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Online, Blended or Flipped? Gatekeeper Training of Resident Assistants in a Macau University

by

YEUNG, Wai Kong

A dissertation submitted to the University of Bristol in accordance to the requirements for award of the degree of Doctor of Education in the Faculty of Social Sciences and Law

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Abstract

Gatekeeper training (GKT) equips university resident assistants (RAs) with the knowledge and ability to recognise and respond to students with mental health problems. Previous studies have focused on either face-to-face or the online mode of GKT, but what types of activities and how trainees take part in such training is not known. The present study addresses three research questions: 1) What are the impacts of training between the flipped, blended and online training modes?, 2) To what extent did the trainees of the three training modes engage in the training? and 3) What are the preferred training activities by the trainees?

The current research adopted a mix of quantitative and qualitative methods. Seventy RAs in a Macau university were divided into three groups, each taking part in a GKT using a flipped (online followed by face-to-face), blended (face-to-face followed by online) or online training mode. Quantitative data were collected from a learner survey, a pre- and a post-training skills test and online course activity logs, which were analysed using descriptive statistics, *t*-tests and ANOVA. Qualitative data were also collected through focus groups and individual interviews, and analysed using the content analysis method.

All three modes exhibited positive training impacts. The online participants showed greater improvement in skills but limited improvement in efficacy. Meanwhile, the flipped mode was effective in building confidence of participants through practice and reflection, and it demonstrated more mental health first-aid efforts. The blended mode participants showed the least improvement amongst the three groups as they spent less effort on the course materials. Certain active learning activities, such as online dramatised videos and role play exercises, were more positively accepted than others.

Overall, the results suggest that the flipped mode is the most effective for new RAs. The online mode is good for returning RAs. The blended mode is ineffective as a means to encourage trainees to use material after training. The current study provides suggestions for future directions in designing, operating, assessing and researching training activities for RAs.

Dedication

To my family, teachers and students.

Acknowledgements

I must express my utmost gratitude to my supervisor, Prof. Sally Barnes, for her clear guidance, immense patience and insightful comments. Without her motivation and support, I would not have brought this dissertation to completion.

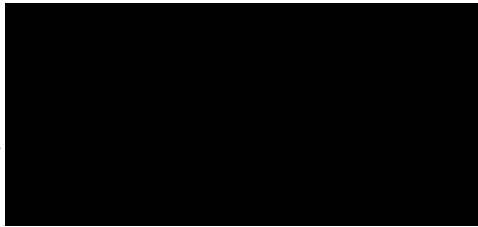
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I am indebted to my family for their understanding and patience, as I was often not able to dedicate as much time to them as I would have liked due to the demanding requirements of preparing and drafting this dissertation.

Author's Declaration

I declare that the work in this dissertation was carried out in accordance with the requirements of the University's *Regulations and Code of Practice for Research Degree Programmes* and that it has not been submitted for any other academic award. Except where indicated by specific reference in the text, the work is the candidate's own work. Work done in collaboration with, or with the assistance of, others, is indicated as such. Any views expressed in the dissertation are those of the author.

SIGNED: ..



DATE:.....1st October 2019.....

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Chapter 1 Introduction

1.1 Introduction

This chapter offers an overview of the present research. It describes the background, states the research problem, purpose and significance of the study and provides an outline of chapters.

1.2 Background of the Problem

This section describes the background and rationale of the present study, including the mental health situation in Macau, help-seeking behaviour and intervention, with particular attention given to training programmes generally offered to resident assistants (RAs) who serve on university campuses. The background information indicates that there is an urgent need to formulate a more effective approach to conduct RA training programmes that are especially targeted at improving their knowledge, skills, intentions and actions relevant to help-seeking behaviour and intervention.

1.2.1 Mental Health, Mental Disorders and Mental Health Problems

Mental health is ‘a state of well-being’ (World Health Organization [WHO], 2014, para. 1). An individual with good mental health has normal cognitive function, control of personal emotion and positive interaction with people around him or her (WHO, 2014). In contrast, mental disorder or mental illness affects an individual’s cognition, emotional state and behaviour, which limits the individual’s ability to perform his or her duties and

to interact with others smoothly (American Psychiatric Association [APA], 2000). Common examples of mental disorders are anxiety disorders and depression (The Mental Health Association of Hong Kong [MHAHK], 2011). Mental disorders can cause functional impairment and disability (Lipson, 2016). The longer the delay for a person to receive support and treatment, the more difficult it is for the person to recover (Marshall et al., 2005). Mental health problems or issues cover both mental illness and less severe symptoms of mental illness (MHAHK, 2011).

1.2.2 Student Mental Health and Well-being Across the World

Recent studies show that mental health problems among university students across the world is widespread (Auerbach, et al., 2018; Bantjes, Phil, Kagee, McGowan & Stell, 2016; Eisenberg, Hunt, Speer, 2013; Johnson, 2018). Among these, a study by WHO on 13,984 full-time first-year students in 19 universities across the six continents (Africa, Asia, Australia, Europe, North America and South America) reveals that over 30% of the respondents were screened positive for at least one type of common mental health illness (Auerbach, et al., 2018). The study also points out that the mental health resources on university campuses far below the demand (Auerbach, et al., 2018). Thus, universities around the globe need to re-structure their student mental health support services more widely.

1.2.3 Mental Health Situation in Macau

Located next to Hong Kong, Macau is also one of the Special Administrative Regions of China. The city's main economic pillar is the gaming industry which accounts for over 40% of its annual GDP (Statistics and Census Service of Macau SAR Government,

2017). The *casino town* has enjoyed rapid economic growth over the last two decades, resulting in some key changes in local social and living conditions (Macau Youth Research Association [MYRA], 2018; Valles, 2017). Unfortunately, Macau's mental health system, including public awareness and education, has been unable to keep up with its tremendous economic development. A recent study showed that about 8% of the city's population (over 18 years old) was suffering from depression (Hall et al., 2017). Findings also suggest that university students in Macau might also experience mental health problems (Chu, 2010; Guo, 2017). Another study of all tertiary students in Macau revealed that 50.4% and 49.8% of them were suffering from depression and anxiety, respectively (MYRA, 2006). Such a share of the population is even larger than that of Hong Kong and Mainland China (MYRA, 2006; Valles 2017). Thus, it is urged that mental health care should be a top priority in Macau (Hall et al., 2017).

1.2.4 Help-Seeking Behaviour and Intervention

Many university students are unable to receive intervention early enough to help them alleviate their mental health problems (Lipson, 2016). For example, a study in the United States revealed that only 34% of those who suffered from mood disorder reported that they received treatment in the previous twelve months (Blanco et al., 2008). People with mental health illness tend not to seek help actively most probably because they cannot identify their problems themselves (Buscemi et al., 2010). Even if they can identify their own problems, those from Asia, in general, still consider mental health illness a taboo (Valles, 2017). This makes it difficult for the sufferers to reach out to their family members and peers. Due to the invisible nature of such illnesses, people with mental health problems are difficult to be identified by the community (Valles, 2017). In

consideration of this issue, universities need to provide help-seeking interventions that are effective in identifying and handling students' mental health problems.

1.2.5 Training Programmes for Resident Assistants (RAs)

On university campuses, RAs, who are postgraduate or senior undergraduate students, are employed to provide pastoral care to students living in university accommodations. As RAs live in the same college community with their resident students, they serve as the immediate contact points for residents if a problem arises. Studies show that people are more willing to attend psychological service if it is suggested by a close person (Cusack, Deane, Wilson, & Ciarrochi, 2004; Dew, Bromet, Schulberg, Parkinson, & Curtis, 1991).

The training for RAs is challenging. Most RAs quit their jobs after one or two academic years (Fok & Chung, 2013). The high turnover rate makes the training for and supervision of RAs an ongoing task (Thombs, Gonzalez, Osborn, Rossheim, & Suzuki, 2015). In Hong Kong, Fok and Chung (2013) found that many institutes have no official pre-training programme for new RAs before their jobs begin; therefore, they start their positions without any training at all. They have to learn the relevant knowledge and skills by doing (Fok & Chung, 2013). Moreover, no formal data was found about RA training in Macau.

Recent RA training programmes, reported in the literature, focus on themes such as institutional policies and procedures, as well as skills development, for example, decision-making with respect to their roles and the significance of community building (Garey & Givhan, 2010). However, the training programmes devote very little time to

gatekeeper training (GKT) (Taub et al., 2013). GKT programmes aim to equip trainees with knowledge about mental health issues and the ability to identify and respond to these problems, which, in turn, motivates people with such problems to seek help (Lipson, 2016). Those programmes that involve GKT are primarily locally devised and conducted by departments of residence life or housing (Taub et al., 2013). Only a limited number of such GKT programmes are evidence-informed or tested (Cimini et al., 2014; House, Lynch, & Bane, 2013; Lipson, Speer, Brunwasser, Hahn, & Eisenberg, 2014; Pasco, Wallack, Sartin, & Dayton, 2012; Taub et al., 2013; Thombs et al., 2015; Wong, Lau, Kwok, Wong, & Tori, 2017). Most of these are nonetheless conducted within the Western context, and they have demonstrated conflicting impacts of training. For instance, a GKT done in the United States was reported as having a promising impact on trainees' knowledge, attitude and self-efficacy about mental health intervention (Lipson et al., 2014), whilst the effect of the same training programme was found to be weaker when it was conducted in Hong Kong (Wong et al., 2017).

1.2.5 Need of a More Effective Approach to Conduct GKT Programmes

With respect to modes of delivery, GKTs can be conducted using different approaches, for instance, face-to-face or online, on or off-campus, didactic or experiential. Each approach has its own strengths and weaknesses. In the preceding empirical research, on one hand, there has been no blended-mode GKT, comprising didactic lecturing, experiential exercise, and online interactive learning activities. On the other hand, to this point, no single delivery mode has been able to simultaneously provide trainees with the attitudinal benefits, skills development and motivation to make more mental health first-aid efforts (Lipson, 2016; Thombs et al., 2015). High-level learning activities are required

for development and application of such skills, according to the concepts of Bloom's taxonomy (Anderson & Krathwohl, 2001; Bloom, Engelhart, Furst, Hill, & Krathwohl, 1956). To design activities of higher levels, active learning theory is able to offer strong theoretical guidance (Bonwell & Eison, 1991; Brame, 2016). Active learning is 'an umbrella term for pedagogies focusing on student activity and student engagement in the learning process' (Roehl, Shweta, & Gayla, 2013, p. 44). It advocates that students learn by bridging their existing knowledge and experience with new ideas and experience to create new or advanced understanding (Brame, 2016).

In practice, with carefully planned instructions, interactions, group work, learner-focused questioning and other effective strategies, active learning can be applied in different teaching modes, whether face-to-face, online, or a mixture of both, i.e. blended. The latter, blended learning, is aimed at capturing the benefits and reducing the shortcomings of the former two modes. One way to do so is for the instructor to ask students to view a video lecture before coming to class, and during class, the students then carry out problem-solving tasks, conceptualise ideas and participate in collaborative learning with facilitation by the instructor (Roehl et al., 2013). In addition to this, a more recent pedagogical approach called *the flipped classroom* has emerged to further enhance student learning experience and engagement (Hamdan, McKnight, McKnight, & Arfstrom, 2013). A critical review of the recent studies in GKTs with regard to research focus and designs, training programmes, data collection methods and training impacts is presented in Chapter 2. Chapter 3 discusses the theory of active learning and its application in various modes of delivery, the recent studies of the flipped classroom and the principles and application of an engaging flipped classroom.

1.3 Statement of the Problem

Taking into consideration the background described above, the current study identifies the gap in the current knowledge: there is a need to search for an effective design of an appropriate mode with which to deliver a GKT programme that can be tested for its training impact and student engagement, so that it will suit the local needs in Macau. To obtain informed evidence, a study on a GKT that adopts different modes of delivery, including online, face-to-face and blended (flipped), is needed to gauge the attitudinal benefits of the training and the actual referral behaviours, and to potentially bridge the two aspects in the local Macau context. The underlying factors for all these also need to be addressed.

1.4 Purpose and Significance of the Study

The present study is aimed at investigating the best way to deliver a GKT programme for RAs in student residences (specifically called residential colleges in the local context) in a university in Macau.

The current study contributes to the body of knowledge by comparing the training impacts of a GKT which is offered in different delivery approaches: flipped, blended and online. This study also provides an explanation on how learners engage in the course in these delivery modes. Moreover, it offers insights for management decision-makers and educators of higher education institutions, especially those of university campuses, on how to improve their programmes for training RAs and other support personnel. GKT trainers can refer to the results and recommendations of the current

research to consider the feasibility and effectiveness of the flipped classroom and different learning activities to guide the design and implementation of GKT programmes.

1.5 Outline of Chapters

This dissertation, including this introductory chapter, is comprised of eight chapters. Chapter 2 reviews literature on GKT as an essential type of help-seeking intervention for university campuses. Chapter 3 critically reviews different modes of delivery, the active learning theory, and the flipped learning pedagogical frameworks. It also offers a feasible approach to address the deficiency and, thus, the gaps of the preceding GKT empirical studies. As an adjunct to the literature reviews, this chapter defines the research gap, objectives of the study, and research questions, supported by the conceptual framework. Chapter 4 describes and explains the methodology chosen for addressing the research questions of the study, including the philosophical assumptions, method, research design, schedule, training programme, research instruments, data collection procedure, data analysis and ethical considerations.

Chapter 5 and 6 provide the research findings and results. Chapter 5 presents demographic profiles of participants, results of a self-reported survey on learners' perceived engagement, training impacts and feedback on training design, as well as the inferential results of variations amongst different training modes. It also presents an analysis of the course system data on participants' engagement in online materials and the results of the SIRI-2, another instrument to measure learners' actual skills improvement. Chapter 6 presents and elaborates on the qualitative findings based on a

number of main themes that emerged from the content analysis of the individual and focus group interviews, including their implications in respect to the research questions.

Chapter 7 develops an in-depth discussion on the findings explicated in the preceding two chapters, according to the three research questions. Chapter 8 concludes the dissertation by discussing its practical application and implications, the strengths and weaknesses of the study, power issues, future research directions and, last but not least, insights gained by the author through his research journey.

1.6 Chapter Summary

This chapter stated the background of the problem that established the rationale of the current study. In short, mental health care is a top priority in Macau. An effective approach to successfully train RAs as gatekeepers in the higher education context is needed. For careful design and implementation of such training, various modes of delivery, including online, face-to-face and blended (flipped), have to be studied for their effectiveness, especially in light of an absence of a blended-mode GKT in the empirical literature. The current study therefore contributes to the body of knowledge by comparing the training impacts of the GKT programme when it is delivered in those three different modes. It also offers an explanation on their engagement patterns.

In view of the extensive topics and concepts of GKT and various relevant learning modes, such as blended learning and the flipped classroom, a critical review of relevant literature of these issues was needed to provide a solid theoretical foundation for the current study. Chapters 2 and 3 report and summarise, respectively, the concerned

literature on GKT application and research and on active learning modes, the latter of which particularly covers the principles and application of the flipped classroom.

Chapter 2 Gatekeeper Training for Resident Assistants

2.1 Introduction

The primary issue examined for this research is an effective approach to successfully train RAs as gatekeepers in the university context. This chapter and Chapter 3 review the literature on GKT and different modes of delivery, respectively. This chapter firstly introduces the process and models of help-seeking. Second, help-seeking interventions in the university context are presented. Third, recent studies of GKT in the university context are reviewed with in-depth discussion on the specific GKT adopted, mode of delivery and training impact, and the studies' strengths and weaknesses are described.

2.2 Process and Models of Help-seeking

2.2.1 Process of Help-seeking

Although there is no generally agreed upon definition of help-seeking, it is commonly referred to as an active behaviour to seek support from others (Rickwood & Thomas, 2012). Studies on mental health point out that help-seeking is a sequential process which involves the following stages: problem occurrence, problem recognition, perception of the need to get help, intention to seek help and action to seek help (Cornally & McCarthy, 2011; Saunders & Bowersox, 2007).

2.2.2 Models of Help-seeking

In the university context, there are three commonly used models to inform studies on 'mental health help-seeking': the Health Belief Model (HBM), the Socio-Behavioural Model (SBM) of Health Service Utilization and the Theory of Planned Behaviour (TPB) (Lipson, 2016, p. 10). HBM is commonly adopted to predict use of mental health services (Fishbein, Triandis, Kanfer, Becker, & Middlestadt, 2000). Rosenstock (1966) asserted that the model has the following four factors that determine help-seeking behaviour:

Susceptibility (the degree to which an individual feels vulnerable or susceptible to a particular health condition), severity (the extent to which he feels that contracting that condition would have serious consequences), effectiveness (the person's belief about the availability and effectiveness of various courses of action), and cost (perceived benefits of taking action and barriers to action). (pp. 99–100)

With the HBM, it is assumed that a patient with mental health illness is able to judge the treatment benefits and costs (Rosenstock, 1966). However, Lipson (2016) argued that this is not always the case. Thus, the SBM proposed by Andersen (1968), which additionally takes personal factors into account, may predict help-seeking behaviours better.

The SBM consists of the following factors that determine use of treatment: 'predisposing factors' (e.g. demographic characteristics, social factors and beliefs of health), 'enabling factors' (e.g. wealth and insurance coverage) and 'need factors' (perceived need for health service and severity of symptom) (Andersen & Davidson, 2001, p. 7). The SBM emphasises that the enabling factors are critical for help-seeking behaviour. It suggests that the more there is access to the enabling factors, for example, the university

counselling service, the more effective will be the use of the treatment. Lipson (2016) argued that the relevancy of the SBM in the university context is largely reduced because, nowadays, free counselling service and medical insurance are more accessible to university students than in the past.

The TPB, according to Ajzen (1985), is based on the assertion that a person's intention to display a behaviour is attributed to the following three determinants:

Attitude (people's positive or negative evaluation of performing the behaviour), subjective norm (individual's perception of the social pressures put on him to perform or not perform the behaviour in question), and perceived control (one's perceived difficulty of performing the action). (p. 12)

The TPB suggests that intention strongly affects actual behaviour (Ajzen, 1991). However, recent studies failed to show a strong relationship amongst the variables of the TPB (Lipson et al., 2014; Taub et al., 2013; Thombs et al., 2015). For example, Lipson et al. (2014) reported that the TPB does not predict help-seeking behaviour of students in mental health crisis. Nevertheless, it is still the most popular theoretical framework adapted by recent studies on mental health help-seeking in the university context (Cimini et al., 2014; House et al., 2013; Lipson et al., 2014; Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015; Wong et al., 2017). These studies focused on the training impact on trainees' mental health crisis intervention knowledge, attitude towards the intervention, intention to make referrals and the actual referral behaviour. The aforesaid studies are reviewed in detail in Section 2.4.

2.3 Help-seeking Interventions in the University Context

2.3.1 Help-seeking Interventions on the University Campus

Lipson (2016) identified three types of help-seeking interventions commonly conducted on campuses – ‘stigma reduction and awareness campaigns’ (p. 17), ‘screening linkage programmes’ (p. 22), and ‘gatekeeper trainings’ (p. 25). Stigma reduction and awareness campaigns include mental health programmes and seminars, and advertisement of campus counselling facilities, services, referral procedure and contacts. Screening linkage programmes consist of initial mental health screening at the beginning and follow-up tailor-made counselling services or information. GKTs are educational programmes that equip trainees with knowledge about mental health issues and the ability to identify and respond to the problems, which increase help-seeking behaviours of people with such problems (Lipson, 2016). Since the current study is related to the training of RAs, the focus of the review is on GKTs.

2.3.2 Gatekeeper Training

The term gatekeeper within the context of mental health was originated by Snyder (1971) who defined a gatekeeper as anyone to whom people in trouble are looking for assistance. Examples of potential gatekeepers are sport coaches, bartenders, and hairstylists because their job nature provides opportunities for them to observe, detect and help people with mental health issues (Cross, Matthieu, Lezine, & Knox, 2010).

In the university context, RAs, teachers, staff and security guards are the gatekeepers, and they are the main targets for GKT (Lipson, 2016). It is estimated that at

least a few hundred universities in the United States have used GKT (Eisenberg, Speer, & Hunt, 2012). In Asia, although there is no formal data, GKT is widely provided in Australia, Hong Kong and Macau (Wong et al., 2017). How these GKT is conducted in different modes in the university context is further reviewed in the next section.

2.4 Comparative Studies of GKT in the University Context

This section provides an overview and comparison of the recent studies of GKT in the university context. The inclusion criteria are two: the studies must be published in peer-reviewed journals before January 2017, and their participants must include RAs or university students. A total of seven studies are identified which represent recent GKT studies (Cimini et al., 2014; House et al., 2013; Lipson et al., 2014; Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015; Wong et al., 2017). Appendix 1 provides an overview of the study focus, the specific GKT adopted and their instrumentations, and Appendix 2 compares the main findings and scopes of the studies. The seven studies are categorised in three types according to their delivery modes – didactic, experiential and online – which are discussed as below.

2.4.1 Didactic GKT

In this work, didactic GKT refers to a GKT that is delivered in traditional lecture style, where the interaction between the trainer and trainees is less emphasised. Two studies, Lipson et al. (2014) and Wong et al. (2017), adopted the delivery mode of this type – Mental Health First-Aid (MHFA). MHFA is categorised as a didactic GKT because

its main course activity relies on face-to-face lectures (www.mhfa.org.hk). This 12-hour course comprises five modules: 'depression, anxiety, psychosis, substance misuse, and eating disorder' (Lipson, 2014, p. 613). This review only covers the work of Lipson et al. (2014) because of the similarity of the study objectives of Lipson et al. (2014) and Wong et al. (2017), but the work of Lipson has a wider coverage, which includes the impact on trainees' behaviour.

The study of Lipson et al. (2014) tested whether the training impact on knowledge, attitude and self-efficacy, if any, can be transferred to the student population (e.g. change in the number of students to seek help from the university's counselling centre). It was conducted with 533 RAs from 32 universities in the United States from 2009 to 2011. The class size was under 30 for each campus, and the same content, examples and demonstrations were used to ensure the delivery consistency. The treatment group received a 12-hour MHFA training plus pre-existing training, while the control group received the pre-existing training only. Pre- and post-intervention measurements were conducted two to three months before and after the intervention, respectively. Three Likert scale instruments – the Discrimination-Devaluation Scale and two self-developed scales – were used to measure trainees' attitude, knowledge and self-efficacy, respectively (Lipson et al., 2014, p. 615). Furthermore, the following self-reported data on behavioural actions were collected: first, from RAs, the 'number of residents with whom RAs discuss mental health issues'; second, from residents, 'whether they have received any treatment in the past two months', with a response of either 'any medication and/or therapy' or 'no medication or therapy' (Lipson et al., 2014, p.616).

The treatment group (who received MHFA plus pre-existing training) had a significant positive impact on RAs' self-perceived knowledge and self-efficacy, which

was sustained two to three months after the intervention. However, the training had no impact on RAs' number of contacts with students in crisis, nor the utilisation of mental health resources by the students. In my opinion, the work of Lipson et al. (2014) has the following three defects. First, since the treatment group and control group did not receive the same amount of training, the positive training impact of the treatment group might have been caused by the additional training. Second, the study relied only on self-reported surveys and the number of actions by participants, which might likely have been overstated due to the impact of social desirability (Creswell, 2014). Alternatively, an objective skills test should be adopted to measure trainees' skills change (Taub et al., 2013). Third, the 12-hour MHFA may have been too long for para-professionals such as RAs. As Lipson et al. (2014) reported, the 12-hour training was completed by 50% of the participants only. The high dropout rate provides evidence for this tendency. Instead, recent studies, including those of Cimini et al. (2014), House et al. (2013), Pasco et al. (2012) and Taub et al. (2013), showed that GKTs with a shorter duration, which last for one and a half hours to three hours, can also be effective. Related studies which adopted GKTs of this type are reviewed in the next section.

