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E-COUNSELLING IMPLEMENTATION: CONTEXTUALIZED APPROACH

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Abstract

The research contextually focuses on e-counselling implementation in the senior high school education in Ghana. The purpose of the research is to develop a counselling game arising from unraveling students' life challenges through their life stories. The study also explores the extent to which ICT is used in providing counselling services in the senior high school education. Questionnaires and interviews were used to collect data from the students and the school counsellor. Stratified random sampling technique was used in selecting the students. The selected students were made to write their own life stories subjectively. After that, the results of the research showed that students have a little knowledge about the use of ICT in counselling. The findings further demonstrate that students' financial status is the main challenge to their academic work though several other difficulties were revealed in the study. Students were optimistic about a counselling game and responded positively to the relevance of counselling game in life and career development. The findings were partly used as a guide in the development of the *hope game* platform to aid in the students' counselling services. The hope game idea is based on a hope-centered model for career development. The purpose of the model is to help individual students to develop, nurture and manage their own lives with less assistance from a counsellor. Design science research approach was used in the development of the hope game platform. The platform was evaluated in the environment, and the feedback was considered in the final implementation. Feedback from the evaluation indicated that hope game helped students in career planning and development through the hope-centered model.

Keywords: Counselling, e-counselling, hope game, life story and hope-centered model for career development (HCMCD).

Dedication

*I dedicate this research work to **Philippa Yinman Awuni***

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Abbreviations

AIM	AOL instant messenger
BS	Basic school
DVD	Digital video disk
FCUBE	Free compulsory universal basic education
FRQ	Further research questions
GCE	General certificate examination
HCCI	Hope-centered career inventory
HCMCD	Hope -centered model for career development
HTML	Hypertext markup language
ICT	Information and communication technology
IM	Instant messaging
JHS	Junior high school
MOE	Ministry of Education (Ghana)
MSN	Microsoft messenger
NERIC	National education reform
OKESS	Osei Kyeretwie senior high school
PNDC	National provision defense council
PC	Personal computer
PHP	Hypertext preprocessor
RQ	Research question
SHS	Senior high school
SMS	Short message system
SDLC	Software development life cycle
UML	Unified modeling language
UNESCO	United Nations educational, scientific and cultural organization
YMSG	Yahoo messenger

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1. INTRODUCTION

1.1 Background

The rapidly expanding field of e-counselling raises concerns among practitioners about the efficiency of the traditional face-to-face counselling in relation to the emerging new method of e-counselling. The advent of the Internet and its related web resources has taken counselling service beyond the face-to-face method of rendering services to electronic-based counselling (Brown, 2011). The face-to-face counselling method is nonetheless still a necessity and applicable. Thus, the essence of the emerging pace of technology in counselling is not meant to replace the existing traditional face-to-face counselling method. Some educational counsellors are reluctant to adapt to the emerging counselling technologies, and this is mainly due to their incapacity to use the technology. ICT needs to be integrated into the traditional face-to-face counselling method for diversity in counselling delivery in order to alleviate the problems connected with the face-to-face counselling. Sanders and Rosenfield (1998) define e-counselling as a counselling method through the medium of telecommunication technologies such as telephone, internet and teleconferencing. Based on Sanders and Rosenfield's (1998) definition of e-counselling, it becomes clear that the role of e-counselling would be very crucial in providing counselling services to remote students.

Education plays a significant role in everyone's life. The knowledge acquired from education undoubtedly has a great impact on our life (Oye et al., 2012). Oye et al. (2012) also describes education as a process through which societal values, norms, principles, ethos, and skills are conveyed. Besides that, education is a necessity and above all the most effective instrument in national development. Moss and Majerowicz (2012) reflect on the Government of Ghana's vision 2020 plan launched in 1995, which sets higher economic growth in the country as the primary target. The aim of the vision 2020 is to transform Ghana from a low-income to a middle-income country within one generation (Moss and Majerowicz, 2012). To achieve such a vision, the country needs to develop the human resource base efficiently and effectively. Guidance and counselling services in the senior high schools cannot be overlooked in the development of the human resources. Failure to properly provide counselling services to students in the senior high school has a

detrimental effect on their lives and that may have a negative impact on the society and ultimately the economy as whole in the future.

Oye *et al.* (2012) reiterate that the essence of incorporating guidance and counselling into the school system is to minimize the uncertainties facing many young people in their choices of career prospects and also to decrease personality maladjustment. Health (psycho-social), academic and career counselling are the key aspects of human development for which this study is focused. Counselling constitutes an important aspect of education which requires a sustained intervention to improve on child upbringing. School counselling services are expected to help individual students to access and derive benefits from career development and self-actualization. The deviant behavior of students stems from the challenges they face in life. Duveskog *et al.* (2009) outline drug abuse, alcoholism, domestic violence and rape as social vices which have a negative impact on people and on the society as a whole. Devising appropriate tools and framework to encourage students to reveal the problems (or difficulties) in their life can help counsellors to deliver efficient counselling services.

The thesis focuses on the challenges facing students, and designing an electronic framework called *hope game* to aid in the counselling services. The game is to orient students on career development through the hope centered-model. The approach implements the first three of the six competencies of hope-centered model for career development (HCMCD). Different approaches of rendering counselling services to students are also discussed in the Section 2.4.1 of the study.

1.2 Research problem

Ghana is a developing country. The methods and techniques used to administer effective counselling services are mainly based on the traditional face-to-face counselling. Many counsellors and students are unaware of, or have little knowledge about the use and the integration of ICT into counselling. The problem is not only attributed to the practitioners in the field. Indeed, other factors might also hinder the integration of ICT into counselling.

The thesis is based on the preliminary assumption that poor academic and social upbringing of students is attributable to lack of counselling services and the inability to probe into the students' life stories. It is common that some students have inherent difficulties that affect their academic work. Some of these problems are due to the problems they face in life, and this might hinder their capabilities to perform well academically. Social vices such as drug abuse in Ghana are on the ascendency especially in senior high school sector (Ghana Education Service, 1995). While students often get addicted outside the confines of the school, others are being influenced by their peers within the school set-up. This is alarming and has led many students astray resulting in poor academic performance. The use of alcohol and other related problems are increasingly becoming a public health concern, and they represent one of the leading causes of preventable death, illness and injury. Students often end up in such situations through the influence of peers. The researcher recognizes the serious nature of the problem and intends to understand it from the students' life stories, their difficulties and how it affects academic work. The findings are meant to provide guidelines for e-counselling researchers to consider, thereby aiding in the development of any digital counselling platform. Also, there are no contextual counselling digital games to help students in self-management and development for which the researcher sort to develop a gaming platform to augment the counselling services in schools.

1.3 Research objectives

1. To listen to students' life stories and to deduce from it how their life challenges affect their academic work.
2. To find out the extent to which counsellors and students know and use e-counselling technologies.
3. To develop a game platform (hope game) based on the hope-centered model for career development, and to determine its contributions to requirements in counselling.
4. To establish how digital game responds to the existing knowledge base.

1.4 Significance of the study

The future of any country is largely dependent on the youth. A large proportion of the youth in Ghana are found in the senior high schools. It is, therefore, necessary to develop an efficient strategy for ensuring appropriate social behavior, and to instill the desire for academic pursuit in the youth preventing health risks and personal or social problems. As a result, setting up ICT-mediated guidance and counselling in the various senior high schools is in the right direction towards the training of students. Senior high school education in Ghana is predominantly boarding. In the boarding school system students are provided accommodation and meals in a confined premise during the period of their studies. In this case, counselling practitioners and teachers take up the role as parents of the students during their period of stay within the confines of the school premises.

Errera *et al.* (2012) observed that practitioners have consequently realized that changes due to technological advancement will continue to have a substantial impact on the human services. However, educational counselling coordinators will know and vary their counselling methods through the use of several ICT tools to augment counselling services, especially counselling games. Teachers, rather than counselling coordinators are indirectly involved in coordinating and counselling students towards achieving the best academic goals. Unfortunately, many teachers in the Ghanaian senior high schools do not have good knowledge in the use of ICT tools and the web technologies to facilitate in the integration of ICT into counselling. Dzulkefli *et al.* (2012) advocated for the need to expose teachers to the use of web technologies in education.

Several e-counselling methods are discussed in the literature review, in Section 2.4.1. The approach is aimed at exposing counsellors to the need and relevance of integrating ICT into counselling, and to help them variate their counselling methods to suit the students. Conversely, a good number of school counsellors in Ghana do not have the willingness and good technological abilities to integrate ICT into counselling. This is rooted in the Ghanaian mentality that recruiting elderly people to oversee the running of counselling units in schools is the most appropriate way to achieve good results. The belief is that elderly people have more wisdom to provide better counselling to the youth, ignoring the fact that some of them are technically handicapped. Instead, competent and capable people need to be recruited for the administration of counselling units thereby encouraging ICT integration.

The study collected data on students' life stories. The essence of the findings is to create awareness to counsellors that academic challenges are to a large extent buried in the untold stories of students. Some of these life experiences have a negative impact on their academic and moral conduct.

The *hope game* platform is intended to provide an opportunity for students to become aware of the hope-centered model for career development. The game enables students to spell out their career desires, and the possible challenges to achieving their life goals. The responses of the students after playing the game are then directed to a counsellor for assistance. Feedback is then sent to the students from a counsellor.

1.5 Limitations and constraints of the study

The study is limited to e-counselling implementation in the senior high school education in Ghana. It is also aimed at creating awareness among students and counsellors on the relevance of using e-counselling, especially digital game to facilitate counselling services in schools. Students in Osei Kyeretwie senior high school in Kumasi in the Ashanti region of Ghana were selected for the study.

The study encountered several problems during the data collection. The original idea was to gather data from fifty (50) students, but the researcher ended up gathering data from only thirty (30) students. The questionnaires were given out to students, expected to be filled in and return at their own convenient time, but by a stipulated date. Consequently, some of the questionnaires were not returned, though over fifty (50) students were given a copy each.

Moreover, some students were reluctant to answer the questions that touched on their life stories and challenges. They were afraid that their life challenges may be revealed to the public, though the captions of the questionnaires were clear about the confidentiality regarding the data. Others wrote about their life stories and challenges, but they were not elaborate enough, and did not point out the exact problems that impede or might impede their academic progress. In the end, the expectations of getting quality information on the students' challenges were not fully met because some students declined to answer questions about their biographies. The students who responded were mostly male students. The researcher could not find well-referenced statistics online concerning the deviant attitudes of students in the senior high schools. Therefore, in the next line of research the researcher would consider visiting and taking data directly from the Ghana statistical services department.

Finally, testing the platform in the environment encountered expected problems. It was difficult to get students in their free time to test the platform. Also, the availability of computers connected to the internet was scarce. The computers were quite old with low memory and speed. Some of the computers certainly did not even start when we tried to use them. The number of computers expected for the testing were reduced. Consequently, the number of expected students of fifteen (15) to test the platform was reduced to only nine (9).

1.6 Organization of the thesis

The thesis consists of six chapters. The respective chapters are the introduction of the study, literature review, research design, analysis and results of the data, discussion of the findings and the conclusion and recommendations of the study.

The introduction chapter introduces the background of the research, significance of the studies, research objectives and problem identification. The limitations during the research work are also captured and discussed in chapter one.

The literature review chapter consists of the review of the various literatures in the area of counselling and e-counselling. Research in this area has been reviewed and discussed.

The research design chapter encompasses a detailed description and the use of the research approach and context. Also, research questions regarding the objectives of the study are also captured in chapter three. The procedure and strategic methodologies for collection and analyzing data are introduced.

The analysis and results chapter of the study is geared towards the data analysis, the results arising from the data collected, and the hope game development. The results chapter also elaborates on the extracts from the students' own words about their life stories and the counsellor's view on counselling and e-counselling services.

The discussion chapter discusses the findings and provides an overview of the research, based on the data collection and analysis. The arguments are duly interpreted by the literature. The contribution of the research is also captured in the chapter.

The last chapter is the conclusion and recommendations of the study. The conclusion discusses the answers to the research questions that have been stated in chapter three of this study. Recommendations arising from the study have also been outlined involving further questions to be pursued in PhD research.

1.7 About the researcher and his role

The researcher holds a bachelor degree in ICT and a certificate in education. He is currently a Master's degree student at the University of Eastern Finland gearing towards completion. His interest is to integrate ICT into education and software engineering practices. In fact, he developed a management information system for senior high schools in Kumasi, a city in Ghana, as his bachelor degree project work.

He started teaching in the senior high school right after his bachelor degree. The researcher has served in a capacity as a teacher and information system administrator in two different senior high schools in Ghana. He taught elective mathematics, physics, chemistry and ICT. Osei Kyeretwie senior high school located in the Ashanti region was the last school he taught before enrolling in the IT program at the University of Eastern Finland. He held several positions in the schools he had taught which include a school entertainment master and a house master. House master in the Ghanaian senior high school is a caretaker and a counsellor to students in a particular hall of students' residence. Thus he had good interaction with students. Students often shared their problems and challenges with him.

The researcher is aware of certain perennial life challenges of the senior high school students, which needs to be addressed through counselling. In fact, his experiences with students is partly the reason for the study. The counselling services in the various senior high schools need to be diversified to enable students to share their problems. He therefore intends to use his expertise as a computer scientist and educationalist to help the sector. The researcher noticed that trust between students and counsellors or staff is a key component in counselling. The level of trust between students and teachers is minimal for students to open up to the counsellors in the face-to-face session. This is the key reason why he advocates the use of ICT to enable students to share their life problems or challenges anonymously. The researcher intends to continue this line of research from the contextual perspective to the global context in the doctoral studies. He has interest to develop learning objects to augment the effectiveness of counselling.

2. REVIEW OF THE LITERATURE

Literature review provides an overview of existing work in that area of research. It is usually done after the research proposal, problem identification and the objectives of the study. The goal of a literature review is to update readers with the current literature about the topic under study and probably form the basis for another research direction. This chapter reviews the related and relevant research in the area of counselling and e-counselling. There has been a lot of research on e-counselling, but little research has been carried out about Ghana regarding e-counselling implementation. However, the specific idea in this chapter is to point out or identify research areas in e-counselling with effective methods and models to help students in academic (towards studies), health (psycho-social) and career development (vocational).

2.1 Education in Ghana

Ghana is located in the western part of sub-Saharan Africa. The country, previously known as the Gold Coast, was under the British colony until independence on March 6, 1957. The history of education in Ghana dates back to the colonial and post-independence period (Zame *et al.*, 2008). Given that the country was a former British colony, most civil institutions, including the educational system were inherited from the British. The educational system was modeled exactly according to that of Britain into the post-independence era when major reforms were introduced. In the older educational system handed down from Britain, the duration of basic school was six to ten years of primary school followed by four years of so-called middle school. After this level, one could join the working force or proceed to higher level of secondary school (now called senior high school). The secondary school lasted seven years altogether; after five years one obtained the GCE ordinary level (O) level, and then two more years to obtain the GCE (A) advanced level. After the A-levels, one could then proceed to the university provided the required grades achieved.

It was not until the late 1980s, when major reforms were undertaken. The old system was restructured, abolishing the middle school and shortening the secondary level from seven to five years.

The 2007 education reform has since been the last reform designed to transform the sector by introducing ICT as the main program to meet the change in technology. Zame *et al.* (2008) identified inadequate leadership, management and administrative training as the main challenges associated with the head teachers to oversee the administration of schools. They also reiterate that less effort has been put in place to address those challenges. In line with that they were of the view that the reform could have made provisions for effective leadership and management. It is common in Ghana that most head teachers are teachers who have risen to the leadership position due to long services. This does not give automatic administrative skills to manage an educational institution. Zame *et al.* (2008) have also called on the implementers to recognize the strong relationship between implementation of educational reform, effective schools, and the leadership abilities of head teachers. They identified these relationships as equipping the head teachers with the knowledge, skills, and disposition to handle effective school organizations. The core aim of an educational system which seeks to train students in the academic perspective as well as improving the good moral standards would not be achieved if the head teachers, counsellors and other auxiliary staff do not have the requisite and well nurtured skills to efficiently and effectively manage a counselling unit. In this regard, it is inevitable that good leadership and management skills of head teachers and counsellors become imperative.

The Ministry of Education in Ghana was established in 1993 to oversee the running and development of education. The ministry is entrusted with the mandate to provide relevant education for all Ghanaians as the means to national and human development. The Ministry of Education is also responsible for putting in place a good educational system that will focus on promoting creativity and problem-solving through the development of academic, technical and vocational programmes.

The sector medium-term development plan for 2010-2013 (2009) in Ghana identified the use of ICT skills and knowledge as a key challenge facing the senior high school sector, highlighting the problem that a sizeable number of senior high school students and counsellors are technically incapable of using the ICT tools and the internet resources to facilitate counselling services. In this respect, ICT was introduced into the senior high school curriculum in 2007 to help in streamlining the students to acquire knowledge and skills in ICT (National Education Reform NERIC, 2007). The essence is to meet the policy framework of the Government of Ghana for which resources have been committed into its realization. The policy framework to augment the ICT services in the country is:

“As part of the mission to transform the educational system to provide the requisite educational, and training services and an environment capable of providing the right types of skills and human resource required for the developing and driving Ghana’s information and knowledge-based economy and society, the Government is committed to a comprehensive programme of rapid development, utilization and exploration of ICT within the educational system from primary school upward” (National Report of Ghana, 2004).

Ghana has 11,827 kindergartens, 13,510 primary schools, 7,656 junior high and 493 senior high schools in the public sector (Ministry of Education 2010/13 report, 2009). The private sector also has 4,612 Kindergartens, 4,371 primary Schools, 2,557 junior high and 177 senior high schools (Ministry of Education 2010/13 report, 2009). The tertiary level has 8 public universities and 10 polytechnics, one in each of the ten regions. The main part of the 2007 education reform relevant to this study is the eleven-year universal basic education which is made up of two years of kindergarten, six years of primary school and three years of junior high school (National education reform NERIC, 2007). The duration of senior high education was increased from three years to four years of study by the government in 2007. The purpose was to provide students with more time to mature in knowledge and skills acquisition. The other reason was to reduce the unemployment situation in the country (National education reform NERIC, 2007). Free compulsory universal basic education (FCUBE) and cost-sharing at the secondary and tertiary levels

were also maintained. Although the reform made provisions for educational services to include library and information service, guidance and counselling and distance education (National education reform NERIC, 2007), the reform was not explicit in the integration of ICT. Training and awareness-raising programs were organized across the country to orient stakeholders and students about the relevance of the reform. However, a new government came into power in 2009, and reversed the duration of the senior high school education to three years (Ministry of Education, 2009).

2.2 What is counselling?

Post *et al.* (2002) describe counselling as a mutual relationship that exists between a counsellor, who is professionally trained, and a client, who is a consumer of counselling services. Zamani (2009) also defined face-to-face counselling as a physical presence between the counsellor and the client. The counsellor as per the profession actively listens to the stories of the client, tries to empathize, understand, respect and render help to the client in line with the decision-making process coupled with the client capabilities and interest. People often associate counselling with merely the face-to-face method. Counselling is a generic term that describes all counselling methods or technologies. The face-to-face counselling was by far the sole method upon which counsellors relied to administer counselling services until the emergence of ICT that made it possible to diversify the counselling methods.

2.3 School counselling

School counselling may be described as an organized activity in schools that seeks to orient and guide students towards proper accepted behavioral standards, good academic work and career development. The main goal of school counselling is to alleviate the distress, anxiety, or worries experienced by students when they seek for counselling services. The one who administers the counselling service is the school counsellor. School counsellors are professionally trained personnel who have gone through a formal training and possess the relevant qualification and competence to administer counselling services.

Guidance and counselling in the school set-up provide students with the intrinsic motivation to manage their academic life, social or personal and career development. Counselling services and programs rendered to students within the context of school counselling is geared towards helping students to resolve emotional, social or behavioral problems. In addition to that the students are able to develop a clearer focus and a sense of direction towards growth and development. This can be achieved through effective and high quality counselling programs. Effective and high quality counselling programs are important to school climate as well as a crucial element to improve students' achievement.

