development of mobile applications is different by the development of a normal application, because mobile applications are designed starting from the mobile devices on which are used. The difference between a mobile application and a normal one is that the mobile application provides the opportunity to answer of users' requests wherever they may be. Google Apps, including Gmail, Google Calendar, Docs, and Contacts, want to provide access to their information regardless of location or device. These applications can be accessed from most common types of mobile devices, like BlackBerry, iPhone, Nokia S60, using operating systems such as Windows Mobile, Android or iOS.

So, in the design, the following are some of the factors to be considered in the application of "m-NingBK: Social GC":

- Method of approach used in this application is an interactive multimedia approach by combining educational psychology and the opinion of a Confucius philosopher (Gong Zi) is "I hear, I forget; I see, I remember; I do, I understand".
- Mobile content needs to be developed specifically for mobiles, with clear images and good quality sound to enable users to continue to come back and enjoy new segments and features [16].
- Mobile phones must be small, reliable, and convenient devices that can provide the full spectrum of information and entertainment options to users [16].
- The application comes with four multimedia components, namely text, sound, images and illustrations in the form of animation-related guidance services.
- This application only includes social guidance.
- The language of instruction is Indonesian's application

because users come from Indonesia.

- File size on sub application is made no more than 1 MB.
- The application is built using java.
- This application embedded in the phone that has the Android operating system.

#### C. Application Architecture

Fig. 4 shows the application architecture "m-NingBK: Social GC". This application consists of four modules, namely (i) the module "Potential", (ii) "Social", (iii) "Expert System", and (iv) "About". Module "Potential" contains three sub modules namely (a) Emotional Intelligence (EQ) Test, (b) EQ Review test and (c) the potential for self-development through knowledge and communication. When the module "Social" is composed of two sub-modules: (a) "Environment" contains info same and opposite sex and (b) "Ethics" that contain Peers, Parent and Teacher. The next module "Expert System" includes applications to help students of knowing whether socially with friends can work well or need improvement. Last module is "About" which contains the about the application and the developer.

#### D. Storyboard Hierarchy

Fig. 5 shows the hierarchy of Storyboard of "m-NingBK: Social GC ". Figs. 6 to 11 are storyboard samples of the application "m-NingBK".

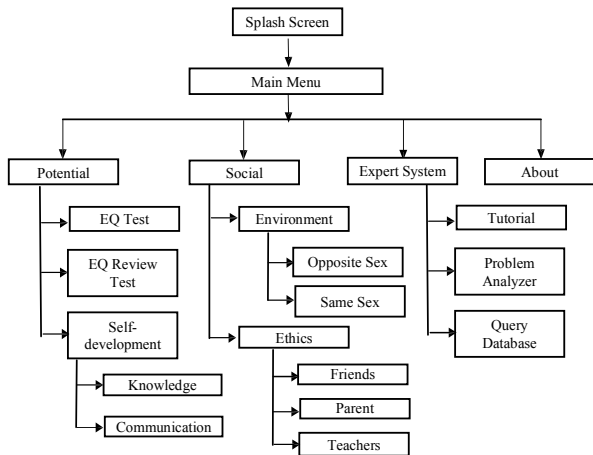


Fig. 4 Architecture of "m-NingBK: Social GC"

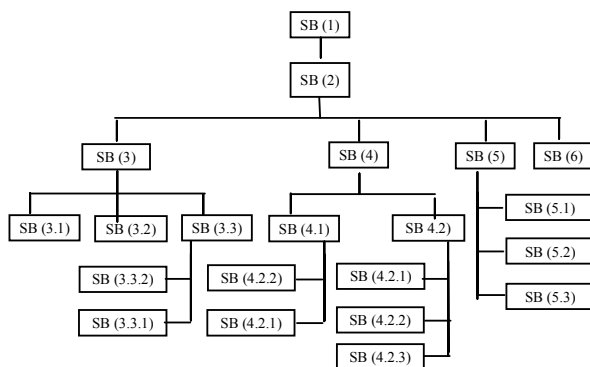


Fig. 5 Hierarchy of Storyboard

SB: SB(1)		
Name of Application: M-NingBK Social GC		
Multimedia Element: Animation and Graphic		
SB Name: Splash Screen	Graphics Direction	Step Direction
	AT1: Animation Text "Welcome to m-NingBK"  G1: Photo of JHS Student	Around 10 seconds the automatics go to SB (2)