2.4.2 Experiential GKTs

In the current study, experiential GKT refers to GKT which is delivered face-to-face and emphasises interaction between the trainer and trainees. Studies which adopted this type of GKT include 'Campus Connect' (House et al., 2013; Pasco et al., 2012), 'ALIVE @ Purdue' (Taub et al., 2013) and an 'audience-specific small-group interactive GKT' (Cimini et al., 2014). Experiential GKT has a shorter duration – ranging from one and a

half hours to three hours, and is normally delivered in small classes, with an experiential learning exercise, e.g. role play (Pasco et al., 2012). Due to the small class size, experiential GKT enables tailor-made scenarios of role plays for training groups from different departments and units (Cimini et al., 2014). The works of Pasco et al. (2012) and Taub et al. (2013) are covered in the following review because the two studies were more credible as they adopted an objective skills test to measure trainees' skills change, whilst those of House et al. (2013) and Cimini et al. (2014) were excluded from discussion because the two studies relied solely on a self-reported survey to measure the skills change.

Pasco et al. (2012)

Pasco et al. (2012) compared the training impact of GKT on knowledge, attitude, and skills by two delivery modes: didactic vs experiential. The study was attended by 65 RAs, of which 75% were new RAs and were second-year undergraduate students of Syracuse University. The study adopted 'Campus Connect', a GKT consisting of a 1.5-hour didactic lecture and a 1.5-hour experiential workshop. The participants were invited to do two surveys before, during, and after the training. The first survey, Suicide Intervention Training Assessment (SITA), was a self-developed 14-item ten-point Likert scale to measure trainees' suicide- and crisis-related knowledge and self-efficacy' (Pasco et al., 2012, p .136). The second survey, Suicide Intervention Response Inventory-2 (SIRI-2), which was adopted from Neimeyer and Bonnelle (1997) was a seven-point Likert scale questionnaire of 25 items aimed to evaluate the skills of trainees to recognise appropriate responses to people who intend to commit suicide (Pasco et al., 2012, p. 136).

The participants who attended the 1.5-hour didactic lecture (before the experiential workshop) showed improvement in knowledge-related items of SITA, e.g.

'understanding suicide-related terms' (Pasco et al., 2012, p.138). After the 1.5-hour experiential exercise, there was an additional positive impact indicated by the self-efficacy items of the SITA, e.g. showing that the trainees were 'able to connect with students in crisis' (Pasco, et al., 2012, p.138), and the trainees achieved better scores on the SIRI-2. Also, this study of Pasco et al. supported the finding of Neimeyer & Bonnelle (1997) that females had better crisis response skills than males. However, both studies found that there was no significant relationship between gender and training effect.

Pasco et al. (2012) made a case that experiential GKT has more impact on trainees' crisis intervention skills than the didactic GKT. The SIRI-2 survey is useful due to its effectiveness in evaluating both adolescent and adult para-professional counsellors for their peer at suicide risk (Neimeyer & Bonnelle, 1997; Pasco et al., 2012). The studies of Lipson et al. (2014) and Pasco et al. (2012) did not consider individual differences amongst trainees, e.g. different levels of experience between new and returning RAs. However, Murray, Kagan, and Snider (2001) argued that new RAs' self-confidence improves after a theoretical-based training, whereas returning RAs' self-confidence declines after the training. Thus, different contents should be provided to RAs with different experience levels. Taub et al. (2013) attempted to address this issue, which is reviewed in the next section.

Taub et al. (2013)

Taub et al. (2013) compared the impact of experiential GKT on new and returning RAs. The study was conducted with 300 RAs in August 2008. Two separate sessions for new and returning RAs were arranged, respectively. The GKT adopted is called 'ALIVE @ Purdue', and it consisted of sessions of short duration (two hours) and delivered

contents similar to those of Campus Connect (Pasco et al., 2012). The invitation to participants included an online evaluation packet which contained two surveys sent by email one week before the training: Knowledge of Suicide Scale (a five-item true-or-false scale to measure participants' knowledge developed by the authors) and SIRI-2. Immediately after the training, a paper-based package of the same evaluation was sent to the participants (Taub et al., 2013).

A repeated-measures analysis of variance (ANOVA) showed that there were significant positive treatment effects on the new RAs, based on their Knowledge of Suicide Scale and SIRI-2 skills test scores (Taub et al., 2013). The standard deviation scores also dropped after the training for new RAs, which meant that the training had reduced the gap of difference on crisis communication knowledge and skills. However, the training had no significant effects on returning RAs, and they were observed to be less engaged in the training. Regression analyses showed that the improved RAs' knowledge did not predict SIRI-2 scores (skills) of new RAs (Taub et al., 2013).

The work of Taub et al. (2013) replicated the finding of Pasco et al. (2012) that experiential GKT has a positive impact of RAs' knowledge and skills. However, the training of Taub et al. (2013) failed to make an impact on the returning RAs, although tailor-made content was provided. The returning RAs were less engaged in the training content than new RAs. Therefore, Cimini et al. (2014) suggested further investigation into the role of booster GKT for returning participants, including the comparison between face-to-face and online curricula, with regard to retention of knowledge, skills, and their implementation to practice. However, neither Taub et al. (2013) nor Pasco et al. (2012) measured trainees' behavioural change, which is, however, an essential goal of GKT.

2.4.3 Online GKT

In the literature, there is only one GKT that was fully delivered online by Thombs et al. (2015). The training, referred to as Peer Hero, was tailor-made for universities in the United States which were aiming to strengthen RAs' ability to provide intervention to undergraduate students. Peer Hero provided video dramatisations of residence life events, and it engaged participants through interactive features that required them to make decisions about how to intervene in students' mental health first-aid cases. The training consisted of four video sessions of 20–25 minutes each, which were delivered by means of an online platform.

Thombs et al. aimed to connect the link between trainees' attitude and self-efficacy and their action to make a referral. The study adopted the online GKT and was participated in by 652 RAs on eight campuses in the United States. The participants were randomly allocated into two groups: one group which took the online training plus a traditional pre-service training (referred to as training-as-usual) and another group which attended the training-as-usual only. There were four measurement points spaced out from August 2012 to May 2013, and trainings were given right after the first, second and third measurements. The study adapted a survey from Glanz, Rimer and Viswanath (2008) which covered 16 Likert-scale items on 'perceived referral barriers, self-efficacy, anxiety, and norm' (Thombs et al., 2015, p. 512). In addition, the number of referrals each participant made to his or her supervisor or the university counsellor was collected.

Thombs et al. reported that the online training programme group increased the number of referrals for residents with problems related to alcohol and drug abuse, academics, and mental health in the first and the second measurements. However, the

training impact could not be sustained in the third and fourth measurements. Although the RAs' action to make referrals had improved, the online GKT did not have a significant effect on RAs' attitude and self-efficacy related to the first-aid efforts. Besides, due to an absence of face-to-face contact, a high dropout rate from the training was observed. At the beginning of the programme, 273 RAs completed the first training session. The number dropped to 214 and 150 after the second and the third sessions, respectively, representing a dropout rate of 21.6% and 29.9%.

This study of Thombs et al. determined that online GKT has a positive impact on trainees' behaviour, which didactic and experiential GKTs do not. However, their work had three shortcomings. First, it compared two groups of RAs who had received different amounts of training, and the claimed positive training effect (more referrals being made) might have been brought about by the additional training that the intervention group had received. Therefore, an experiment comparing two groups having received an equal amount of training would be more appropriate. Second, the diminishing impact of the training reported in the work shows the limitation of single session GKT – its short-lasting training impact – which supports the argument of Lipson (2016). Thus, additional face-to-face training may be helpful to reinforce the training impact. Third, the dropout rate was believed to lower the impact of the intervention programme. Therefore, finding a means to better engage the trainees throughout the training is worth our attention.

2.4.4 Section Summary

The didactic GKT is useful for building up trainees' knowledge, attitude and self-efficacy (Lipson et al., 2014), while the experiential GKTs are better for developing

participants' skills (Pasco et al., 2012; Taub et al., 2013). The online GKT had a positive impact on the number of first-aid efforts of RAs; however, it did not have an impact on trainees' attitude and self-efficacy (Thombs et al., 2015). Both didactic and online GKTs had the limitation of a low completion rate (Lipson et al., 2014; Thombs et al., 2015). Regardless of the delivery mode, no single GKT's impact was long-lasting; thus, continuous supplementary trainings are required to uphold the training impact (Cimini et al., 2014; Lipson et al., 2014). Based on the results of these recent studies, it is evident that a training programme that is able to transfer learning to practice and to connect the impacts of knowledge, attitude and behaviour is needed. A GKT that combines both face-to-face and online modes seems to be a solid option. Also, creating GKT that can respond to the needs of RAs with different levels of experience and maintain the participants' engagement throughout the training is well worth our consideration.

2.5 Chapter Summary

This chapter reviewed the recent works on GKT. Based on the TPB, GKT focuses on equipping trainees with knowledge about mental health problems and the ability to identify and respond to these problems, which, in turn, increases help-seeking behaviours of people with such problems. As a result, GKT is believed to be most relevant to the training of RAs in the university context.

On the whole, seven studies in the existing literature on GKTs were identified. Four representative studies were selected and critically reviewed concerning the aspects of their research focuses, participants, design, training programme, data collection method and training impacts.

All in all, these studies focused on face-to-face GKTs, except for one that examined online GKT. Each study had its own advantages and limitations. The review showed that didactic GKT is good for nurturing trainees' knowledge, attitude and self-efficacy, but the impact cannot be transferred to trainees' behaviour. It also revealed that experiential GKT, with a shorter duration, can better develop participants' skills. However, the related studies did not measure trainees' behaviour. The review further determined that online GKT has a positive impact on the number of first-aid efforts (a change in behaviour) of RAs, but the impact on trainees' attitude and self-efficacy is absent. Thus, a study that is able to connect learning to practice is needed. In addition, both the didactic and online GKTs had the problem of low completion rates, but the underlying reason has not been studied. Therefore, a study on how participants engage in the training and how they use the training materials will be helpful to provide insights into this. In addition, none of the existing trainings, as shown in the current literature, had an impact on returning RAs. Hence, a study that respond to the needs of RAs with different levels of experience will be helpful for current practice.

In the next chapter, the theory of active learning and different modes of delivery are reviewed, as they provide a feasible approach to address the deficiencies and, thus, the gaps of the preceding GKT empirical studies.

Chapter 3 Active Learning and Different Modes of Delivery

3.1 Introduction

In the previous chapter, the works on GKT were reviewed. This review revealed that, currently, there is an absence of blended-mode GKT which would consist of didactic lecture, experiential exercise, online interactive video and short exercises. This type of GKT could create a connection between attitudinal benefits and actual behaviours. This chapter reviews the theory underlying active learning through blended-mode learning, and how it is applied in different delivery approaches. Research studies using flipped learning, as a more appropriate conception than blended learning, are reviewed, with a discussion on the conceptual framework for flipped learning and related studies. Finally, the research gap, research questions and conceptual framework of the present work are presented.

3.2 Active Learning

Educators have acknowledged the ‘complexities of teaching and learning for understanding as opposed to just knowledge retention’ (Ritchhart, Church, & Morrison, 2011, p. 7). Bloom et al. (1956) published a framework, commonly known as Bloom’s taxonomy, to categorise learning goals into six levels, from low to high: ‘knowledge, comprehension, application, analysis, synthesis, and evaluation’ (p. 18). Bloom’s

taxonomy was revised with the use of verbs to label the six levels of learning goals: 'remember, understand, apply, analyse, evaluate, and create (Anderson & Krathwohl, 2001, p. 215). Chickering and Gamson (1987) advocated that, more than just listening, students must read, debate, write and/or be involved in problem-solving. This means that students must apply higher-order thinking to complete learning activities. Educators have come to realise the need to shift from rote memorisation, or surface learning, to deep learning, which implies that learners develop understanding through 'active and constructive processes' (Ritchhart et al., 2011, p. 7). This points to the rise of a learner-centred paradigm. One such approach is active learning, 'an umbrella term for pedagogies focusing on student-centred activity and student engagement in the learning process' (Roehl et al., 2013, p. 44).

Active learning is derived from constructivism, and it is associated with enquiry- or problem-based learning and student-centred learning (Pardjono, 2016; University of Cambridge Local Examinations Syndicate [UCLES], 2017). All constructivist theories, including the seminal works by Dewey (1938a), Piaget (1950), Bruner (1968), Vygotsky (1978) and Kolb (1984), amongst others, have multiple roots and share general goals for learners to develop the ability to take part in independent thought (Garrison, 2012; Johansson & Gardenfors, 2005). They contend that people learn by interacting with their environments, rather than receiving knowledge passively (Scott, 2011). The active learners interpret and impose meaning through connecting new information with existing knowledge (Anthony, 1996). On one hand, 'active' learning activities are applied to offer students a higher level of autonomy and control of the direction. On the other hand, and more importantly, active intellectual enquiry is emphasised so that students

make a mental effort to construct knowledge (Anthony, 1996). In other words, a constructivist approach to learning means that there is much more to active learning than providing practical or group exercises, encouraging class participation, or having a collaborative classroom.

Active learning, from the constructivist perspective, is inductive as knowledge is created when experience is transferred to learning, rather than the other way around (Cooperstein & Kocevar-Weidinger, 2004). Teachers using active learning strategies design and execute 'instructional activities involving students in doing things and thinking about what they are doing' (Bonwell & Eison, 1991, p. 1). Thus, 'students' thinking about their own learning' forms an essential element in such teaching methods, 'providing the link between activity and learning' (Brame, 2016, para. 5). It also often involves peer interaction and metacognitive reflection (Stillwell, 2018). Rather than directly transmitting knowledge, teachers therefore play a role in facilitating and activating students' learning by providing them with appropriate learning environments, opportunities, interactions, tasks and guidelines (UCLES, 2017).

3.3 Active Learning through Different Delivery Modes

Regardless of the teaching modes, whether face-to-face, online or blended, active learning happens with carefully planned instructions, interactions, group work, learner-focused questioning and other effective strategies.

3.3.1 Active Learning in Face-to-Face Classroom

Zayapragassarazan and Kumar (2012) have identified four types of instructional strategies for an active learning classroom: 'individual activities, paired activities, informal small groups, and cooperative student projects' (p. 3). Typical activities that apply active learning range from short, easy add-ons for lectures, such as pause for questioning and clarification, demonstrations, think-pair-share, class games and short written exercises, to highly-structured activities and pedagogies that can replace some lecture, such as conceptual mapping, collaborative learning group, small group discussion, role playing, simulation, debate, learning by teaching and case-based learning (Brame, 2016; Zayapragassarazan & Kumar, 2012).

A further example is that any course of study can apply readings and resources that are available from scholarly and professional works in the subject field (Lemke, 2017). By adopting an active learning approach, students can be asked to conduct a case study of a real-world issue, based on which they will submit an analysis report, a reflection or a video presentation, which can also be shared in a discussion forum. Offering a flexible choice of different assessment formats helps students practise new skills and self-direct their learning. Activities that apply current affairs prompt students to think about what is going on in the field right now, and they bridge abstract theories with practical application (Lemke, 2017).

In addition, by combining written assignments, such as research papers, into 'multiple deliverables', teachers can incorporate peer-peer and teacher-student interaction into the learning process of students (Lemke, 2017). For instance, feedback by teachers and peers can be given at different stages of the writing so that students have

the opportunity to engage with the course material and their peers on a deeper level throughout their learning process (Lemke, 2017).

Different from traditional classroom methods, an active learning approach is an interactive and student-centred approach of teaching (Mulryan-Kyne, 2010). Since students have prepared the low-level content, for example, recall of concepts and knowledge before class, they are equipped to take part in the higher-level learning in class (Du, 2011; Frick, Birt, & Waters, 2017). Prior research has shown that the active learning approach has a positive impact on learners' participation in class, effort put into a course (Frick et al., 2017) and deep learning (Dowling, Godfrey, & Gyles, 2010).

Rather than rote memorisation of facts, students learn to understand, and thus will be better able to express the content ideas in examinations and other assessments, as well as within contexts outside classroom (UCLES, 2017). Such adaptive understanding allows students to apply knowledge and skills to diverse contexts and problems in the future. This kind of problem-solving skill is what employers and institutions are seeking nowadays. In addition, students can have greater engagement and control over their learning, and thus obtain skills for life-long learning (UCLES, 2017).

As mentioned in Chapter 2, GKT with active learning activities, such as role plays, yielded a positive impact on trainees' crisis communication skills (House et al., 2013; Pasco et al., 2012), while GKT adopting mainly a didactic approach did not have such an impact (Lipson et al., 2014; Wong et al., 2017).

Despite the overall advantages of active learning, a range of challenges are involved when using this face-to-face approach in the classroom. These challenges can be primarily categorised as student-related barriers, teacher-related challenges and

pedagogical and institutional issues (Lo & Hew, 2017; Michael, 2007; Petersen & Gorman, 2014). First, with respect to student-related barriers, some students may lack the knowledge, experience or willingness to engage in active learning, and they may have expectations about learning which are different from those of their teachers (Michael, 2007). An even more complex issue is that some students are reluctant to engage in approaches that require them to take more responsibility for their learning (Petersen & Gorman, 2014).

Second, teacher-related challenges range from teachers' personal attributes and experience to their educational value. The lack of knowledge and experience of teachers in active learning may limit the value of this approach perceived by teachers, and at the same time hinder their use of active learning in the classroom (Michael, 2007). Changes in teaching roles impose great challenges to teachers, as they are no longer the focal point and may therefore feel uncomfortable with the loss of control of the contents and classroom (Petersen & Gorman, 2014).

Third, pedagogically, some teachers perceive that the preparation of active learning materials is time-consuming, as related materials might not be available or suitable for a particular class, and thus they have to spend considerable start-up effort (Lo & Hew, 2017). Other pedagogical issues include traditional classroom settings and class sizes unsuitable for active learning activities and too much class time perceived as being taken out for such activities (Michael, 2007). In addition, the extent of institutional investment in teaching space and equipment, such as refurbishing traditional lecture halls to accommodate an active learning classroom, as well as purchasing and installing smart electronic devices, might also affect the application and effectiveness of active learning (Lo & Hew, 2017).

3.3.2 Active Learning Online

In online learning, Lemke (2017) suggested, active learning pedagogies can be applied to make online courses more engaging and genuine. The author illustrated that, rather than a passive approach of giving long one-dimensional lectures, teachers can create 'mini-lectures' that last for only 8–10 minutes. Between and/or after those mini-lectures, such opportunities as reflective questions, pause procedure or asking students to recap or identify certain concepts they still do not understand from the lecture can be provided so as to check the extent of knowledge students have grasped (Lemke, 2017).

Active learning may be enabled with the aid of a learning management system (LMS), such as Blackboard (Carr, 2014) or WebCT (Goodrich, 2007). These LMSs enable teachers to conduct active learning activities in a virtual classroom, such as quizzes, auto-marking, feedback and chat rooms (Carr, 2014). In addition, social network platforms such as Facebook (Nguyen, 2015), or instant messaging apps such as Whatsapp (So, 2016), were reported to be helpful in improving communication between teachers and students.

Recent empirical studies show that there is a positive relationship between engagement in the online material of LMS and course achievement (Dixon, 2015; Ji, 2015; Li & Tsai, 2017). Carefully planned course content (Draus, Curran & Trempus, 2014), instructor presence, such as in instructional video (Wang & Antonenkok, 2017), and the types of feedback, for example, video-taped versus text (Thomas, West & Borup, 2017), are all useful for improving learner's motivation and satisfaction.

In the RA training context, Peer Hero is an online GKT that adopted an active learning approach (Thombs et al., 2015). First, it provides dramatised videos to engage learners through interactive features; second, its online platform enables teachers to

monitor learning progress and take follow-up action, such as action reminders (Thombs et al., 2015). As reported in Chapter 2, Peer Hero has successfully created impact on trainees' behaviour of making more referrals (Thombs et al., 2015), which face-to-face GKTs had failed to do.

Active learning online faces challenges similar to those of face-to-face classrooms. The challenges to conduct active learning online include students' attention problems, low motivation to access the course material and lack of prior faculty training and support (Kim & Bonk, 2006). Another key issue is low acceptance of the new initiative by school administrators, teachers and students (Nguyen, 2015; Thombs et al., 2015). Moreover, online learning was reported to be disadvantageous to students with lower academic ability (Lu & Lemonde, 2013). Low performing students who took a statistics course delivered online performed worse on the course tests than those low performing students who took the course that used the face-to-face mode (Lu & Lemonde, 2013).

In the RA training context, online GKT also faces challenges. For instance, in the Peer Hero GKT study, many trainees did not engage in the training and its completion rate was only 50% (Thombs et al., 2015). The training did not improve learners' knowledge, attitude and self-efficacy about the mental health first-aid. The authors even suggested the need for face-to-face trainings to complement the deficiency.

Since both the face-to-face and online approaches have their own strengths and weaknesses, the blended learning idea was initiated to capture the benefits of the two modes, which are elaborated below.

3.3.3 Active Learning in Blended Learning

Blended learning makes use of technology and new pedagogy for e-learning, such as enquiry-based learning, in order to promote active learning (Kubicek, 2005; Whitelock & Jelfs, 2003). Instructors adopting a flipped learning model, a kind of blended learning model, would ask students to view the instructional material (e.g. online lecture) prior to the lesson (Roehl et al., 2013). Then, the teacher would support students during the lesson to carry out problem-solving tasks, conceptualise ideas and take part in collaborative learning. Studies reported that this kind of blended learning improved students' concentration and active participation in the face-to-face classroom (Dowling et al., 2010; Frick et al., 2017; King & Robinson, 2009).

Although blended learning has been widely adopted by researchers and teachers, the term *blended learning* is considered to be inconsistently used and ill-defined. In the higher education context, Bliuc, Goodyear and Ellis (2007) posited that the most commonly used definition for blended learning is the mix of face-to-face and online teaching. For instance, The Online Learning Consortium has defined blended learning as the combination of face-to-face and online teaching, with 30–79% of the course taught online (Allen, Seaman, & Garrett, 2007). Other definitions include a combination of different tools and media in a technology-enhanced teaching and learning environment, a mix of didactic approaches (e.g. collaborative learning and discovery learning, and ways of delivery (e.g. broadcasting and personal communication) (Kerres & De Witt, 2003). However, Oliver and Trigwell (2005) argued that 'under any current definition, it is either incoherent or redundant as a concept' (p. 24). Due to the absence of a common conception of the meaning of blended learning, it is impossible to synthesise the findings

of its research in a coherent way (Oliver & Trigwell, 2005). Thus, they have insisted that the term should be abandoned and replaced by another term which is 'theoretically coherent, philosophically defensible, and pragmatically informative' (p. 17). In view of this, a more precise definition for blended learning, 'flipped approach', was adopted by the current study and is further discussed in the coming sections.

3.4 Flipped Approach

3.4.1 Definition and History

The flipped approach is a content delivery approach which switches the sequence of teaching and learning activities in classroom activities and homework (Gilboy, Heinerichs, & Pazzaglia, 2015). The flipped approach, or flipped classroom, is not necessarily the same as flipped learning, as the latter requires a range of active engagement activities (Flipped Learning Network [FLN], 2014). However, in the current study, the three terms are interchangeable. The concept of flipped learning was developed by Eric Mazur, a professor at Harvard University, who proposed a peer instruction model called 'just-in-time teaching', in which students were assigned to read material before class, and then the instructor used lecture time to implement instructor and peer interactions in order to challenge students' deeper cognitive thinking (Crouch & Mazur, 2001). Later, technological elements, such as the Learning Management System, were included in the model, while the role of teachers was more emphasised as a coach or facilitator (Baker, 2000). An overview of the recent studies on flipped approach is presented as follows.

3.4.2 Overview of Recent Studies

Many studies on flipped learning in higher education and professional settings were conducted in Australia, the United Kingdom, and the United States from 1994 to 2014 (O’Flaherty & Phillips, 2015). The more recent works on the flipped approach examined what technologies were being used, the educational outcomes of flipped learning and the conceptual framework underlying the studies. These are introduced below.