The basic aim of education is to acquire an accumulated knowledge, norms and values towards the development of oneself and the nation at large. Oye *et al.* (2012) pointed out that individuals need education in order to acquire this accumulated knowledge. Thus, counselling is considered as a vital component of educational curriculum, which ensures that the acquired knowledge benefits the individual and the society as at large. However, to achieve such an ultimate benefit, life design process is a necessity through counselling. Phillips and Smith (2011) describe school counselling as a service delivery activity. The activities are designed to provide a wide range of services for children, young people and families, so as to make the schools a well-resourced facility for community counselling services. Core values should be instilled into the youth so as to achieve the dream of the current generation of attaining Ghana's middle income status by the targeted year of 2020 (Moss and Majerowicz, 2012). The Government of Ghana through the Ministry of education made several attempts to increase the infrastructure base of schools. The Government also anchored the senior high schools with guidance and counselling coordinators to undertake the responsibilities of shaping students with appropriate behavior since the year 2000 (National Education Reform NERIC, 2007), in order to facilitate poverty reduction and promote socio-economic growth and national development.

Researchers have strongly emphasized the relevance and the need to maintain the traditional face-to-face counselling method in schools (Zamani, 2009), and have even recommended for school counsellors ahead of the ICT integration. This idea is still limited to only students who can easily access the physical counselling method. Nonetheless, with the advent of ICT and services available through the myriad web environments, counselling in schools need to be diversified to provide effective web services to all students who prefer to conduct business in an online environment. Certain aspects of daily running of school counselling activities ought to be considered and effectively upgraded to ensure high quality counselling services in the secondary schools. Landers *et al.* (2008) identified these aspects as the school counselling curriculum, individual students' planning, responsive services and collaboration within and outside the school community as fundamental to high quality counselling. When students work through their social and

emotional issues with the help of their parents and the counsellor, they are able to devote attention and energy to the intellectual tasks at school, and this must be the concern of the school counsellors. Additionally, Landers *et al.* (2008: page v) explain that “*School counsellors use a variety of prevention and intervention models and programs to assist students in overcoming barriers to learning, to make strong connections with educational opportunities in their schools, and to ensure that every child learns in a safe, healthy and supportive environment*”.

Senior high school education in Ghana is predominantly a boarding system except of a few of them that use the day school system (non-resident). Consequently, student-parent contact hours are limited in the boarding system. The implication is that staff of schools has taken of the responsibilities of parents, thereby ensuring consistency in students’ monitoring towards their life development. In spite of school counselling practitioners being the sole personnel with the entrusted responsibility to administer counselling services to students, teachers and other non-teaching staff are part of the counselling delivery. In this respect, the boarding school system must be well equipped with the needed facilities to provide accommodation for teachers in the counselling delivery. However, some schools in Ghana are not able to provide accommodation for their staff within the confines of the school environment. Thus, it is difficult for teachers to monitor and help students achieve their academic excellence. This is because counselling practitioners cannot shoulder all the responsibilities of students’ upbringing, especially in schools with a large student population.

2.3.1 Career counselling

Jigau *et al.* (2003) have defined career counselling as a process of attaining the maximum compatibility between the resources, requirements, aspirations or interests of an individual and the real offer in the field of education, training, social and vocational integration. Providing career counselling to individuals under all aspects of their personal, professional and social life is a global practice. It is therefore common that many people at various stages in their lives have used counselling to enhance their careers. Career counselling provides information, counselling and guidance services aimed at supporting each person

in their future development. This augments the efforts made by individuals to improve their self-development through education, work, and in community life.

The junior high school curriculum in Ghana has been designed in such a way that all students are made to take the same courses as a preparatory stage towards selecting their choice of program in the senior high school. The senior high school education is, therefore, considered an intermediary stage in the education cycle prior to pursuing tertiary education in Ghana. Students go to the university directly after acquiring the required grades in the final examinations at the senior high school. At that level, students are obliged to identify their potential career goals through counselling or by themselves (through counselling models) to make a good and informed career choice. Although the career counselling model has achieved success through the use of assessment methods and techniques such as psychological tests, mostly questionnaires and inventories of interests, preferences, aptitudes, attitudes and values, the hope-centered model for career development is also aimed at helping students to improve on their career flow index, i.e., the degree of hope regarding the career development and self-development.

The career development field is continually growing. People have now realized the importance of the field, and it is now changing to reflect the current career realities of individuals (Post *et al.*, 2002). The practice of career counselling before the 21st century was using career counselling models and techniques which indeed were rooted in the assumption of stability of personal characteristics (Savickas *et al.*, 2009). Savickas *et al.* (2009) observed that the emergence of a myriad of technologies and the information age has thrown a challenge for career theories and vocational techniques to be reformulated in order to fit into the post-modern economy. They further argue that current career development theories and techniques which are based on the stability and stages in life are questionable and may no longer be applicable. They were quick to add that the stability of individual characteristics may not be the only factor to consider. However, they posited that the environment is changing and has an influence on career counselling theories. The use of ICT in counselling is generally accepted in most of the developed countries, but the

lack of practical knowledge of counsellors and students in Ghana is making it difficult for its integration into the school counselling.

The environmental impact on career choice varies across the world. For instance, in Ghana, students often base their career choice solely on the job opportunities in a particular field, but this may not be the same elsewhere. The environment compels students to make choices without seeking counselling services. Thus, a student may not have the capability or interest to take a program, but still goes ahead to take it. This happens because students usually think about the availability of job after graduating instead of prioritizing interest and capabilities. Career counselling helps students to avoid making a career choice solely on the basis of the availability of a job without taking into account their capabilities and interest. School counsellors are, therefore, responsible for rendering high quality counselling services to students by consistently monitoring their progress from the onset. Esbroeck (2008) believed that the counselling services in schools must focus on the vocational (career) guidance, personal guidance and learner support (academic). Some students are usually unaware of their own capabilities mainly due to lack of self-reflection and clarity. They, therefore, require a third person to assist in the identification of their potentials. Others are over reliant on their parents to decide for them their career prospect. Indeed, the literacy rate in Ghana is low; hence parents find it difficult to assist their ward to make a good and informed career choice based on students' interest and capabilities.

Hope-centered model for career development (HCMCD)

The hope-centered model may generally be considered as providing intrinsic motivation in a person's life. It gives the psychological drive (or impetus) in one's career and life development. Scholars in the psychological and career fields have done lots of research in this area and have given several definitions to the concept of hope. However, for the purpose of this study, hope is defined by Snyder (2002) as the perceived capability to derive pathways to desired goals, and motivate oneself via agency thinking to use those pathways.

The hope-centered career research team from the University of British Columbia and the Pennsylvania State University in March 2013 final report described the origin of the hope-centered-model for career development. They pointed that HCMCD was integrated and synthesized from three theories which is based on Bandura's (2001) human agency theory and Snyder's (2002) hope theory. The report provided further explanation on the latest development in HCMCD. The writers cited Niles *et al.* (2010) as the researchers who developed the model further, and revealed that they focused on the creation of an inventory based on the model upon which the end result is hope-centered career inventory (HCCI).

Niles *et al.* (2010) posited that HCMCD is “*based on the essentiality of developing career adaptability that refers to a capacity to respond effectively to new information about oneself and/or one's changing situations and transform these strategic career behaviors which leads to effective and satisfying career self-management*”. They described career self-management as the capacity to cope effectively with career challenges or task across one's lifespan. Career challenges may come intermittently in stages of one's life progression; nevertheless one is expected to be resilient to face these challenges through hope. Counsellors are also expected to identify these challenges, thereby rendering counselling services to aid in dealing with their challenges. Helping adolescence in career self-management skills is a core aim for career guidance goal (Hatch and Bowers, 2005).

Counselling is beneficial to helping students in career development, but this may not be completely successful if students do not hope for better life prospects. Consequently, hope in connection with the students' career development play a part in all stages of career development. Moreover, hope contributes to career outcomes, such as school engagements, performance, and career aspirations. Niles *et al.* (2010) identified six competencies of hope-centered model for career development viz. *hope, self-reflection, self-clarity, visioning, goal setting & planning, implementing & adapting*. Figure 2.2 below illustrates the six competencies of hope-centered model and their relations to each other and the environment.

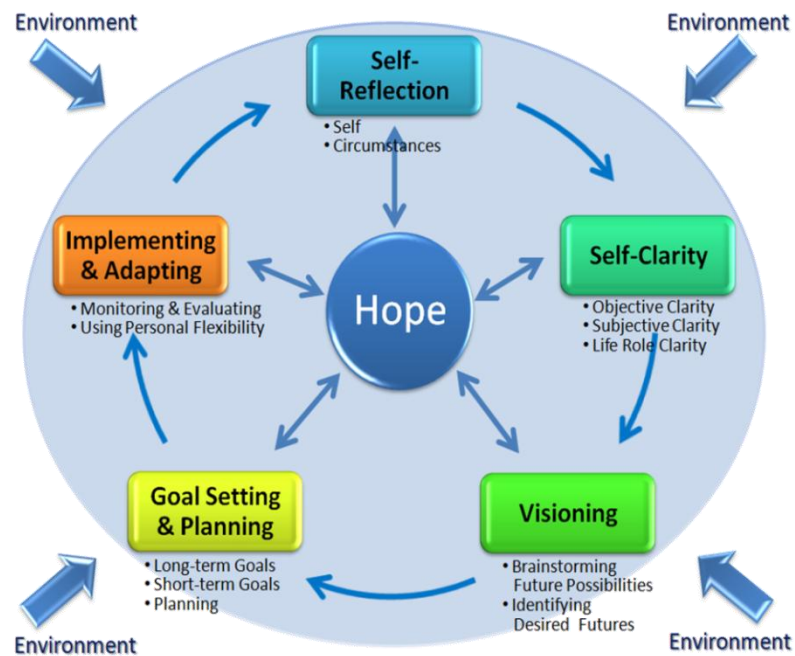


Figure 2.1. HCMCD (copied from HCC Research Team between the University of British Columbia and the Pennsylvania State University (March, 1995))

Hope

Hope is essential for career development. Hope is the fulcrum and the foundation to develop and build a good career. Niles *et al.* (2010) observed that *hopefulness* “is envisioning a meaningful goal and believing that positive outcomes are likely to occur should specific action be taken”. Snyder (1994), one of the pioneers to have studied hope posited that hope is the sum of the mental will-power and pathway power that one has for his or her goals. Certainly, to perceive a goal in life, one must have the will-power to persevere, and this is certainly an important drive to succeed. Hope may easily be conceived with strategies for goal achievement but one may not have the zeal and agency to persevere in the face of obstacles. Thus, Niles *et al.* (2010) described that as agency hope. Again, one may also perceive a goal as achievable, but may lack the strategies for working towards it, mainly due to lack of clarity. Niles *et al.* (2010) again described that

as pathway hope. However, the final description of hope is those who possess the sense of global hope and are those who believe and are certain that they can achieve their goals (Niles *et al.*, 2010).

Self-reflection

Self-reflection is the second stage of HCMCD. Niles *et al.* (2010) described self-reflection as “*the capacity to examine one’s thoughts, beliefs, behavior and circumstances*”. They further elaborate by describing self-reflection as “taking time” to consider one’s evolving self-concept in a particular context. Naturally, humans have the capacity to exercise introspection, but the drive to exercise introspection may not be realized if one does not soberly reflect on his or her capabilities. This should be the core essence of anyone who intends to achieve success and be valued in a society. Self-reflection is a necessity in HCMCD and counselling as a whole. Nonetheless, self-reflection continues after hope has been enormously gathered. One has to ask questions about oneself. Examples of such questions are: What is my interest? What can I do better? What are my capabilities? The questions may provide a pathway to finding career choice, and to provide room for discovering answers to it. Asking questions regarding one’s capabilities is central to discovering oneself.

Self-clarity

Self-clarity is the third stage of HCMCD. It is strongly linked to self-reflection. During self-reflection, one is expected to ponder and ask questions about his or her capabilities. Self-clarity, however, continues after one has reflected on his or her life and has discovered the capabilities and interest. Self-reflection is to ginger one to develop answers to those questions (Niles *et al.*, 2010). Potentials are inherent, and this requires an effort to reveal them. Giving oneself hope, reflecting by asking questions on capabilities give reasons to find answers to those questions. At this stage, counsellors may be consulted to guide and help students to find answers to the questions. The answers may lead to developing a life career. It is eminent that HCMCD is adapted by senior high school students for self-career development. In self-clarity stage, a sufficient list of career options has to be generated based on interest and capabilities. Niles *et al.* (2010) explain that the

options which are found to be desirable may then be subjected to greater scrutiny and information gathering. Thus, in-depth knowledge of the listed career options can further be developed to ascertain robustness against the future. In this way, the best career option has to be selected and focused further by setting a goal.

Visioning

Visioning, as the name implies, focuses on the future and what one intends for a career. Niles *et al.* (2010) described visioning as brainstorming future career possibilities and identifying desired future outcomes. One needs to envision the future after finding answers to the questions (self-clarity stage). Thus, visioning is the pathway to developing a good career. Visioning is the first step in a goal-setting or planning process and provides a sense of direction for a long term goal.

Goal setting

The client then sets specific career goals after rigorously providing answers (self clarity) to the questions (self-reflection). The client needs to develop a goal plan and work assiduously towards achieving it. Students or clients are advised to involve counsellors at this stage for professional goal setting (Niles *et al.*, 2010). Short-term and long-term goals are the two kinds of goals for one to consider (Niles *et al.*, 2010). While short-term goals are the ones that might be achieved in the near future (e.g., in a day, within a week, or possibly within a few months), long-term goals, are ones that might be achieved over a longer period of time (e.g., one semester, one year, five years, or twenty years). Long-term goals are often important for students since they target at the future. As a result, one often has trouble staying focused and maintaining a positive attitude toward reaching these goals. That is why a counsellor is needed intermittently during stages in life to assist in counselling students to deal with life challenges and to direct them towards the right path.

Planning, implementing and adapting

Planning, implementing and adapting are the last stages of HCMCD. Planning follows after the goal-setting. Planning involves the process of thinking about and organizing the activities required to achieve the desired goal. Planning is essential to achieve the targeted

goals. The implementation follows directly after the goal-setting. Implementing the goals involves taking action after planning and goal-setting (Niles *et al.*, 2010). In this regard, counsellors are needed to help the client to implement their career goals (long-term or short-term). At this stage, one may have found the answers to the questions and probably identified his or her capabilities and interest for a career choice. Niles *et al.* (2010) again expressed the need for one to monitor and evaluate the career choice against the capabilities.

2.3.2 Academic counselling

Landers *et al.* (2008) describe academic development as acquiring skills, attitudes and knowledge that contribute to effective learning in school, thereby achieving success and to understand the relationship of academics to the world of work, home and in the community. Hope is needed as the very basic requirement for one to attain academic success. Nothing works well if there is no hope for one's aim and aspirations.

Education has many functions from which a child benefits after going through it. Academic work is the main function of education. Learner support (academic) is one of the three areas of guidance in the school set-up (Esbroeck, 2008). Esbroeck (2008) further explains that academic counselling helps to maximize the effect of the learning process. This includes the support to acquire appropriate learning skills and methods, attitude and motivation to excel. Academic counselling may be perceived by many as giving solutions to academic problems. However, counselling does not offer direct solutions to students. Academic counselling rather dwells on helping students with perennial life problems, and they are also taught on the strategies to cope (Ghana Education Service, 1995). Counsellors do not advise, but rather analyze one's life situation out of their academic challenges and render counselling services. The onus lies with the individual to make his or her decision. Academic counselling exposes students to the realities and the road map to achieve academic success. The environmental impact due to the current social change is a threat to students staying focused in their academic perseverance. Students are easily veered off the academic ladder irrespective of their previous academic success.

Stages in education (from the basic level right up to the university) are accompanied by a myriad of academic challenges. These challenges have to be dealt with appropriately with good academic counselling procedures and models. Students may have inherent problems that impede their academic work, but may be reluctant to disclosing them to anyone for help. For instance, a student may have the capabilities to excel academically, but the full potential may not be realized due to life challenges. There are students who have to hawk tradable items on the street daily in order to make ends meet, and to also pay for school fees. Others may also have to engage in illegal activities such as prostitution and selling of drugs to pay their school fees and other expenses. This certainly affects academic work.

Research in the Ghanaian universities has demonstrated that some students perform poorly, and have expressed concerns about how they were able to successfully complete senior high school. Consequently, they have consistently questioned the capabilities of those students enrolled in the universities from the senior high school. The poor performance of students is often blamed on the tuition received from the senior high school. On the other hand, the authorities of senior high schools have tried to distance themselves from such blame. The blame for students' poor performance is shifted down to the lower step in the ladder of educational hierarchy, namely the junior high school. The chain of blame-shifting would probably go down to the beginning of the child's education with the final resting place being possibly the parents. Following the chain of blame on the respective stages in education, career counselling must be firmly rooted in the child development throughout their life stages. Parents are often blamed in all the steps during the child's career trajectory. The Universities are sometimes blamed from the job market for producing incapable human resource. A well thoughtful strategy is needed for high quality education with a clear focus on career development. The schematic diagram in Figure 2.2 illustrates the chain of blame-shifting from the job right down to the parents.

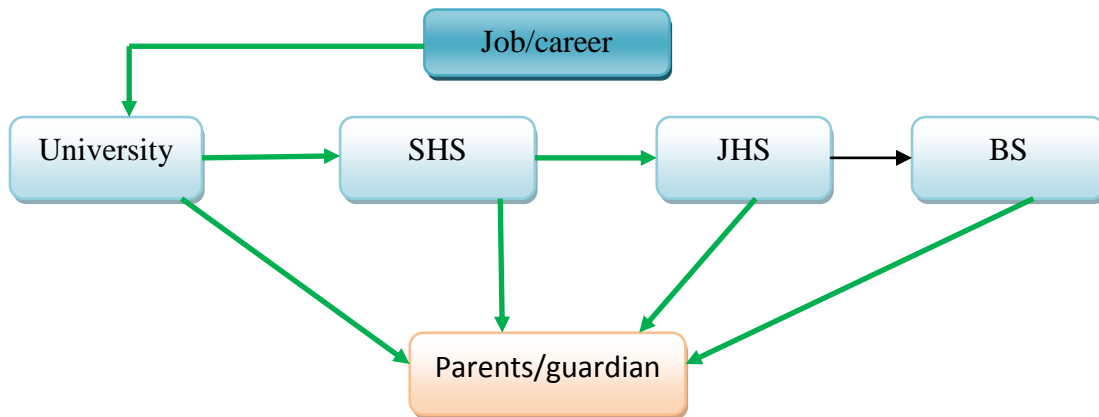


Figure 2.2.Chain of blame-shifting based on the child's moral and academic failures

2.3.3 Health counselling (psycho-social)

Health and well-being are essential to a student's success and also fundamental to career development. Personal or social well-being of a child must be critically considered in the context of senior high school education, where a chunk of the youth resides. However, school counsellors are solely for ensuring efficiency in students' social and personal development. The desire for academic success is partially rested on the sound mind and body. Emotional and stress-related problems are areas of health concern for which counsellors must also focus.

The rapid social transformation has generated deviant behavior among senior high school students observed in Ghana in recent times. The most harmful in relation to the well-being of students in the senior high schools is drug abuse (Ghana education service, 1995) and other related vices which threaten students' progress in school. Drug abuse is alarming and has raised series of questions about the essence of drug educators and high school counsellors. Indeed, the situation is worrying and requires immediate and effective intervention to eradicate it. Addiction takes a long time to get someone to sway away from. Counsellors are expected to encourage client growth and development in ways that will foster the interest and welfare of clients, and this promotes the formation of healthy relationships (Ralls, 2011). Importantly, counsellors must actively attempt to understand

the diverse cultural backgrounds of students. Ralls (2011) calls on counsellors to explore their own cultural identities and find out how it affects their values and beliefs about the counselling process.

The challenges confronting students in their academic pursuit may have psychological effects on their performance. School counselling ought to psych students to be able to cope or deal with these challenges when they come. Academic work requires one to be mentally sound. Again, an immoral sexual activity among students in recent times is also alarming and for this reason, counsellors must take a comprehensive view of sexual reproduction education (SRE).

2.3.4 Holistic model for counselling

Holistic model of counselling is an integrative counselling approach which combines a wide range of counselling techniques that focus on the whole being or well-being of individuals. It takes a look at the individuals' mental, emotional, physical, spiritual, and social aspects right from the childhood. In recent times, holistic counselling has been compartmentalized and categorized into body, mind, and spirit joined, and at peace with each other. Esbroeck (2008) has dicusses that lifelong development in modern society is divided into stages, and each stage is characterized by specific interests, values, activities and forms of behavior. Until the 21st century, the stages were relatively stable and more or less universally accepted (Esbroeck 2008). Esbroeck (2008) argued that the situation is no longer a discussion of universal and well-defined developmental stages or periods. Life development stages take place from childhood, adulthood and into retirement. Each stage in life is characterized by respective challenges, and this requires a different approach to solve holistically.