Fig. 6 SB (1): Splash Screen

SB: SB(2)		
Name of Application: M-NingBK Social GC		
Multimedia Element: Text, Graphic		
SB Name: Main Menu	Graphics Direction	Step Direction
	T0: "Main Menu: B1: Potential Button B2: Social Button B3: ES Button B4: About Button B5: Exit Button	<ul style="list-style-type: none"> <li>If B1 is clicked exit from application</li> <li>If B2 is clicked the go to SB3</li> <li>If B3 is clicked the go to SB4</li> <li>If B4 is clicked the go to SB5</li> <li>If B5 is clicked the go to SB6</li> </ul>

Fig. 7 SB (2): Main Menu

SB: SB(3)		
Name of Application: M-NingBK Social GC		
Multimedia Element: Text, Graphic		
SB Name: Potential Menu	Graphics Direction	Step Direction
	T1: "Potential Menu" B6: Main Menu Button B7: EQ Test Button B8: EQ Review Test Button B9: Self-development Button	<ul style="list-style-type: none"> <li>If B6 is clicked then go to SB2</li> <li>If B7 is clicked then go to SB3.1</li> <li>If B8 is clicked then go to SB3.2</li> <li>If B9 is clicked then go to SB3.3</li> </ul>

Fig. 8 SB (3): Potential Menu

SB: SB(4)		
Name of Application: M-NingBK Social GC		
Multimedia Element: Text, Graphic		
SB Name: Social Menu	Graphics Direction	Step Direction
	T2: "Social Menu" B6: Main Menu Button B10: Environment Button B11: Ethics Button B12: Self-development Button	<ul style="list-style-type: none"> <li>If B6 is clicked then go to SB2</li> <li>If B10 is clicked then go to SB4.1</li> <li>If B11 is clicked then go to SB4.2</li> </ul>

Fig. 9 SB (4): Social Menu

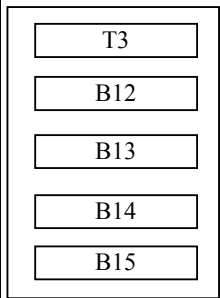
SB: SB(5)		
Name of Application: M-NingBK Social GC		
Multimedia Element: Text, Graphic, Sound and Animation		
SB Name: Expert System Menu	Graphics Direction	Step Direction
 <p>The interface shows a vertical stack of buttons: T3, B12, B13, B14, and B15.</p>	<p>T3: "Expert System Menu"  B6: Main Menu Button  B12: Tutorial Button  B13: Problem Analyzer Button  B14: Query Database Button</p>	<ul style="list-style-type: none"> <li>If B6 is clicked then go to SB2</li> </ul>

Fig. 10 SB(5): Expert System Menu

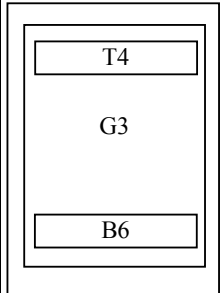
SB: SB(6)		
Name of Application: M-NingBK Social GC		
Multimedia Element: Text, Graphic		
SB Name: About Menu	Graphics Direction	Step Direction
 <p>The interface shows a vertical stack of elements: T4, G3, and B6.</p>	<p>T4: "About"  G3: Photo of developer  B6: Main Menu Button</p>	<ul style="list-style-type: none"> <li>If B6 is clicked then go to SB2</li> </ul>

Fig. 11 SB (6): About Menu

*E. Interface Design*

Figs. 12 to 19 are interface design samples of the application "m-NingBK".