The technologies used in the flipped classroom consist of out-of-class activities and in-class activities. The out-of-class activities include pre-recorded lectures (McLaughlin et al., 2013), captured videos (Mason, Shuman, & Cook, 2013; Prober & Khan, 2013), screencasts and videocasts (Gannod, Burge, & Helmick, 2008), pre-readings and study guides (Ferreri & O’Connor, 2013) and internet video resources, such as Khan Academy (Wilson, 2014). The in-class face-to-face activities include assessment (Ferreri & O’Connor, 2013), student presentations, discussions, case-based presentations (Ferreri & O’Connor, 2013; Pierce & Fox, 2012), debates, role plays and simulations (Critz & Wright, 2013; Prober & Khan, 2013), problem-solving (Kim, Khera, & Getman, 2014) and expert-led discussion (Young, Bailey, Guptil, Thorp, & Thomas, 2015). Ferreri and O’Connor (2013) claimed that in-class activities enable immediate feedback which facilitates students to reach higher levels of Bloom’s taxonomy, such as applying and analysing rather than just listing and recalling. However, so far, there is an absence of research that considers interactive video dramatisation as an out-of-class activity. As discussed in Chapter 2, interactive dramatised videos may be useful to maintain trainees’ attention throughout the videos, which could strengthen trainees’ mental health first-aid efforts

(Thombs et al., 2015). Thus, there is a need to study the impact of interactive video dramatisation as a pre-class activity in the flipped learning context.

Most of the flipped classroom studies have assessed the educational outcomes by comparing the traditional face-to-face course with a flipped classroom (O'Flaherty & Phillips, 2015), except for one study that compared a flipped classroom to face-to-face and full e-learning (Thai, De Wever, & Valcke, 2017). These studies used a Likert scale survey to measure students' satisfaction with the flipped classroom and the active learning approach (Critz & Wright, 2013; Mason et al., 2013; McLaughlin et al., 2013; Young et al., 2015). The flipped classroom was found to improve academic performances, such as final exam scores (Albert & Beatty, 2014; McLaughlin et al., 2013; Pierce & Fox, 2012), and to lead to higher attendance rates (Chen, Wang, Kinshuk, & Chen, 2014; Prober & Khan, 2013). It was also determined that it provides more opportunities to practise communication and team work skills, and that it improves learning compared with the traditional classroom approach (Ferreri & O'Connor, 2013; McLaughlin et al., 2013; Strayer, 2012).

Thus far, there have been only a few studies that promoted pedagogical understanding that equips teachers to engage students in the flipped classroom (O'Flaherty & Phillips, 2015). These studies focused on conceptual frameworks for flipped learning (Chen et al., 2014; Hamdan et al., 2013). In particular, Chen et al. (2014) proposed a comprehensive framework to measure learners' engagement and perception in flipped learning. In fact, this kind of work is needed because curriculum design is the most significant factor for the flipped classroom that results in a positive impact (Albert & Beatty, 2014). These works are reviewed below.

3.5 Pedagogical Frameworks for Flipped Learning

3.5.1 FLIP – the four pillars of the flipped learning

Jonathan Bergmann and Aaron Sams were two pioneers who flipped their classes by videocasting via YouTube in 2007 (Hamdan et al., 2013). They reported that their students engaged more in the flipped class because more time and attention can be spent with students (Bergmann and Sams, 2012). The authors proposed four pillars or principal elements for flipped learning: ‘Flexible environment, Learning culture, Intentional content, and Professional educator’, which form the acronym FLIP (Hamdan et al., 2013, p. 5).

First, ‘flexible environment’ implies that flipped classroom ‘allows for a variety of learning modes’, such as online and offline, and in groups or independently’ (FLN, 2014, para. 5).

Second, the flipped class aims to adopt a ‘student-centred learning culture’. Instead of one-way information transfer by the teacher, students are involved actively to construct and evaluate the knowledge (FLN, 2014).

Third, ‘intentional content’ means that teachers must know their intended learning outcomes. They have to carefully select what is to be taught online, and what activities are to be held during face-to-face modules, with due consideration given to the smooth transition between the two platforms (Hamdan et al., 2013).

Finally, the flipped classroom model requires ‘professional educators’ with technical skills and pedagogical knowledge to teach online. Teachers of the flipped classroom have to continuously monitor students’ learning progress and provide timely

feedback, reflect on their own practice, learn from their peers, accept constructive criticisms and tolerate the expected chaos in the flipped classroom (Hamdan et al., 2013).

Chen et al. (2014) commented that the FLIP model emphasises content planning rather than activity planning, which they feel is equally important because of the paradigm shift from passive learning to active learning. Thus, the authors argued that the flipped learning model should address questions such as what kinds of activities need to be organised during class and how to implement these activities (Chen et al., 2014).

3.5.2 Additional pillars: PED

Built upon the FLIP principles, Chen et al. (2014) proposed three additional principles for the higher education context. These included 'Progressive networking learning activities, Engaging and effective learning experience, and Diversified and seamless learning activities' which they referred to as PED (p. 17). The last pillar involves synchronous online activities, which is out the focus of this study. Thus, only the first and second pillars will be elaborated.

'Progressive networking learning activities' refers to the sequence of teaching and learning activities for the flipped classroom (Chen et al., 2014). The authors suggested that, in the early adoption stage of the flipped classroom, low-risk activities (e.g. activities of short duration, say 15 minutes) should be adopted to provide a basic understanding about the content to be discussed. After adoption of low-risk activities, high-risk learning activities should follow, which may include discussions of longer duration, for a less structured problem or a relatively abstract issue. Students are delegated to lead the discussion in order to enhance their engagement. In this stage, the high- and low-risk activities are interchangeable according to the actual situation.

'Engaging and effective learning experience' refers to students' engagement in the flipped classroom. The authors measured students' engagement in online class activities, such as the number of pages read and threads posted in a discussion forum.

The theoretical frameworks on flipped learning reviewed above and other related constructs in the higher education context have been adopted in various empirical studies. Such recent studies will be reviewed in the next section.

3.6 Comparative Studies on Flipped Learning in the Higher Education Context

3.6.1 Underlying Factors of Learner Engagement in the Flipped Classroom

To explore the underlying factors that influence learners' engagement in the flipped classroom, Chen et al. (2014) conducted a study with 32 postgraduate students who attended an 18-week course titled Computer Networking and Internet at a university in Taiwan. The study adopted a mixed-method approach, comprising a student survey, interviews and an analysis of online learning system logs. Students were provided with a face-to-face introduction to the system in the first week and a summative test in the last week. The course was delivered entirely online. The main instrument of the work was a self-developed learner survey with six constructs (FLIPPED, see Section 3.5), using 50 close-ended questions to measure learners' perception of and engagement in a flipped classroom. The student evaluation results of the same course conducted without any flipped or online components in the previous two years were used as a basis for comparison.

The survey, interviews and online system logs provided contradictory results. The survey showed positive learner engagement in the flipped course, as evident in the high mean scores ranging from 3.92 to 4.34 (out of 5) in all seven subcategories and limited standard deviations. It was speculated that the very positive result of the survey might have been caused by the small sample size of the work ($N = 32$), or the fact that the self-administered survey was conducted in English, which may have affected the accessibility to the survey content. Negative feedback was collected from the individual interviews. For example, a few students expressed their reluctance to participate in the flipped learning method and unwillingness to preview the videos in full length. Chen et al. (2014) believed that such students might be more used to a traditional passive learning style and, thus, not motivated by flipped learning. This finding was in line with other studies that showed many students did not watch pre-class materials and, thus, were not prepared for the in-class activity (Brunsell & Horejsi, 2013; Milman, 2012). Although summative and formative assessments had been arranged in an attempt to enhance student engagement in pre-class materials, this failed to solve the engagement problem (Chen et al., 2014). Other tactics, such as more interactive and interesting materials (e.g. interactive dramatisation videos) (Thombs et al., 2015), as discussed in Chapter 2, and injecting a sense of urgency, which is introduced later in this chapter, may be needed.

Chen et al. compared the online platform system logs of the current cohort (2013) with those of the previous two cohorts (2011 and 2012) that were not flipped. The current cohort had an increased number of class activities in the flipped classroom, such as reading pages and posting. However, this was a surprise considering the limited effort exerted, which was evident because there was no significant change in the number of hours spent on the materials. This observation tended to reflect that students might not

have seriously studied the materials. In addition, the study focused only on the improvement in the final grade, rather than learning outcomes that equip learners for practical circumstances. In a GKT context, learners' performance is judged based on their crisis intervention knowledge, efficacy, skills and behaviour change. Thus, a study to measure the learning outcomes beyond the final grade improvement is needed for RA training courses. A learner survey may be useful to measure the underlying factors of learner engagement in a flipped classroom, if the survey is translated and adapted for the Chinese or Macau context.

There are other constructs that emerged from the literature which are helpful and fundamental to explain learner engagement. The related studies are discussed below.

3.6.2 Perceived Usefulness of the Process of Flipped Learning

Yoshida (2016) pointed out that there is an absence of work that measures learners' perceived usefulness of the process of flipped learning in the higher education context. Perceived usefulness of the process of flipped learning refers to the extent to which a learner perceives the flipped classroom useful for his or her learning (Yoshida, 2016). Perceived usefulness originated from the technology acceptance model (TAM), which is one of the most popular models that researchers adopt to explain and predict users' engagement in a new technology (Venkatesh & Davis, 1996; Yoshida, 2016). TAM consists of two factors, perceived usefulness and perceived ease of use, where the former has been reported as the strongest determinant that attributes to users' usage of a new technology (Davis, 1989; Venkatesh & Davis, 1996).

Yoshida (2016) studied 66 undergraduate students majoring in education, who attended a five-week flipped class about instructional design for primary and secondary

schools. After the class, the participants were requested to answer one open-ended question. The results showed that there were 20 themes or 'usefulness statements' (p. 431). Two examples were 'Flipped learning is useful because learners can study through the video over and over again' and 'Flipped learning is useful because it enhances learners' understanding' (p. 432). Further, the author identified 14 statements which were then classified into four clusters: 'enhancement of classroom instruction' (example statement: 'Flipped learning is useful because it develops learners' readiness for classroom lessons'.); 'review and confirmation' (example statement: 'Flipped learning is useful because learners can use the videos to review what they learned'.); 'learning effectiveness' (example statement: 'Flipped learning is useful because learners can check their understanding through quizzes on the videos'.); and 'productivity and self-paced learning' (p. 433).

The four clusters for flipped learning proposed by the author explain the reasons behind the perceived usefulness. Yoshida's study was conducted exclusively with education major students so students of other majors were not included. As these education major students may have had prior knowledge of flipped learning or a favourable attitude towards it, the study sample might have been biased as it included participants with better knowledge and higher motivation. Participants from a variety of backgrounds would have provided more comprehensive data. The study was based on a one-item open-ended survey; thus, follow-up interviews and observation would have further supported the findings.

3.6.3 Perceived Ease of Use of the Flipped Classroom

Long, Logan, Cummins and Waugh (2016) provided evidence of measuring learners' perceived ease of use and perceived usefulness about the flipped classroom in higher education, which are the two major components of TAM that determine user engagement in a new technology (Davis, 1989). Perceived ease of use refers to the extent that the components of the flipped classroom, for example, the online learning platform and the learning materials, such as video clips, concept-check exercises and discussion forum, are easy to access and use (Long et al., 2016). If the new technology is easy to use, users tend to engage more in it (Davis, 1989; Venkatesh & Davis, 1996). The work of Long et al. (2016) also investigated how the flipped classroom enhances the teaching and learning outcomes. The work used a qualitative approach with semi-structured individual interviews with five undergraduate students and the course instructor at a university in the Southeastern United States (Long et al., 2016). An example of a question used for the students is 'Do you think learning this course is easy?', while an example of a question for the course instructor is 'How can you improve students' participation in the in-class learning activities?' (p. 49).

Students reported that the flipped classroom was easy to use and useful, and the flipped learning approach improved their motivation to learn (Long et al., 2016). The teacher interviewee reported that flipped learning improved students' class performance in forms of presentation, problem solving, and collaboration.

This work supports the contention that learners' perceived ease of use and perceived usefulness help explain flipped classroom engagement and learning impact. The authors also argued that the learning environment design, appropriate use of

technologies and resources and carefully organised learning activities are critical for flipped learning to meet learners' needs (Long et al., 2016). This argument is in line with some of the elements that the FLIPPED model proposes, specifically that flipped learning should be flexible and learner-centred and have intentionally planned content (Chen et al., 2014; Hamdan, McKnight, McKnight, & Arfstrom, 2014). However, the study had two limitations: small and uniform sample size, and single data collection method. First, as all five student interviewees were science and engineering majors, this might have created bias towards the actual situation. Second, the result was based solely on individual interviews. Other sources of data, such as skills tests and observations, would have been more effective in improving the reliability of the result.

3.6.4 Sense of Urgency

Yeh (2015) proposed using sense of urgency or peer influence to remind learners to access pre-class materials. In an experiment conducted in a flipped mathematics course in Taiwan (the class size was not mentioned), the author required his students to send a message to the social media group of the class once they had completed reading the pre-class materials (Yeh, 2015). The message served as a reminder to those who had not finished the materials because the later a student read the materials, the more reminders the student would receive (Yeh, 2015). The author reported that the tactic of peer influence improved students' engagement in the pre-class materials, as well as their performance in the face-to-face class in terms of homework quality and final grade (Yeh, 2015). However, this tactic was not tested empirically. Thus, further testing of the impact of peer pressure is needed.

3.7 Gap in the Current Knowledge

Both face-to-face and online approaches have various strengths and weaknesses in delivering courses. A blended approach has been regarded as effective in capturing the essence of those two approaches (Allen et al., 2007; Bliuc et al., 2007; Whitelock & Jelfs, 2003). More than merely taking advantage of technology to support traditional classrooms, a blended approach may also develop and apply new pedagogies for the ever-changing dynamics of teaching and learning. In particular, GKT requires higher levels of interaction, opportunities to practise and a longer period of time for the impact to surface (Taub et al., 2013). Thus, while face-to-face training offers basic knowledge and skills, builds rapport and provides learners opportunities to apply skills through role plays and discussion, online platforms facilitate learners to reflect on their practice at their own pace, and retrieve course materials based on their own needs. Yet, the existing literature on GKT has shown a lack of flipped-mode GKT comprising didactic lectures, experiential exercise, online interactive videos and short exercises. Previous research on face-to-face GKT that combined didactic knowledge transfer with experiential exercise demonstrated more impacts on trainees' knowledge, attitude, skills and efficacy than those offering only didactic knowledge transfer (Cimini et al., 2014; House et al., 2013; Pasco et al., 2012; Taub et al., 2013). Yet, such impacts did not include transfer of attitude to behavioural action (Lipson, 2016). Online GKT with interactive teaching and learning activities might have a positive impact on behavioural action but a limited impact on knowledge, attitude and skills, as Thombs et al. (2015) reported. Based on all this literature, the present study assumes that an effective blended GKT would offer a connection between attitudinal benefits and actual behaviours.

The overall view of flipped learning, that it stems from but is more focused than blended learning, suggests that it would offer an effective model and approach to guide the design and implementation of a blended GKT. The combination of the initial pedagogical framework of flipped learning, the FLIP proposed by Hamdon et al. (2013), the extra PED pillars subsequently added by Chen et al. (2014) and the other three additional constructs: perceived usefulness (PU), ease of use (EU) and sense of urgency (SU) suggested by the present research, as respectively detailed earlier in Section 3.6, are believed to be the key elements of flipped learning that can be used to both promote and measure learner engagement in a course.

3.8 Research Aim and Questions

On the basis of previous literature and discussion detailed in Chapter 2 and this chapter, this study aimed to investigate the best way to deliver GKT on a university campus. The research questions of the study are as follows:

RQ1: What are the impacts of training between the flipped, blended and online training modes?

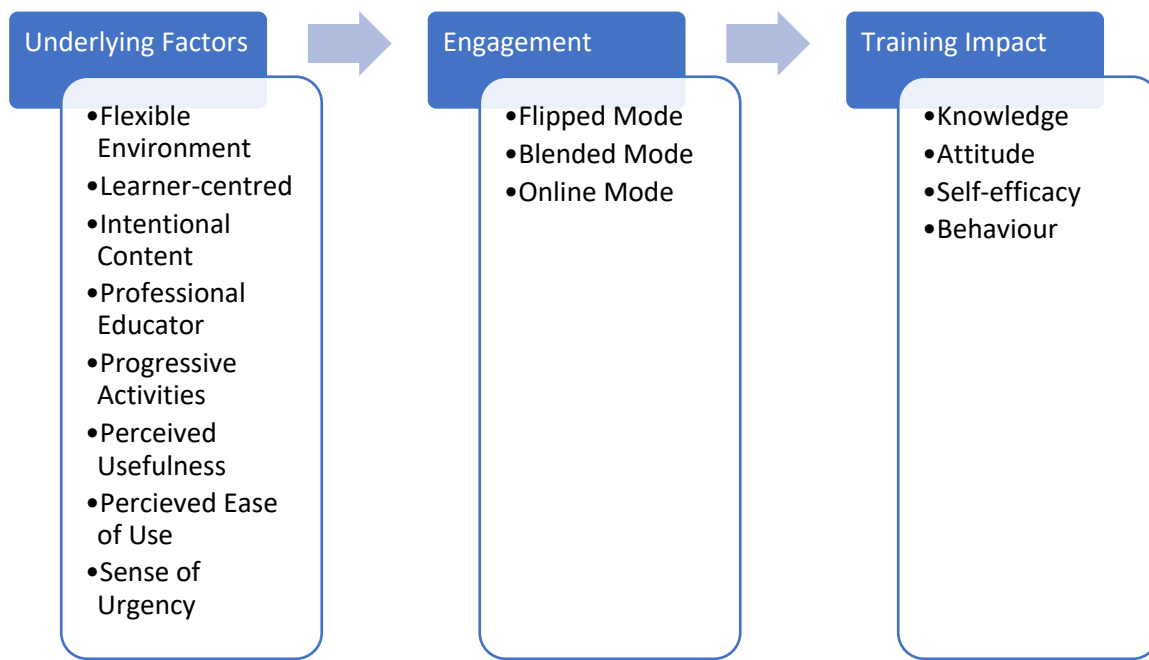
RQ2: To what extent did the trainees of the three training modes engage in the training?

RQ3: What are the preferred training activities by the trainees?

3.9 Conceptual Framework

Figure 1 shows the conceptual framework of the current study. Based on the reviews in Chapter 2 and this chapter on the FLIPPED model of Chen et al. (2014) and other literature, including Davis (1989), Venkatesh and Davis (1996), Yoshida (2016), Long et al. (2016) and Yeh (2015), various constructs have been hypothesised to have an impact on learners' engagement in GKT. These constructs include flexible environment, learner-centred culture, intentional content, professional educator, progressive activities, perceived usefulness, perceived ease of use and sense of urgency. Explanations about these underlying factors address Research Questions 2 and 3. Learners' engagement in different delivery modes of GKT has been further hypothesised to determine training impact in aspects of knowledge, attitude, self-efficacy, skills and behaviour on mental health intervention. Such findings address Research Question 1.

Figure 1. Conceptual framework of the current work



3.10 Chapter Summary

This chapter has reviewed selected pedagogical theories that are pertinent to the understanding of how and why GKT is delivered in different modes. Active learning helps explain pedagogies that are oriented towards student-centred activities and learning engagement in the learning process. Active learning can be applied through different modes of delivery, including face-to-face, online and blended. The blended approach, nonetheless, has theoretical and pragmatic limitations in offering coherent, defensible and informative research and discussion.

The flipped approach is considered more useful for synthesising pedagogical research. The pedagogical frameworks for flipped learning, and empirical studies on flipped learning in higher education were reviewed. In consideration of their applicability, the constructs (FLIPPED) and additional components as suggested in the literature, including perceived usefulness (PU) of the process of flipped learning, ease of use (EU) and sense of urgency (SU), were adopted for explaining the underlying factors of learners' engagement in GKT in the current study. The research gap, research aims and questions were stated, which are supported by the conceptual framework outlined in Section 3.9, to guide the present research. The next chapter discusses the methodology applied for seeking answers to the three research questions.

Chapter 4 Methodology and Methods

4.1 Introduction

The previous two chapters reviewed relevant existing literature concerning GKT and flipped learning. This chapter describes and elaborates on the methodology that is believed most feasible for addressing the problem identified in Chapter 3, and thus frames the study. The philosophical assumptions underpinning this work are first explicated. The method and the research design are then described. Next, the research schedule, the training programme and the instruments are respectively detailed. Further, the procedure of data collection, the data analysis, the validity and reliability of the data and ethical considerations are explained.

4.2 Philosophical Assumptions

The current work aimed to investigate the best way to deliver a GKT, and to understand who, what, when, how and why trainees engage in GKT. It adopted a paradigm of pragmatism because it was considered to be highly relevant to this study. Pragmatism emphasises the connection between theories and actions in the process of a quest for knowledge (Dewey, 1938b). This paradigm seeks to ‘break down the dualism between realism and idealism’ (Morgan, 2014, p. 1048). Taken as the assumption behind the study, pragmatism concerns the concept that there could be a single or multiple realities (Creswell & Plano Clark, 2007). This worldview focuses on the research consequence, and the research questions rather than the methods. It orients the current work towards ‘what works and practice’ (Creswell & Plano Clark, 2007, p. 23).

Implicating more than one paradigm, pragmatism associates with the characteristics of different paradigms – post-positivism and constructivism, which are elaborated below.

Post-positivists believe that there is a single reality, and they make the claim that knowledge is based on determination, reduction, empirical observation and measurement and theory verification (Slife & Williams, 1995). Thus, it is a top-down approach and is usually associated with quantitative methodology (Creswell & Plano Clark, 2007). As a ‘less arrogant form of positivism’, post-positivism claims a relatively lower level of objectivity than positivism, and seeks to approximate the truth (Crotty, 1998, p. 29). Post-positivism is helpful to investigate learners’ engagement in training and the training’s impact by adopting an established measurement scale, which is elaborated on in Section 4.7. In contrast, constructivists believe that there are multiple realities, and they focus on the understanding of meaning and phenomena from multiple participants and their subjective views, which are shaped by their personal histories and interactions with others (Creswell & Plano Clark, 2007). Ultimately, theory is formed from individual perspectives to broad patterns. Therefore, it is a bottom-up approach and is usually associated with qualitative methodology (Creswell & Plano Clark, 2007). In the current study, the constructivist paradigm has helped to understand meaning and phenomena from multiple participants and their subjective views, which enriched the findings of the study.

4.3 Methods

A mixed-method approach was chosen for this study because it draws from the strengths of both quantitative and qualitative approaches (Punch & Oancea, 2014) but minimises their limitations (Creswell, 2014). The quantitative method collects objective

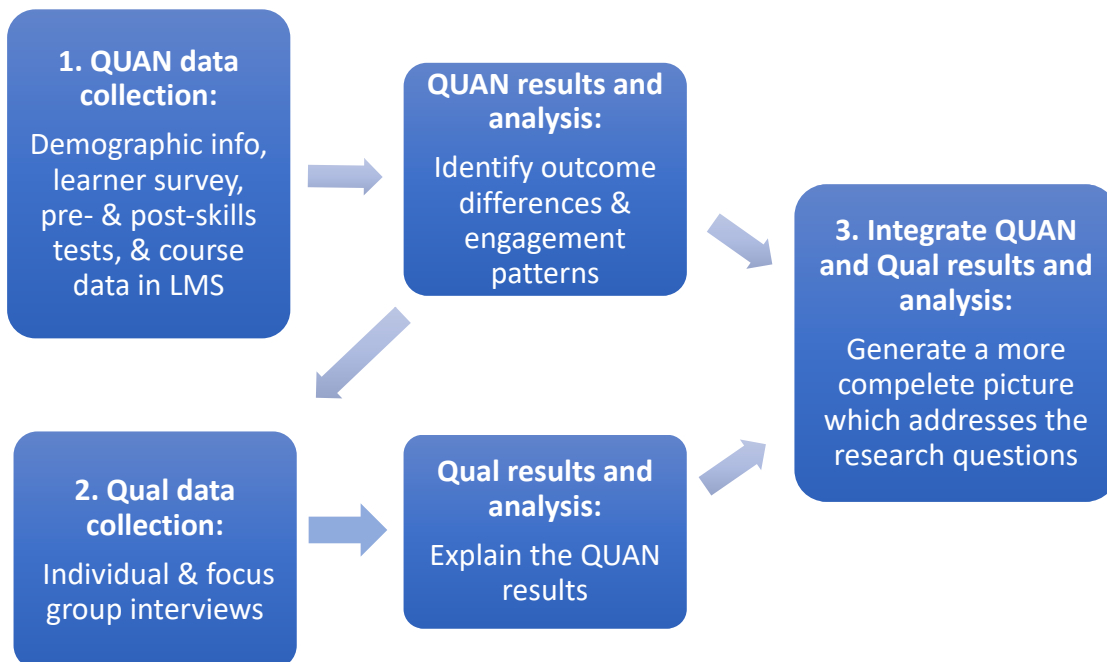
data for the who, what and when questions, such as the profile of the participants, their score in a job-related skills test and when they engage in the online training material. The quantitative results also facilitate comparison of the training impact amongst different modes (Punch & Oancea, 2014). However, the quantitative method is not able to collect in-depth views of participants (e.g. their feelings towards the training material) and other detailed responses, such as communication style and behaviour change (Tashakkori & Teddlie, 1998). Thus, qualitative methods are needed to supplement the quantitative findings by explaining why and how the results occur, in other words, the reasons underlying the students' engagement, their preferred training mode(s) and activities and the difference between training modes through individual and focus group interviews (Creswell, 2014; Punch & Oancea, 2014).