Students in the senior high school sector are in a specific stage of the life development, and the stage is characterized by career, health (psycho-social) and academic development. Students in this stage are susceptible to deviant attitudes mainly due to the youthful age and the desire for introspection. They become susceptible to being influenced by peers and others. Consequently, this throws a challenge to school counsellors to be

more effective and cautious in dealing with senior high school students. In this case, school counselling must focus on and aim at identifying the sources of the challenges regarding students' well-being. Counsellors must be professional to devise a good and well thought strategy to remedy such situations. High school students experience a wide range of issues that affect their well-being, and these may stem from the lack of experience and knowledge in seeking professional counselling services or from the lack of or little parental care.

Esbroeck (2008) believes that individuals may need support at each stage of their development. Some may need counselling assistance to cope with their life challenges in school. Others may also need counselling to overcome barriers that prevent them to finish a stage and enter into a new developmental stage. Phillips and Smith (2011) have identified family-related matters, bullying, behavioral and emotional problems, depression, self harm and suicide, and mental health issues as areas of concern in counselling. Those areas are the potential sources of problems that confront students in their academic pursuit. Phillips and Smith (2011) again noticed that these challenges can affect their relationships with peers in school, and even outside including their families and their engagement with education. Unfortunately, students who may have gone through these challenges either seek for counselling services or live with it to escalate. As a result, some stop schooling, or may have their academic work terminated by the school due to poor academic performance or unacceptable behavioral life, and may end up committing suicide. Estyn (2006) noted bullying as a factor for suicide among the adolescence.

Bullying is a worrying concern in the Ghanaian senior high school education. The situation is progressively alarming in each year when new students are admitted. Estyn (2006) defined bullying as aggressive or insulting behavior by an individual or group, often repeated over a period of time that intentionally hurts or harms. These areas of needs as identified by Phillips and Smith (2011) can be categorized into academic, health and career needs. Students of the higher grades usually use bullying as a stepping stone to lure new students into doing what they want them to. Some students are too resilient to give in, and others who resist may have their academic performance affected. Thus, they are being

influenced into unacceptable societal behavioral life like drug abuse, alcoholism and lesbianism. Counsellors owe it as a duty to reach out to students and not wait for students to come to them for counselling services. In this sense, ICT can be used to facilitate counselling delivery by creating easily accessible and diversified communication channels.

2.4 The benefits of school counselling

The role of a school counsellor is vital and cannot be overlooked in the school set-up. Counsellors in this sector must be professional and well motivated to discharge counselling services. This is because some students can be very stubborn and unwilling to cooperate well with counsellors. The ability to exercise patience and show empathy are core qualities that a counsellor must possess, though there are other qualities that are acquired by virtue of the profession or accumulated during practice. It is challenging and difficult for students to get used to a new studying environment. School counselling is involved in organizing orientation courses to enable fresh students to adjust to a new school environment. The orientation provides students with the capacity to cope with the changes in themselves and in their surroundings. This is the first stage of receiving counselling services in school. The benefits of counselling thereafter cannot be overlooked since it helps one to build positive feelings towards oneself and others. Since school counselling is aimed at providing academic and social guidance to students, it ensures that every student benefits from the curriculum. Data about students are kept and monitored throughout the educational cycle. This helps to facilitate students' improvement by ensuring equitable access to educational opportunities.

Counselling provides strategies for closing the achievement gap because some students need more counselling services in order to reach the same level as the others (ASCA, 2005). This should be consistent through the help of regular data collection to help establish effective study skills, thereby keeping the weak students in par with others. This is because some students can easily lose focus regardless of how successful they have been. As a result, they may veer off the achievement ladder.

Some students have in-born special skills for which they are not consciously aware of, and may require another person to help bring out that latent to enhance the student's chances of success. Therefore counselling can also bring out latent talents in students and help secure their future.

Counsellors also help to develop the interaction and communicative skills of students and this is considered as vital for one to succeed in the modern working environment. Students are brought up from different environments with different values and attitudes. Communication among students is a core ingredient for students to stay together without or major communication problems.

Moreover, counselling helps students to identify their strengths and weaknesses (ASCA National Model, 2005). The senior high school system in Ghana usually consists of a community of different people with different values and almost certainly different cultures. Therefore, it is a challenge to live in a community with people who may not share the same taste and aspiration. In this respect, counselling is meant to help students to cope with, accept and learn each other's behavior. In this way, students are able to construct positive feelings towards each other and learn to behave responsibly.

The achievement of the future prospects, including securing a career, is one of the fundamental aims of school counselling in which students are led on to identify and develop their own career. Through counselling students are made to create a vision which keeps them focused and therefore minimizes the risk of falling into despair in their career path. Education develops the students to acquire knowledge and skills, which in the end must be beneficial to themselves and the society as a whole. It is, therefore, important for students to know what the society expects from them.

2.5 What is e-counselling?

The advent of ICT has brought about the diversity in counselling methodologies. It was discovered gradually over the years that it is possible to administer e-counselling in schools to provide remote counselling to students over a long distance. Researchers in this area have given several definitions of e-counselling. For the purpose of this study, e-counselling is an electronic way of receiving supportive counselling either through an exchange of emails, live webcam session over the internet or via telephone and through digital games. Though face-to-face counselling was the predominant practice before the emergence of e-counselling, e-counselling has an edge over face-to-face because of its versatility and relative low cost. E-counselling uses ICT resources to engage clients in counselling services. E-counselling is often referred to by many scholars as online counselling or internet counselling.

The world is now a global village for which information can easily be shared irrespectively of the distance and location. Challenges posed by the traditional face-to-face counselling have practically been fully or partially dealt with through the advent of ICT and this has opened up a new era for the counselling profession. Thus, ICT has created opportunities for counselling centers to be established and reach many people around the world. Therefore, Zamani (2009) indicated that *“technological advances and emphasis on time-limited, inexpensive treatment has ushered in counselling through the use of communication via internet”*. Counselling is a necessity and indispensable tool in senior high school education. The zeal and the youthful exuberance to explore the ICT world could of course be geared towards helping and shaping students to meet the running pace of technology. Ralls (2011) points out that professional counsellors in schools are responsible for providing students with a schedule of times, during which the online counselling services are available, including a reasonable anticipated response time. This provides students with an alternative means of contacting the school counsellors at other times, including emergencies (Ralls, 2011). E-counselling is an ideal platform for counselling in this technological age to reach remote students.

2.5.1 Technologies in counselling

Traditional face-to-face counselling was by far the most common method of counselling that has been used for a long time before the emergence of ICT. In spite of the existence of ICT methods of counselling, traditional face-to-face counselling is still practiced. Ralls (2011) believed that the traditional face-to-face counselling may never be entirely eliminated. Both methods need to exist alongside each other in order to complement each other where necessary. There are many methods for using ICT in counselling and each respective method is used based on the relevance and model for counselling. Zamani (2009) and Shiller (2009) identified five e-counselling tools: these are email, chat, web-based messaging, video-conferencing and text messaging or short message system (SMS). Future-based simulation with role-playing in which learners' imaginations are engaged (Jarvis and Gangitano, 2007) is one of the most effective strategies for learning and to develop career and life management. Digitizing a real life situation in the form of the game is currently an important tool to sensitize and expose students to the realities of life. The increasing pace of technological change could see more of these technologies cropping up as a means of sharing information. Counselling as a professional activity is obliged to embrace these technologies as they develop and mature.

2.5.1.1 Email

Electronic mail, widely known as email is a form of communication transmitted electronically using computers. It is tremendously faster than all previous means of communication, for instance sending letters using the traditional postal system. It is therefore not surprising that email has been widely adopted by a large section of the world's population as their preferred means of communication. It is widely used in business communication because of its nearly instantaneous nature. Sending email is free, except the cost of paying for the infrastructure such as a computer and Internet connection. It goes without saying that to have access to email there must be electricity. In that connection, most rural dwellers in the world may not have email facilities because most rural areas around the world have no electricity.

Zamani (2009) points out that email is an ideal platform or medium for people with different time schedules, providing an opportunity for introspective responses. Email is used as an electronic tool for counselling services, but it requires that both the counsellor and the client have access to the facility in order for the counselling to take place. In this connection, counsellors in the ICT departments of the various senior high schools should create email accounts for students as a motivation to use the medium for counselling services.

The relevance of email in counselling cannot be overemphasized. It is important that students disclose information deemed necessary for counsellors to consider in rendering efficient counselling services. Consequently, clients may forget to raise vital information during a face-to-face session, but email contact allows the clients ample time without pressure to provide that information through text. Shiller (2009) reveals that emails can be used by clients as a self-monitoring facility. With the proliferation of ICT tools, students seeking counselling remotely can use the platform at any convenient time with the counsellor provided there is an availability of internet. The thesis has demonstrated that students face life challenges through their life stories (table 4.1) and their reasons for their reluctance in seeking counselling through the face-to-face session.

The confidentiality of the client in counselling is a very sensitive issue and crucial in counselling which calls for careful handling on the part of the counsellor. However, sending email is associated with security issues which make it difficult for the counsellor to guarantee a water-tight confidentiality. The world is now flush with information and knowledge for which leakage of confidential information about someone could create a serious jeopardy. Ralls (2011) worries about the confidentiality issues associated with the use of email in counselling, and cautions that email conversations are not secured without any means to protect it. However, he advises that confidential information on the internet can be shared over a secured server; otherwise, only general information could be requested and provided. Indeed, emails can also be encrypted over the internet for secure confidential materials. Conversely, when the email is not encrypted, then it is best to

ensure that the information provided is general. This is a precautionary measure to ensure its (data) safety.

2.5.1.2 Web-based messaging

Web-based messaging is the newest form of e-counselling (Zamani, 2009). Web-based counselling is a method of service delivery with the potential to supplant traditional face-to-face counselling thereby releasing resources to engage in counselling either by peer counselling or with a professional counsellor. Unlike counselling with a professional counsellor, Wang *et al.* (2010) described peer counselling as a form of counselling which focuses on academic work. They further added that college peer counsellors use this method for students to assist themselves by exploring and resolving personal concerns. Students are more likely to discuss personal concerns with a peer counsellor rather than a school counsellor or a teacher or other professional counsellors. Zamani (2009) also indicated that web technologies allow the counsellor and the client to interact in a secure, web-based environment using a third-party host. Dzulkefli *et al.* (2012) identified 3,000 web technologies that are reported to be available on the internet and are widely being used in education. Consequently, schools are already motivated by these technologies for counselling, especially in the developed countries and have adapted to provide counselling services to students. Ghanaian counsellors have is still yet to adopt most of these facilities largely because the internet is not yet well developed and is very slow at times.

In spite of the significant strides achieved by the traditional face-to-face counselling practices, web application is gradually supplanting it though the two are often used in parallel.

2.5.1.3 Instant messaging and chat

Instant messaging and chat are communication technologies which uses text-based communication. The communication often involves two or more people over the Internet or other related networks. Instant messaging (IM) is a private network communication between two users, whereas a chat session is the network communication between two or more users (Jennings *et al.*, 2006).

Africa is considered as one of the continents for which mobile telephony usage is high (Aker and Mbiti, 2010). Aker and Mbiti (2010) observed that mobile telephony has brought new possibilities to the African continent. They also believe that mobile phones can connect people anywhere, highlighting the connection of individuals to individuals and across urban to rural and rich to the poor divide. In this case, counsellors could take up the advantage of the widely used device to efficiently engage clients in counselling services. IM or chat applications are often designed for portable devices like mobile phones. Chat provides virtual group session for chatting, and permits more than one person for information sharing or counselling services. Counsellors could virtually engage students into counselling with the intent of providing group or individual counselling.

Zamani (2009) described chat and IM as synchronous (happens in real-time), and noted that participants have to be logged on at the same time for chatting or messaging. In this regard, time and scheduling become vital since parties have to be on the platform at the same time. Chat or IM sessions can either be private, where each user is invited to join the session, or public, where users also join the session on their own initiative (Jennings *et al.*, 2006). In addition, some IM systems allow file transfers, webcam usage, using privacy controls, maintaining buddy lists, voice chat sessions, and other options (Jennings *et al.*, 2006). Grohol (2003) also identified chat as one of the widely use forums for online counselling in the world. Chats and IM platforms virtually run on portable device, ranging from standard mobile phones (Aker and Mbiti, 2010) to smart phones. The widely used public IM networks include AOL Instant Messenger (AIM), Skype, Microsoft messenger (MSN) or Yahoo messenger (YMSG), though there are other useful IM networks for counselling. The user name is usually defined as a unique name when using the platform.

Considering the enormous relevance of using instant messaging or chat in counselling, Ralls (2011) does not agree more, and was of the view that chat rooms do not offer enough confidentiality to the clients. He further argued that they are best used for distributing general information to an individual or group of students rather than using it for more confidential issues. This is because chat messages can be hacked, and the intended confidential information may be leaked to the public depending on the intent of the hack. However, he alluded that secure live chat usually requires a messenger service housed in a secure site within a school website or on other secured software such as Blackboard or Moodle. Nonetheless, the security issues and confidentiality can easily be controlled. For instance instant messaging software such as Yahoo messenger and AIM are not secure methods of chatting, and care must be exercised about the kinds of information that need to be shared over the platform.

2.5.1.4 Video conferencing

Down (2009) described video-conferencing as a method of conferencing between two or more locations where both sound and vision are transmitted and received. The platform allows simultaneous interactive communication between users. In its most basic form, a video-conference involves transmission of image and voice of the participants over a long distance. Optional sources include still images and/or moving sequences from a video recorder, a DVD or a PC (Down, 2009). The platform is dynamic and can also be used for other purposes in an educational set up. Suler (2000) described video conferencing as synchronous (real time). In this regard, teachers can also use the platform for virtual learning, especially for online and distance learning. This is to bridge the gap between students and the teacher. The traditional face-to-face counselling involves the physical presence of the counsellor and counsellee who engage in information exchange with the former rendering counselling services, and this is similar to the video conferencing. However, video-conferencing provides participants with the visual as well as spoken communication. In spite of having a serene environment for the conduct of video conferencing for participants; Down (2009) indicated that a basic conference requires a television camera to capture images of the participants, a microphone to pick up their

speech and a means of transferring this sound and vision information to the remote location. Video Conferencing requires the participants to sit in front of a camera and are indeed expected to have compatible video equipment (Zamani, 2009).

Suler (2000) discussed the importance of video conferencing in psychotherapy in cyberspace for which he discovered that video conferencing provides multiple sensory cues, such as visual appearance, body language and vocal expression that can provide valuable information for understanding the client. Zamani (2009) also argued that video conferencing may be less ambiguous than typed text, which may lead to fewer misunderstandings. As much as speaking is faster than typing, video conferencing conveys information more quickly, and readily has a consequential benefit to those who express themselves better through speaking than writing. Though video conferencing may be quite expensive to set up in schools, its impact on counselling cannot be overlooked. Unlike the chat platform, it also allows counselling of two or more students at the same time. Students on holidays can still use video conferencing to seek guidance and counselling services, especially in areas of health, academic and career development. Hence, it is important to raise awareness among students to accept the use of electronic means of counselling. Figure 2.3 illustrate a typical example of video conferencing involving three different participants.

There are challenges that impede the smooth running of video conferencing. The quality of the received images can be compromised by the technology. The body language can be lost if movement is jerky or picture quality is reduced. Body language is a form of communication which helps counsellors to identify certain facts about their client even if the client is not disclosing the truth. Also, there may be delays in the sound. When this happens, it is not good to continue exchanging information using the platform. The session becomes inappropriate because the sound comes in pieces and it becomes extremely difficult to put the pieces together in order to understand each other. This creates significant interruption when dealing with a group of students synchronously.

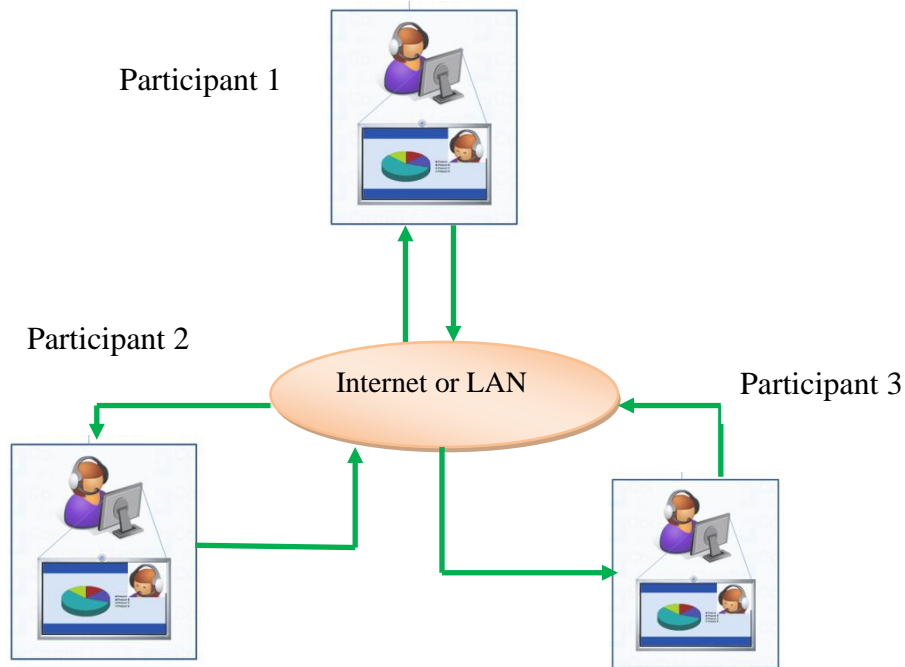


Figure 2.3. Sample view of video conferencing with three participants

2.5.1.5 Digital games in counselling

Game is a competition among players or against oneself. Bada (2013) described games as a set of activities that involves one or more players who has goals, constraints, payoffs and consequence. The motivational aspect of a game is to win or play for fun. The thrilling part is the failure to attain the desired winning points. This, intention drives people to continue playing. Students may have perceived winning as the motivational factor but, games are usually meant to carry a message or to educate. Different kinds of games (eg. role play, simulations, knowledge games.) have existed for a long time. The current generation's taste for technology is overwhelming.

ICT is still gradually developing in Ghana and Africa as a whole. As a consequence, digitizing a real life situation in the form of a game is a huge motivation for students to use. Some students do not give serious attention to seeking for guidance and counselling services from professionals. Although a digital game may not be popularly known as a tool to facilitate counselling services in the Ghanaian context, nevertheless a digital game simulates a real life situation and provides students with the opportunity to ask questions

and clarification through the game. In spite of the above discussed electronic platform to facilitate information sharing between the counsellor and the client digital game can also facilitate student development by providing relevant information to students on their academic progression, health issues and career choices. Students can adequately learn from playing and this enhances the understanding of the game platform in relation to real life situations.

Real game is a type of digital game that seeks to focus solely on students' counselling services (Jarvis and Gangitano, 2007). Digital real game is an electronic game that simulates a real life situation in the form of role play. Real game is an original game purposely designed to enhance counselling for students, especially in their career development. Real game programs are also designed to bring real life into the classroom. The educational curriculum which recognizes real game focuses on teaching useful or practical skills through non-threatening role-play activities. Jarvis and Gangitano (2007) estimate that millions of children and adults today are engaged daily in the programs of the real game series, thereby acquiring critical career management skills that they would use throughout their lives. Jarvis and Gangitano (2007) believes that digital real game increases awareness of potentially satisfying career opportunities, and gaining hope and confidence about their future. Despite the instituted counselling unit in schools, Jarvis and Gangitano (2007) believe that educators find it difficult to help students to make informed career decisions in an area of academic accountability and high stakes testing.

One reason for using a digital in this study was to demonstrate its relevance and how digital game can be used to augment counselling services in schools. Digital game is not just a game that students play for point, more than that, it is a platform that focuses on helping students to understand real life situations, and the intent of leading them to make an informed decision regarding their academic and career development. Digital games practically provide students with the opportunity to find questions about their future through role-play and scenarios relevant to their current development and future lives. The game shows students how their school works, social life, work and community experience contribute to the many opportunities open to them.

2.5.2 Benefits of e-counselling in schools

In spite of the benefits associated with the traditional face-to-face counselling, e-counselling is more flexible and has diverse benefits to deal with students' health, academic and career development. The underneath are some benefits of e-counselling services.