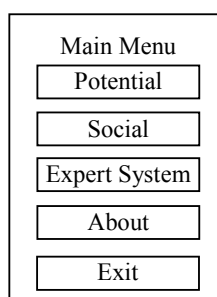


Fig. 12 Interface Design of the Main Menu

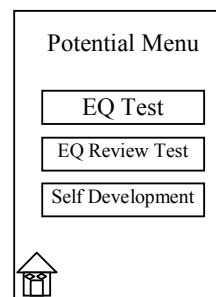


Fig. 13 Interface Design of the Potential Menu

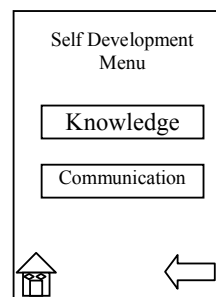


Fig. 14 Interface Design of the Self Development Menu

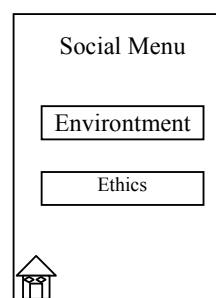


Fig. 15 Interface Design of the Social Menu

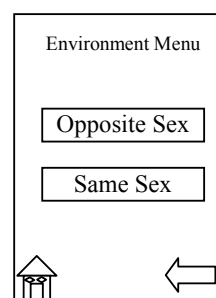


Fig. 16 Interface Design of the Environment Menu

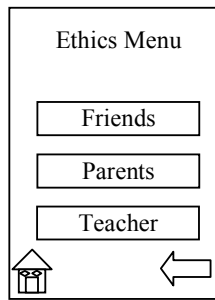


Fig. 17 Interface Design of the Ethics Menu

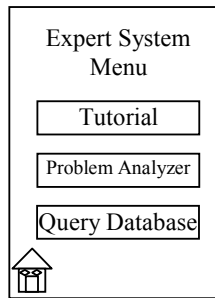


Fig. 18 Interface Design of the Expert System Menu

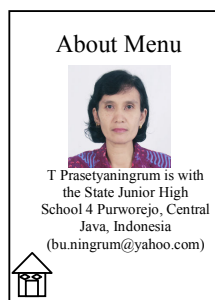


Fig. 19 Interface Design of About Menu

#### IV. RESULT AND DISCUSSION

At this time, the application "m-NingBK: Social GC" has been successfully designed and implemented using the Java programming language. There are four components used in multimedia applications "m-NingBK: Social GC" i.e. text, images / graphics, audio / sound and animation. This application was tested using a Smartphone with Android Operating System.

Tests on the users is done by asking 72 JHS students to access the application "m-NingBK: Social GC" and ask the opinions of the users are on the application by filling in questionnaires that were distributed. The questions raised included the aspects of ease of use of the display of beauty, charm features, understanding of content and applications and benefits of self-knowledge. "m-NingBK: Social GC" application has been tested at 72 JHS students. All JHS students provides an assessment that includes excellent, good, enough, not good, or very bad in the questionnaire given to them after they access the application "m-NingBK: Social GC" User rating - average to the overall aspect "m-

Psychology" applications in the questionnaire were based on the results of the assessment above the 16.7% rate excellent, 61.1% gave a good rating, 19.4% provide rate adequate, and 2.8% gave the rating was not good/poor (Fig. 20).

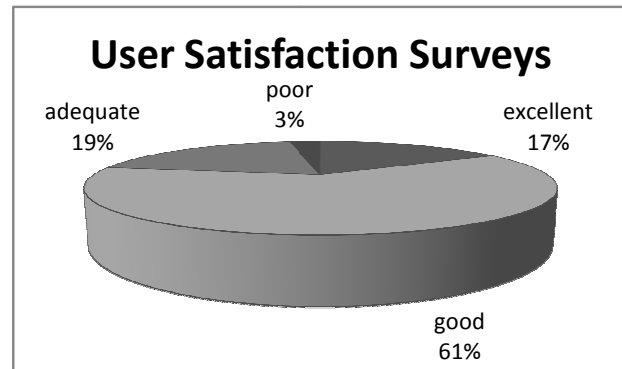


Fig. 20 User rating for "m-NingBK: Social GC"

Therefore, this application can be used as an aid GC services indirectly because counselors does not directly face to face with the counselee (the students). GC through mobile media services (Information Technology) is expected to reach Junior High School students throughout Indonesia. This is a form of small contributions to the advancement of education in Indonesia.

#### V. CONCLUSION

This paper has been presented design application "m-NingBK: Social GC" as a means of providing assistance field of social counseling services that run on mobile devices. This application is designed specifically for student of Junior High School. There are four components used in multimedia applications "m-NingBK: Social GC" i.e. text, images / graphics, audio / sound and animation. This application is implemented using the Java programming language. The application has been tested using a smart phone with android operating system.

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