4.4 Research Design

There are five main types of mixed-method designs (Creswell, 2014). Each type has its own form of data collection and analysis, interpretation and validity. Amongst them, the 'explanatory sequential mixed-method' with the 'QUAN → Qual' design was adopted in this study as it would provide a more complete understanding of the research questions of the study (Creswell, 2014, p. 229). This design implemented quantitative and qualitative strands or components in sequence to use follow-up qualitative data as a supplement to the initial quantitative results (Plano Clark & Ivankova, 2016). Figure 2 shows the procedure of the research activities. In phase one, quantitative data were collected from participants' demographic information, a learner survey, a set of pre- and post-training skills tests and course data stored in the learning management system. The

quantitative strand had two aims: first, to identify outcome differences, if any, for those who took the flipped training, the blended training and the online training; second, to explore what and how participants took part in the training. This phase took place from August to September 2017. In phase two, the qualitative strand was begun which aimed to provide follow-up data for why the course was engaged in the patterns as observed. The qualitative data were collected through individual and focus group interviews which took place from October 2017 to March 2018. In phase three, both quantitative and qualitative data were integrated and discussed together in order to generate a more complete picture which addressed the research questions. This phase happened from May to June 2018.

Figure 2. Research design for the current study: Explanatory sequential mixed-method (QUAN → Qual) (Creswell, 2014)



4.5 Participants

This study was conducted at a university in Macau which has ten residential colleges. Each residential college has a similar structure of RAs and resident students. The researcher approached five of the residential colleges which are more open to and supportive of student leadership training activities. Two residential colleges with a total of 70 RAs agreed to take part in the study, which represented the entire populations of the RAs of the two colleges. The two colleges have a similar mix of RAs, the profile of these are presented in Chapter 5. The other three residential colleges declined the invitation because they were occupied with other activities at that time.

To ensure the groups of RAs would work together in order to create rapport and team morale for their respective colleges, the purposive sampling procedure of Robson (2011) was adopted in which participants were allocated by the researcher according to their serving college and training experience. Table 1 shows the allocation results. The flipped and the blended modes consisted of participants who were new to the training of this study from College One and College Two, respectively. The online mode consisted of participants from College One who had attended the face-to-face workshop of this study the previous academic year.

Table 1. Training background of the participants

Mode	Participants' college	Number of participants	Training status
Flipped	College One	23	New to the training of this study
Blended	College Two	32	New to the training of this study
Online	College One	15	Had received the face-to-face component of this study previously

4.6 The Training Programme

4.6.1 Training Modes

Three different modes were applied in the training programme: flipped, blended and online. In this study, the flipped mode refers to a condition in which participants attend an online module followed by a face-to-face training workshop. The blended mode refers to a condition in which participants attend a face-to-face workshop followed by an online module. The online condition refers to a condition in which all training material is delivered online. To determine which worked best for the GKT, the study explored different aspects concerning the training, including training impacts, how trainees used the material in the different modes, why the course was engaged in the patterns as observed and which training activities were more preferred by the participants.

Each of the three modes had a different sequence of training components (i.e. online, face-to-face, and practicum) adopted during various stages of the training, while the same content was used. The sequence and content of the training modes will be briefly described in the following subsections.

4.6.2 Training Sequence in Different Modes

In both the flipped and the blended modes, the new participants used the same training content and received the same training time. The difference was the sequence in which they received the training content. Table 2 shows that the flipped participants took a 30-minute online training in Week 1 and then a 90-minute face-to-face training in Week 2. In contrast, the blended participants took the 90-minute face-to-face training in Week 1 and the 30-minute online training in Week 2.

Table 2. Sequence of the training in different modes

Mode	Week 1	Week 2	Weeks 3–6
Flipped	Online (30 min)	Face-to-face (90 min)	Practicum
Blended	Face-to-face (90 min)	Online (30 min)	
Online	Online (30 min)	Online (7 min)*	

Note. *The online participants had received the face-to-face training (90 min) the previous academic year. They were only required to attend a seven-minute online revision video.

The online mode also consisted of a 30-minute online training in week one, while its participants attended a seven-minute online refresher training in week two, which was different from what was done in the other two modes. The face-to-face workshop was replaced by an online refresher in this mode because the participants had received the 90-minute face-to-face training previously. This mode exemplified how online GKT can revive the impact of previous training on returning RAs.

A practicum, which was provided during weeks three to six, required all participants to apply the knowledge and skills they had learnt. The content of the training programme, including the practicum, is elaborated in the next subsection.

4.6.3 Training Content

The training consisted of three units: how to make a referral, active listening and responding skills (face-to-face or online, depending on the training mode) and practicum. The content was developed based on the findings of previous empirical studies (House et al., 2013; Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015) (see Chapter 2). Table 3 shows the details of each unit.

Table 3. Content of the training programme

Unit	Content (based on previous empirical studies)	Main teaching and learning activities
One	Referral skills & Knowledge (Thombs et al., 2015)	Online dramatised videos Online concept check questions and automated feedback
Two	Active listening and responding skills (House et al., 2013; Pasco et al., 2012; Taub et al., 2013)	Face-to-face workshop (for flipped and blended modes) Online revision videos and exercise (for online mode)
Three	Practicum	Conversation with residents Self-reflective writing task

Inspired by the Peer Hero online training programme (Thombs et al., 2015), Unit One aimed to arouse the participants' interest in the training topics, and to project a positive image of an exemplary RA who demonstrates the appropriate skills to deal with students with mental health issues. The main teaching and learning activities included dramatised videos and concept check questions with instant feedback. As mentioned in Chapter 2, this kind of dramatised GKT projects a positive image of RAs which results in creating a positive impact on trainees' referral behaviour (Thombs et al., 2015). This unit was delivered via Moodle, the university's official online learning platform, which was capable of providing interactive teaching and learning required by the unit. In view of the possibility that learners might have difficulty in learning in English, the dramatised videos were reproduced in Cantonese and Putonghua. As discussed in Chapter 3, the availability of the Chinese version was expected to improve the perceived ease of use of the training, which was reported as a favourable factor for course engagement (Long et al., 2016). The duration of the unit was 30 minutes. The screenshots of the teaching and learning activities of this unit are detailed in Appendix 3. As discussed in Chapter 3, pure

online training failed to have a significant impact on the trainees' attitude, knowledge, and self-efficacy of mental health issues (Thombs et al., 2015). Therefore, additional training to supplement for this deficiency was needed. Unit Two was developed to fill this gap.

Unit Two covered principles of active listening and responding skills, with the aim of equipping learners with the necessary skills to chat with their resident students in order to gain trust, build rapport and effect behavioural change. This unit was delivered face-to-face, which included experiential exercises (such as role play in the current training). As reported in Chapter 2, experiential exercises on top of didactic training result in a more positive impact on attitude, skills, self-efficacy and the intention to make a referral, than didactic training alone (Cimini et al., 2014; House et al., 2013; Pasco et al., 2012; Taub et al., 2013). A sample of the instructions used in the role play is attached in Appendix 4. This unit, which lasted for 90 minutes, was facilitated by the researcher. The workshop PowerPoint slides were subsequently uploaded online for participants' review. As mentioned in previous subsection, new trainees were allocated to the face-to-face workshop, while returning trainees who had attended the face-to-face workshop previously were provided a refresher online video of seven minutes which covered the principles and skills taught in the workshop in order to recall the memory of the concepts.

Unit Three, the practicum, was aimed to encourage the participants to apply their new skills and to reflect on their practice. All participants were assigned to a group of student residents and were requested to chat with them. Afterwards, they were requested to provide a brief description about the chats and submit a self-reflection article of about 200 words in either Chinese or English, whichever they preferred. Reflective writing was

adopted because it facilitates both self-reflection and integration of training content and practice (McGuire, Lay, & Peters, 2009). The submission deadline was one month after Unit Two, Week 6 or mid-September 2017. The suggested format included a description of the interaction with their student residents, general counselling skills they had applied and their reflection on the interaction, such as good points and room for improvement. The language options and guidelines aimed to assist trainees to do the reflection, which may have motivated them to engage in the task (Davis, 1989; Long et al., 2016; Venkatesh & Davis, 1996).

4.7 Instruments and Other Data Sources

There were six sources of data, including two surveys, in this study. The survey method was adopted because it matched the following objectives of this study. First, this study had to measure participants' attitude, belief and motives. A survey is able to collect all this required information. Second, survey data are highly standardised which makes comparison with other data possible (Robson, 2011). Table 4 provides an overview of the two surveys and other data sources of this study.

Table 4. Instruments/Sources of data of the current study

Name (Source)	Items	Aims to measure/ explore
1. Learner survey (Chen et al., 2014; Davis, 1989; Long et al., 2016;	49 item Likert scale questionnaire	Perceived engagement, perceived usefulness and underlying factors of engagement

Venkatesh & Davis, 1996; Yeh, 2015; Yoshida, 2016)		(conducted after the training)
2. SIRI-2 (Neimeyer & Bonnelle, 1997)	25 item Likert-scale questionnaire	Training impact/skills improvement (conducted before and after the training)
3. Learning activity logs	Participants' learning activity record (number of clicks and video viewing time) from the online course platform	Learners' engagement in the training material
4. Number of referrals	One item questionnaire	Training impact
5. Individual interview	Semi-structured individual interview with seven questions	1. Underlying factors of engagement and training impact difference 2. Preference of training mode
6. Focus group	Semi-structured focus group interview with seven questions	Same as individual interview plus some unexpected insights

4.7.1 Learner Survey

The first instrument, namely, the learner survey, was a self-reported five-point Likert scale questionnaire with 1 = strongly disagree, 2 = disagree, 3 = neither disagree nor agree, 4 = agree and 5 = strongly agree. The survey aimed to measure to what extent learners agreed with statements about the reasons why they engaged in the training. The learner survey was conducted after the training.

The survey of the current study was chosen and modified based on the related studies in the literature, including Chen et al. (2014), Davis (1989), Long et al. (2016), Venkatesh and Davis (1996), Yeh (2015) and Yoshida (2016), as explained in Chapter 3.

These studies were the only ones that suggested the key elements of flipped learning that promote and measure learner engagement in a course. The learner survey consisted of nine sub-scales (as shown in Table 5), covering 49 items (See Appendix 5). In Table 5, Sub-scale 1 Engagement (EG) aimed to measure learners' engagement experience in the course. An example of an item is 'I have actively engaged in the videos of Unit One (Referral skills)'. Sub-scale 2 Perceived Usefulness (PU) was about learners' perceived learning impact. An example is 'The course is useful because it enhances my general counselling skills'. Sub-scales 3 to 9 (Intentional Content [IC] through Sense of Urgency [SU]) were targeted to understand the underlying factors about the course engagement. An example is 'The instructor has provided detailed guidelines for how to use the course learning platform'. (see Chapter 3). To improve the scale validity, the questionnaire was reviewed and refined by two experts in e-learning and one psychometrician in Hong Kong.

Table 5. Sub-scales of Learner Survey

Sub-scale	Number of items
1. Engagement (EG)	7
2. Perceived Usefulness (PU)	4
3. Intentional Content (IC)	6
4. Progressive Activity (PA)	8
5. Professional Educator (PE)	6
6. Learner-centred (LC)	5
7. Flexible Environment (FE)	5
8. Perceived Ease of Use (EU)	4
9. Sense of Urgency (SU)	4
Total	49

To improve the accessibility of the items, all items were translated into Chinese by the researcher. To ensure the content validity of the items, the Chinese version of the questionnaire was back-translated by three advanced English-Chinese speakers who had a master's degree or above from universities with English as the medium of instruction. This type of back-translation method is suggested in the literature about translating English language surveys into Chinese (Forsyth, Kudela, Levin, Lawrence, & Willis, 2007; Lam, Gandek, Ren, & Chan, 1998). Both the original and back-translated items were compared and any mistranslated items were rectified. The reliability of the learner survey was tested by calculating Cronbach's alpha for each item of the survey. The results will be reported in Chapter 5.

4.7.2 Suicide Intervention and Response Inventory – Revised Version (SIRI-2)

The second instrument, SIRI-2, is also a self-reported seven-point Likert questionnaire with 25 items. It aims to measure the training impact or the ability to identify appropriate responses that are emphatic. As with the learner survey, an English-Chinese translation and back-translation process was done for this instrument. The questionnaire was designed with the scale ranging from -3 being 'highly inappropriate' to +3 being 'highly appropriate'. Each item presented a client comment, for example, 'I decided to call in tonight because I really feel like I might do something to myself . . . I've been thinking about suicide' and two possible helpers' responses, such as 'Helper A: You say you're suicidal, but what is it that's really bothering you?' and 'Helper B: Can you tell me more about your suicidal feeling?' (Neimeyer & Bonnelle, 1997, p. 75). The scores of all items were averaged to get an overall mean score for the SIRI-2. A lower SIRI-2 mean score indicated better skills. The review of the scale is presented in Chapter 2, and the

detailed scale is shown in Appendix 6. To measure the training impact, all participants were invited to asked to take the SIRI-2 survey before and after the training.

4.7.3 Learning Activity Logs in Moodle

The third source of data was from students' learning activity logs from the online course. Moodle was used to capture learners' engagement in the training material. The data collected included participants' number of clicks on the online teaching and learning activities, for example, read or write a post, or download a PowerPoint; amount of time spent on viewing the course videos; and when they accessed these activities. The data were downloaded in Excel format for analysis. Version 3.3 of the Moodle platform was adopted, and the data were stored in the server of the university under study. The participants were familiar with the Moodle platform, as it is the official online learning platform of their university; thus, no prior training was needed to use the learning platform. In addition, interactive teaching and learning activities, such as video playing, question and answer with instant feedback, forum and self-reflection, are available in Moodle 3.3, which satisfied the functional requirements for this work.

4.7.4 Number of Referrals

The fourth data source was the RAs' mental health first-aid effort, which was measured by the number of referrals by RAs to their supervisor or the university counsellor. The number of referrals only included those related to students with symptoms of mental health issues. Other cases, such as disciplinary referrals, or students who directly sought help from the RAs' supervisor or university counsellor, were not counted.

4.7.5 Individual and Focus Group Interviews

The fifth and sixth sources of data were from individual interviews and focus groups. They aimed to follow up the issues identified in the quantitative stage, including how learners engaged in the material, the underlying factors that engaged learners in the training, the training impacts of the three modes, and learners' preferred training mode and activities. Individual and focus group interviews were appropriate for this study because the interviewer could ask follow-up questions and clarify questions raised by interviewees (Robson, 2011). In addition, the interviewer was able to encourage the involvement of interviewees. There are challenges involved in individual and focus group interviews. These include some interviewees being afraid to speak up during a focus group interview (Robson, 2011). Thus, the interviewer attempted to listen carefully and ask probing questions (Legard, Keegan, & Ward, 2003). The measures taken to make the most of the advantages of using the interview method and to deal with the challenges are explained in the following subsections.

Interview Format and Questions

Both the individual interviews and focus groups were semi-structured and shared a set of seven questions. All were facilitated by the author of the work and audio-taped for further analysis. Either Cantonese or Putonghua was spoken, depending on the interviewee's mother tongue and preference. The interview questions concerned the choice of medium of instruction, time and location of accessing the online material, usefulness of the course and its specific parts, perceptions towards skills improvement, future use of course material, preference of study mode of the course and feedback on possible improvement of the course. Examples of the questions are 'Which part of the

training do you think is particularly useful or not useful? Why?' (training impact and the underlying reason) and 'When and how did you use the training material?' (how to engage). The full question list is available in Appendix 7.

Selection Criteria

A mix of representations was taken into account while selecting interviewees: some were local Macau students, while others were from Hong Kong and Mainland China; some were new, while others were experienced RAs. Most of the interviewees were doing their second or third year of study; a few were fourth year and postgraduate students. Different groups of interviewees were invited based on their varied levels of engagement as evident in the number of clicks and viewing time of online materials, and the results of SIRI-2. Each participant was assigned a pseudonym, of which the first letter showed the participant's training mode (F = flipped, B = blended and O = online). Appendix 8 presents the list of pseudonyms and the key background information about all the interviewees.

Number of Participants

Twenty-seven participants from the three different modes were selected to take part in individual or focus group interviews. Ten participated in individual interviews (3 flipped, 2 blended and 5 online). Seventeen took part in the focus groups arranged by mode (9 flipped, 3 blended and 5 online). The number of interviewees varied amongst the two types of interviews and the three modes due to the availability of participants invited to attend the respective interviews.

Interview Procedure

All of the interviews were conducted by the researcher in a quiet office in College One. The ten individual interviews were held on a one-on-one basis. Each interview lasted from 13 and 20 minutes. The interviews were conducted from November 2017 to February 2018. Three focus group interviews were conducted on each of the three modes. The flipped and online focus groups took place in November 2017 with nine and five participants, respectively. The blended focus group was conducted in March 2018. In the beginning of each individual or focus group interview, the researcher introduced the objectives of the interview and discussed confidentiality issues. Participants were invited to respond to the various interview questions. In the focus groups, the participants were also encouraged to engage in discussions with each other. Thus, certain group dynamics amongst the participants occurred when some agreed, disagreed or wanted to follow up similar points with each other. In all the qualitative interviews, participants were encouraged to express themselves freely, including their opinions about both positive and negative experiences. Probing questions were asked until the interviewers felt that the whole mine of the information had been explored (Legard et al., 2003).

4.8 Procedure of Data Collection

Table 6 shows the procedure of data collection of this study. One week before the training, that is, in week zero, all participants were invited in-person to take part in the study and were given a cover letter which explained the study, a consent form and a copy of the second instrument (pretraining SIRI-2 survey). They were also requested to fill in a demographic information sheet which recorded their age, gender, country of origin, college and service experience in the residential college, as well as the first six digits of

their student ID to track their post-training performance and to connect the demographic variables with other variables in subsequent stages. After that, all participants received the training and practicum from weeks one to six. One week after the practicum, in week seven, all participants were requested to complete the second instrument (post-training SIRI-2 survey) and the third instrument (learner survey). At the same time, activity logs, which stored learner engagement data from week one to week seven in the Moodle, were exported in Excel format for further processing. In order to measure the mental health first-aid effort of RAs, the number of referrals of students with symptoms of mental health issues by RAs to their supervisor or university counsellor were counted in weeks 6, 10 and 14. After that, all data were entered or imported into the IBM Statistical Package for Social Sciences (SPSS) version 24 (IBM, Armonk, NY, USA) for statistical analysis.

Table 6. Data collection procedure

When	Item/Activity
Week 0 (One week before the training)	Cover letter, consent form and SIRI-2 (Pre-training)
Week 1–Week 6	Training and practicum
Week 1–Week 7	Collection of learning activities log (From week one until one week after the practicum)
Weeks 6, 10 and 14	Number of referrals of students
Week 7 (One week after the practicum)	SIRI-2 (Post-training) and learner survey
Weeks 8 and 9	Preliminary quantitative analysis
From Week 10	Individual interviews and focus group interviews

The individual and focus group interviews were carried out after week 10. Participants of the individual interviews were not invited to attend the focus group interview and vice versa to avoid overlapping. An individual interview lasted from 15–20 minutes, and a focus group interview lasted from 40–60 minutes. All the interviews were audiotaped for transcription and further analysis. To improve data accuracy, member checking (Creswell & Plano Clark, 2007) was adopted. A transcript was sent to respective interviewees, and they were asked to check whether it reflected their opinions accurately. Amendments were made in case there was any discrepancy.

4.9 Data Analysis

All surveys were counted and sorted according to the training modes of the participants. Each participant was assigned a unique code which was used to connect his or her data collected by different instruments. Then, the numeric data were entered into IBM SPSS for statistical analysis. The categorical and continuous variables and the minimum and maximum values of each variable were visually inspected to ensure there were no out-of-range or non-sense values (Pallant, 2016). Data of three participants who did not complete all surveys were discarded because their training impact could not be compared. After the data cleaning process, further analysis was carried out. The data collection and the analysis techniques of this study are listed in Table 7 as follows:

Table 7. Data collection and analysis techniques of this study

Data collection	Technique
Demographic information	Frequency
Learner survey	Mode, median, Cronbach's alpha test, mean, standard deviation, one-way ANOVA with post

	hoc Tukey's honesty significant difference (HSD) and eta squared
Learning activity logs	Mean, standard deviation, one-way ANOVA with post hoc Tukey's HSD
SIRI-2	Paired-sample <i>t</i> -test, Cronbach's alpha test, and Cohen's <i>d</i>
Number of referrals	Frequency and mean
Individual and focus group interviews	Content analysis

4.9.1 Demographic Information

Basic demographic information, such as gender, age, year of study, programme of study and year of service experience, was obtained. Frequency was counted for analysis.

4.9.2 Learner Survey

By looking at and comparing the mode, median, mean and standard deviation of respective variables in the learner survey amongst the modes, the broad trends and the shape of distribution of learners' perceived engagement were analysed (Lewin, 2011).

A three-stage process of the statistical procedure of Barnes and Lewin (2011) was further carried out to evaluate the results. First, the reliability of the learner survey was tested by calculating Cronbach's alpha coefficient for each sub-scale of the survey (Field, 2013). The coefficients of the learner survey were compared with the results of the preceding study. A scale with Cronbach's alpha coefficient of at least 0.7, which is considered reliable (Pallant, 2016), was used in this study.

The second and the third stages were designed to select an appropriate statistical test and carry out an appropriate test of significance, respectively (Barnes & Lewin, 2011).

For comparing an independent variable with more than two levels or groups with a continuous dependent variable, the technique of one-way ANOVA is suggested (Pallant, 2016). This technique was used to compare the training modes and each dependent continuous variable item of the survey. However, it did not indicate where the significant differences lay; therefore, post hoc test with Tukey's HSD was needed to identify this. If there was any significant case, the post hoc test was then conducted (Pallant, 2016).

In addition, the effect size for the result, which showed the percentage of variance of the dependent variable that is explained by the independent variable (Cohen, 1988), can be evaluated by using eta squared. Eta squared was therefore chosen because it is regarded as the most common measure of effect size for ANOVA (Pallant, 2005; Adams & Conway, 2014). However, eta squared may tend to be positively influenced by small sample size (Adams & Conway, 2014). Thus, caution must be taken when interpreting the eta squared. The eta value is obtained by dividing the 'sum of squares between-group' by the 'total sum of squares' from the one-way ANOVA output (Pallant, 2005, p. 219). In Cohen's (1988) terms, the eta squared is considered a small, medium or large effect if it has a value of .01, .06 or .14, respectively.

4.9.3 Learning Activity Logs

Descriptive statistics, including mean and standard deviation, were generated for major variables of the learners' activity logs in Moodle, such as number of clicks and duration of video viewing time. They were compared for patterns of learners' actual engagement. One-way ANOVA with post hoc Tukey's HSD was conducted to identify the difference between the three modes.

4.9.4 SIRI-2

Cronbach's alpha test was conducted and compared with the results of the preceding studies (Neimeyer & Bonnelle, 1997; Pasco et al., 2012; Taub et al., 2013). To assess levels of impact of the training using the respective modes, paired-sample *t*-test was conducted to compare the pre- and post-training SIRI-2 results. This technique was adopted because sometimes the difference between the means of the pre- and post-tests is not large enough and can be caused by chance (Pallant, 2016). The output of paired-sample *t*-test is able to determine whether the difference is large enough and not caused by chance. Based on the guidelines of Pallant (2016), the confident interval was set at the .05 level.