Convenience

E-counselling is convenient to use. The electronic method of counselling can either be synchronous or asynchronous. Both parties (client and counsellor) can access the services anytime and anywhere. Unlike the face-to-face method, clients are not confined to the limits of traditional counselling services. E-counselling is intended to increase easy accessibility, save resources and decrease frustration. Life design development process is continuous and must be consistent with the monitoring of students' life development. Thus, e-counselling offers the opportunity for students to access the service anytime including the holidays. In this way counsellors are able to keep in touch while students are far apart. As a result, e-counselling makes it convenient for students to contact counsellors remotely.

Cost savings for travel, accommodation and time

Acquiring the resources such as mobile phone or laptop to use for counselling services may be expensive. However, one enjoys cost savings for travel, accommodation and time, once the tools have been acquired. This is because the counsellor and counsellee may live far apart from the counselling unit or office. Instead of the time and traveling expenses involved to enable the parties to meet, e-counselling offers both parties the alternative to engage in counselling services, thereby saving time and travel expenses.

Time control (time management)

Time is a vital resource that once lost cannot be recovered. Time needs to be managed effectively if one intends to achieve success in professional life. E-counselling provides the opportunity for the counsellor and client to arrange and agree on the time of meeting.

Having decided on the time for the meeting, e-counselling encourages more control and less time wasted on non-agenda items. Thus, the parties are focused on the main agenda for which the time was arranged.

Reduction of potential intimidation of client

A student may be addicted to an illegal activity such as drugs which is not acceptable in the rest of the society. Morality varies from society to society; for instance, homosexuality is widely condemned in Ghana while it is even legalized in many parts of the world. Some students may not withstand the embarrassment and end up committing suicide if their personal secrets are disclosed to the public. Others may never disclose their personal problems even to their closest friends and therefore find it extremely embarrassing and difficult to disclose to a counsellor. In this regard, e-counselling offers the opportunity for clients to discuss and share their problems without letting out their identity to the counsellors. There are several e-counselling platforms that render counselling to client without knowing them. Also, child abuse victims or people who are facing criminal charges can testify over a video link without fear of being intimidated.

2.5.3 Setting up e-counselling centers in high schools

Ghana's educational sector's medium-term development plan for 2010-2013 (2009) explicitly calls on the educational sector to focus on promoting creativity and problem-solving through the development of academic, technical and vocational programmes that will improve the acquisition of skills prior to entering the labor market by 2020. Counselling should run in parallel with the mainstream academic training to ensure that school graduates have the required skills to cope with the demands of society.

The aim of school counselling is to provide capacity for those students who face difficulties making a career choice or those unable to perform well at school due to certain psychological difficulties which may not be obvious. School counselling programmes should be carefully designed to address the physical, psychological, social, personal and academic difficulties of students. In other words, school counselling ensures the holistic development of the student. Establishing guidance and counselling as an additional facility

in Ghanaian senior high schools is crucially important to ensure students' success and well-being. Therefore, there are key factors that need to be considered when setting-up a counselling centre, including the people who might work there, the tools and resources available to students, and the process or method of counselling (Post *et al.*, 2002). Generally, setting up a counselling unit requires one to consider the type of establishment, the goals and the population. Well trained counsellors should also be considered for the establishment of the center.

In spite of the relevance of setting up e-counselling center in the secondary schools, Post *et al.* (2002) argued that some ideas may be easier to implement while others require a greater investment of time and or financial resources.

The type of institution and its goals

The first stage for setting up a counselling center is to consider the type of institution. In this case, the study is about setting up counselling units or centers in the senior high schools. The implication is that the average age of the center's clients would be 16 years in Ghanaian context.

In Ghana, the public sector junior high schools concentrate less on career development. Therefore, students who progress to the senior high school are arguably ill-prepared, have no clear goals, and lack the necessary career management skills to succeed. Those who decide to enter into the workforce therefore face difficulties in making career advances. The type of institution is important since it provides clear ideas to the designers and implementers to consider the kind of people the center would be dealing with. Therefore, designers and implementers take due cognizance to their level of knowledge, the type of training received and where students are transiting from.

Institutional goals

Every institution usually has set goals to achieve and employees are given certain tasks to accomplish in order to achieve those goals. Depending on the available resources counsellors must be efficient to ensure that the goals of the institution are achieved.

Generally, the goals of the senior high schools in Ghana aim at producing potential human resources out of the students for the labor market. Some of those may advance to higher academic institutions thereby increasing the overall quality of the skilled labor. Therefore the designers and implementers of counselling centers have to consider the goals of the institution. The goals of the institution help in the policy framework of the sector.

The staff in the counselling center

The caliber of the staff in the counselling centers is a critical factor to consider when setting up a counselling unit or centers in schools. The counselling profession has adopted the computer-mediated world of e-counselling as a working tool which is important to leverage its potential to extend access to remote students for counselling services. It is therefore essential that well trained counselling professionals with the ability to use ICT to administer counselling services are the most appropriate personnel to staff a school counselling facility. The practice is often that school counsellors are selected from the teachers based on age without considering the knowledge and capabilities which should not be the case; the school counsellor should have a professional training relevant to that position.

An ideal and suitable school counsellor and other workers must possess additional qualities of being patient, good listeners, compassionate, non-judgmental, encouraging and research-oriented. These qualities are central to ensure that the right people are chosen to exercise counselling services in the secondary schools.

The population of the school

The population of a school is an important factor to consider when setting up a counselling center. The population determines the facilities needed in the center. Also, designers and implementers ought to anticipate the possible increase in population in the near future. This, provide an idea of expected facilities in case of possible increase in the school population.

Required tools and resources

The backbone of setting up e-counselling centers in senior high schools is the tools and resources needed for the service. Necessary tools for dispensing high quality counselling service to students should be available. The counsellor and client are expected to have an electronic device connected to the internet in order to use e-counselling. However, the center is not expected to acquire such counselling-supportive tools to the students personally. Instead, students are expected to use the ICT facilities in the school. The counselling facility should be designed to ensure that computers and their related devices complement e-counselling services. This may include devices that can support video conferencing.

Moreover, the counsellor should be given a standard office located within the center. The counselling center should include a small library shelf with books, magazines, journals, newspapers that focus on students' well-being and development.

2.5 Blended model of guidance and counselling

Blended counselling is an integrative approach to accommodate different counselling methods in counselling delivery. Due to the advancement in communication technology, multiple channels of communication have opened up opportunities to provide different methods of counselling in schools. In addition to the traditional face-to-face method, it is now also possible to deliver counselling services by making use of modern telecommunication. For instance, counselling can be administered over the internet, using video conferencing, email, instant messaging and internet chat.

New possibilities have opened up for delivering different counselling services. Blended counselling however carries enormous benefits because it means, in the case of school counselling, that any of those communication platforms can be used interchangeably therefore providing an opportunity to cover as many students as possible. Pырstöjärvi and Saramäki (2011) point out that the emergence of the internet has created a possibility to diversify the counselling methods using different communication platforms arising from the digital revolution. Therefore counselling can be provided to different categories of clients at different times to suit their convenience.

ICT has increased the flexibilities and possibilities for guidance and counselling work. However, ICT is vital to be integrated with the face-to-face counselling to meet the needs of different students. Different students may have different needs at different stages of their studies and thus require different counselling approaches (blended counselling) for support. In this way, Pырstöjärvi and Saramäki (2011) show that counselling support can take many forms, and this may come from the staff, teachers and fellow students (peer counselling). In this regard, there are many students in the Ghanaian context who lack the capacity to use the ICT and internet resources. Such students can be offered the opportunity in the blended counselling environment. Students can choose the method with which they are comfortable. In spite of the fact that e-counselling provides convenience of use, there are certain cases or counselling sessions that cannot be held electronically. As a result, face-to-face counselling may be the ideal method for such a situation.

3. RESEARCH DESIGN

This chapter explores the research approach, context, questions, and data collection methods. The chapter also provides a schematic overview of the research process, highlighting on exploring the environment, understanding the environment and to the development of the *hope game* platform.

3.1 Research approach

The research method for the study is primarily based on design science research. Design science research is an iterative process focusing on producing an artifact through the process of analysis, design and development, intermittent testing processes and implementation (Hevner *et al.*, 2004). Design science artifact must be well evaluated through an effective evaluation process to meet the objectives of the study. However, the end product of the artifact must be relevant to meeting the study objectives and appropriate for human use. March and Smith (1995) describe design science as a two way activity which consists of *building* and *evaluating*. On one side, they described *building* as a process of constructing an artifact for a specific purpose starting from a problem identification, and the *evaluation* on the other hand as a process of determining how well the artifact performs.

Design science is technology-oriented, and the products are of four types: constructs models, methods, and implementations (March and Smith, 1995). Hevner (2007: p.88) categorized the design science research into three cycles, and they are: *relevance cycle*, *design cycle* and *rigor cycle*. Figure 3.1 illustrates the cycles with their corresponding relationships. The main idea of the cycle is focused on the understanding of the research environment, implementing the findings and synthesizing the findings into theory that will benefit the society. The design science approach is appropriate for this study. Thus, the various cycles (Hevner, 2007) involved in the design science research were duly followed.

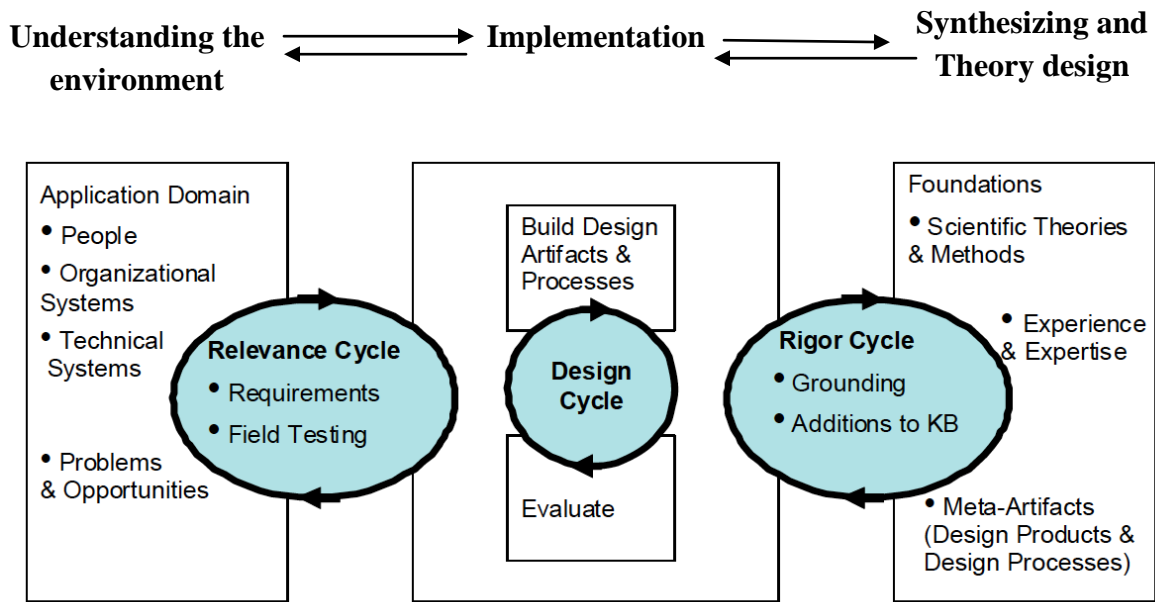


Figure 3.1. Design Science research cycles copied from (Hevner, 2007: p. 88)

The *relevance cycle* provides requirements and acceptance criteria of the contextual environment which also includes the field testing (Hevner, 2007). Thus, the prior interest in e-counselling, responses from students and counsellor through interviews and questionnaires gave rise to this study. The hope game requirement emanated from the students' little knowledge in counselling models for self-management and development. In that regard, the hope-centered model was accordingly identified for students in the senior high school sector.

The second cycle is the *design cycle* which is focused on the processes involved in building the artifact. The cycle includes the software development models, software system analysis and software development life cycle (SDLC). The design process is iterative until the final version of the artifact. Hevner (2007) recognized that the developed artifact must undergo thorough and well executed evaluation process to ascertain its quality, efficiency and efficacy. The hope game development went through two evaluation process for which each feedback was considered in the next deliverable. The feedback was collected through an evaluation form. The evaluation process in the hope game included

the consultations with the students and the school counsellor. This was necessary to get the hope game executed to meet the students' choices and desire.

The third and final cycle is the *rigor cycle*. The cycle provides scientific theories and methods as a reference point for future projects. The theories are obtained from the final outcome of the answers to the research questions. The development and planning of this thesis began from the collection of data through data analysis to the implementation of the hope game, though the process was not completely linear. Views from students after the final implementation of the platform were positive, and students demonstrated in practice that hope game is a step in the right direction for career counselling.

Four stages were involved in the study to give rise to the final project. The stages respectively represent data gathering, data analysis, design process, and evaluation and implementation process. Figure 3.2 is the summary of the stages and what each stage means in connection with the design science approach. Figure 3.3 illustrates the stages of the thesis, including the various activities that were carried out at each respective stage.

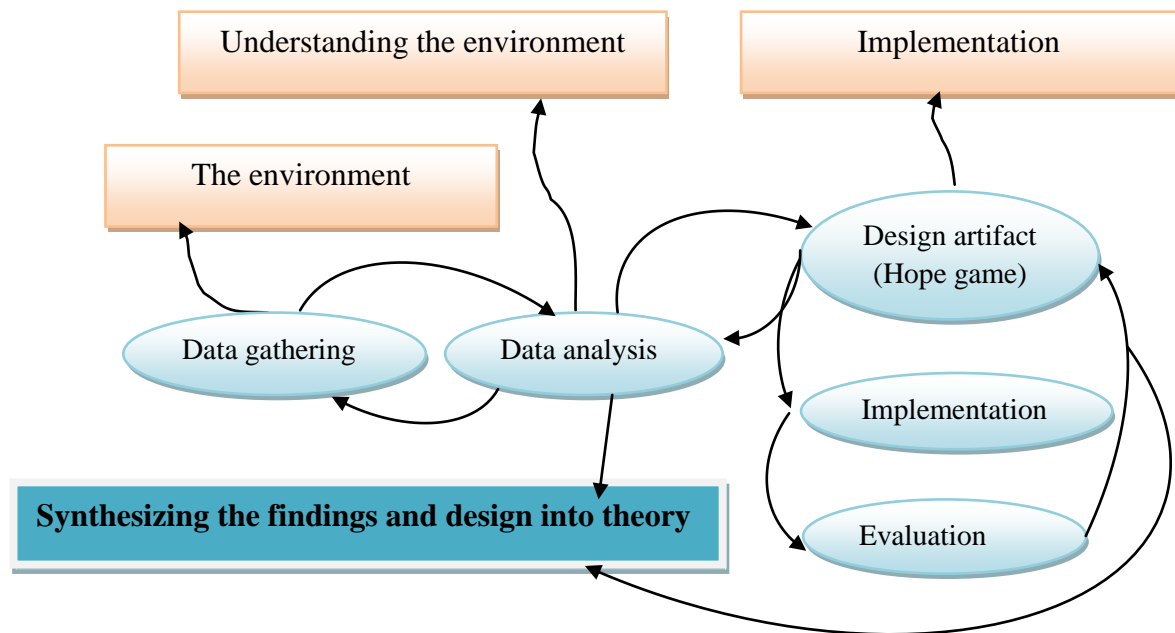


Figure 3.2. Research process diagram

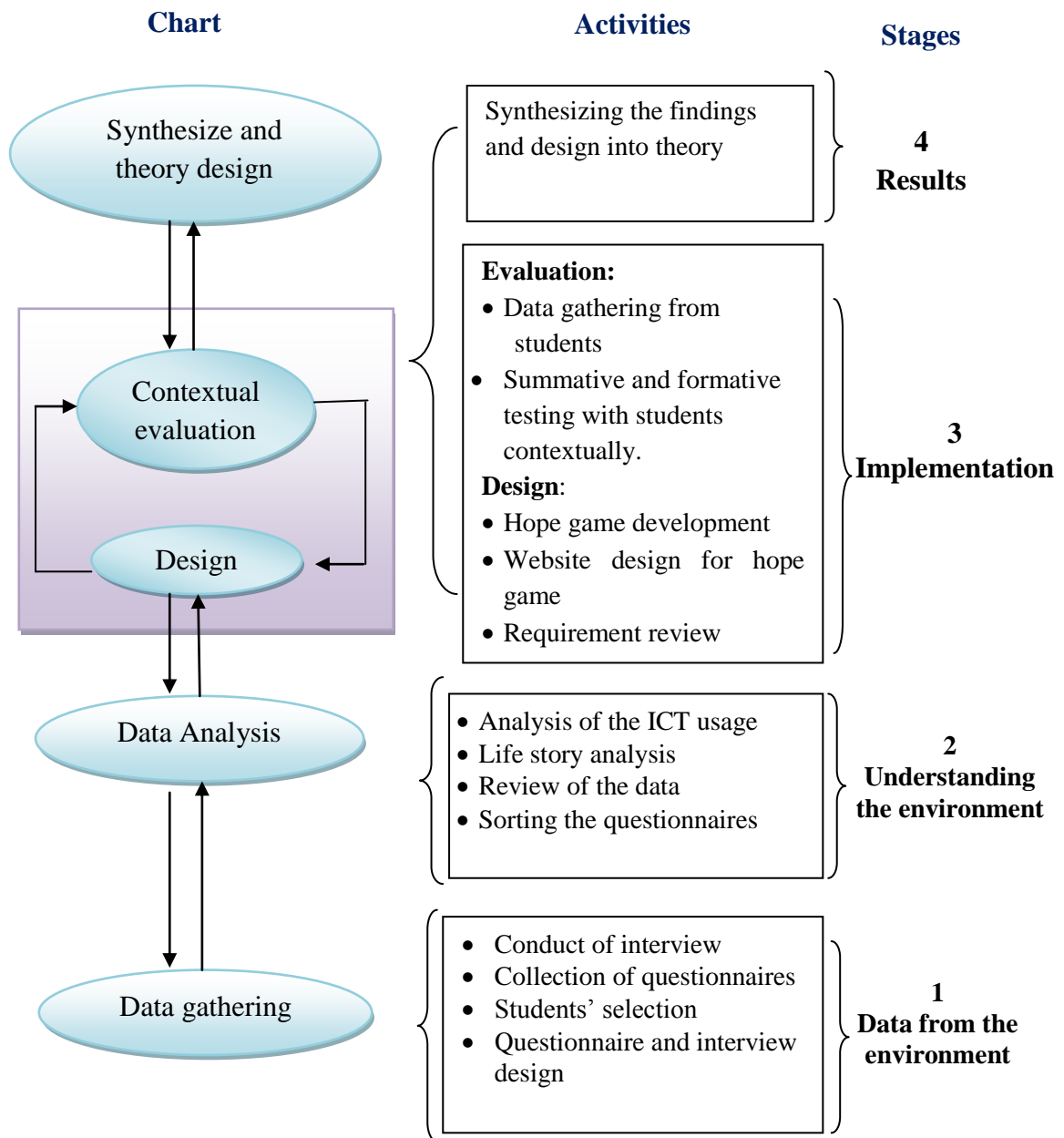


Figure 3.3. Detailed graphical representation of the research process

3.2 Research questions

The objectives of the research as outlined in the Section 1.3 can successfully be achieved from the underneath research questions. Table 3.1 shows the research questions and its purpose.

Table 3. 1: Research questions and the purpose

	Research Question	Purpose
RQ1	To what extent do students' life challenges affect their academic work?	To listen to students' life stories through questionnaires, and to identify the extent to which students' life challenges affect their academic work. The aspect is directly captured in the questionnaires for the students and the counsellor
RQ2	To what extent do counsellors and students know and use counselling technologies, especially games to facilitate counselling services?	This is to identify the counselling technologies used by the school counselling units and as well as the students. I also intended to find out from students if digital games in counselling can help in their development and management. Thus, research questionnaires and interviews were used to collect data.
RQ3.	How can gaming respond to the requirement in counselling?	The purpose is to examine students' responses to the hope game through the evaluation form after the final version of the platform.
RQ4.	What does the digital counselling game contribute to the existing knowledge base?	This is to Synthesize the findings and designing through the hope game into theory and practice.

3.3 Research context

The study is focused on the e-counselling implementation in the Ghanaian senior high school sector. The knowledge and routine use of digital counselling games in the Ghanaian context are not conventional. Hence, the initial idea of counselling game was germinated.

Ghana has ten regions. Senior high schools are spread across all the regions. There are two kinds of high school education in Ghana. These include vocational and technical, and grammar senior high school. The grammar senior high schools are involved in the training of students towards academically oriented programs while the latter is geared towards producing students in the vocational or technical oriented programs. Irrespective of whichever school, the mission statement of the Ministry of Education is to *“provide relevant education to all Ghanaians at all levels to enable them acquire skills that will assist them to develop their potential to be productive so as to facilitate poverty reduction and promote socio-economic growth and national development.”* (Development of education national report of Ghana 2004: page 1). The study is intended for senior high education in Ghana, but Osei Kyeretwie senior high school (OKESS) was the only school selected for the study.