To observe the magnitude of the training effect, Cohen's *d* was adopted because it is the most commonly used measure of effect size for a *t*-test (Cohen 1998). Cohen's *d* is obtained by the following formula: $d = (\text{Post-test mean score} - \text{pre-test mean score}) / SD$ of pre-test. The thresholds for a small, medium or large effect as suggested by Cohen are $d = .2, .5$ or $.8$, respectively (Field, 2013). The results demonstrated the training impact differences between the modes.

4.9.5 Number of Referrals

The RAs' mental health effort was measured by the number of referrals by RAs to their supervisor or the university counsellor. Since each mode was comprised of a varied number of RAs, to facilitate comparison amongst the three modes, the average number of referrals was adopted.

4.9.6 Individual and Focus Group Interviews

Having determined the differences in the training impact and learner engagement level from the quantitative data, the researcher had to look for reasons and explanations from trainees that would explain these findings. Such data primarily included ten individual interviews and three focus group interviews. The content analysis technique was adopted because it involves 'replicable and valid methods for making inferences from observed communications to their context' (Krippendorff, 1980, p. 69). The technique fit the purpose of interpreting meaning from the content of qualitative data, that is, the feedback of participants on certain aspects of the GKT training.

From amongst the various approaches of qualitative content analysis, an inductive manifest analysis was applied as the analysis of the current study aimed to describe what the interviewees actually said, stay close to the text, and explain the visible and obvious in the text (Bengtsson, 2016). The audiotaped interviews were transcribed into texts, followed by a systematic process of organisation of these qualitative data, with use of the software NVivo. The process included 'open coding, creating categories and abstraction' (Elo & Kyngäs, 2007, p. 109). During open coding, headings and notes were input in each of the transcripts whilst studying it. The transcripts and notes together were re-examined until a sufficient number of headings were created to illustrate all aspects of the opinion (Burnard, 1991, 1996; Hsieh & Shannon, 2005, as cited in Elo & Kyngäs, 2007). The original text (meaning unit) was summarised as a condensed meaning unit. Codes were then identified alongside the condensed meaning unit, and they together generated different categories. Themes emerged from certain categories as transcripts and codes were read through repeatedly, while generalisation was conducted as the themes were

revised after a few rounds of review and comparing them with the relevant literature. Examples of the analysis process from raw data to results will be presented in Chapter 6.

4.9.7 Presentation of Findings

The findings were presented in summary form (Creswell & Plano Clark, 2007). The quantitative results were presented in table, figure, chart and statement forms about whether an inferential statistical test was significant. For qualitative results, tables were used to assist the description of background information, such as physical setting of the interview scenes and the composition of the interviewees. The results were presented through discussion of evidence with related quotes for the themes that emerged. To present divergent views, multiple perspectives of individuals with evidence were drawn from both quantitative and qualitative results (Creswell, 2005).

4.10 Validity and Reliability

Before data collection, the two surveys were reviewed by subject experts to improve construct validity (to judge whether the items would measure what they were intended to measure), content validity (whether the questions were representative of the items) and criterion-related validity (whether the scores were comparable to external standards) (Creswell & Plano Clark, 2007). Then, the surveys were translated into the language (Chinese) that was most accessible to the participants. To maintain the content validity, the translation was back-translated by three advanced English and Chinese users (Forsyth et al., 2007; Lam et al., 1998). After data collection, Cronbach's alpha was calculated to check the reliability of the scales.

Several methods were adopted to ensure qualitative validity and reliability. First, to avoid double counting of opinions from any one respondent, participants of the individual interviews were excluded from the focus group interviews (Creswell & Plano Clark, 2007). Second, to ensure different perspectives were represented, interviewees were encouraged to freely express themselves, including giving positive and negative feedback (Long & Johnson, 2000). Third, a clear decision trail was demonstrated and consistent data interpretations were ensured by meticulous documentation of transcription criteria and records (Lincoln & Guba, 1985; Long & Johnson, 2000; Rodgers & Cowles, 1993). Fourth, verification of transcriptions by respondents was adopted (Lincoln & Guba, 1985; Long & Johnson, 2000). Finally, during data extraction and analysis, triangulation was done by the researcher using various sources: surveys, individual interviews and focus group interviews, learning activity logs and literature (Finfgeld-Connett, 2010; Lincoln & Guba, 1985).

4.11 Ethical Considerations

This study obtained written approvals from the Ethics' Committee of the Graduate School of Education at University of Bristol (see Appendix 9) and verbal approvals from the heads of the two residential colleges. This study also balanced the rights of participants against the potential benefits to the participants and the society (Seale, 2012a). Participants were informed of the benefits of their involvement in the study and their rights. The benefits included an opportunity to learn from a training course specially designed for them and an opportunity to reflect on their learning experience. At the same time, they were informed that the study would benefit society

by making sense of the factors affecting why gatekeepers engage in a GKT, and which modes of delivery would provide more impact.

The present study followed the guidelines of Punch and Oancea (2014) and Seale (2012b) concerning the issues of safety, voluntary participation and withdrawal and informed consent. First, the participants and researcher faced no hazard and minimal risks when undertaking this study. The entire training was conducted in the classrooms of the residential college of the university being researched. The online components were accessed by means of the participants' desktop or laptop computers, or mobile devices. Data were collected from paper-based questionnaires, individual interviews, focus groups and the online course database. Second, participation in the study was voluntary, and participants could withdraw from the research at any point. Third, before the study, an informed consent form, introducing the study, the benefits of involvement, the rights of participants and the complaint procedure, was given and explained to the participants. In addition, the following statement was added to the consent form of the interviews and questionnaires:

Data collected will only be used for research and for the improvement of residential education. Your performance evaluation as an RT/RA will not be affected in any by your participation, refusal to participate in this study or withdrawal from it.

Signatures of participants on the consent forms were required to ensure their understanding and agreement. A sample of the research information and consent form is attached in Appendix 10.

However, Guillemin and Gillam (2004) pointed out that a signed consent form does not necessarily constitute an informed consent. The researcher of the current study has another role at the same time, i.e. the teacher or supervisor of the subjects of the

research. This dual role brings challenges results from the issue of power distance and an insider research. These challenges, in turn, may affect the participation and responses of the informants, and the researcher's interpretation and application of these data (Drake, 2010). Distorted power relations may result in reluctance of subordinates (Seale, 2012a) and students (Denscombe & Ausbrook, 1992) to refuse their supervisors and teachers' invitation to take part in research, although they have the right to do so. For example, if the invitation or the survey is delivered during the training, participants may think that the research is part of their work duties. The researcher as a staff member of the institution under study may create another issue. As an insider, the researcher may not be able to possess an appropriate degree of distance from his or her informants (Burgess, 1984; Simmel, 1950), and thus have his or her own preconceptions (Mercer, 2006). Nevertheless, Mercer (2006) counter argued that the insider can have better access to the data and a stronger rapport with the participants. Katyal and King (2014) supported the notion that the insider can have a better understanding of the training need and background of the participants, which is difficult for an outsider to detect.

To address the potential issues of power distance and the insider-researcher, the current study took on the strategy of 'reflexivity' (Berger, 2015; Finefter-Rosenbluh, 2017) throughout all phases of the research process, and adopted certain practical measures during the course of data collection and analysis. The strategy of reflexivity helps to keep the process of research ethical, 'situating the researcher as non-exploitative and compassionate toward the research subjects,' hence helping to alleviate negative impact of the issue of power relations (Berger, 2015). On one hand, the current researcher acknowledges his own presence and embodies his role in the formation of knowledge throughout the entire research period, including the formulation of research questions,

data collection and analysis, as well as interpreting results and drawing conclusions (Berger, 2015; Guillemin and Gillam, 2004). On the other hand, he kept himself engaging in continual reflexive processes that involved both internal dialogues and critical self-evaluation of his own positionality (Berger, 2015; Pillow, 2003; Stronach, Garratt, Pearce, & Piper, 2007).

During the data collection, first, RAs' anxiety to refuse to take part in the study was reduced. The invitation and the questionnaires of the study were sent after a regular meeting when students were free to leave the classroom if they did not want to participate. Second, their responses and facial expressions were monitored to detect any discontent about the training and the study. Third, the RAs were also encouraged to express their feelings about the training programme and the study during the qualitative interviews. Examples of the questions were 'Which part of the training do you find particularly useful or not useful? Why?' and 'Do you have any suggestions about the training and the study?'. Fourth, the researcher was not involved in the survey data collection from his subordinates. A research assistant was employed to collect the data from the participants concerned.

Anonymity of the participants' information, as advised by Punch and Oancea (2014) and Seale (2012b), was assured. No individual could be identified or named in any research reports. Pseudonyms were used where appropriate. Each participant was assigned a number code so as to protect his or her identity. Audio recording was only conducted with interviewees' consent. The attendance and performance in the training course of individual participants was not revealed to their supervisors, except in the case of the researcher as one of the supervisors of the RAs under study.

Based on the guidelines of Seale (2012b) on data storage, the data collected for this study were encrypted and safely stored in the researcher's office and personal computer. The data will be disposed of five years after publication of the relevant research results. According to the suggestions of Punch and Oancea (2014) about the appropriate usage of research findings, the results of the present study were and will be solely used for training course improvement, this doctoral dissertation and other academic research publications.

4.12 Chapter Summary

The current research was based on the paradigm of pragmatism, focusing on what works well and the best practice that the research results indicated. This philosophical orientation is associated with mixed-method research; therefore, both quantitative and qualitative methods were adopted. A total of 70 RAs, from two residential colleges in Macau, participated in the current study. They were divided into three groups, respectively, taking part in the GKT training programme using flipped, blended and online modes.

Quantitative data were collected from a learner survey, pre- and post-training SIRI-2 (skills) tests and learning activity logs on the online course system. Qualitative data were subsequently collected from responses of invited participants in focus groups and individual interviews. Quantitative data analytical techniques, such as descriptive statistics, paired-sample *t*-test, and one-way ANOVA with post hoc Tukey's HSD test, were employed, while qualitative content analysis was applied for analysing interview

responses. Validity, reliability and ethics considerations were all taken into account throughout the research process.

In the following chapters, the quantitative and qualitative data analysis and findings are sequentially presented.

Chapter 5 Quantitative Results

5.1 Introduction

This chapter presents the quantitative findings of this study. First, it introduces the demographic profiles of participants, and then the results of a self-reported survey on learners' perceived engagement in training, training impacts and their comments on the training design. Next, inferential results will be presented that indicate the differences amongst the three training modes. Then, analysis of the course system data on how participants engaged in online material is demonstrated. Lastly, results of SIRI-2, another instrument to measure learners' actual skills improvement, and the post-training mental health first-aid effort by RAs are presented.

5.2 Demographic Profiles

As reported in Chapter 4, there were 70 eligible participants in this study comprising new and returning RAs from two residential colleges. Each was allocated to one of the three training modes. Three participants who did not finish either the pre- or post- SIRI-2 survey were withdrawn from the analysis. Table 8 shows the composition of the remaining 67 participants, amongst whom 23 took part in the flipped mode (online first, then face-to-face), 29 in the blended mode (face-to-face first, then online), and 15 in the online mode. Although there were more female than male participants across all the three modes, the three modes shared a similar gender composition.

Table 8. Composition of participants by gender

Mode	Male	Female	Not specified	Total
Flipped	7	16	0	23
Blended	8	17	4	29
Online	5	10	0	15
Total	20	43	4	67

As shown in Table 9, both flipped and blended mode had a relatively larger group of participants aged 20 or below because the modes were attended mainly by new RAs who were second- or third-year undergraduates. The online mode was attended by returning RAs only; thus, over a half of participants were aged 21 or above.

Table 9. Comparison of age between modes

Mode	20 or below	21–23	24 or above	Total
Flipped	17	3	3	23
Blended	21	4	4	29
Online	6	7	2	15
Total	44	14	9	67

Table 10 shows that both flipped and blended modes had a mix of experienced and new RAs, while the online mode had participants who were all returning RAs.

Table 10. Service experience of participants

Mode	New RAs	Returning RAs	Total
Flipped	16	7	23
Blended	13	16	29
Online	0	15	15
Total	29	38	67

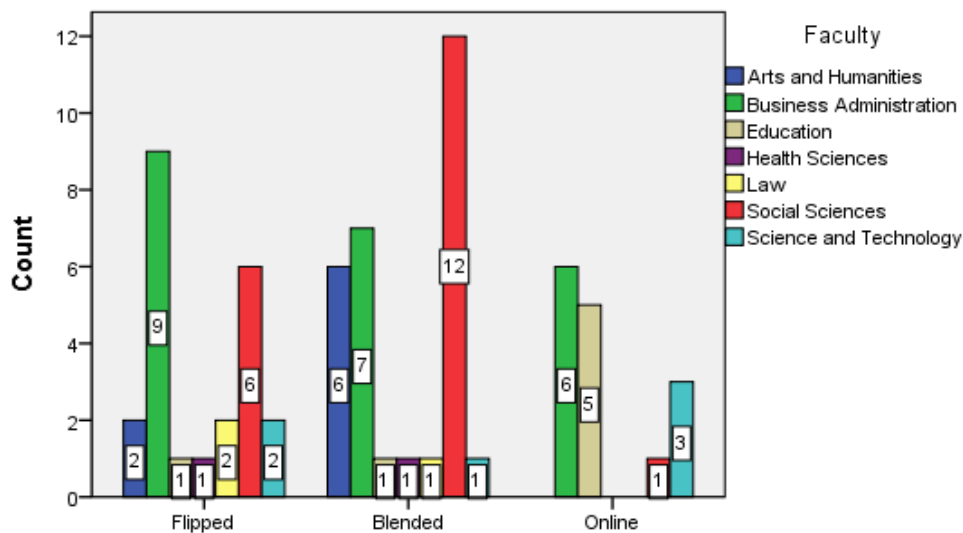
All participants were Chinese and from Macau, Mainland China, Hong Kong or Taiwan. Table 11 shows that the three modes shared a similar composition by country of origin and that Macau and the Mainland China formed the majority.

Table 11. Composition of participants by country of origin

		Macau	Mainland China	Hong Kong	Taiwan	Total
Mode	Flipped	7	15	0	1	23
	Blended	12	11	5	1	29
	Online	8	6	1	0	15
Total		27	32	6	2	67

As shown in Figure 3, both flipped and blended modes covered participants from all seven faculties, of which more than half were from the social sciences and business administration. The online mode did not include participants from all the faculties, and more than half were from business administration and education.

Figure 3. Composition of participants by faculty



Section Summary

Participants were allocated to three modes, and 67 of them completed both pre- and post-training surveys. The three modes shared a similar proportion of gender (about 1 male to 2 females). Both the flipped and blended modes, which were aimed at new participants, shared a similar proportion of age groups, geographic background (from Macau, Mainland China, Hong Kong or Taiwan), positions and service experience. The online mode, which was aimed at returning participants, had a composition that was a bit different from the other two modes.

5.3 Learner Survey

As introduced in Section 4.7, a self-administered survey was developed to measure learners' perceived engagement in training, their perceived learning impact and their comments on the course design. The scale consisted of nine sub-scales covering 49 items. The overall results, reliability test, and the descriptive and inferential results of the survey are reported in the subsequent subsections.

5.3.1 Overall Results

The median and modes of individual items of the learner survey (see Appendix 11) were rated 4 or 5 (5 the highest) across the board, except for a few items from the online mode which resulted in a median of 3. The results indicated that participants of the flipped and blended modes strongly agreed or agreed that they felt engaged in the training, and commented that the training course possessed the following characteristics: its content was intentionally planned, learner-centred, flexible, had ease of use and was useful for their RA position; they also noted that it progressively developed learners' knowledge and provided them with a sense of urgency to attend. However, online

participants were slightly less positive, as they reported being neutral on the following items: ‘Fully engaged in this course (item EG7)’, ‘Actively engaged in online self-reflective question (EG6)’ and ‘Instructor adapts teaching according to students (PE4)’. Nevertheless, their responses to other items were still very positive.

5.3.2 Reliability Test

Table 12 shows that all the nine sub-scales passed the reliability checking with an alpha coefficient of over 0.7. A scale with Cronbach’s alpha coefficient of at least 0.7 is considered reliable (Pallant, 2016), therefore, the scale was considered internally consistent or measuring the same underlying factor with the sample ($N = 67$).

Table 12. Cronbach’s alpha test on the learner survey

Sub-scale	Number of items	Cronbach’s alpha
1. Engagement (EG)	7	.906
2. Perceived Usefulness (PU)	4	.909
3. Intentional Content (IC)	6	.917
4. Progressive Activity (PA)	8	.920
5. Professional Educator (PE)	6	.890
6. Learner-Centred (LC)	5	.856
7. Flexible Environment (FE)	5	.849
8. Perceived Ease of Use (EU)	4	.902
9. Sense of Urgency (SU)	4	.748
Total	49	

5.3.3 Descriptive Statistics of the Sub-Scales

All individual items of the learner survey were transferred into ratio level data in order to compare the three modes. The transfer used the function *Compute* in IBM SPSS

which added the different Likert values of each item in the sub-scale together, and the result was a ratio number which allowed for the use of inferential statistics. Appendix 12 shows descriptive statistics of the nine sub-scales. Results showed that the flipped mode received relatively higher mean scores than the other two modes in most of the sub-scales, except the ease of use sub-scale, whereas the blended mode had the lowest mean scores in all sub-scales amongst the three modes. The online mode received the highest mean score in the ease of use sub-scale. The next section reports inferential differences in the mean score between the three modes.

5.3.4 Difference Between the Training Modes

A one-way ANOVA was employed to determine whether there was any significant difference(s) between the three modes, while a post hoc Tukey's HSD test was used to determine at which modes the differences lay. The effect size of the difference for ANOVA was calculated by eta squared (See Subsection 4.9.2 for explanation). The findings are reported below with the aid of the results of one-way ANOVA (Appendix 13) and post hoc comparisons of Tukey's HSD test (Appendix 14).

i. Perceived Engagement

The ANOVA results showed that there were statistically significant differences in mean scores for the three training modes at the $p < .05$ level in the engagement sub-scale [$F(2, 64) = 3.160, p = .049$]. Post hoc comparisons using Tukey's HSD test indicated that the mean score of the flipped training ($\bar{x} = 4.22, s = .511$) was significantly higher than that of the blended training ($\bar{x} = 3.84, s = .571$) by .382. The eta squared for the engagement sub-scale was $1.889/21.015 = .090$, indicating that the actual difference in the perceived engagement mean scores between the flipped and blended modes was significantly medium-large. This demonstrates that, compared with the blended mode participants,

the flipped mode participants perceived that they engaged in the training to a greater extent.

ii. Perceived Usefulness

There were statistically significant differences in mean scores, for the three training modes at the $p < .05$ level in the perceived usefulness sub-scale [$F(2, 64) = 6.836, p = .002$]. The Tukey's HSD test showed that the mean score of the flipped mode ($\bar{x} = 4.42, s = .436$) was significantly higher than that of the blended mode ($\bar{x} = 3.90, s = .577$) and online mode ($\bar{x} = 3.93, s = .616$) by .527 and .491, respectively. The effect size, calculated using eta squared, was $4.017/22.819 = .176$, which indicated that the actual difference in mean scores of perceived usefulness between the modes was large. This showed that the training was perceived to be more useful by the flipped mode participants than the blended and online mode participants.

iii. Intentional Content

There were statistically significant differences in mean scores for the three training modes at the $p < .05$ level in the intentional content sub-scale [$F(2, 64) = 4.662, p = .013$]. The Tukey's HSD test indicated that the mean score of the flipped mode ($\bar{x} = 4.52, s = .467$) was significantly higher than that of the blended mode ($\bar{x} = 4.08, s = .449$) by .441. The effect size, calculated using eta squared, was $2.553/20.075 = .127$, which indicated that the actual difference in mean scores between the modes was nearly large. This illustrated that the training was considered to be more intentionally planned by the flipped mode participants than the blended mode participants.

iv. Progressive Activity

There was no significant difference in mean scores for the three training modes at the $p < .05$ level in the progressive activity sub-scale [$F(2, 64) = 1.549, p = .220$]. The Tukey's HSD test indicated that the mean differences between the three modes were very small.

v. Professional Educator

There were statistically significant differences in mean scores for the three training modes at the $p < .05$ level in professional educator sub-scale [$F(2, 64) = 3.113, p = .051$]. The Tukey's HSD test indicated that the mean score of the flipped training ($\bar{x} = 4.56, s = .470$) was significantly higher than that of the blended training ($\bar{x} = 4.22, s = .526$) by .334. The effect size, calculated using eta squared, was $1.532/17.285 = .089$, indicating that the actual difference in mean scores between the modes was medium-large. This showed that the trainer was considered, to a greater extent, to possess the characteristics of professional educator by the flipped mode participants than the blended mode participants.

vi. Learner-Centred

There was a nearly statistically significant difference in mean scores for the three training modes at the $p < .05$ level in learner-centred sub-scale [$F(2, 64) = 2.971, p = .058$]. The Tukey's HSD test indicated that the mean score of the flipped training ($\bar{x} = 4.43, s = .425$) was nearly significantly higher than that of the blended training ($\bar{x} = 4.12, s = .528$) by .311 ($p = .052$). The actual difference in mean scores between the modes was medium-large because the effect size, calculated using eta squared, was $1.298/15.276 = .0850$. This demonstrated that the training was considered to be more learner-centred by the flipped mode participants than the blended mode participants.

vii. Flexible Environment

There was a statistically significant difference in mean scores, for the three training modes at the $p < .05$ level in flexible environment sub-scale [$F(2, 64) = 9.859, p = .000$]. The Tukey's HSD test indicated that the mean score of the blended mode ($\bar{x} = 4.03, s = .469$) was significantly lower than that of the flipped mode ($\bar{x} = 4.65, s = .418$) and the online mode ($\bar{x} = 4.44, s = .422$) by .522 and .406, respectively. The effect size, calculated using eta squared, was $3.851/16.349 = .236$, indicating that the actual differences in mean scores between the modes were large. This showed that the training was perceived as less flexible by the blended mode participants than participants in other two modes.

viii. Perceived Ease of Use

There were statistically significant differences in mean scores for the three training modes at the $p < .05$ level in the ease of use sub-scale [$F(2, 64) = 8.296, p = .001$]. The Tukey's HSD test indicated that the mean score of the blended mode ($\bar{x} = 4.03, s = .570$) was significantly lower than that of the flipped mode ($\bar{x} = 4.54, s = .481$) and the online mode ($\bar{x} = 4.60, s = .524$) by .509 and .566, respectively. The actual differences in mean scores between the modes were large because the effect size, calculated using eta squared, was $4.672/22.694 = .210$. This showed that training was perceived to be less easier to use by the blended mode participants than participants in other two modes.

ix. Sense of Urgency

There was a statistically significant difference in mean scores in the sense of urgency sub-scale for the three training modes at the $p < .05$ level [$F(2, 64) = 6.145, p = .004$]. The Tukey's HSD test indicated that the mean score of the flipped mode ($\bar{x} = 4.32, s = .454$) was significantly higher than that of the blended mode ($\bar{x} = 3.88, s = .577$) by .436. The effect size, calculated using eta squared, was $2.628/21.507 = .122$, indicating that the actual

difference in mean scores between the modes was nearly large. This demonstrated that the sense of urgency to attend the training was higher for the flipped mode participants than the blended mode participants.

5.3.5 Section Summary

The flipped and blended mode participants were very positive in the learner survey, which means that they reported they engaged in the training, and they commented that the training was engaging and useful for their RA position. Comparatively, the online mode participants were slightly less positive than those of the other two modes, who reported being neutral when they were asked about their engagement in online self-reflective writing and overall training.

All the items of the learner survey passed the reliability checking with a Cronbach's alpha coefficient of over 0.7, which is considered reliable and internally consistent with the sample ($N = 67$) (Pallant, 2005). The descriptive results of the learner survey provided further information that the flipped mode received relatively higher mean scores than the other two modes in almost all sub-scales, except in the 'ease of use' sub-scale, in which the online mode received relatively higher mean scores.