Osei Kyeretwie senior high school (OKESS)

Ashanti region is the second most densely populated region in Ghana. Osei Kyeretwie senior high school (OKESS) was established in July 1937 as the first grammar secondary school in the Ashanti region (OKESS, 2014). The school is a public boarding senior high school, which is responsible for providing high quality opportunities and enabling atmosphere for learners to acquire critical skills in academic, career choice and good personal development. *“It was started as a private educational institution with just a handful of students by the late J. T. Robert who was a Sierra Leonean by birth, but became a Ghanaian by naturalization. The school operated under the name Ashanti collegiate and sited at Asafo, a suburb of Kumasi in the Ashanti region. The school began as a small institution, but like the biblical mustard seed, it grew and later metamorphosed into the giant tree now known as Osei Kyeretwie senior high school. After many years of*

private management, the school was taken over by the Ministry of Education in September, 1962. It, however, retained the name Asante collegiate. The Ministry of education in 1968/69 renamed the school after the then Asantehene (Ashanti King) who was called in his private life as Kwame Kyeretwie, as Osei Kyeretwie senior high school. This was in appreciation of his deep and missionary interest in education”. (OKESS, 2014).

The school offers five different academic programs. These include: business, general arts, visual art, general science and home science. In addition to that the school has a counselling unit with only one counsellor, though there are other teaching staff that naturally assists in the counselling delivery. The school currently has one hundred and nine (109) teaching staff and seventy five (75) non-teaching staff who engage in several school activities such as cooking, security, accounts and many more. The school currently has a student population of 2,035 students reading the various programs mentioned above.

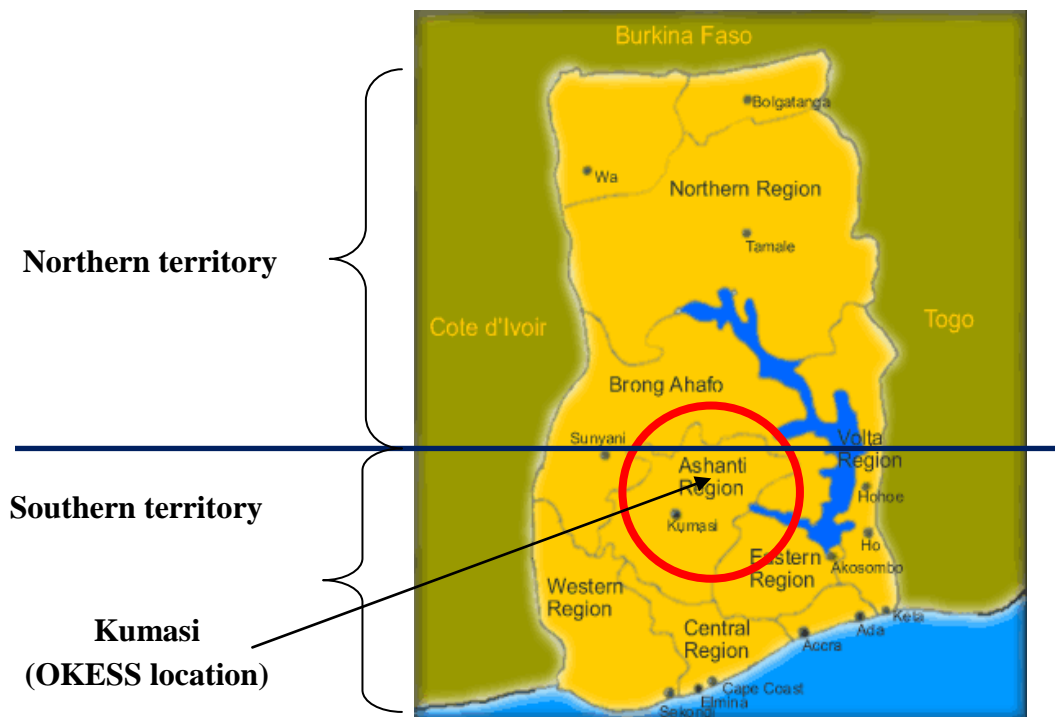


Figure 3.4. Map of Ghana showing the two territories and the location of OKESS

3.4 Data collection method

Data was collected from a selection of students and the school counsellor. Students' life stories and the use of counselling technologies in the school are the main data collected. Stratified random sampling technique was used for the selection of the students. In stratified random sampling, the strata are formed based on members' shared attributes and characteristics (Investopedia, 2014). However, the school population was classified into four groups called *strata*. The four groups are made up of the four streams (years of study), which comprises of the year one to four. Stratum in this research represents each stream of students according to their year of study. The basic idea of using this technique is to collect data evenly in order to avoid or minimize bias towards the levels of educational experiences.

Questionnaire and follow-up interview

Students and the school counsellor were made to answer questions pertaining to this study, though there were few challenges that have been discussed in the limitations of this study in Section 1.5. The questionnaires for the students are made up of both open and close ended questions. Twenty two (22) out of fifty five questions (55) were open-ended questions which required students to answer in their own words. The remaining twenty three (33) questions were close-ended questions that also required students to answer objectively. Some of the objective questions expected further explanation arising from it. The intention is to seek views from students regarding e-counselling services and their life challenges. Students were interviewed after filling out the questionnaires. The concept of hope-centered model for career development (HCMCD) was clearly explained to students. This was done before giving the questionnaires to students.

The simple random sampling technique was then applied within each stratum. Thus, 12 students each were selected from each stratum (each year group) except that 14 students were selected from the fourth stratum. The fourth stratum is comprised of the final year students. The final year students are quite experienced in terms of their level of education, and this accounted for the extra two (2) students.

Unlike the online questionnaire for the school counsellor, the questionnaires for the students were printed out as a hard copy. The idea is rooted from the fact that some of the selected students could not have been able to fill in the questionnaires online due to their inability to use the online platform. Again, such students found it comfortable to write about their life stories rather than typing. The essence of the questions regarding the students' life stories motivated the idea of giving out the questionnaires to students home or to dormitories fill in at their own comfort and return them by a stipulated date. Consequently, twenty students (20) failed to return the questionnaires. Eventually, only ten (10), nine (9), seven (7) and four (4) students from the year one, two, three and four respectively returned the questionnaires as shown in the Table 3.4. Efforts to get the other students to return the questionnaires proved futile. The thirty (30) answered questionnaires were then considered for the analysis.

Table 3.2: Respective respondent in each level (stratum) of the school (OKESS)

SHS (stratum) level	Respondent	%
1	10	33.3
2	9	30.0
3	7	23.3
4	4	13.3
Total	30	100.0

Additionally, different kinds of questions were designed for the school counsellor to answer electronically. The questionnaire consisted of twenty four (24) subjective (open-ended) and twenty two (22) objective questions (close-ended). The main idea of the questionnaire to the school counsellor is mainly focused on the use of counselling technologies in the school and the associated impact on the students' academic, social (health) and career development. The researcher had an online interview session with the school counsellor after he had responded to the questionnaire.

4. ANALYSIS AND RESULTS

The chapter explores the procedure for analyzing the collected data and the outcome of the analyzed data. Responses (data) for the study were successfully collected from only thirty (30) students out of the intended fifty (50) students representing 60%. The school counsellor also responded successfully to the questionnaire and the interview.

4.1 Analysis of data

The collected data were qualitatively analyzed. The analysis focuses on providing answers to the research questions which are based on the students' life stories and how it affect their academic work. The analysis is also geared towards the extent to which ICT is used in counselling delivery of the senior high school sector.

Qualitative research is a type of research method that explores issues and understanding of some aspects of social life. Qualitative research questions are mostly “open-ended” that seek to give participants the room to respond in their own words, and these responses tend to be more complex. Denzin and Lincoln (1994) identified case study, personal experience, introspective, life story, interview, observational, historical, interactional and visual texts as typical examples of qualitative research. Generally, data analysis of this type of research is often characterized by words rather than numbers. Additionally, data collection method in qualitative research is unstructured, and the content of its questions asked the ‘why’ rather than the ‘how’. Joubish *et al.* (2011) believed that qualitative research is difficult to express mathematically. The researcher deemed appropriate to use qualitative research for the study. Students were given the opportunity to respond to a question that touched on their life stories in their own words. The content of their responses was critically analyzed using the qualitative research approach. However, the game ideas resonated partly from the outcome of the findings, and the design science approach is used in the development of the game platform.

In Ghana, students transiting from the junior high school level to the next higher level are expected to be in the age range of 14 to 16years. However, some students exceed the

anticipated age range. This may be due to their personal life challenges. These challenges may cause distortion in the transition from one level to the other in the educational hierarchy. This is the key reason for the collection of students' personal data characteristics. They are: *age, age range, school residential status, home residential status, educational financier and support.*

4.1.1 Students' life stories

Data about individual students, especially their life stories is crucial. This may jeopardize their life prospect either in a short term or long term if considerable carefulness is not taken to protect the data. In this regard, a formal letter was forwarded to the headmaster, and also to each selected student seeking for their concern regarding their life stories. Students' names and serial numbers were not recorded on the questionnaires, and thus have no link to the participants (students). This was the first step in protecting the students' data. The informed consent letters and the questionnaires to the students and counsellor are attached to this study in appendices I to III of the study.

The life stories of students may be overlooked by educational counsellors, but students' life stories are a vital component of their success or failure in search of knowledge. Some may have come from affluent homes, but face inherent challenges that hinder their capabilities to excel academically. The study is to help e-counselling researchers in their implementation of digital counselling platform especially a digital counselling game. Nineteen (19) students representing 63.3% out of the 30 collected questionnaires responded in writing about their life stories. However, the remaining eleven (11) students who did not respond to the question that touched on their life stories may have done so due to the challenges encountered during the data collection stage. The key challenge was the difficulty to convince students to write about their life stories. Students who declined to answer the question about their life stories opened up to the researcher about the reason for the declination upon a follow-up interview. They disclosed the fear of the data getting into the public domain was the main reason, though the confidentiality of the data was assured. However, it was important to gain the trust of the students in order to get them to open up and share their life challenges through the questionnaires. The researcher

identified and categorized the challenges as *financial problems (F)*, *academic challenges (A)*, *career challenges (C)* and *psycho-social problems (P)* as the main challenges upon the analysis of the data collected. Table 4.1 summarizes the responses from the nineteen (19) students who wrote about their life stories.

Table 4.1: Summaries of students' background, Life challenges and reasons

No.	Age /sex	Challenge(s) F/A/C/H/S	Summary of reason(s)
1	20 F	A /P	<ul style="list-style-type: none"> • Lost mother • Delays in the school (OKESS) dining hall. This affects class and her academic work. • School lacks facilities for academic work.
2	18 M	F /A /P	<ul style="list-style-type: none"> • Parents divorced and staying with grandmother • Trade on vacation holidays to raise money for school.
3	17 M	F/A	<ul style="list-style-type: none"> • Lost parents. Has to be supported by siblings. • Trade after school for support • Less time to learn
4	16 F	A/P	<ul style="list-style-type: none"> • Lost mother and father married away • Living with uncle
5	16 M	F/A	<ul style="list-style-type: none"> • Living with parents, but difficult for parents to support him.
6	16 M	F/A	<ul style="list-style-type: none"> • Living with both parents, but father is jobless. • Hawks on the street to sell sachet water for self support. • Less time to learn.
7	18 M	H	<ul style="list-style-type: none"> • Not clear about the cause of the health condition.
8	17 F	F/A/C	<ul style="list-style-type: none"> • Problems with organizing studies • Have no idea of her future career • Difficulty in paying fees

9	18 M	A	<ul style="list-style-type: none"> • Lives with parents • Peer influenced his into lesbianism. Affected her academically.
10	15 M	F/A/C	<ul style="list-style-type: none"> • Lives with parents with five children. Father is a police but difficult to take care of 6 children.
11	19 M	F/C /P	<ul style="list-style-type: none"> • Lost father. Lives with mother. • Supported by uncle. Uncle is a teacher.
12	19 M	F	<ul style="list-style-type: none"> • Lives with parents in rented apartment.
13	18 M	P	<ul style="list-style-type: none"> • Living with mother. Father stays elsewhere.
14	16 M	P	<ul style="list-style-type: none"> • Lives with mother and grandparents. • Grandfather is a missionary • Parents are divorced.
15	18 M	F	<ul style="list-style-type: none"> • Lives with parents • Brother finances his education • Wash cars for self-support. • Difficulty in paying fees.
16	20 M	F / A	<ul style="list-style-type: none"> • Lives with parents • Father works as quality control officer. • Walks long distance to school. Misses some lessons. • Hawk on street to support mother.
17	19 F	P	<ul style="list-style-type: none"> • Parents divorced • Lives with a family member. • Grieve over fatherly love and how it has affected her academic and social life.
18	17 F	F/C	<ul style="list-style-type: none"> • Lives with parents • Does not know what career to choose for the future
19	16 M	F/ P	<ul style="list-style-type: none"> • Lost father. Lives with uncle • Uncle partially supports education • Mother is jobless

The under-listed are two (2) extracts from the students' life stories. The grammar may not be well constructed, but a review has been provided underneath to augment the understanding.

Life story 1

Life story 1 represents a life story of a sixteen year male student who lives in a compound house with both parents and siblings. Compound house is a contextual term that describes a rented open house for two or more people or families. This is the extract of the story:

“I was with my parents in Sekyere east and my father decided to move to the city to work to be able to get money to cater for my siblings and I. At that time all my father’s brothers and sisters have moved to Kumasi remaining one. Three months after my father have went to Accra to work, every day the remaining one of his brother you come to our house and talk saying that my father have been sending us money without given him some. This brother day in and day out threat my mother with knife to kill her so after one year so after one year my father came to pick us into the city. Until now my father is a casual worker and he only get paid when he goes to work. Sometimes one month and my father will not go to work because there is no work to do and because of this he is not paid. My mother is not able to carry things as a result of carrying food and charcoal to cater for us when my father was not around and because of this she always complain of his head.

*This has made me suffer a lot in life. I started selling water by the road side when I was seven years old. After seven month I had a road accident when I decided to cross a road to sell water to someone. I was sent to the hospital and when I got well I stopped selling the water. Two months later what we will eat was even a problem and this made me to sell soap anytime I close from school and weekends as well. Later other people in the same house also started selling soap and this made my mother to stop selling soap and move on to sell **tom brown and wheat** till today. This has affected my educational performance and sometimes gets insulted by friends for selling as a male senior high school student”.*

Sekyere east is a province in the Ashanti region of Ghana for which he first resided with the family. He was clear in the beginning that financial problems forced the father into the city from the rural community in search of greener pastures, but a paternal uncle who has a direct link to the father in terms of sending money denies them from accessing the

money. He again demonstrated that the relationship between the mother and the uncle is not a good one, and this has brought about internal wrangling among them. He was quick to add that the uncle had threatened and still keeps on threatening to kill the mother. This indeed is not conducive enough for the family and for him in particular as a student. Eventually, the father moved them from Sekyere east to Kumasi (a city in the Ashanti region of Ghana). The father is a casual worker. He does not work on a regular basis, so he gets paid based on how many times he works.

As innocent as he was in seven years, he started trading sachet water after school hours and weekends as a street hawker to make money for self-support and the support of family. Sadly, he was once hit by a car while hawking on the street to sell his tradable items. The mother's business is not also regular, and her financial support to the family is not good enough. The mother stopped selling soap after she noticed a competition from the same compound house. She then moved on to sell another food item called "tom brown". *Tom brown* is a kind of local food in Ghana. He was quick to add that his life and educational performance is affected, and worse of it all is that he gets stigmatized by friends because of the street hawking. It is uncommon for a male high school student to hawk sachet water on the street and this may have accoutered for the stigma.

In fact, he also presented an emotional answer to a separate question that touched on the life challenges and the effort to tackle it. Although he has not been able to find any solution to his life challenges, he revealed that he has had a face-to-face encounter with the school counsellor. He had this to say about the reasons for the life challenges:

"We are seven in number and among us only one was able to make it successfully to the university and passed out well. Three were not able to make it to the university and two are in their final year in the high school whiles I am also in the year one. Because we are three in the high school my father finds it difficult to pay my school fees and also feeding becomes difficult"

Again, in response to a question on how he intends to end or minimize these challenges to have a smooth education, he vehemently stated that selling sachet water on the street is the

only way to successfully complete the senior high school education since he cannot think of any better solution to his predicaments. Ghana is a developing country, and the economy is not well resourced to oversee the responsibility of helping needy students in education, though there are few non-governmental organizations that contribute to their social responsibilities by helping the needy.

The story above is a challenging one, and a threat to the academic work of a first year student who has just gained admission into the senior high school. He also revealed that the encountered challenges were never shared with anyone including a counsellor until he gained admission into the senior high school. Three key challenges identified in the life story are *financial constraints*, *family wrangling*, which is a potential threat to his academic work and *hawking tradable* items on the street after school and weekend days. Though, the finance may not have been solved by a counsellor, but counsellors could have guided him to cope well with the situation and to lead him on to other opportunities rather than the hawking. Certainly, counselling is not meant to provide solutions to clients, but seeks to guide students on how to cope or deal with life challenges or perennial life challenges when they come. However, counselling guides and leads individual students to make good decisions based on their current situation regarding self-management and development.

The threats by the uncle may have a psychological effect on the child upbringing for which he may be adapted to that attitude. At that age, he is still ductile, malleable and susceptible to the environmental influence. The students are expected to use the after class time and weekends to study, but his case is on the contrary, and this may affect academic work resulting in probable withdrawal. Students who perform poorly at the end of every academic are being withdrawn.

Life story 2

The extract below represents the life story of an eighteen year old male student who lives with his parents in a rural community. The father is a pastor. In his life story, he did not clearly state some of his life challenges and did not also miss words by using “*somehow good*” to describe his life. In a related question about his life challenges he hinted on

having health problems that threatened his academic work. The extract below represents the life story and I quote:

“My life story is somehow good. I live together with my parents in our own house. They pay my fees and attend to other responsibilities of theirs. They have never failed to pay my school fees or any other money needed to be paid. I only find difficulty in transport from my home to school. The distance is too far and it is easy sitting in the vehicle for almost about five hours. I face no other challenge in my life and it is just good”

The attitude to which he responded to his life story indicates that he is from an affluent home, and does not really have financial problems regarding his education. He indicated of having had health problems. Although, he did not state clearly the specific health problems, he was clear about his inability to discuss with neither parents nor seeking for guidance from a counsellor. This is what he said and I quote:

“I face health problems. I also want to know how I can link my education to career”.

This has affected his academic work as he said. Interestingly, he is eager to find out how his education could be linked up with a career. It is clear that he does not know what career to aim at, and the necessary steps for the career selection. Figure 4.1 below is the researchers codebook presented in the form of mind map from the analysis of the 19 collected responses touched on students' life challenges, and the counsellor's views and challenges.

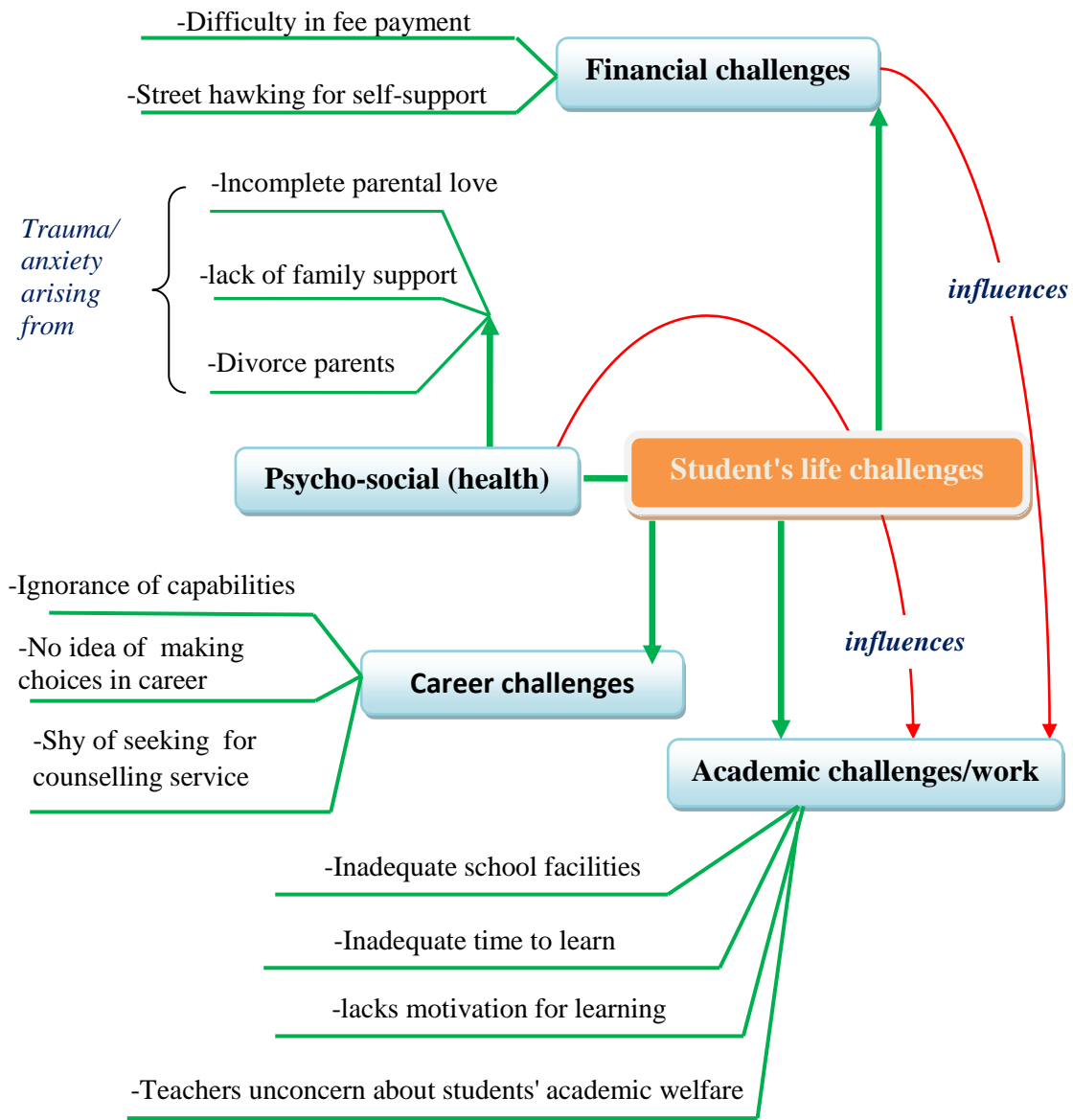


Figure 4.1. Mind map of students' life challenges arising from their life stories (code book)

4.1.2 Counsellor's story

The school counsellor was made to answer questions relating to students' life challenges, and the technologies used by the counselling unit to discharge counselling services. The school has a male counsellor within the age range of 31 to 40. He has a bachelor degree in the counselling profession, and has been in the school within 1 to 5 years practicing as a counsellor. The counsellor lives outside the school campus, a distance of 1 to 5km away. When quizzed about why he stays outside the school campus; he had this to say:

“The school has limited accommodation for the teaching staff”

Although he conceded that the school has limited accommodation for the staff on campus, he was positive that his stay outside the confines of the school environment is not the best. This is because it affects his duties and the profession as a whole, considering the contextual boarding system of education in Ghana. Thus, he is not able to exercise his responsibilities accordingly. He further explained that helping and guiding students is not limited to a time frame, and the profession requires a lot of time to discharge counselling services to students within a regular or off the regular school time. The counsellor again was affirmative that students come to him to discuss their life challenges. He was quick to add that some of the students are not confident enough to disclose certain vital information about their life challenges. He further alluded to the fact that his main challenge in the profession is the ability to lure students into divulging vital information that threatened their academic work.

“It is rumored that some of our students are addicted to smoking ‘weed’ and others are also involved in sexual activities whiles on campus, but since they have not been caught, it is difficult to do something about it” he said in a question posed to him during the follow up interview.

He also added that it is against the profession to accuse anyone of illegal act if he or she does not come out to disclose. On further probing he explained that such activities go

against the rules of the school and any student caught up in the act will be expelled. However, a student is free to seek for counselling voluntarily without any punishment.

The counsellor spoke about drug addiction and bullying as some of the specific examples that students discuss with him. He also added that some of the stories are horrible and really put the academic performance of students in jeopardy. He, however, declined to give specific examples of what he meant by horrible. Additionally, many students share with him their financial challenges that impede academic work, and sometimes get tempted by students to lend them money. However, he was quick to add that financial problems may have been the challenges of many students, but with a sound mind and a good academic and career plan, students can make it through. In this regard, he reiterated that he has been working hard within the resources available to help students, though he attributed most of his challenges to the inadequate facilities in the school.

4.1.3 Technologies in the school counselling

The second research question is aimed at identifying the current counselling technologies used by the school and the students. The counsellor and the selected students answered questions to that effect. In this regard, several questions were asked, highlighting on the tools and methods of counselling. Most of the questions were directed to the school counsellor, though students were also asked to give their views on the state of technology in the school. Subsequently, follow up interviews were conducted to ascertain views from the students regarding a digital game as a model for counselling. The researcher tried to get the school headmaster to answer questions relating to the state of ICT or e-counselling in the school, but the headmaster insisted and requested that all questions be directed the school counsellor.

Counsellor's perspective

The content of the questionnaires revealed that the school often organizes symposia and related counselling activities including orientation programs for students. Inviting experts from different fields to speak to students is important for counselling activities in the school. Students who are not courageous enough to see counsellors for help or guidance

may have the opportunity in such programs to learn and plan. The forums and symposia are organized for students through a public address system. The counsellor revealed that the school engagement with students is limited within the confines of the school and that he does not conduct counselling services for remote students. However, in attempts to find out about the counselling method used by the school to send feedback to students or parents, he mentioned letter, mobile phone call and face-to-face session as the only means. He also added that email is rarely used to send feedback to parents. He was quick to add that the unit is not connected to the internet. Certainly, the entire school was not connected to the internet at the time this study was conducted except for the students' ICT laboratory. The underneath quote is a definition given by the school counsellor when he was asked to explain e-counselling in his own words:

“It is a situation where the counsellor conducts guidance and counselling through other medium either than face to face interactions. This avenue is used to communicate with past students in various tertiary institutions and students during vacations”

The definition indicates that he has a clear understanding of e-counselling though he failed to mention specific examples of e-counselling tools. He revealed further that there are challenges in implementing e-counselling technologies in the school and Ghana at large. He did not mention these challenges. Subsequent study will seek to unravel these challenges, and recommend measures for its effective integration.

On the question of digital game in counselling, the counsellor again expressed his desire for using games to aid in the counselling session. He disclosed that he has never seen any contextual digital game in Ghana especially for the senior high school sector. As a result, he expressed that integrating digital game into counselling will help students to understand and develop rapidly. The counsellor was positive about having learnt hope-centered model for career development (HCMCD) during his studies in the university. Consequently, the researcher briefed the counsellor on digitizing the hope-centered model for career development. He was quite enthusiastic about the idea and this is his comment:

“The generation of today has an inelastic taste for games and other IT programs. Through these avenues such programs can be designed to inform and teach individuals on how to develop their career personality. It helps a lot in helping students and individuals have first hand information about career developments and opportunities. It will give more information about job characteristics, environment and requirements to career and vocations.”

On his last general comment about digital counselling game into counselling he expressed that the present generation has an insatiable taste for technology and the development of such programs would help minimize the workload of counsellors. Again, he was of the view that large students’ population can be dealt with effectively and efficiently through such games.

Students’ perspective

With respect to students’ responses to ICT in counselling, they were enthusiastic and wished to be engaged in a counselling session with the counsellor remotely. Some revealed that they can discuss and divulge information that cannot easily be discussed face-to-face with the counsellor. Some students expressed worries about the school going against the use of mobile phones and other digital devices on the school campus. They further expressed their concerns about the integration of ICT into counselling because the school rules go against keeping electronic devices on school campus.

None of the selected students responded to having used any online tools for counselling. They showed ignorance of e-counselling and eventually attributed their ignorance to the school for the failure to educate them about the use and alerting them on the availability of such method of counselling in the school. Besides that the study also revealed a serious problem of students lacking the basic knowledge in ICT. This is a challenge to the effective integration of counselling games. Integrating the e-counselling platforms into the school counselling services required an absolute training and orientation of e-counselling tools for easy adaptation by students.

Students were also made to respond to questions relating to e-counselling implementation, especially digital games in the Ghanaian context. The concept of hope game was clearly explained to students. Students were enthusiastic about understanding the hope-centered model for career development through the hope game platform. The insatiable taste for technology and its easy accessibility alerted students on the need for digitizing such a model instead of reading from books. Students were questioned on how digital counselling game can help in their development. The respondent provided their views and explained in their own words about the relevance counselling game platforms. Fifty (50%) percent of the participants clearly agreed that counselling game can help students to adapt to counselling models. 10% partially agreed, 13% disagreed and 27% had no idea of the relevance of counselling game in education. Figure 4.2 represents the graph of students' responses about digitizing counselling models in the form of games for self-management and development.

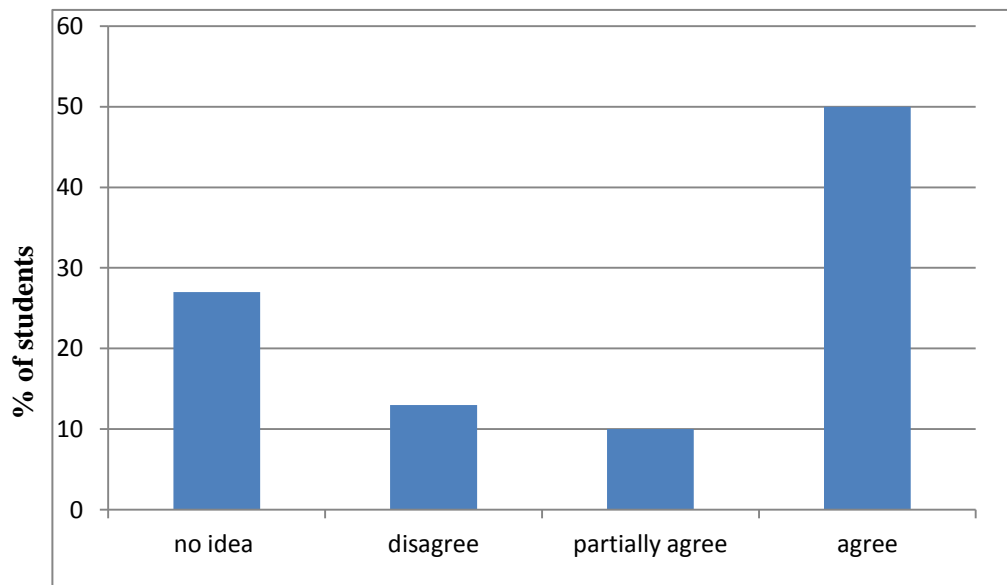


Figure 4.2. Graphical representation of students' response about counselling game

4.2 The hope game design

The first three of the six competencies of the HCMCD were implemented in the hope game platform. The first three of the HCMCD competencies are *hope, self-reflection and self-clarity*. The idea is to orient students on the step-by-step understanding and uses of HCMCD model. The remaining three competencies shall be considered in the future. Design science approach was used in the development process. The outcome of the data analyzed about digital counselling game generally revealed that students are enthusiastic about the hope game platform, and responded affirmatively to the relevance of digital game in counselling.

4.2.1 Pedagogical perspective of hope game in educational counselling

Pedagogy of the *hope game* in educational counselling is important to students' well-being and development. The origin of hope-centered model for career development was posited and put forward by Niles, Amundsen and Neault in 2010 as a model to promote career self-management of people. The HCMCD is a counselling model based on developing career adaptability. (Niles *et al.*, 2010). The model for career adaptability is to help individuals to respond effectively to new information or environmental adaptation which lead to effective and satisfying career self-management (Niles *et al.*, 2010). The key aim of the hope game is to help students to change their life situation into more strategic career behavior.

There are a couple of articles published (e.g. Niles *et al.*, 2010) on the hope-centered model that aims at providing people with the framework for self-management and development. It is difficult nowadays for people to engage in learning the models from books and other hard copy materials and this may be due to the advent of the ICT and telephony world. The possible and effective solution is to get along with the technology, thereby getting students to appreciate or use the model. In this respect, the researcher resorted to developing a digital counselling game to aid in getting students to understand and use the model. Thus, students can practice and follow the model for self-management and personal development. The game is also meant to trigger students to tell their life challenges and to identify their interests and capabilities.

The hope game runs on a web-based platform. This is to get students on board to play and appreciate the importance of the HCMCD. Thus, students can be educated at all times anywhere provided there is internet connectivity. Again the game is to help students to identify their potential, and also to find an appropriate way of nurturing it (from the counsellor's response). The six competencies of hope-centered model are sequential. The hope game triggers students to provide feedback to questions surrounding their own life in order for a counsellor to act on it.

The school counsellors can use the platform to teach. Counsellors could guide students to understand the hope game ideas, thereby answering questions regarding to the practical stage-wise activities required for career development. Again, hope game provides an opportunity for school counsellors to assess the career flow index of students. Career flow index assesses the degree of hope of a student or client as it relates to the six hope-centered career development competences (Niles *et al.*, 2010). This explores how focused a student is, and the sense of optimism he or she has in order to develop a career barring all other challenges that might threaten the progress.

4.2.2 Hope game software development

The first working version of the platform was demonstrated to students. The feedback and bugs were considered in the next phase of the development process. Aside the web page, the database design and the application were developed in modules. The database is implemented using MYSQL, and the game application uses HTML, PHP, Ajax and JavaScript. The idea of linking the application to a database is to make the content easily updatable, collect data from students and send it to a counsellor to act on it.

The game does not limit the time of access. Students can play the game online at all time and anywhere. However, students are required to give accurate email addresses. The email is to help the counsellor to send a reply to the respective students who play the game. Students may be asked to see the counsellor face-to-face, should the need arise. Figure 4.3 illustrates the programming tools, their interactions and roles.

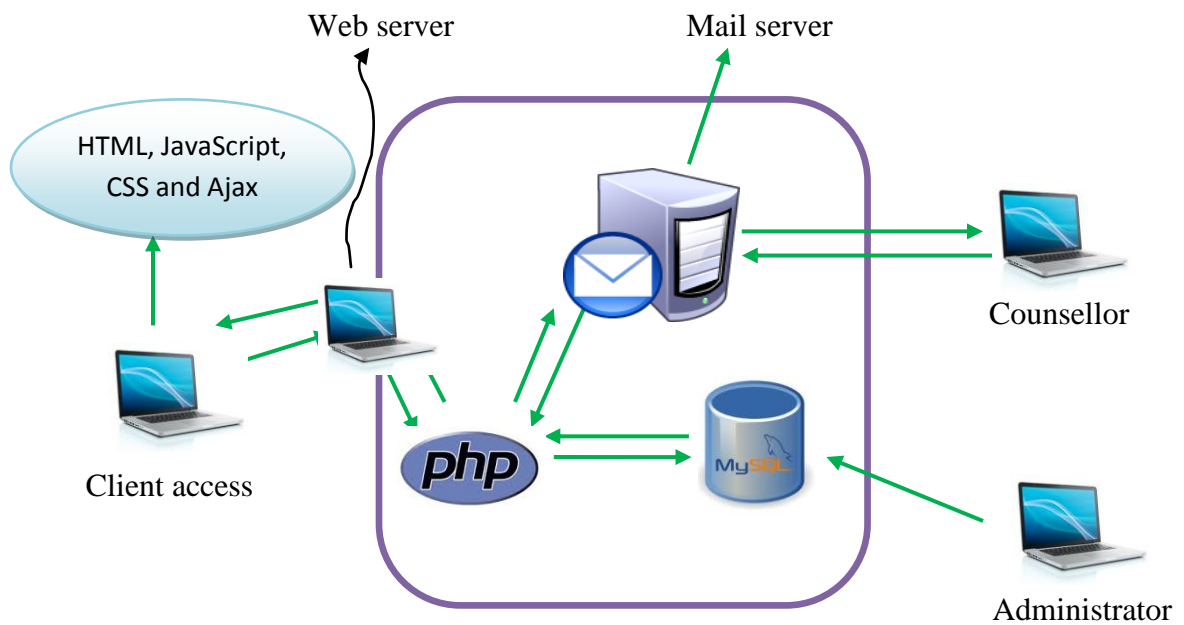


Figure 4.3. Hope game development tools

Web site for the hope game

The website shown in Figure 4.5 was dynamically developed to meet the content management standard for the hope game. This is to make it easier for counsellors and other related professions to manage the content without technical problems. The website is developed to provide the necessary information and tutorials regarding the HCMCD. The website has other functions titled: downloads, contact counsellor and forum.

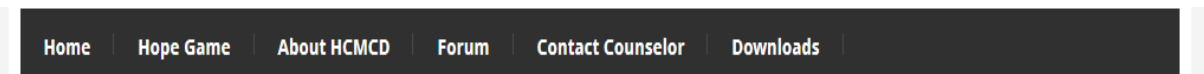


Figure 4.4. Menu bar of the e-counselling website hosting the other functions

The *Contact counsellor* is intended for students to submit their request or challenges to a school counsellor. Consultations regarding health issues, academic and career development may be asked through this medium. This allows information exchange between the counsellee and the counsellor. The information is expected to be kept

confidential by the counsellor. Unlike the contact counsellor function, the *forum* function is to provide students with the opportunity to engage in peer counselling. Certain problems may be well explained and understood by students themselves if they are given the platform to share. Students can post and share their views on this platform with respect to their life development and the use of the hope-centered model. The platform is also designed for counsellors to make comments and give advice to students who may have posted on the forum. Questions may also be posted on the forum for answers. The *downloads* function is also intended for students to download a desktop version which will be developed in future.



Figure 4.5. Webpage for the hope game

The hope game Architecture

The hope game is a single player game. The game was developed in two different levels. The first level introduces the player to the concept of the three implemented competencies. This level is intended for students to identify the practical life activities required in each of the implemented items. Practical questions automatically pop out for students to make the right guess. The options are based on the first three competencies of HCMCD. Thus, the player has only one chance in a question. Questions in hope game are designed to trigger students to provide answers by typing in their own words regarding their life (sample question in Figure 4.6), and also get students oriented in the three competencies of HCMCD.

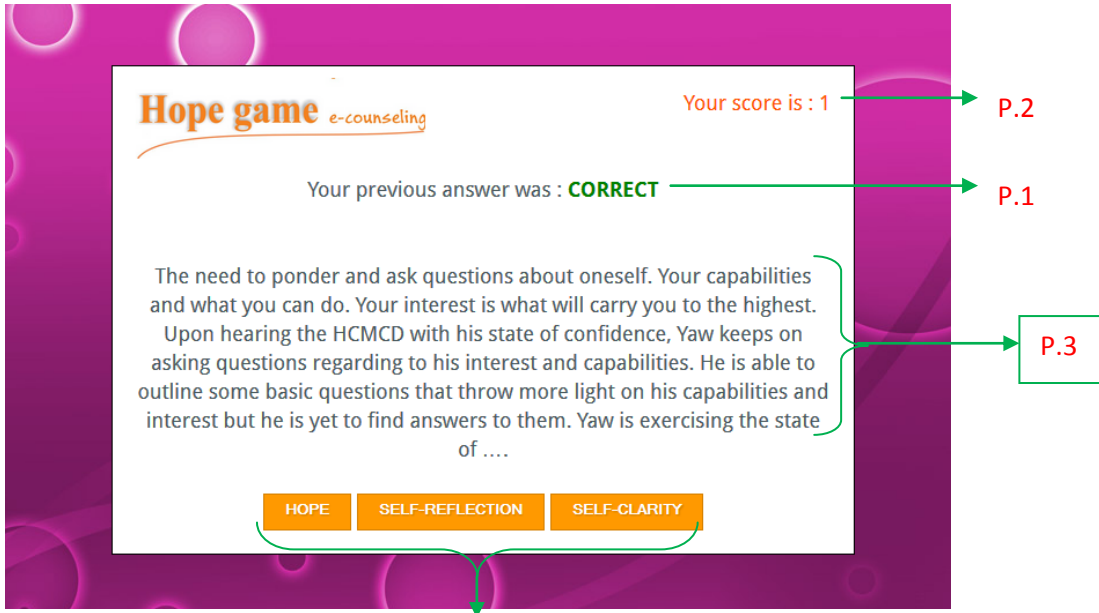
Level one of the hope game mainly has three sections as shown in Figure 4.6. The first section is the *remark*. The *remark* section indicates whether the previous selection is correct or not. A point is then awarded to the player if the selection is correct; else a zero point is awarded.