The inferential results showed that there were three differences between the training modes. Compared with those in the blended training, the flipped mode participants perceived that they engaged in the training to a greater extent and commented that the training was learner-centred, the content was intentionally arranged, the instructor was professional, the course was flexible, easy to use and more useful for their RA work and a sense of urgency was created for them to attend. Compared with the blended training participants, the online mode participants perceived that online training was more flexible and easier to use. Compared with online training, flipped training was rated higher in terms of perceived usefulness.

5.4 Course Data

The system data stored in the online platform consisted of video viewing time, participation in forum discussion and self-reflection questions in the form of the number of clicks on these activities. Data were automatically collected throughout the course period from early August to the middle of September. The data retrieved from the course system provided more objective data which triangulated with the other findings of the study. However, the course data might not have actually reflected the actual behaviour of the individual participants (e.g. the participant might have left the computer while playing the video clip). The limitation of using the course data is further discussed in Chapter 8. The total video viewing time, total number of clicks and the time of engagement are presented.

5.4.1 Total Video Viewing Time

Table 13 shows how much time participants spent viewing the course videos in different modes. The flipped mode had the highest mean per participant, averaging 10.96 minutes, followed by the online mode, averaging 8.66 minutes, and the blended mode had the lowest mean, averaging 1.83 minutes. The blended mode had relatively lower values of standard deviation (3.01 minutes) and range (11 minutes) than the other two modes, which indicated the viewing time duration was narrowly distributed. In other words, most blended participants spent less time on the course videos, and many of them did not view the videos at all.

Table 13. Video viewing time in different modes

Minutes	Flipped (<i>n</i> = 23)	Blended (<i>n</i> = 29)	Online (<i>n</i> = 15)
Mean	10.96	1.83	8.66
<i>SD</i>	6.52	3.01	6.66
Range (Min.–Max.)	24 (0–24)	11 (0–11)	22 (2–24)

There were statistically significant differences in mean video viewing time (in minutes) for the three modes [$F(2, 64) = 20.430, p = .000$] (see Table 14). Post hoc comparisons using Tukey's HSD test showed that the mean video viewing time of the blended mode ($\bar{x} = 1.83, s = 3.013$) was significantly lower than that of the flipped mode ($\bar{x} = 10.96, s = 6.519$) and the online mode ($\bar{x} = 8.60, s = 6.663$) by 9.129 and 6.772 minutes, respectively (see Table 15). The effect size, calculated using eta squared for video viewing time, was $1156.022/2966.716 = .390$, indicating that the actual differences between the modes were very large ($<.14$).

Table 14. ANOVA of video viewing time by mode

		Sum of squares	<i>df</i>	Mean square	<i>F</i>	Sig.
Video viewing time	Between groups	1156.022	2	578.011	20.430	.000
	Within groups	1810.694	64	28.292		
	Total	2966.716	66			

Table 15. Post hoc Tukey's HSD test of video viewing time

Dependent variable	(I) Mode	(J) Mode	Mean difference (I-J)	Std. Error	Sig.
Video viewing time	Flipped	Blended	9.129*	1.485	.000
		Online	2.357	1.765	.381
	Blended	Flipped	-9.129*	1.485	.000
		Online	-6.772*	1.692	.000
	Online	Flipped	-2.357	1.765	.381
		Blended	6.772*	1.692	.000

5.4.2 Total Number of Clicks

The number of clicks recorded participants' total number of responses on the online platform, including viewing of the videos, responding to the concept check questions, reading and writing of the threads in discussion forums and attempting the self-reflection questions. For example, if a participant clicked a video clip of a unit, it was counted as one 'click'.

Table 16 shows the number of clicks in the three modes. The online mode had the highest mean of the total number of clicks, averaging 23.33 clicks per participant. It also had the highest *SD* value amongst the three modes, ranging from 10 to 50 clicks per participant. This indicated that participation in the online activities by participants of the online mode was quite diverse. The flipped mode had the second highest mean of the total number of clicks, averaging 15.74 clicks per person, but the lowest value of *SD*, averaging 6.60 clicks. This suggests that the flipped mode participants engaged in online activities often much more consistently amongst the three modes. The blended mode, similar to the case of the video viewing time, had the lowest mean in the total number of clicks, averaging 6.07 clicks per person. Moreover, this mode had the lowest range value, that is, from 0–30 clicks per participant. The results further showed that blended mode participants were far less engaged in the online material than the those of the other two modes.

Table 16. Number of clicks in different modes

No. of Clicks	Flipped (<i>n</i> = 23)	Blended (<i>n</i> = 29)	Online (<i>n</i> = 15)
Mean	15.74	6.07	23.33
<i>SD</i>	6.60	8.57	9.30
Range (Min.– Max.)	35 (0–35)	30 (0–30)	40 (10–50)

The inferential results aligned with the descriptive findings. Table 17 shows there were statistically significant differences in the mean number of clicks for the three modes, at the $p < .05$ level [$F(2, 64) = 23.919, p = .000$].

Table 17. ANOVA of number of clicks

		Sum of squares	df	Mean square	F	Sig.
Number of clicks	Between groups	3163.056	2	1581.528	23.919	.000
	Within groups	4231.630	64	66.119		
	Total	7394.686	66			

In Table 18, post hoc comparisons using Tukey's HSD test shows that the mean number of clicks of the blended mode ($\bar{x} = 6.07, s = 8.565$) was significantly lower than that of the flipped mode ($\bar{x} = 15.74, s = 6.628$) and the online mode ($\bar{x} = 23.33, s = 9.302$) by 9.67 and 17.264, respectively. The effect size, calculated using eta squared for number of clicks, was $3163.056/7394.687 = .430$, indicating that the actual differences between the modes were very large ($<.14$). The results showed that the blended mode participants engaged in the use of online materials was less than the participants of the other two modes.

Table 18. Post hoc Tukey's HSD test of number of clicks

Dependent variable	(I) Mode	(J) Mode	Mean difference (I-J)	Std. Error	Sig.
Number of clicks	Flipped	Blended	9.670*	2.270	.000
		Online	-7.594*	2.699	.018
	Blended	Flipped	-9.670*	2.270	.000
		Online	-17.264*	2.586	.000

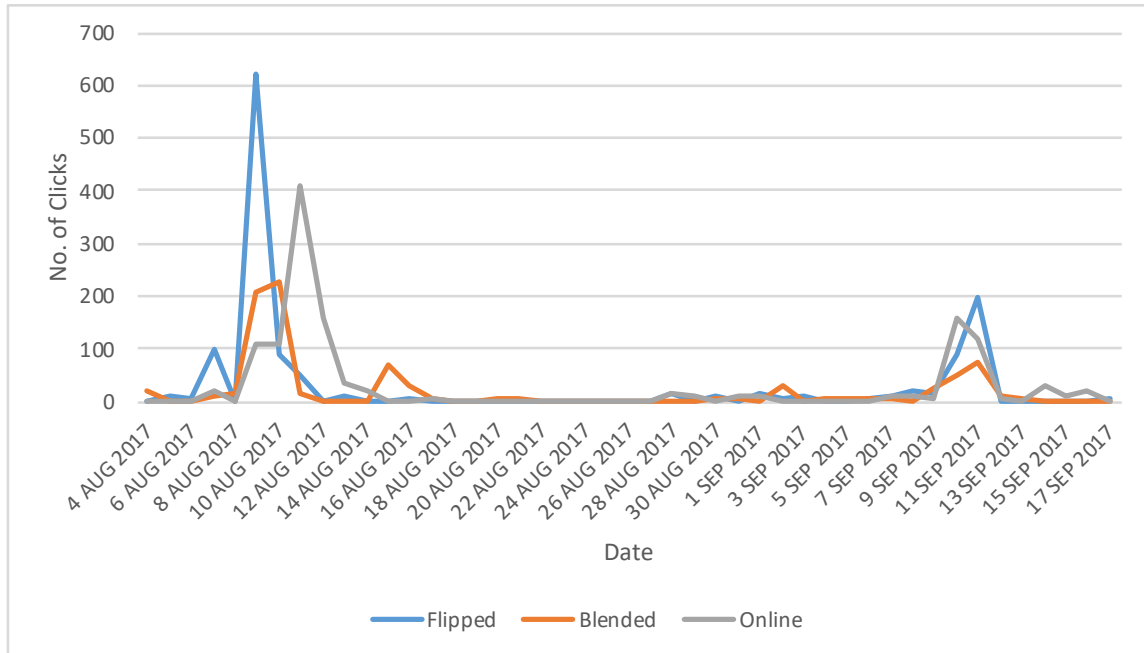
Online	Flipped	7.594*	2.699	.018
	Blended	17.264*	2.586	.000

5.4.3 Dates of Online Engagement

The dates when participants accessed the online material were recorded. These data were extracted from the course Moodle system throughout the training period. There were major checkpoints when the participants were required to submit two course tasks: (1) 10th and 11th of August being the deadline to post a thread on the online forum; and (2) 11th of September being the deadline for the monthly chat logs and the reflective journal. In the flipped mode, the participants were additionally required to preview the online videos before the face-to-face component. Details of the online module are available in Chapter 4.

Detailed distribution of efforts made for each mode is shown in Figure 4. As expected, all participants were actively engaged in the online material around the deadlines of the two course required tasks and when the flipped mode participants previewed the videos before the face-to-face workshop. After the deadlines, some who missed the deadline accessed the online material when they were completing makeup submissions of the course’s required tasks after an email or mobile text reminder by the course instructor. Disappointingly, very few of them accessed the material at other times.

Figure 4. Distribution of number of clicks of each mode



5.4.4 Section Summary

This section analysed participants' course engagement activities by their total video viewing time, total number of clicks and the time of engagement. The results showed that the flipped and online mode participants spent comparable effort on the online material, which was reflected by their higher video viewing time and greater number of clicks. In contrast, the blended mode participants spent little effort on the online material. As expected, all participants were actively engaged in the online material around the deadlines of the required course tasks, and when they were reminded to do the makeup. Very few of them accessed the material at other times.

5.5 Suicide Intervention Response Inventories – 2 (SIRI-2) Result

This section reports results of the reliability test, pre-test and post-test of SIRI-2. This survey was aimed to evaluate trainees' skills to recognise appropriate responses to

people who intend to commit suicide (Neimeyer & Bonnelle, 1997). A lower score in the SIRI-2 means the test taker has better skills (see Section 4.7). The SIRI-2 was conducted before and after training in early August and mid-September, respectively. A paired-sample *t*-test for the three modes was conducted to compare changes in participants' skills.

A Chinese version of SIRI-2 was developed for this study in order to improve the accessibility of the scale by its Chinese participants. Cronbach's alpha was adopted to assess internal consistency of the revised scale. Table 19 summaries the Cronbach's alpha coefficients of this study and all related studies. In this study, the internal consistency coefficients of the Chinese version of SIRI-2 were .92 and .88 at pre-test and post-test, respectively, which were comparable to the coefficients reported by the authors of the original SIRI-2: alpha = .90 and .93 at pre-test and post-test, respectively (Neimeyer & Bonnelle, 1997), and the previous two studies on GKT: alpha = .86 (Pasco et al., 2012) and alpha = .81 (Taub et al., 2013).

Table 19. Comparison of Cronbach's alpha coefficients in different studies

Study	Pre-test coefficient	Post-test coefficient
This study	.92	.88
Neimeyer & Bonnelle (1997)	.90	.93
Pasco et al. (2012)	.86	.90 (mid-test) and .94 (post-test)
Taub et al. (2013)	.81	.79

The descriptive results (Table 20) show that the training had a positive impact on learners' skills. On average, all participants performed better on the post-test (the lower the score, the better). In specific, the online mode provided the greatest improvement amongst the three modes. On average, the online mode participants scored lower on the

post-test ($\bar{x} = 105.9$) than on the pre-test ($\bar{x} = 117.7$), representing a drop of 11.8 or 10% in mean score. The flipped mode participants showed the second largest improvement. On average, the flipped mode participants scored lower on the post-test ($\bar{x} = 113.4$) than on the pre-test ($\bar{x} = 121.7$), representing a decrease of 8.3 or 6.8%. The blended mode participants had the least improvement. On average, the blended mode participants scored slightly lower on the post-test ($\bar{x} = 105.1$) than on the pre-test ($\bar{x} = 109.2$), representing a decline of 4.1 and 3.8%.

Table 20. Means and SDs of pre-test and post-test scores of SIRI-2 in different modes

Mode score	SIRI-2		
		Mean	SD
Flipped ($n = 23$)	Pre-test	121.7	21.1
	Post-test	113.4	15.7
	(Change)	(-8.3 or -6.8%)	
Online ($n = 15$)	Pre-test	117.7	14.5
	Post-test	105.9	18.9
	(Change)	(11.8 or -10.0%)	
Blended ($n = 29$)	Pre-test	109.2	18.8
	Post-test	105.1	13.3
	(Change)	(-4.1 or -3.8%)	

The training helped reduce learners' difference in skills in the flipped and blended modes. As shown in Table 20, the *SD* of the flipped and blended modes dropped after the training, from 21.1 to 15.7 and from 18.8 to 13.3, respectively. However, this improvement did not appear in the online mode. The *SD* of the online mode increased after the training from 14.8 to 18.7. The reason is explored in the qualitative stage.

The inferential results (of Table 21) show that the flipped and online modes had a significant positive impact on learners' skills, while the blended mode failed to do so.

The output from the paired sample *t*-test shown in Table 21 determined whether the SIRI-2 score differences were large enough and not caused by chance. Both flipped and online modes yielded a significant difference between the pre- and post- SIRI-2 scores, with $t(22) = 2.16, p = .042$ and $t(14) = 2.85, p = .013$, respectively. However, the blended mode did not yield a significant difference between the pre- and post- SIRI-2 scores, with $t(28) = 1.26, p = .217$.

Table 21. Paired sample *t*-test for pre- and post-SIRI-2 scores

Mode		Paired Differences							
		Mean	SD	Std. Error Mean	95% CI		<i>t</i>	<i>df</i>	Sig. (2-tailed)
Flipped	Pre-test	8.23	18.33	3.82	.308	16.16	2.16	22	.042
Blended	score minus	4.03	17.20	3.19	-2.51	10.58	1.26	28	.217
Online	Post-test score	11.79	16.03	4.14	2.91	20.66	2.85	14	.013

As described in subsection 4.9.4, Cohen’s *d* was adopted to show the magnitude of the training effect for the *t*-test. The thresholds for a small, medium or large effect were $d = .2, .5$ and $.8$, respectively (Cohen, 1988). The effect sizes for the flipped and online modes were $-.39$ and $-.81$, respectively. Therefore, the Cohen’s *d* indicated a small to medium effect size for the flipped mode and a large effect size for the online mode.

Section Summary

The Chinese version of SIRI-2 yielded good internal reliability with Cronbach’s alpha coefficients of .916 and .879 at pre-test and post-test, respectively. With respect to the SIRI-2 scores or crisis communication skills improvement, the training had a more

significant impact on the flipped and online mode participants. However, the blended mode participants did not gain as much as other mode participants.

5.6 RAs' Mental Health First-Aid Effort

This section reports RAs' mental health first-aid effort after the completion of the training. As explained in Chapter 4, the number of referrals only included RAs' referrals to their supervisor or university counsellor about students with symptoms of mental health issues. To facilitate comparison between the three modes, each of which was comprised of a varied number of RAs, the average number of referrals was adopted (see Table 22).

Table 22. Number of mental health case referrals per RA

Mode	Total number of RAs	Immediately after training (Mid-Sept. 2017)*	One month after training (Mid-Oct. 2017)*	Two months after training (Mid-Nov. 2017)*
Flipped	23	3 (.13)	6 (.26)	2 (.09)
Blended	29	3 (.10)	4 (.14)	1 (.03)
Online	15	2 (.13)	3 (.20)	1 (.07)

Note. *Total number (Average number).

Table 22 shows that, for all three modes, compared to the period immediately after training, the average number of referrals increased at the end of the first month after training. In specific, the flipped mode participants had the largest percentage increase of the number of referrals (100%) from the first to the second period of measurement, followed by the online mode participants (50%), and the blended mode participants had the smallest percentage increase (33%).

The average number of referrals for all participants dropped to a lower level at the end of the second month after training. The flipped and online mode participants had the same percentage decrease (-66%), whereas the blended mode participants had a greater drop (-75%). The reasons for these results will be explored in the next chapter.

5.7 Chapter Summary

The course data analysis revealed that all participants were actively engaged in the online material around the deadlines of the required course tasks, and when they were reminded to do the makeup. However, very few participants accessed the material at other times. Interestingly, the flipped and online mode participants spent comparable effort on the online material, as reflected by their longer video viewing time and higher number of clicks. In contrast, the blended mode participants spent less effort on the online material. The data retrieved from the course system provided evidence which triangulated other findings of the study. However, the course data might not necessarily have reflected what an individual participant was doing.

The Chinese version of SIRI-2 scale developed for this study yielded satisfactory internal consistency coefficients for both the pre-test and post-test. With respect to the SIRI-2 score improvement, the training had a more significant impact on the flipped and online mode participants. However, the blended mode participants did not gain as much as other types of participants.

The total number of RAs' mental health first-aid efforts, regardless of the mode, increased at the first month after training. Those from the flipped mode had the largest percentage increase, followed by those from the online and blended modes. However, the average number of referrals for all participants dropped to a lower level at the end of

second month after training. Those from the flipped and online modes had the same percentage decrease, whereas those from the blended mode had a greater drop.

Results of the qualitative interviews provided clues for the queries raised in this chapter, and they are presented in the next chapter.

Chapter 6 Qualitative Interview Results

6.1 Introduction

This chapter presents qualitative findings based on those themes which emerged from content analysis of the interviews. Implications from these findings for the research problem, leading to discussion in the next chapter, are described.

6.2 Background and Generation of Themes

As detailed in Chapter 4, a total of 27 participants took part in the interviews, 10 of which were individual interviews, and the other 17 attended three different focus groups. Inductive manifest analysis was applied to analyse the interviews, as described in detail in Subsection 4.9.6.

An example of the analysis process from raw data to results is given in Table 23. The original text of the transcripts was summarised by notes and headings. Codes were then identified alongside the condensed meaning unit, for example, 'useful part of the course', 'lay foundation', and 'need to accumulate experience', as demonstrated in Table 23. These codes then together generated a category named 'perceived improvement in relevant knowledge and skills'. After the transcripts and codes were read through repeatedly and compared with relevant literature (Chen et al., 2014; Davis, 1989; Long et al., 2016; Venkatesh & Davis, 1996; Yeh, 2015; Yoshida, 2016), a theme titled 'training impact as perceived by participants in terms of knowledge and skills gained' was developed.

Table 23. Example of the process of content analysis from raw data to results

Original text	Summary of original text	Code	Category	Theme
<p>'I think this course for newbies like us as new RAs, it lets us know we may encounter those situations, and remind us to pay attention . . . giving guidance to us . . . but it is not possible to see the effect immediately, perhaps we need to accumulate experience . . . but the course is necessary, as in the beginning we need some basic stuff to start with. In general, it is needed, but to say it can immediately improve our confidence or skills, that might not be obvious, that depends on experience to be gained slowly over time'.</p>	<p>This course was able to provide basic knowledge to new RAs before they started their job, for example, possible situations they may encounter in future, and suggestions on what to pay attention to when performing job duties; however, it is too early to conclude that this course has immediately improved their skills which, in turn, should be further nurtured over time when they accumulate more and more experience.</p>	<p>1) Useful part of the course 2) Lay foundation 3) Need to accumulate experience</p>	<p>Perceived improvement in relevant knowledge and skills</p>	<p>Training impact as perceived by participants in terms of knowledge and skills gained</p>

For the qualitative findings, several themes that emerged from the content analysis included the following: (1) training impact as perceived by interviewees, in terms of (a) knowledge/skills gained, (b) confidence in talking with resident students and (c) behavioural change; and (2) engagingness of the course as affected by (a) sense of urgency/peer influence, (b) ease of use, (c) flexibility, (d) mixed approach preferred and (e) course design with different active learning activities. In the following sections, each of these themes and corresponding evidence from the qualitative findings are presented, respectively.

6.3 Training Impacts as Perceived by Interviewees

Participants of both individual and group interviews were asked if the course had improved their knowledge, skills and confidence in talking with fellow students. They believed that they had improved in these areas through the training programme to a varied extent.

6.3.1 Basic Gatekeeper Knowledge for RA Duties

Generally speaking, all RAs agreed that the training introduced basic knowledge and skills for RAs to perform their duties. As a new RA, Felisa said,

We may not know the exact [terminology of the] skills we have normally acquired, but in the course, the skills are categorised, which helps us get a deeper understanding.

Similarly, Fatima also believed that:

In the beginning, we didn't have much experience, serving as a floor leader for the first time. We did not know what difficulty or problem we would encounter, and how to handle it, so the course has some impact, like, guiding us.

Recalling one of the principles of active listening learnt from the training, Fiona reflected,

Perhaps I can't provide them with a lot of guidance but I listen to them, which makes them feel soothed.

Brielle considered the training impact this way,

I will not comfort a person like the way I used to do, but imagine myself as him/her. I will know what to do.

6.3.2 Progressive Acquisition and Improvement of Skills

Most flipped and online interviewees perceived they had obtained and improved several areas of skills relevant to the gatekeeper role, including active listening, responding and referral skills. They regarded these skills as helpful because RAs needed to frequently respond to residents' enquiries. Orson believed,

I think in many cases when students look for an RA to chat, they are not looking for any particular advice. Instead, what they need is a person who listens to them. Therefore, active listening and responding skills are important.

Many interviewees expressed positive feedback on the communication skills they had gained through the course. Orlando explained,

These skills are useful for my job as an RA because I have to deal with new students. When they are new, they are facing a lot of problems, for example, how to respond to the new environment, course selection, and so on. However, they are too shy to ask me for help. The skills are useful to break the ice.

Similarly, Olga stated,

The course is useful to enhance the trainees' communication skills, such as with eye contact.

With respect to referral skills, Oliver opined,

The referral case scenarios might happen in real life. It would be good for us to discuss how to handle the situation in advance.

The scaffolding feature of the course was also recognised as helpful by some trainees. For example, Olivia expressed,

I feel I could understand the course material in a progressive way.

A few blended mode interviewees agreed that the training helped them to improve their gatekeeper skills. For example, Betty said,

I am taught the skills to care about other people's feelings.

6.3.3 Confidence in Talking with Resident Students

Most flipped interviewees deemed that the course built up their confidence to speak up with students through practice and reflection. They became less nervous. Fred elaborated,

Firstly, my self-confidence has improved because of the help of my floor partners (RAs). Later, I've built up more confidence when dealing with floor members. But I am not sure if I've applied those skills mentioned in the course... because I know those skills like listening before... the course just has reminded me of those skills again... yet the course is still useful. My self-confidence has improved.

Felisa had similar opinions,

The course helps us get a deeper understanding, and then naturally instil into our conversation. That also helps us talk with people with confidence.

The flipped mode interviewees further explained that the training had successfully encouraged them to improve through continuous practice and reflection.

Fanny believed,

The most useful parts are... the key points in the PPT of the active listening and responding skills workshop, the things the instructor

mentioned in the workshop . . . the examples he raised in the workshop . . . I would think over about how to apply them, rather than by rote.

A few flipped mode interviewees suggested that confidence to speak up takes time to develop. Fabiana critically reflected,

I think this course for newbies like us as new RAs lets us know that we may encounter those situations, and remind us to pay attention . . . giving guidance to us . . . but it is not possible to see the effect immediately, perhaps we need to accumulate experience . . . but the course is necessary, as in the beginning we need some basic stuff to start with. In general, it is needed, but to say it can immediately improve our confidence or skills, that might not be obvious, that depends on experience to be gained slowly over time.

Moreover, all respondents in the focus group of the online mode participants pointed out that the online material, such as the videos, might not be sufficient to build up their confidence within the course's short time span. Olga pointed out,

Communication is a complicated thing as every time the content to communicate is different.

Considering the training impact of the videos, Owen believed that,

It is difficult to improve a person's confidence in a short period of time. Also, it is difficult to develop one's confidence to chat with others through watching video clips. I think it requires practice.

Therefore, follow-up activity was desired to internalise the skills, as Oscar, Owen and Olga suggested. However, most blended mode interviewees did not feel that their confidence was further strengthened by the training. Yet, they could not provide any reason for this perception.

6.3.4 Behavioural Change

Many trainees perceived that the course had facilitated their adjustment in behaviour or ways of communication. Fiona expressed that she had changed after the training,

In the past I spoke more. In the beginning, I talked a lot of things to them but later I found that they might not want me to talk a lot. . . . In Unit 1, there is one suggestion that we should not intervene too much while helping them properly solve a problem. So, I think this point is quite right. So, when handling my floor members' case, I tried not to push them to solve the problem immediately, but slowly.

Indeed, she thought that she had become more welcomed by some students after the course. Fiona went on to say,

I feel that after learning the active learning skills, some students directly come to me for a chat.

Another interviewee (Fleta) also reflected on how her practice had changed before and after the training:

I applied some skills to offer help, and moreover, avoid something like . . . to me . . . avoid concluding too early . . . avoid providing solutions too early.

Some interviewees said their communication style was changed after the training.

Oliver expressed,

I referred to the training material again when I wanted to chat with fellow students'.

Brielle said,

I have implemented what I heard and watched in the course. For instance, I listen to the dramatised video on how to comfort a person.

6.3.5 Prior Training Impact Revived

With particular respect to the online course, many online interviewees perceived that their memory of previous training was effectively recalled and thus the training impact was prolonged. Oliver acknowledged this:

It's been a long time since last semester when we attended the training, I've already forgotten some of the things learned. So now we could review the things and got some improvement'. Also, Olivia considered that the online course produced along-lasting impact: 'Even if we finished the online course a month ago, we could have some memory back in our minds.

As was evident, while asked by the interviewer about the exact types of skills introduced in the course, Octavia showed that she could precisely recall the course content about how to listen actively and make appropriate responses (e.g. keep eye contact).

6.4 Ease of Use

6.4.1 Language

Most parts of the course, including the face-to-face and online components, were conducted in Chinese (Cantonese or Putonghua in case of spoken language), whilst some online materials were available only in English. It was unsurprising that all interviewees preferred using their mother tongue, rather than taking the course in a second language. Their reasons were comfortability and effectiveness. Many interviewees perceived the course materials easy to use in terms of the medium of instruction. Fernando, for instance, said,

What the actors tried to express is much better interpreted in Cantonese.

Some participants' perception of the accessibility of the medium of instruction varied based on the availability of supporting props, as well as their language ability and personal incentive. Otelia, for example, found the traditional video in Unit One difficult to listen to and did not finish watching it as the video was conducted in English.

Those who were less confident in English suggested that they would need tools or supplementary options to assist their learning, including subtitles (Ben, Faline, Fanny and Fred), translation (Faye), simpler English (Otelia and Felisa), slower pace (Faye and Fatima) and possibility to repeat the contents (Ben, Bianca Fanny, and Fleta). Fanny expressed this:

If I don't understand the contents or the words, I would stop and reverse to play it again, or to check it out in the dictionary.

Although many participants across all three modes still perceived the course material easy to use in case of being instructed in a second language, many interviewees of the online mode did not feel comfortable to do so. In the individual interviews, Oliver and Olivia from the online mode group stated that the learning process would take more time because they would have to spend time to look up English terms in the dictionary or on the internet. Octavia, Olga and Orson from the online mode group also believed that taking the course in a second language might lower their learning motivation. Orchid pointed this out:

We are used to communicating in our mother tongue [i.e. Cantonese or Putonghua] in daily conversations.

Moreover, Oscar considered that learning the course in English would be a bit strange:

We normally use Cantonese and Putonghua to communicate with resident students.

6.4.2 Accessibility

The easy accessibility of the online material was also highly praised by most of the interviewees. For instance, Fiona, Ben and Oliver said the material was available in Moodle so they could access it anytime anywhere they needed it. Some RAs found it convenient to refer to the online material to recall their memory about the skills in advance of chatting with their floor members. For example, Faline noted,

Instead of calling my supervisor, I would recall the referral skills online if I encountered a case, because I thought it would be faster to check the material online.

Another RA (Faline) analogised the course material accessible online as a dictionary:

I feel the course is like a dictionary, for example, you see a vocabulary, or you encounter a situation, perhaps the first point of reference is that course material. If it is not solved after viewing back the material, then we may seek help from our supervisors. . . . Although we may not find a particular solution from the material, there may be some inspiration.

Fiona also told the interviewer that she even downloaded the video clips for review when a need arose.

6.5 Sense of Urgency

The occasions on which the interviewees mentioned that they viewed the online material showed some common characteristics, irrespective of their training modes. The most frequently mentioned time periods were around the deadlines of submission of the required tasks, and when the participants received reminders from their instructors to view the material via either email or social media messages.

Ben described his reason to access the course material:

The instructor told us that there were assignments. At that night, I clicked and watched the videos, and finished an assignment.

Olivia also frankly spoke of her motive of viewing the online material:

I worked with the material only when I had to submit the course tasks.

Most interviewees agreed that the instructor's reminders had motivated them to access the material. Oliver confessed,

I view the material when my instructor urged us. . . . because I forget at times.

Otelia added that,

In case of no coursework, I think students will not finish all parts of the online material seriously.

This demonstrated the importance of a sense of urgency for trainees to finish certain course tasks. Some RAs (Orchid, Oscar, Orson and Olga) even admitted that they would not review the material again after the completion of coursework.

In contrast, the sense of urgency tended to be less effective to motivate the blended mode interviewees to access the material after the training. Betty stated,

I watched the dramatised videos when I was having the face-to-face training. After that, I didn't watch them anymore.

Another blended mode interviewee (Bianca) offered the same reason:

I did not access the material again because I thought it was done after the face-to-face training.

Nonetheless, some participants viewed the online material based on their own needs. For instance, Fanny said,

I reviewed the material before the fall semester when we were about to need to communicate with residents.

Olivia stated a special incentive for reviewing the course material was that it assisted her learning of another course on school counselling and advising:

I would sometimes look for materials that are relevant to this course. Because sometimes their topics are the same, then I would review them, for example, the last topic was about listening.

6.6 Mixed Training Mode Preferred

It is noteworthy that participants of the flipped and blended modes would choose the same mode of learning if they were to take the same or a similar course again. They believed that face-to-face interaction with the instructor and peers meant getting immediate feedback and having role play exercises, and thus this made a deeper impression which led to deeper learning. Fatima explained her preference:

If doing together, the atmosphere is better, and with face-to-face discussion, we may have more critical thinking.

Many flipped mode interviewees suggested that delivering the course with a face-to-face method would be quite effective. Fiona held that,

It's better to have face-to-face . . . because online . . . is less efficient and the effect is not that good. I think there should be face-to-face exchange . . . with feedback . . . and you can know what your partners are thinking of.

The flipped mode participants also wished to take part in role play exercise again with more advanced contents. Fernando further pointed out an additional advantage of the face-to-face mode as,

Strengthening our relationship.

With the flipped mode approach, the course material would still be accessible anytime when trainees wanted to review it, which was how Fred justified his choice. Generally agreed upon by many flipped mode interviewees was the perception pointed out by Fleta:

If all materials are put online, maybe some people won't view them at all . . . or just browse them very briefly merely for finishing the coursework . . . and not learning them wholeheartedly.

Some experienced RAs, who had taken the course with the online mode, as well as a face-to-face workshop in the previous semester, perceived that the face-to-face mode would be suitable for new RAs. Orlando noted,

People who don't have the skills should attend the face-to-face mode because communication skills need practice.

Olga, who was fine with either online or face-to-face training, suggested that new RAs should do face-to-face first and then online, as the face-to-face mode could introduce the content in a more relaxing environment, while the online course would help learners deepen their understanding. However, Otelia thought that an online course might be less engaging to some students who were less self-motivated,

. . . because it's online . . . actually if students take it online, their engagement is less. In case of no coursework, I think they will not finish all the parts seriously.

Similarly, some participants from the blended mode course preferred the face-to-face mode more because they thought that students might not treat the online training seriously. One blended mode interviewee (Brielle) pointed out,

If it is the similar situation, I'll simply skip to answer. I'll pay attention to the answer but I may skip the process.

Fatima even considered the learning mode in association with emotion, saying that,

Viewing on your own is a bit lonely . . . Our thinking may be too narrow.

Her comment demonstrated that some participants perceived online learning might produce a shallow learning impact.

Likewise, the blended mode interviewees tended to prefer a combination of face-to-face and online components in the training. While many of them did not finish viewing the online material after the face-to-face workshop, according to the course engagement

statistics, the respondents in the interviews still emphasised the need of both modes to facilitate their learning. For instance, Bianca elaborated this as follows:

If you do face-to-face only, you may forget it easily. If you do online only, most of the people will not really go deeply into it. They might just click in, tick something and leave.

Ben also held that a mixed approach would be good:

Face-to-face works as a foundation that you may review the videos afterwards. If there is only the online course, you might leave it back or if there is only the face-to-face workshop, you may not be impressed.

Another blended participant (Betty) emphasised the impact of impression which resulted from the face-to-face mode:

If we use a mixed way, though you are 'forced' to do the homework, you'll find what you learn in class is useful and what you will remember. Using only online course is like checking Facebook, which you will soon forget, but at least using a face-to-face way is what I still remember now.

Talking about the sequence, a blended mode participant (Betty) suggested,

Watching beforehand seems better. Using the same example, sometimes even homework is assigned, an example like me, I didn't review them afterward.

Ben also shared this opinion. Nonetheless, some interviewees of the online mode preferred their current mode of training. Octavia explained:

The online training course is more flexible and convenient to learn.

Oliver even expressed that:

The online training that semester had been better than the face-to-face training held in the previous semester: I think some of the participants of the [face-to-face] training held in last semester did not take it seriously, so they seemed to be teasing during the scenario role-play exercise, the result was not good.

Olivia assumed that the online course would suit the needs of different learners as,

Some ideas might be less useful to some people, for others they could be useful. In other words, trainees could choose which parts to learn or repeat during the online training.

On the whole, with respect to the preference of training mode, most of the interviewees preferred a combination of face-to-face and online components. All interviewees agreed on the necessity of face-to-face components in the training, especially for new RAs. When considering the online mode, some of the trainees were rather hesitant due to a higher level of self-motivation required, whilst those who supported the online mode pointed out the flexibility it offered.

6.7 Different Active Learning Activities

A variety of active learning activities were applied in the training programme. The experiential role play exercise was conducted only in the face-to-face mode of training, while participants in all modes of training had to finish the dramatised videos and the practicum (both conversation with residents and self-reflective writing) at varied stages. Participants expressed different levels of engagement in these activities, and they provided different reasons for their liking or disliking of these activities.

6.7.1 Role Play (Experiential) Exercise

Interviewees generally agreed that the role play exercise provided learners with skills and opportunities to practise, thus enhancing their ability to perform RA duties and communicate in other situations. The flipped mode participants hoped to take part in role play exercise again in future training.

Fanny described the role play exercise in this way:

The workshop was quite engaging . . . We sat in a circle to do role play exercise . . . which was very interactive . . . We received the small paper slips that provided you some wrong ways to communicate, but we had to use the intended wrong instructions to respond . . . so we had to evaluate the appropriateness of the responses.

In respect to the concept of learning by doing, Betty noted:

I am very impressed by the role play exercise because it offers deeper impression and helps us engaged in the situations. In contrast, you may be less engaged when viewing videos.

The interviewees pointed out the real-life applicability of the scenarios demonstrated in the role plays. Francis, for instance, stated:

The listening skills of the role play workshop were helpful . . . because I think they are not only useful for chatting with fellow floor members, but also applicable for daily conversation with other people.

Fatima also spoke of the usefulness of the experiential exercise:

I feel most impressed by the exercise that we used small pieces of paper during the role play exercise. The skills to have good dialogue . . . like 'I understand . . .' so later I always use this phrase in my conversation with my fellow floor members.

However, some online mode participants were not optimistic about the role play exercise which they tried in the face-to-face training conducted in the previous semester.

Oliver expressed his honest feelings about this:

Some of the participants of the face-to-face training held last semester did not take it seriously, they seemed to be teasing during the scenario role play exercise, the result was not good.

Similarly, Orchid confessed that the online course had been more useful than the face-to-face workshop of the previous semester because she had not taken the last one

seriously due to the large class size (about 30), and admitted to messing around with her classmates during the workshop. One blended mode interviewee (Bianca) also recalled:

The practicing session looked messy. I forgot why it became messy.
A large number of people might be the reason.

In relation to this aspect about the class size of face-to-face training, interviewees from the flipped mode course generally preferred a size smaller than the previous training setting. Fred argued:

If it's like the number we have (ten) today, it's good. But if all RAs are attending, I think there might be some disadvantages, for example, in a big group, if everyone speaks one sentence, then the session will already be finished.

6.7.2 Dramatised Videos

Participants had mixed comments on the dramatised videos in Unit One of the training programme.

Many interviewees who liked the videos suggested that familiarity with the actors was one of the reasons for their engagement in video viewing, while both the actors' good performance and the storyboard of the case also attracted their attention. Oliver suggested that more RAs could be invited to be cast in the video in the future, which would make the video even more interesting to watch. However, Faye reported that she could not concentrate on the video content because she knew the two actors of the videos. Faye described her experience in watching the videos:

We know the two actors, and when we were watching them, we were busy at laughing . . . but not focused on the contents of the video . . . so the things we learnt from the video might be less than what we learnt from latter parts . . . but the emphasis we got is their performance . . . not the information delivered by the course.

Another component of the dramatised videos was the multiple choice question, asking participants' choice of handling the situation, followed by short clips expressing

feedback on the choice. This learning activity was believed to enhance learners' understanding of the content. Brielle made a pointed about this:

Sometimes when you click one choice as the answer that you think is the most appropriate and it is false, you will remember more deeply that another is correct. It made me remember the correct answer.

Otelia also said,

Students may not get the real meaning if they just watch the conversation between Ming and Ryan (the characters in the video clips) in the scenario . . . not able to understand how Ryan thought and why Ming said those things . . . but if you view the feedback, you will get the real meaning.

This interviewee also compared the dramatised videos in Unit One with the traditional videos in Unit Two, and pointed out that the former were more engaging than the latter:

Compared to Unit One on referral skills, the videos in Unit Two less interesting, as the latter only explained the points but didn't show any scenario.

In addition, as Olga noted,

The unit does provide useful skills to respond to students who have potential mental health issues, although I think that RAs would seldom have to handle referral cases.

The two options of language, Cantonese and Putonghua, were available for participants to choose when they watched the videos, so they liked the videos due to the availability of their preferred languages. A blended mode interviewee (Ben) stated,

You can choose. If you don't like one language, you can change. If the material was delivered face-to-face, it might have been taught only in one language.

Some interviewees also expressed doubt about the videos, arguing that the cases shown would rarely happen in daily life. Fabiana said,

The video case on referral skills. . . . the actors . . . there wouldn't be someone lying on the ground at the staircase.

Felisa added that,

The video could have been more down-to-earth.

Yet, Francis claimed that he had witnessed a similar case that actually happened in the college. He recalled the event:

In my freshman year, I saw a guy vomiting just right outside another person's bedroom, and speaking like sleep talking.

Some interviewees pointed out that the videos were not effective in developing trainees' confidence to communicate, which would instead require practice and time to improve. Owen contended,

It is difficult to develop one's confidence to chat with others through watching video clips. I think it requires practice.

6.7.3 Conversation with Residents

As part of the practicum of the training, as well as part of their job duties, the RAs were required to talk with their fellow floor members on a regular basis, that is, at least once per month for each member. Francis considered this arrangement to have regular conversations with residents quite motivating:

Previously I didn't speak much. Now I have to communicate more and write it down, and moreover, when I have difficulty in some issues, I can ask for support from other RAs, so I can apply some of the skills.

Each RA was also asked to complete a form to keep track of the chat history in different categories of topics with their fellow residents. The concept behind this chat record was to provide RAs some general guidelines about the content they were going to talk about, thus helping them communicate better with their floor members. Some RAs

deemed the monthly chat record useful because it served as a helpful tool for them to recall the chat history of a particular student. Specifically, this task facilitated them to reflect on their own practice. Fanny said,

The conversation with residents is useful . . . for some residents with whom I could meet easily, I could talk to them . . . but after looking at the record, and find there are still some residents I have missed, I will go knock at their doors, and try to talk to them.

Fiona echoed this idea:

You can chat with fellow students based on the past record . . . the record can remind you what you have chatted about, and whether the chat was in-depth.

Nevertheless, a number of RAs were suspicious about the usefulness of the task of the monthly chat log. Some of them did not like to fill it in when they were chatting with students, while it was difficult for them to remember and record it afterwards due to memory loss. Fernando doubted the value:

I forgot whom I've talked with, and when . . . maybe I bumped into someone one day, and then talked for a while . . . it's difficult to fill in the information because perhaps we just talked for a few seconds'.

Moreover, some interviewees perceived that completing the chat record merely for the sake of assignment submission would cause superficial learning. Otelia noted,

I chat with students not because of this [chat record] . . . but because I want to do it . . . It seems a bit insincere.

Some regarded it to be too demanding as they had to input the record too frequently.

Instead, Fabiana proposed another option:

We don't need to submit every time . . . otherwise, some people may feel that's just a task, just trying to catch the deadline to submit it. Maybe it's better to just eat and chat together.

Owen also proposed an option:

As we may be busy with our own studies, projects and presentations, it's better to submit it every two months.

However, some RAs considered the task of initiating conversation with all levels of undergraduate students residents to be too aggressive, as they believed that many senior students did not welcome their visit. Orchid elaborated on this:

After a long day of study or work, some students do not want to be interrupted. They feel annoyed when we RAs visit them without specific reasons but just to tell them 'Hi, we want to show care to you'. [All interviewees were laughing loudly]. We feel embarrassed too.

Owen also expressed doubt about this task:

Is it a bit overdone [to knock their doors and chat with them]? The idea [of filling up the monthly chat log] is like monitoring the residents, which is fine for secondary students, but not appropriate for university students.

To seek a balance, Fleta proposed a compromise:

Perhaps dividing into different times or groups . . . say, I am assigned with 18 students, I may not be able to chat with all of them within this month, may miss some people. So maybe for this month I focus on particular members, and report on them this time; rather than taking record of everyone, that information submitted might not be totally true. Perhaps by limiting the focus, we can get a better effect.

Generally speaking, while some RAs found the conversation activity motivating and useful, others felt that it was too demanding, and thus suggested focusing on a smaller group of residents during each specific time period.

6.7.4 Self-Reflective Writing

New RAs generally were quite positive about writing reflective journals, whilst returning RAs tended to be more reluctant about this task. Those who liked the reflective

writing tasks regarded them as engaging and interactive. This type of practicum engaged learners to reflect on their own practice. Octavia opined,

The practicum is engaging because I was asked to respond, to report my feeling and counselling experience.

Likewise, Fanny described her engagement in the online forum:

I had to recall how I communicated with people, what I've done, and any insufficiency I have done . . . I needed to think about all these.

Fiona also found the reflective exercise about personal communication pattern useful, and stated,

I think it is good for helping you recall your own communication experience.

Faline felt that the required task helped her engage in the material:

The course tasks helped me develop a habit . . . pushing me to complete something regularly . . . and, if there was no practice required, I wouldn't have taken the initiative to do it.

Both Otelia and Olga expressed similar feedback. Also, a blended mode participant (Betty) reflected,

Initially, I was thinking why we would do. However, after I have done it, I found it useful because it allows you to make associations to what you have learnt in class and real life.

These supporters were also fine with the course workload, while acknowledging that, as Fiona admitted,

It takes some effort to keep the record.

In addition, Fanny pointed out that,

The reflective writing was indeed a process to improve ourselves.

Interviewees had varied opinions with respect to the timing of the reflective writing exercise. Octavia asserted that it might not be a good idea to ask the RAs to submit

the reflection during the mid-term (in the middle of and late October) as it would interrupt their studies. Yet, some interviewees suggested that the timing to respond to the reflective exercise, which was set one month after the semester began, was not feasible. They believed that there was a lack of or were only a few cases which required referral, which instead would normally happen during the middle of the semester. Brielle criticised this idea:

After the school starts, we didn't have the chance to talk deeply with our mates, so I don't know what to reflect. However, for talking formally about annoying or unhappy things, they will not find you to talk about them. I don't know what to reflect?

On this issue, Oscar offered a suggestion:

It was too early to do the reflection exercise in the beginning of the semester in late August, when there was an absence of opportunity for us to apply the skills. It is because many cases which need referral happen during the middle of the semester during late-September and mid-October.

This opinion was additionally supported by both Olga and Orson.

Some interviewees were hesitant about the reflective writing activity. Otelia assumed that the reflective writing could not accurately reflect learners' actual behaviour since learners tended to overstate their actual efforts in self-reporting. Otelia stated her reason:

Sometimes what you think is different from what you really do . . . because when you think, you will think of a very good way to do . . . but when you face the student, you may not be rational enough, talk the right things.

A few mentioned the impracticality of the word requirement for the reflective writing on general counselling practice, which was set at 200. Fred speculated,

At least not focusing on having to write at least 200 words . . . maybe if I finish in 100 words, then 200 words is meaningless . . . Otherwise, it's just for the sake of meeting the word requirement.

Some felt that the mandatory reflective writing exercise made them feel a bit stressful (Felisa), and that it could be voluntary (Fatima).

Some suggested an alternative way of reflection. Felisa proposed,

I'd like having a group discussion like this, reflect together, talk through the things . . . better than just writing on your own.

Francis elaborated further on this:

I think the practicum is okay. We can continue 'interviewing' (applying our skills) fellow floor members, and after that, we can organise group meetings like this, asking some questions to facilitate us to think through issues, to reflect, and then submit a written summary of reflection in the evening.

6.8 Chapter Summary

This chapter presented the content analysis of the interviews conducted with different groups of training participants according to various themes. First, with respect to RAs' perceived training impact, although the interviewees were generally positive about the learning impact, a few were more critical about the training effectiveness due to concern about a lack of alignment between the learning objective and the training content. Second, trainees expressed varied levels of engagement in the course due to a number of factors, including ease of use, sense of urgency, different training modes and different active learning activities in which they had participated. In particular, in choosing between online or flipped modes of learning, the new trainees tended to prefer a combination of both online and face-to-face components. Many supposed the limited engagement of learners in the online mode was the result of a lack of their self-motivation, whereas they were generally optimistic about face-to-face training because of the need of immediate feedback and perceived higher engagement.

The interview results also offered interesting observations on the effectiveness of the array of teaching and learning activities in the training programme. While the role play exercise was generally welcomed by the respondents, due to reasons such as opportunities to practise the skills and gain a deeper understanding, they had mixed opinions on other teaching and learning activities. For instance, some interviewees agreed that the attractiveness of the dramatic videos was due to interesting content and familiarity with the actors, whilst some thought that their familiarity with the actors had distracted their attention to the training content. At the same time, some respondents perceived the practicum (both the self-reflective writing and conversation with residents record) to be a practical way to improve themselves; yet, some were suspicious about these activities and criticised the distorted learning objective, claiming that some learners might finish these tasks merely for the sake of fulfilling the coursework requirements.

Taking into account both the quantitative findings analysed in Chapter 5 and the qualitative findings presented in this chapter, the next chapter will generate a combined analysis of these findings and an offer in-depth discussion on the results which address the research questions.

Chapter 7 Discussion

7.1 Introduction

Chapter 5 presented quantitative findings and Chapter 6 presented the results of the content analysis of qualitative interviews. Combining and comparing the results and recent literature, this chapter addresses three main research questions of this study, which include: (1) ‘What are the impacts of training between the flipped, blended and online training modes?’, (2) ‘To what extent did the trainees of the three training modes engage in the training?’, and (3) ‘What are the preferred training activities by the trainees?’.

7.2 Research Question 1: What Are the Impacts of Training Between the Flipped, Blended and Online training modes?

The present study demonstrated that there are training impacts between the flipped, blended and online modes of the GKT programme. The flipped mode was the only mode that exhibited a positive training impact in four measured aspects: knowledge, skills, attitude and self-efficacy and behaviour. The training impact of the flipped mode is presented below.