The second section is the *question*. The questions are practical real life situations that automatically pop out and require the player to make the right selection.

The last section is the *options*. The game has three options, which are based on the first three competencies of the hope-centered model for career development. The options are *hope*, *self-reflection* and *self-clarity*. The player upon starting to play the game might have gone through the game prologue which introduces the player to the various competencies of HCMCD.

The level two of the game assumes that students might have understood the competencies after playing the level one. However, level two adds features that enable students to make the right choice by clicking on a key for the right choice.

Figure 4.6 illustrates the structure of the game, and Figure 4.7 is another type of a question that requests the player to type in their own words based on the question asked.



P.4

Figure 4.6. Example of a question in the level one of hope game

P.1 --Score P.2 – Remark P.3 – Question P.4 – Options

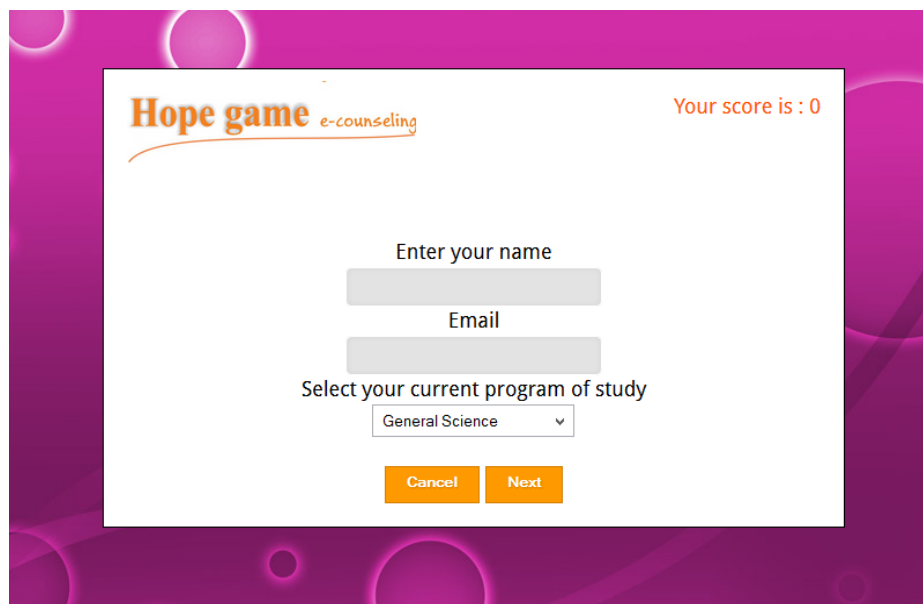


Students are expected to enter their views here. But the right option must still be selected for the point.

Figure 4.7. Example of a question which request students' response

Login page

The players are expected to introduce themselves through the login page. The fields in the login page are all required except the name field. The essence of the email is to help a counsellor to send feedback to students or players. Again, programs in the senior high school education in Ghana are captured in the program combo. Based on the program selected by the students, all other questions in the game are directly linked. Figure 4.8 shows the login interface and the Figure 4.9 also shows the page that will appear if the player decides to play without the entry.



The screenshot displays the login interface for 'Hope game e-counseling'. The page has a purple gradient background with circular patterns. A white rectangular box contains the login form. At the top left of the box is the logo 'Hope game e-counseling' in orange and black text. At the top right, it says 'Your score is : 0' in orange. The form consists of three input fields: 'Enter your name' (a grey text label above a grey input box), 'Email' (a grey text label above a grey input box), and 'Select your current program of study' (a grey text label above a dropdown menu showing 'General Science'). At the bottom of the form are two orange buttons: 'Cancel' and 'Next'.

Figure 4.8. Login page of hope game

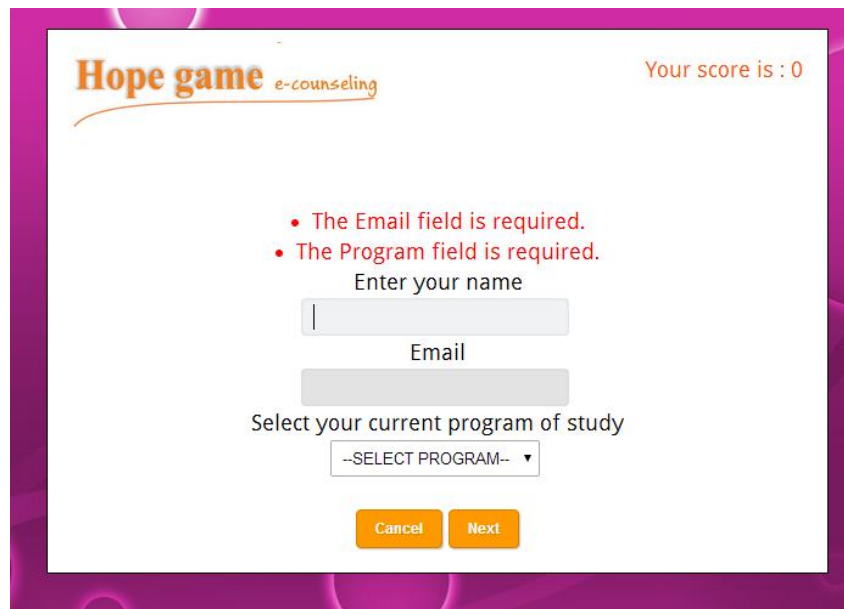


Figure 4.9. Login screen alert

The game Prologue

The prologue gives the students a fair idea about the game. The player is alerted on the relevance of the game and students are required to be sincere about their entry. Figure 4.10 is the prologue page and the figure 4.11 is pre-tutorial of the HCMCD competencies.

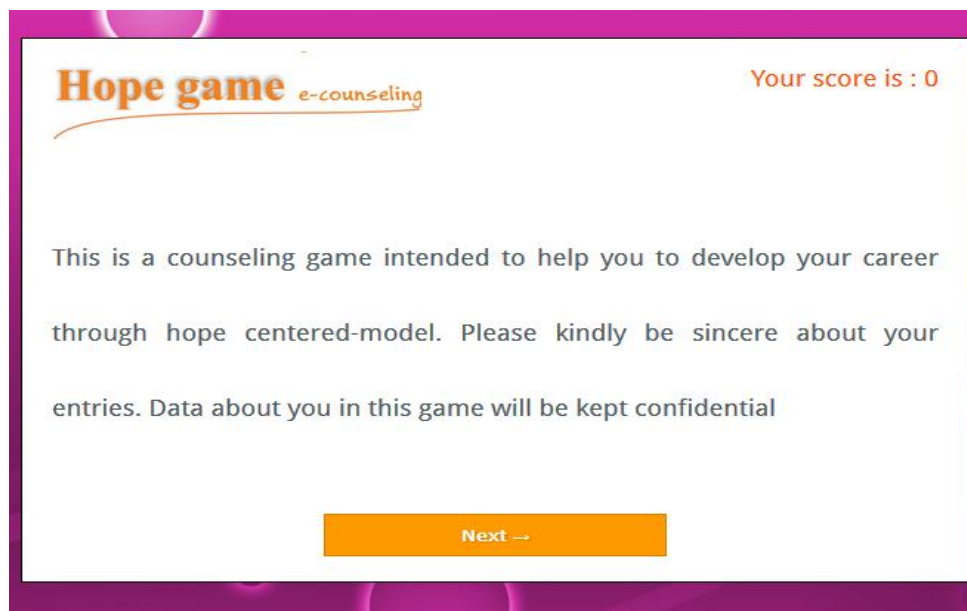


Figure 4.10. Hope game prologue page



Figure 4.11. Tutorials of the three HCMCD competencies

The hope game menu

The game menu explores the various aspects of the hope game, including what is expected of the player. Players are advised to get familiar with all the areas of the menu, thereby forming a complete idea to play the game.

The menu comprises of four different options titled *start game*, *about HCMCD*, *game rules* and *main*. The *start game* button leads the player directly to play the game. However, a player is advised to click on the “*About HCMCD*” button to get familiarized with the hope-centered model. The “*game rules*” explicitly introduces the player to the game. The “*main*” button takes the player back to the e-counseling web page with the intended idea that he or she might want to get more details about the three competencies of the model. Figure 4.12 illustrates the game menu.

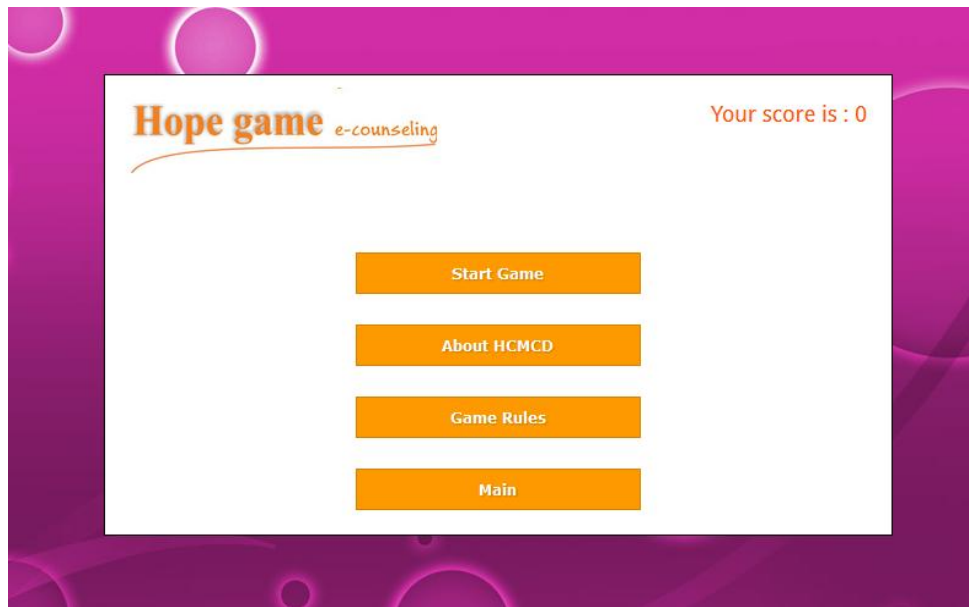


Figure 4.12. The menu screen of hope game

4.2.3 Use case model of the platform

Use case model is a unified modeling language (UML). It describes the interaction of a system which involves the users of the system. In this study, the use case model describes the various functionalities of the hope game platform. The users of the system are referred to as the actors. The actors may be humans or machines, but the actors are the students, the administrator and the school counsellor. Figures 4.12 and 4.13 represent the use case diagram showing the interaction between the actors and the system.

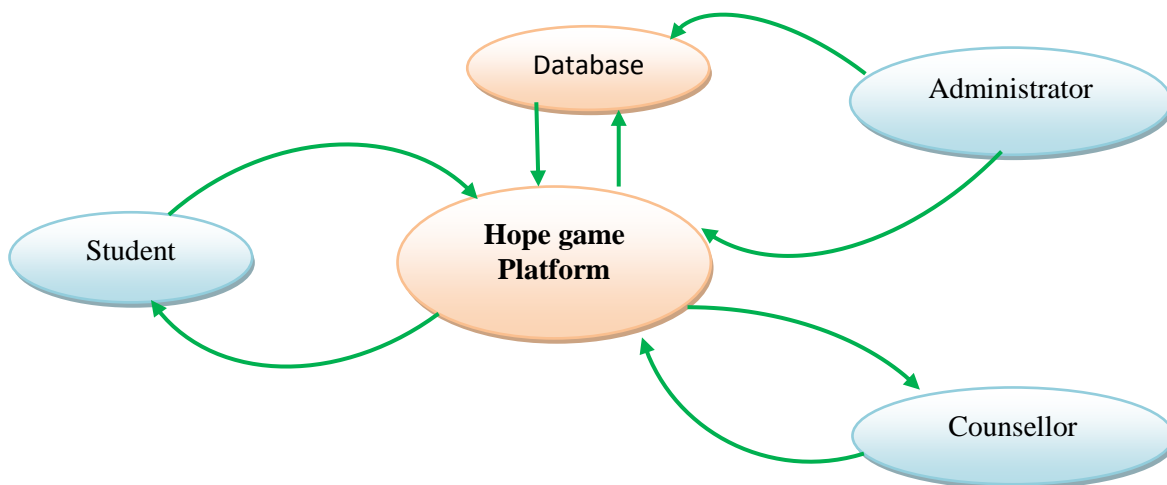


Figure 4.13. Hope game actors' interaction

Hope game platform

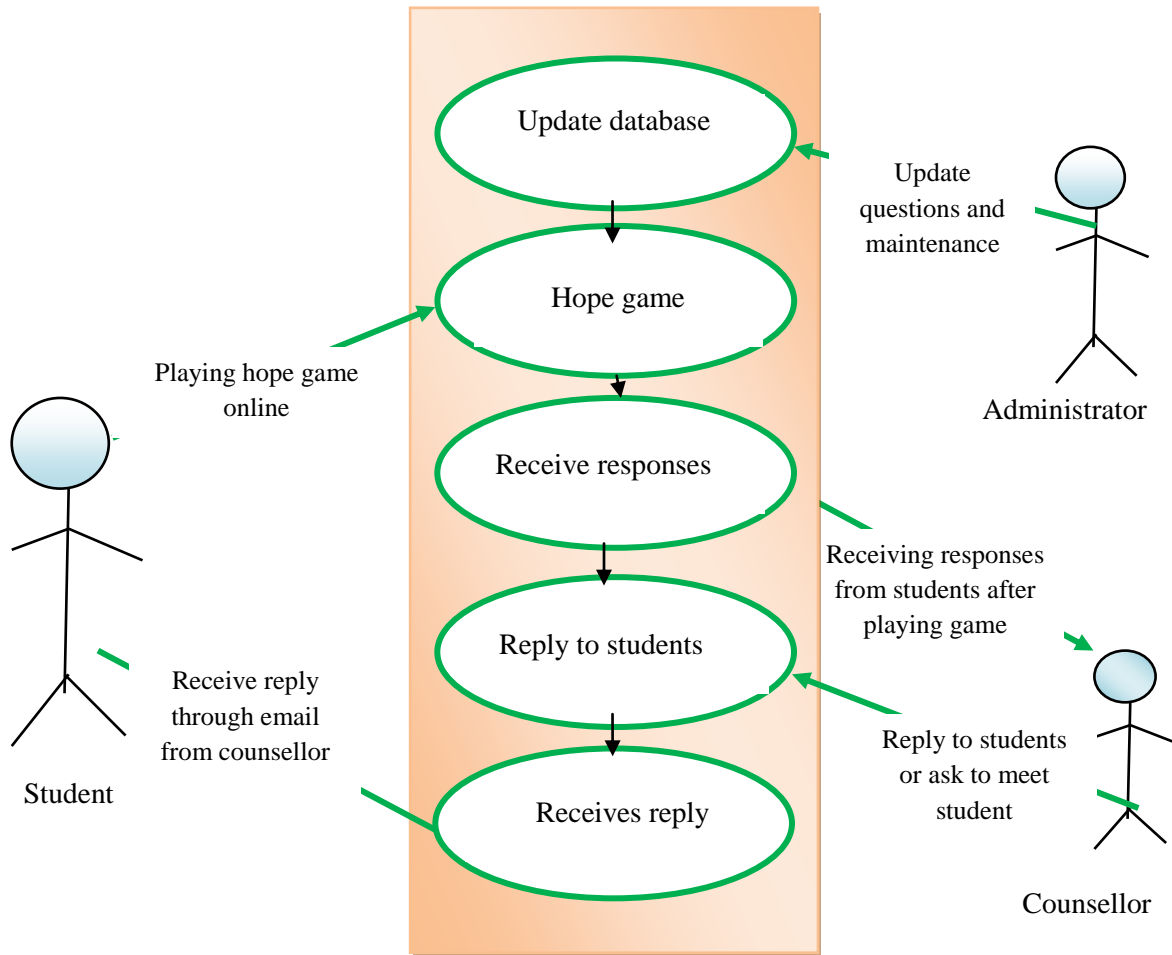


Figure 4.14. Use case diagram for the hope game platform

4.2.4 Implementation

The implementations were done intermittently throughout the development stages. However, the final implementation stage involved the integration of the whole system, system delivery, system installation, including several tests and evaluation. The project was developed in different modules. All system's program modules developed were compiled, debugged and tested. The modules were afterward integrated to produce a full working version of the project's software.

The game is intended for all senior high school students in Ghana, but on further upgrade of the hope game, it shall be fully implemented on a pilot basis by integrating it into the web sites of selected senior high schools in Ghana.

4.2.5 Evaluation

The hope game was formatively evaluated. The game project went through two stages of evaluation. Figure 4.15 illustrates the evaluation process. The platform was demonstrated to the selected students in the final evaluation. Students were made to access the platform online. Thirty minutes were given to the selected students to read around the hope-centered model and the rules of the game. Eventually, students played the game. Questionnaires were again distributed to each student to answer questions based on the hope game. The questionnaire contained only two objective questions and five subjective questions mainly focused on students' views about the game platform. The responded questionnaires were reviewed and analyzed. Relevant and implementable part of their feedback was considered, but some recommendations shall be considered in the future, and this is captured as further research questions in Section 6.2.

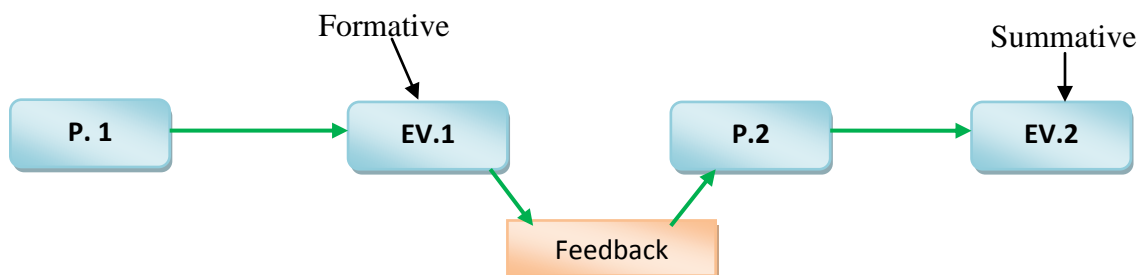


Figure 4.15. Hope game evaluation process

P.1 – project phase 1 **EV.1** – first evaluation (formative) **P.2** – project phase two
EV.2 – second and final evaluation (summative)

A sample of students’ responses after testing the platform:

“I think the game is good. We can play the game and send our problems to the counsellor, but the school doesn’t allow us to use computer and laptops of our own. In this case it will be difficult to play the game at all times. If the game is in animation, it would have been more good. But it is still good for us. I really like it because it is the first game I have ever played in my life which concern counselling. Thank you for trying to help us”.

The above comment is a student of OKESS, who expressed his satisfaction and gave a comment about the hope game platform. He expressed that the idea of the game to help students is in the right direction. However, he also expressed his worry about the current situation in the school where students are not permitted to use any electronic device. He also recommended that animation could have been better for the platform; nonetheless his desire for the game was quite strong. It is also evident from the comment that digital counselling game in the Ghanaian context is unconventional, and this might probably be the first digital game.

5. DISCUSSION

To help students achieve academic success and good career choice, educational counsellors ought to probe into the students' life challenges. Thus, counsellors may be advantaged to discover certain perennial problems associated with students through their life stories. ICT facilitates counselling, and provides an opportunity for counsellors and students to diversify counselling methods, thereby aiding in the academic perseverance. In this study, the expectations of students' life stories were not fully met though there are key findings that merit to be discussed.

The key finding of this study revealed financial challenges by students. Students hinted on the inability to pay their school fees and other educational responsibilities that involve payment of money. The Ghanaian economy expects parents to be responsible for their ward well-fare and upbringing. Consequently, the challenges are not solely attributed to the students, but the parents as well. The specific challenges associated with finance are the inability of parents to pay their ward school fees and take care of their welfare. Some students were candid to demonstrate that they had to hawk tradable items on the street to make money for their welfare, and for their family support. The high school dropout rate is attributed to the inability to pay school fees (Hunt, 2008). Research has indicated that direct and indirect schooling costs are important factors in the child's enrollment and attendance to school (Hunt, 2008). Psychologically, a child's well-being and upbringing is partially dependent on how well the family is coordinated and responsive to the needs of the child. The life stories of the students showed that some students have been living from childhood as orphans and with single parents. Certainly, the love and parental guidance are lost. Students in such a situation often find themselves in the hands of a wrong relative who maltreats and cares less about their welfare. Consequently, some students will go all out including certain unacceptable societal behavior such as prostitution, drug sale and commecial sex trade in order to make ends meet.

Trust is a fundamental ingredient to leverage an individual to open up or divulge vital information that touches on deviant attitude. Findings from the interviews revealed a

meager confidence that students have in the teaching staff. They felt that some teachers are only concerned about imparting knowledge and have less concern about the factors that influenced their academic work, psycho-social behavior and career development. Teaching and non-teaching staff are by virtue of the profession responsible to act as a role model to students, and get involved indirectly with the students' well-fare by law or nature. Building trust among students and staff is a necessity to leverage students to open up in a counselling session. On the contrary, some students get lured or blackmailed into a relationship with the very best teachers who ought to be responsible for their welfare. The idea opens up another research line to establish the contextual factors to build institutional trust. The researcher's prior experience as a teacher confirms that certain life challenges such as drug addiction and bullying destabilizes students' concentration for academic pursuit. At one end, students do not confide in counsellors during their face-to-face session, and at the other end, the fear of information getting into the public domain deters students from consulting counsellors. The eventual consequence is either their academic performance is affected or they get dropped out of the school. The school counsellor revealed that some students come to complain about their addiction to drugs. This attitude to drugs does not really give a clear focus for a student to excel academically. Drug abuse is considered as a social vice in Ghana, and the society frowns against it. In this case, when a student is caught in the act he or she is then expelled. Students who are not able to withstand the societal stigma as a result of the withdrawal finally end up committing suicide. Addicted students are usually afraid to come out clearly for counselling due to the fear of getting exposed to the public. Also, this may be due to their confidence level in order to withstand a counsellor. Ghana education service frowns against the use of alcoholic drinks while in school (Ghana education service, 1995). Students who reside within the confines of the school sneak out to get themselves drunk and eventually cause havoc and chaos under the influence of the alcohol. Drug menace and alcoholic addiction at that level is common and alarming (Ghana education service, 1995). Students' campus unrest is the consequence of such deviant attitude of students. In the nutshell, the study has shown that students are eager for life guidance in order to sway away from social vices that have engulfed and put their life and academic work in a jeopardy, but the confidence

and regular meeting with the school counsellor has become a problem. Therefore, e-counselling platforms become essential to counsel students without declaring any identity.

The senior high education in Ghana is a preparatory stage to offer students the opportunity to identify and make good career choices based on their interest. Counselling units in schools are meant to facilitate and lay the ground for students to identify their potentials and to nurture them. However, the study revealed that some students do not have a clear career goal and are not able to link up their current studies to their career choice. Educational counselling is a continual process to help students to deal with their challenges, and to keep students on track towards life development. A digital game in counselling is absolutely a new counselling dimension in the Ghanaian context. Students showed ignorance of a counselling game, especially a game that depicts a counselling model like HCMCD.

Fifteen students representing 50% of the selected students agreed that a digital game in counselling can help them improve and develop rapidly. Students revealed that they are often afraid to contact a counsellor to divulge private information about their life due to the trust level they have for counsellors. In this regard, they were of the view that the hope game can help them to submit their problems to a counsellor irrespective of the motivation and the fun of playing the game. This is because the game idea allows students to send a request to a counsellor. The counsellor replies appropriately to the player or student after the game is played. The idea of digitizing a counselling model in the form of game compelled the students to reveal that the school does not allow any electronic devices such as laptops and tablets. As a result, the researcher sees this as a challenge to integrate the platform for students, especially when they are still in school. However, they demonstrated a good sense of optimism that with the proliferation of ICT in education, they will be allowed to use such devices in school in the near future. The hope game provides an opportunity and triggers students to tell their problems and career interest. Students could not hide their joy after testing the platform contextually. However, they conceded that they might not be able to access the platform at all time because of the inability to use electronic devices in school.

Finally, the research revealed that integrating state-of-the-art ICT into counselling in the Ghanaian context comes with several challenges as opined by the counsellor. The challenges are partly attributed to the inability of the school to provide the needed support to integrate ICT into the counselling. However, senior high education uses the internally generated funds to run the day to day activities of the sector. Conversely, the internally generated fund is determined by the Ghana education service. The headmasters do not have their own authority to add or decrease any charges proposed by the education service. In this regard, headmasters attribute their inability to efficiently resource the counselling department to inadequate funds (myjoyonline, 2014). Again, the maintenance attitude is another challenge that hinders the ICT integration. Many of the schools do not have good technical staff to maintain the ICT tools in case they are broken down. Duveskog (2009) discovered that the demand for counselling professionals is rising; nonetheless few of the counselling professionals can use and integrate ICT into counselling in the African context. About 80% of counsellors in the Ghanaian senior high schools are beyond the age of 40 and thus technically incapable of handling and integrate the ICT into counselling. However, the motivation to advise the authorities to integrate ICT-mediated counselling is lost. The research also focused on the technologies use in the counselling unit of the school. It is obvious from the counsellor's view that the school does not encourage ICT-mediated counselling and only limited resources have been allocated to the realization of fully integrated e-counselling platforms. The internally generated fund to oversee the running of the school does not make provision for counselling. The study identified face-to-face sessions in counselling and email (rarely used) for sending feedback to parents or students. Again, the findings revealed that the school counselling unit was not connected to the internet as at the time this study was conducted. The counsellor revealed that he uses his own internet facility to send the emails to parents.

Researcher's Contribution

Counselling games have existed for quite a long time now in a bid to ensure individual's development, but Bada (2013) believed that computer games are still not well established

despite the progress in recent years. However, the idea of counselling games in Ghana and Africa as a whole is still rolling. Digital games for students are user-centered platforms which can promote problem-solving strategies and self-development. It is therefore vital to develop a platform based on students' views, and to help alleviate the challenges faced by students. The study collected data from students about their life challenges through questionnaires and interviews. The data were analyzed qualitatively. In this regard, the main contribution of the study was the analysis of the students' life challenges through their life stories, and to help game designers to consider in the development of similar game platforms in future. Also, the study is meant to create awareness to school counsellors to consider the challenges of students in counselling delivery. The study has also demonstrated that computer games are vital to contribute to requirements in counselling and recommends contextual platform development rather than global platform.

6. CONCLUSION AND RECOMMENDATIONS

6.1 Summary of answers to the research question

Ghana is still underdeveloped and the nation is beaming with all sense of delight to improve on the education sector. However, less attention has been drawn to counselling. Academic performance of a student is largely influenced by several factors. Life's challenges may hinder the capabilities and potentials of a child just as this study has revealed. It is clear from the study that some students have inherent life stories which may have never been shared with anyone including counsellors. Others may have discussed their challenges with peers with no strategic measures to curb or deal with it. It is indeed true that good academic work and career choice require absolute resilience, concentration and perseverance to attain. The research analysis has demonstrated that good academic and career choice are largely influenced by life challenges.

Conventionally, deviant attitudes in the senior high schools in Ghana are alarming, especially in the boarding houses. Students embark on campus unrest in the name of being unfairly treated by school authorities. Again, much of the students' unrest is due to the measures by the school to tame and improve on a disciplinary level. Bullying is common in the senior high schools. Teenage pregnancy is still on the increase. The Ghanaian society frowns over these social vices and the effective solution is through effective counselling. Technologies in counselling have come to stay and required its usage to the fullest to reach many students in counselling delivery. Thus, ICT must be explored rigorously to provide a good strategy to help students in counselling delivery. This opens up the dimension of e-counselling through a digital game. Several counselling models have been designed to help students to develop and manage their lives without necessarily seeking for counselling at all times. The Hope game project is a way of contributing contextually to the development of education through counselling models.

RQ1: To what extent do students' life challenges affect academic work?

Data collected from the students on their life stories were critically analyzed and the key findings arising from their life stories are financial and health challenges. Parents'

inability to pay school fees and other responsibilities has compelled students into hawking on the street and indulge in deviant attitude to make money for their well-fare and even the well-fare of their respective families. This puts the academic work of students in jeopardy.

RQ2: To what extent do counsellors and students know and use counselling technologies, especially games to facilitate counselling services?

The findings revealed that students are quite ignorant about any counselling models and have less knowledge on the use of ICT tools in counselling, especially games. Although 50% of the respondents agreed that a game can help them to develop, none of them responded positively to having known and used counselling games for counselling services. Counselling games provide diversification in counselling methodologies.

The school under study does not have any internet connection in the counselling unit, though the school has a laboratory which is connected to the internet, but meant for students' ICT studies. The face-to-face method of counselling is the only method used by the counsellor for counselling. However, email is sometimes the only used medium to send feedback to parents.

RQ3: How can a game respond to requirements in counselling?

The testing of the hope game platform indicated that students are enthusiastic about using the platform for a counselling session. It can afford them to tell their story through the game and expect a feedback from a counsellor. However, as part of the user-centered requirement, the students recommended 3D game platform in the future during the testing of the platform. The game can be used as a learning object.

RQ4: What does the digital game contribute to the existing knowledge base?

The hope game is a digital counselling game. The platform uses the hope-centered model for career development. The game orients students to the competencies of HCMCD. In this case, students can build and develop career and plan their life. Again, the game provides the opportunity for students to give details about their capabilities and challenges that might impede their progress. Students get help into their email after the game is

played. The platform contributes to student's well-being and development with little or no assistance from a counsellor.

6.2 Recommendations

The research gave rise to several recommendations for future study. The research demonstrated and provided a clear direction to augment the study in the future. The ten regions of Ghana have different cultures in the respective regions, though some aspects of the cultures may be related. Irrespective of the general rules and regulations binding all schools in Ghana, norms or contextual beliefs are still considered in the administration of each senior high school in different regions. However, the study considered only one senior high school located in the Ashanti region. The researcher recommends that future research should consider more than one senior high school across the country, thereby taking the regions into consideration. In this case, the data can be quantified and compared.

Three of the six competencies of the hope-centered model for career development were implemented in the hope game. The researcher is considering the implementation of the remaining three competencies in future research. Again, future continuation of the hope game should be upgraded into video game in 3D or any form of animation platform. This shall boost up the students' motivation to use the game platform.

The researcher recommends a peer counselling platform in the Ghanaian context. This shall provide an opportunity for students to share and discuss issues relating to their life challenges anonymously. This is because the counsellors were found not to be that supportive in e-counselling.

Additionally, the researcher recommends an intelligent system that will respond to student queries based on their program of interest at the university. The system shall explicitly relate to the programs in the senior high schools, provide the requirements for the programs at the Universities and the job opportunities in the years to come.

Mobile computing is a new direction of educational technology, especially in learning. The researcher intends to examine how the application of mobile computing can be used in counselling in the Ghanaian context.

The findings revealed that the school has several challenges which impede the implementation of e-counselling in the senior high schools. Future research shall conduct a survey to find out the actual challenges that hinder effective e-counselling implementation.

6.3 Further questions in a PhD study

The researcher intends to carry this study to the doctoral level. In this regard, certain questions came into mind during the study. This includes the interaction of the researcher with students during data collection and the analysis of their life stories. However, future questions will also be considered.

FRQ1. What factors or challenges hinder the effective implementation of e-counselling in schools?

FRQ2. What is the impact of contextual counselling game on students?

FRQ3. Does the curriculum make provision for e-counselling implementation?

FRQ4. Design of peer online counselling platform, and to what extent does peer counselling help students towards careers, psycho-social and academic development.

FRQ5. What is the relationship between counselling activities of schools and the academic work?

FRQ6. For what reasons are students not allowed to use ICT tools to facilitate learning in the senior high schools?

FRQ7. What relationship exists between the counsellor, students' and their parents?

FRQ8. How can e-counselling games or other platforms designed by considering students' ideas (user-centered approach).

FRQ9. What is the current state of ICT-mediated counselling practices in Ghana.

FRQ10. To what benefit has counselling platforms have on students' moral and academic work.

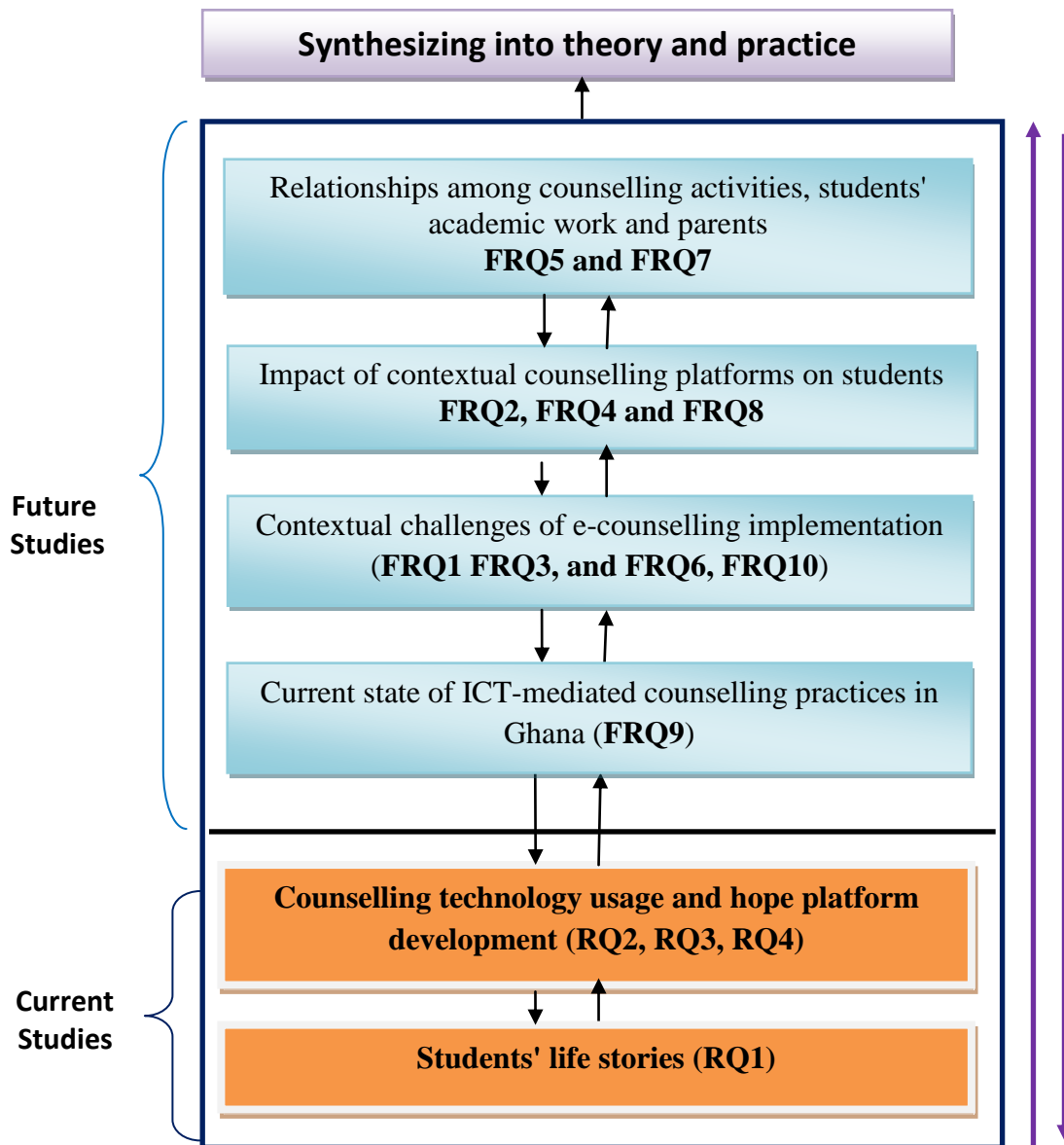


Figure 6.1 Schematic plan for PhD study based on further research questions

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APPENDIX

Appendix I: Informed consent form for the Headmaster

UNIVERSITY OF EASTERN FINLAND
SCHOOL OF COMPUTING
(Computer Science)



Osei Kyeretwie SHS
Box 3789, Kumasi.

Dear Sir,

INFORMED CONSENT FORM

I am conducting a study on life story and online counselling services for senior high schools in Ghana as part of my Master's Degree Thesis. I would be very grateful for your permission to collect data from selected students for the study. The outcome of the analysis of the data would be considered for e-counselling platform development. Students shall be contacted later to test the game platform. The questionnaire will take approximately 30 minutes. The names of selected students shall not be recorded on the questionnaire and their responses will be anonymous.

Please, If you have any questions pertaining to this study, contact Prof. Erkki Sutinen, on (+358) 50 525 2460 and Prof. Marjatta Vanhalakka-Ruoho on (+358) 50 3666673 at University of Eastern Finland.

Thank you for your assistance.

Headmasters signature
Date/..... / 2013

Emmanuel Awuni Kolog

SUPVISORS
Prof. Erkki Sutinen
Prof. Marjatta Vanhalakka-Ruoho

Appendix II: Informed consent form for students

UNIVERSITY OF EASTERN FINLAND, SCHOOL OF COMPUTING

(Computer Science)



INFORMED CONSENT FORM

I am conducting a study on life story and e-counselling services for senior high schools in Ghana as part of my Master's Degree Thesis. Your voluntary participation is requested so that I may learn more about your views on this. This questionnaire will take approximately 30 minutes. Your name will not be recorded on the questionnaire and your responses will be anonymous. Again, your participation is voluntary and you may choose to not answer all of the questions on the questionnaire even after signing the consent. If you are willing to participate, please sign this form. I may also contact you again for follow up questions.

If you have any questions pertaining to this study, please contact Prof. Erkki Sutinen, on (+358) 50 525 2460 and Prof. Marjatta Vanhalakka-Ruoho on (+358) 50 3666673 at University of Eastern Finland.

Thank you for your assistance.

Participant's signature

Date/..... / 2013

Emmanuel Awuni Kolog

SUPVISORS

Prof. Erkki Sutinen
Prof. Marjatta Vanhalakka-Ruoho

Appendix III: Sample questionnaire for students

**UNIVERSITY OF EASTERN FINLAND – SCHOOL OF
COMPUTING JOENSUU CAMPUS**

I am conducting a study on life story and online counselling services for Senior High Schools in Ghana, as part of my Master's Degree Thesis. Your name will not be recorded on the questionnaire and your responses will be anonymous and confidential.

Background

1. Age:
2. Gender: Female
 Male
3. School.....
4. How old are you?
 12-15 16-20 21-25 other
5. Residential status (school): Day Boarder
6. Who do you stay with?
7. Are your parents living together? YES NO

If NO, why?
.....
8. Where do you live with your family, guardian or alone?
 Rural urban other
9. Who finances your Education?
10. What is the occupation of your Guardian?
11. Are you satisfied with your educational finances? YES NO

14. Please tell me the reasons for your life challenges?

15. Can or could you solve these challenges and how?

16. Who did you share these life challenges with?

Family Friends No one Other

17. Did you also share these challenges on the social media platform (eg. Face book)

YES NO

If YES, share it with me, how it helped you?

Educational Counselling

18. Do you have any idea about counselling in your school? NO YES

If YES, since when.....

19. Have you ever been there for counselling? NO YES

If yes, how many times

.....

20. Did you go through any queue to see the counsellor? NO YES

21. Did you go there voluntarily? YES NO

If NO, what made you to go there?

.....

22. What kind of a problem did you see the counsellor for?

Health Career Academic Other

23. Couldn't you have dealt with the problem by yourself or by your peers?

YES NO

If NO, tell me why you needed the counsellor?.....

.....

.....

24. Did the counsellor help you to deal with your problem (s)? YES NO

If NO, what did you think was wrong.....

25. Which of the following do you require counselling services? Please, you can select more than one.

Health counselling Career counselling Academic counselling other

26. Could you tell me the reason(s) for your selection?

27. Have you ever be involved in any professional counselling services? YES NO
If YES, tell me about your experience.

28. What do think that you need counselling for?

E-Counselling

29. Did you for once see any Computer or use of electronic assisted tool in the School Counselling room? YES NO

30. Have you ever heard of the use of ICT in counselling? NO YES

If YES, what do you consider as electronic counselling?

31. Do you see any challenges associated with the current system of counselling in your school? YES NO

Why?

32. Do you think that, online system of counselling would solve these challenges?

YES NO

33. Would you encourage online system of counselling in your School? YES

NO

Why?

34. What kind of online counselling services would you recommend for you school?

35. Digitizing counselling models in a form of game can help in counselling of students and contribute to child's development. What is your opinion?

No idea disagree partially agree agree

36. Please write comment here (if any).

Thank you for your time.

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3. What is the interesting part of the game?

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.....
.....

4. What do you want to be changed in the hope game platform?

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.....

5. You general comment here.....

.....
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.....
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Thank you for your responses.

Emmanuel Awuni K.