7.2.1 Positive Training Impact of Flipped Mode in All Four Measured Aspects

In the current study, participants in the flipped mode generally agreed and said that dramatised videos laid a foundation for the subsequent role play and practicum (see Subsections 5.3.1 and 6.3.1). Many flipped mode interviewees (such as Fiona, Felisa and

Fatima) recalled the principles of active listening acquired from face-to-face training (e.g. being attentive and empathic), which served as evidence of their knowledge improvement. This could be viewed as a low-level learning outcome according to Bloom's taxonomy (Anderson & Krathwohl, 2001; Bloom et al., 1956). However, RAs should be able to recall the training content and also apply it to solve daily problems in their workplace. Thus, GKT shifts from rote memorisation via didactic delivery (Lipson et al., 2014; Wong et al., 2017) to a deeper learning approach, which is achieved through a series of active learning activities, such as role play and case discussion (Pasco et al., 2012; Taub et al., 2013).

Flipped training encourages participants to apply higher-order thinking to complete their learning activity, as advocated by Chickering and Gamson (1987). Role play and case discussions encourage participants to interact with each other, to evaluate their actions and to learn from previous mistakes. Such delivery methods make deeper impressions on learners and help them to engage in actual situations. This evidence further illustrated that participants from the flipped mode learned by interacting with their environments, rather than receiving information passively (Garrison, 2012; Johansson & Gardenfors, 2005). The application of higher-order thinking in the learning process of flipped training in the current study contributed to the improvement of crisis communication skills, as was evident in the significant drop in scores obtained between pre- and post-SIRI-2 tests (Neimeyer & Bonnelle, 1997) (see Section 5.5). This result aligns with the findings of Pasco et al. (2012) and Taub et al. (2013) that GKT with experiential exercise or role play, which emphasise interaction between the trainer and trainees, can enhance RAs' crisis communication skills.

With respect to self-efficacy and attitude, the flipped mode also tended to be effective in building up participants' confidence and improving their attitude towards the job. This was because the course built their confidence to speak with students, so that

the trainees became less nervous through practice and reflection. The training also enhanced trainees' understanding of a network of support and relevant resources, which positively changed their perception of the RA job (see Section 6.3).

The improved knowledge, skills, self-efficacy and attitude motivated the RAs' intention and action to perform their gatekeeping duties, corresponding to the prediction in the TPB (Ajzen, 1985). This argument is supported by the quantitative finding that participants of the flipped mode training had made more referrals about mental health issues after the completion of the training (see Section 5.6). Qualitative interviews further showed that the flipped mode training facilitated learners' adjustment in their behaviour in their ways of communication, for example, becoming more attentive and empathic after the training, and thus making more efforts to chat with their buddies (see Subsection 6.3.4). This result replicates the finding of Thombs et al. (2015) that GKT strengthens RAs' mental health first-aid intention and efforts.

Overall, previous works have shown contradictory results. GKT with a didactic nature was found to have no effect on RAs' number of contacts with students (Lipson et al., 2014). Although online GKT has a significant positive effect on RA's referrals of students with mental health issues, it is unable to improve trainees' knowledge and self-efficacy (Thombs et al., 2015). Studies on experiential GKT have suggested that face-to-face GKT with experiential exercise provides opportunities for trainees to apply their knowledge and skills through interaction and discussion, which strengthens their skills and self-efficacy to perform gatekeeper duties (Pasco et al., 2012; Taub et al., 2013). However, those studies did not measure the impact on trainees' behaviour. The current study fills this gap concerning training impact. It also argues that flipped GKT training,

which combines both face-to-face and online components, is effective in improving trainees' knowledge, skills, attitude, self-efficacy and behavioural action.

The impacts on skills and behaviour varied between participants of the flipped, blended and online modes. This is further discussed in the next subsection.

7.2.2 Impacts on Skills and Behaviour Vary between the Three Modes

With respect to skills improvement, the online mode participants showed the greatest improvement in skills amongst the three modes (see Section 5.5). This result refutes a previous finding which asserted that GKT has no effects for returning RAs (Taub et al., 2013). The more positive result of the current study may be because the online mode was attended only by the experienced group. Taub et al. (2013) reported that returning RAs were less engaged in training compared to new RAs. To address this issue, the current study adopted the concept of online dramatised videos with interactive quizzes as employed by Thombs et al. (2015). This type of online video is believed to promote trainees' engagement in training material and revive prior training impact. This study's qualitative interviews provided supporting evidence of this. For instance, in the focus group interviews, all returning RAs agreed that the training had enhanced their skills in two aspects: general counselling skills (Olga, Owen and Orson) and referral skills (Olga and Oscar). They considered that the online training revived prior training impact. In addition, online training in this study provided a prolonged impact as some face-to-face trainings do, and this impact was sustained for three months after the training (Cimini et al., 2014; House et al., 2013) (see Subsection 6.3.5).

Although both flipped and blended mode participants had similar training backgrounds, and participated in the same training content, the flipped mode participants reported greater improvement in crisis communication skills than the blended mode participants (see Section 5.5). While previous studies demonstrate positive

relationship between engagement in online material of LMS and course achievement (Dixon, 2015; Li, 2015; Li & Tsai, 2017); similarly, in the present study, the flipped mode participants, spent significantly more effort viewing the training videos, as compared to the blended mode participants (see Section 5.4), and achieved a better training result. The lower level of course engagement by the blended mode participants is further discussed in Section 7.3.

In the previous subsection, both quantitative and qualitative results showed that GKT with the flipped mode motivated trainees' intention and action to perform gatekeeper tasks. In comparison, participants of the blended and online trainings reported less behavioural change, which was evident by the lower amount of mental health first-aid effort (see Section 5.6). Indeed, some online mode interviewees (Owen, Orchid and Oscar) revealed that they visited their resident students because of the practicum requirement. This indicates that the online mode participants may not have understood the objective and value of the activity, which negatively affected their perceived usefulness of the activity (Venkatesh & Davis, 1996) and their engagement (Chen et al., 2014), resulting in a lower training impact. This kind of motivation is further discussed in section 7.4.

7.2.3 Flipped Training Had Greater Impact on Attitude and Self-Efficacy

Although the online training was reported to be helpful for trainees to recall relevant knowledge and skills, it was not enough to improve their confidence. As shown by the synthesis in Subsection 6.3.3, participants of the online training understood that communication is complicated because the context is different each time, so they have to practise to internalise the skills. The online training comprised a few online revision videos, which were apparently insufficient. This evidence supports the argument of Thombs et al. (2015) that online training is not strong enough to produce impact on

trainees' efficacy in respect to communication in crisis situations. In contrast, trainees in the flipped mode, in general, felt that the course improved their knowledge and skills progressively, which, in turn, strengthened their attitude and self-efficacy to perform the gatekeeper duties (see Subsections 5.3.1 and 6.3.1). The absence of impact on the blended mode participants was most probably caused by their lower level engagement in practicum and online activities after the face-to-face workshop (see Section 5.4).

Overall, the flipped mode offered a balance between online training and traditional face-to-face training. The former enhanced participants' referral intentions, whereas the latter limited participants' intention to initiate contact with fellow residents.

7.2.4 Section Summary

This section addressed the question regarding differences between the three training modes by discussing their varied training impacts measured through four aspects: knowledge, skills, attitude and self-efficacy and behavioural change. In brief, only the flipped mode offered positive training impacts on all these four aspects. The impacts on skills, behaviour, knowledge and attitude and self-efficacy varied between the three modes. Despite that both the flipped and blended mode participants had similar training backgrounds and same course content, the flipped mode participants demonstrated greater effort spent on the course materials than their blended counterparts, therefore achieving better results for skills and behaviour. Participants of online mode showed greater improvement in skills than the flipped mode participants. This variance may have arisen because the online participants were more experienced and, thus, could recall course materials more easily. With respect to attitude and self-efficacy, the flipped mode was more effective in building up the confidence of participants through practice

and reflection, while online mode participants showed limited progress in efficacy. This was probably due to a lack of practice opportunities during training. The flipped mode offered a balance of strengths and weaknesses between the online and face-to-face trainings and thus filled the training impact gap identified in the literature.

7.3 Research Question 2: To What Extent Did the Trainees of the Three Training Modes Engage in the Training?

This section discusses the extent to which the participants took part in the training.

7.3.1 Flipped Mode

The flipped mode participants were the most active group of participants amongst the three mode groups. They fully engaged in the training through different teaching and learning activities, such as dramatised videos, role play exercise and self-reflective writing (see Sections 5.3 and 5.4).

The flipped mode participants attributed their engagement to their perceived usefulness of the training. The quantitative results (see Subsection 5.3.2) showed that all flipped mode participants highly rated all the perceived usefulness items, for example, that the training was helpful in improving the trainees' job performance. In the qualitative interviews, all the flipped mode participants agreed that the training systematically introduced basic knowledge and skills for RAs to perform their duties. In particular, many interviewees (e.g. Fanny and Fleta) praised the training as engaging and useful in enhancing their skills. This finding supported the argument of Venkatesh and

Davis (1996) that the more useful a participant perceives a new technology to be, the higher will be his or her engagement in it. In the higher education context, perceived usefulness of a flipped classroom is also reported to have a positive impact on learners' engagement and their class performance (Long et al., 2016). The result of the current study replicated this finding beyond the traditional classroom context.

Another reason for the high engagement of the flipped mode participants may have been the carefully arranged material for flipped training. Hamdan et al. (2013) suggested that, as a key element of flipped learning, the teacher must effectively select what is to be taught online and what individual activities can be arranged during a face-to-face module. Chen et al. (2014) referred to this concept as the intentional content of flipped learning (see Subsection 3.5.1), which was adopted in the current study. Descriptive results of the learner survey showed that the flipped mode participants rated all intentional content items very high (at 5) (see Subsection 5.3.4). In other words, the flipped mode trainees perceived that the instructor provided a detailed course overview and explained the learning outcomes of the course teaching and learning activities, which, in turn, improved their engagement in the training. This finding verified the intentional content principle of flipped learning (Chen et al., 2014).

An additional possible determinant of trainees' high engagement was the sense of urgency (influence of instructor or peers) (Yeh, 2015). This study empirically tested this factor and demonstrated its positive impact on the level of engagement in the flipped and online modes (see Subsections 5.3 to 5.6). In general, trainees agreed that reminders from the instructor by email or social media message motivated them to access the course material and to finish the tasks (see Section 6.5 and Subsection 6.7.3).

7.3.2 Blended Mode

In comparison with their flipped mode counterparts, trainees of the blended mode engaged relatively less under certain circumstances. Unlike the participants from the other two modes, the blended mode participants had a weaker sense of urgency to engage in the use of training materials. This was indicated by the significantly lower mean score of these participants in the sense of urgency item than the flipped mode participants (see Subsection 5.3.4). The qualitative interviews provided a clue that the sequence of the blended mode (first face-to-face, then online) lowered their sense of urgency to engage in the online unit, as they thought that their training had ended after the face-to-face unit (see Sections 6.5 and 6.6). This false expectation negatively affected the engagement of the blended mode participants in the subsequent online unit and, thus, limited the potential advantages of blended learning.

The very low engagement in course materials by the blended mode participants was most probably affected by their perceived usefulness of the material (see Subsection 5.3.4 and Section 5.4). This result was supported by the qualitative interviews which revealed that the blended mode participants considered the online materials to be less useful; thus, they did not treat these seriously and attended to them to a lesser extent (see Section 6.6).

Critically speaking, transition between face-to-face and online modules in the blended training did not seem to be as smooth as in the flipped training. It can therefore be argued that sufficient guidelines to finish course tasks and continuous communication about the course learning outcome will further improve the engagement of learners.

7.3.3 Online Mode

The extent to which the online mode participants engaged in the training varied. In the learner survey, they reported being neutral (mode = 3) regarding their overall engagement in the training (see Section 5.3). Although all interviewees agreed that the course instructor provided a detailed overview about the training, the extent to which the guidelines for individual activities were made known to the trainees varied. For instance, Olga, Oscar and Orson deemed the timing to respond to the reflective exercise (one month) as inappropriate. Thus, they were reluctant to participate in conversation with residents and self-reflective writing (see Subsection 6.7.4). This variation caused differences in learners' engagement, verifying the prediction of Chen et al. (2014). These responses clearly indicate that further investigation into the trainees' guidelines for completing tasks is needed.

Michael (2007) pointed out that some students may lack knowledge, experience or willingness to engage in active learning activities. They may have expectations about learning that are different from those of their teacher. Many online mode participants of the current study (e.g. Owen and Orchid) did not like the conversation exercise because they regarded it to be too demanding to input the records so frequently (see Subsection 6.7.4). Thus, if the educational goal of the practicum is articulated more comprehensively to the trainees, training would create more benefits for them, as a reflection of the intention content principle of Chen et al. (2014).

Nonetheless, interviewees generally agreed that the flexible learning environment of the online mode had a positive impact on their engagement in the training, which supports the argument put forward by Chen et al. (2014). The flexibility

of the online material enabled participants to review the material whenever they needed (see Section 6.6). In other words, they were able to recall the skills in order to perform their duties.

7.3.4 Section Summary

This section identified four factors that helped to explain the observed engagement patterns. They include sense of urgency, perceived usefulness, intentional content and flexible environment. Participants of all the three modes generally agreed that the training programme was effective for the four aspects. Nonetheless, certain training modes were considered less effective in some aspects than others: the blended mode participants perceived that the sequence of the blended training did not motivate them to access the training material after the face-to-face unit; the online mode participants were less impressed by the intentional content of the course; and both the online and blended mode participants were impressed by the perceived usefulness.

7.4 Research Question 3: What Are the Preferred Training Activities of the Trainees?

In the current study, the training programme provided a series of learning activities, which included dramatised videos, role play exercise (except for online participants), conversation with residents and self-reflective writing by the trainees. Participants expressed different levels of engagement in these activities, and they provided different reasons for their liking or disliking of these activities.

7.4.1 Dramatised videos

The dramatised videos were very popular with most participants. In the learner survey (see Subsection 5.3.1), all participants reported (mode = 4) that dramatised videos were helpful for their learning, and they agreed or strongly agreed that they actively took part in the activity. The current study successfully engaged participants through online dramatised videos, the concept of which was originally developed by Thombs et al. (2015). The qualitative interviews (see Section 6.7) showed that short duration videos (less than five minutes each) followed by concept check questions contributed to the positive engagement result, corresponding to the recommendations of Lemke (2017). In addition, the availability of different language options improved the perceived ease of use of the dramatised videos (see Subsection 5.3.4 and Section 6.4), which was likewise a favourable factor for course engagement found in the study of Long et al. (2016). The dramatised videos of the present study are able to bring about similar effects of the features of online learning, such as instructor presence, video-taped feedback and carefully planned content, found in previous research (Draus, Curran & Trempus, 2014; Thomas, West & Borup, 2017; Wang & Antonenkok, 2017).

However, some interviewees expressed doubts about the videos, stating that the case shown rarely happened in daily life. Some online participants considered that the videos were ineffective in developing their confidence in communicating, which they felt would require more practice and time to improve (see Subsection 6.3.3). Their perception of impracticability may have impacted the degree of their perceived usefulness of the dramatised videos, which, as observed by Davis (1989), Venkatesh and Davis (1996) and Yoshida (2016), would then affect their engagement in learning.

7.4.2 Role play exercise

The role play exercise was also very popular with the flipped and blended mode participants (note: the role play exercise was only available to the flipped and blended mode participants, as the activity required face-to-face interaction). Perceived usefulness (Davis, 1989; Venkatesh & Davis, 1996; Yoshida, 2016) and the learner-centred nature (Chen et al., 2014; Hamdan et al., 2013) of the role play were helpful in explaining why the participants preferred this activity. In the learner survey, participants in general agreed (mode = 4) that the role play exercise was helpful for their learning, and they actively engaged in the activity (see Subsection 5.3.1). In the qualitative interviews, interviewees expressed their appreciation of the role play exercise, stating that it provided them with skills and opportunities to practise, thus enhancing their ability to perform RA duties and communicate in other situations. Compared with traditional lecture, the role play exercise was more effective in helping participants to immerse themselves in case discussion, which created a deeper impression (see Subsection 6.7.1).

The positive comments on the role play exercise could be attributed to the traits of the facilitator. As Hamdan et al. (2013) argued, one of the characteristics of an engaging course is the presence of a professional educator, who has the traits and skills, such as being positive, inspiring and able to build rapport, and to enhance a lesson and curriculum by bringing in examples from current events. The present study showed that all participants generally agreed that the course instructor possessed the characteristics of a professional educator which encouraged course engagement (see Subsections 5.3.1 and 6.7.1).

To enable sufficient interaction between the trainees and the trainer, a small class size, for example, fewer than 30, is essential for experiential GKT (Cimini et al., 2014). Based on their experience, some interviewees' observed that, in a large class, participants

do not take a training seriously, and it is difficult to conduct role play practice (see Subsection 6.7.1).

7.4.3 Conversation with residents and self-reflective writing

As part of the practicum of the training and their job duties, all participants were required to talk with fellow floor members on a regular basis, for example, once per month, and to reflect upon on their experience (see Subsection 4.6.3). The flipped mode participants were more positive about this activity, while the blended and online mode participants tended to be reluctant.

The flipped mode interviewees considered the practicum helpful because it encouraged them to practise more often, and this helped them to develop the habit of chatting with their resident students regularly (see Subsection 6.7.3). This kind of motivation was similar to the effect of sense of urgency (Yeh, 2015) that encouraged participants to take action regularly. The following participant observations reflected that the conversation with residents and self-reflective writing activities followed the intentional content principle of the flipped learning (Chen et al., 2014; Hamdan et al., 2013): the activity provided general guidelines about the content RAs should engage in during conversation with residents, thus helping them to communicate better with their floor members. The current study also provided evidence that flipped learning progressively develops trainees' knowledge and skills, as conceptualised by Chen et al. (2014). For instance, the dramatised videos were perceived to be helpful in enhancing trainees' understanding of the content (see Subsection 6.7.2), while the role play prepared trainees for the practicum stage (see Subsection 6.7.1). The self-reflective writing challenged trainees to apply and improve their critical thinking skills, as argued by McGuire et al. (2009) (see Subsection 6.7.4). Thus, the series of tasks formed a process to improve trainees' knowledge and skills needed.

A number of online and blended mode participants were reluctant to participate in the practicum. Some were suspicious about the usefulness of the activities (Venkatesh & Davis, 1996). In fact, one interviewee thought that participants completed the chat record merely for the sake of assignment submission, thus causing superficial learning (Otelia). In this case, the guidelines for finishing the tasks might have been insufficient (Hamdan et al., 2013) as two interviewees mistakenly thought that the task required them to visit all undergraduate students, which would have been too demanding (Owen and Orchid), while another two interviewees considered the timing of the activity as inappropriate (Brielle and Oscar). This indicates that the task may not have been user-friendly enough (Venkatesh & Davis, 1996). Also, some did not like to fill in the record form when they are chatting with students (Otelia). Therefore, a flexible choice of different activity formats, for example, face-to-face discussion or small group discussions, may be helpful for trainees to reflect on their learning (Lemke, 2017).

7.4.4 Section summary

In general, participants highly preferred and were more engaged in dramatised videos and role play exercises. However, the conversation with resident students and online self-reflection activities were less popular with the online and blended mode participants. The various reasons were enumerated based on the qualitative interview findings and were discussed with reference to the previous literature.

7.5 Chapter Summary

This study concluded that the flipped training is the only mode that has impacts on the four measured aspects: knowledge, skills, attitude and self-efficacy and behaviour. This finding was absent in the previous GKT research (Cimini et al., 2014; Lipson et al.,

2014; Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015). The current study also revealed that the blended mode is less useful than the flipped mode, even when both training methods are comprised of the same content and duration. In addition, this study challenges and refutes the results of previous research that online training has no impact on returning RAs (Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015). Nonetheless, although returning RAs improved to a certain extent in the four aspects in the online training, limited impact on their self-efficacy was found. This indicates that online training should not be suggested for new RAs.

This study moves the discussion forward by showing that some elements of flipped learning, including perceived usefulness of a training (Davis, 1989; Venkatesh & Davis, 1996; Yoshida, 2016), carefully arranged material (Chen et al., 2014; Hamdan et al., 2013) and flexible learning environment (Chen et al., 2014), are helpful in explaining the engagement pattern of trainees using different modes of instruction. The impact of sense of urgency on trainees' engagement as a theoretical proposition put forward by Yeh (2015) was empirically tested in the current study. The factor was demonstrated to successfully engage participants in the training.

This study furthers the GKT research by identifying the preferred types of learning activities in the training programme, and the reasons for such preferences. Key examples include dramatised video, role play and practicum. First, the dramatised video was preferred by most participants of all three modes. The finding supports the argument of Thombs et al. (2015) and Lemke (2017) that short videos with immediate feedback are able to engage learners more effectively than traditional videos. The dramatised videos also shows similar engaging effect as the features of online learning reported in literature,

such as instructor presence, video-taped feedback and carefully planned content (Draus, Curran & Trempus, 2014; Thomas, West & Borup, 2017; Wang & Antonenkok, 2017).

By introducing different language options, this study showed how perceived ease of use improves participants' engagement in the course videos (Long et al., 2016). Second, role play exercise was identified to effectively incorporate some elements of flipped learning, including perceived usefulness (Davis, 1989; Venkatesh & Davis, 1996; Yoshida, 2016), learner-centred methodology (Chen et al., 2014; Hamdan et al., 2013) and the importance of the professional educator (Chen et al., 2014; Hamdan et al., 2013). Third, the practicum was primarily favoured by the flipped mode participants because of the effect of sense of urgency (Yeh, 2015) and because the practicum was intentionally planned (Chen et al., 2014; Hamdan et al., 2013) to progressively develop trainees' knowledge and skills (Chen et al., 2014; Hamdan et al., 2013; McGuire et al., 2009).

Overall, flipped learning was shown to be a more effective training approach in the context under study. The results of this study conclusively show that, if a training programme is designed with varying consideration of the constructs in mind, flipped learning can offer more than just balancing the pros and cons of either conventional face-to-face didactic teaching or online course delivery.

Chapter 8 Conclusion and Recommendations

8.1 Introduction

The previous chapter provided an in-depth discussion with respect to how the research findings and analyses are relevant to the existing literature about the GKT and different modes of delivery. This chapter discusses the practical application of those findings and their implications. It also reflects on the strengths of this study and the weaknesses with which it has not been able to deal. Finally, areas for further research are suggested.

8.2 Practical Applications and Implications

The experience in designing and operating the RA training programme of the current study and the research analyses on the extent of effectiveness and engagingness of the programme provide both the basis and direction for future practice. The choice of delivery mode and various components of the training programme as suggested in the following subsections provide useful references for the design and execution of GKT programmes relevant to the higher education context.

8.2.1 Modes of Delivery for New and Returning RAs

The present research revealed that the flipped mode of delivery is the best for new RAs, as the evidence demonstrated that it is more engaging and offers better training impacts to this group of trainees. The online mode is good for returning RAs, as the programme delivered by this mode is likewise engaging and supports participants in retrieving the previous learning impact. However, the online mode is less effective for

helping trainees to develop confidence to communicate due to an absence of face-to-face interaction opportunities. The blended mode of training is not effective for encouraging trainees to use the material after the training, despite several clear reminders by the instructor. The limited engagement in the online material is believed to be the reason why blended training has less impact than flipped training. Thus, unless there is another approach to motivate trainees to access the online material, the flipped mode is preferred to the blended mode.

8.2.2 Components of an Engaging GKT

The components of flipped pedagogy are reviewed in Chapter 3, and its application is discussed in Chapter 7. The following elements are recommended to formulate an effective GKT so as to equip RAs with the skills to assist resident students with mental health issues.

(i) Intentionally Planned Progressive Activities

To lay the foundation for higher-level learning activities and intentionally planned training which delivers content in a progressive way is essential (Chen et al., 2014; Hamdan et al., 2013) (see Subsection 7.2.1). For example, learning activities of a flipped GKT are proposed in the following sequence: online material, experiential workshop and practicum. The online material is recommended to include basic content and dramatised video clips with immediate feedback (low-level activities), whereas an experiential workshop should cover role play and discussion (high-level activities). A practicum has to be included as part of the GKT so as to provide trainees with an opportunity to apply their skills under professional guidance. It involves practice and

keeping a self-reflective journal, which provide a continuous challenge to trainees (McGuire et al., 2009).

(i) Professional Educator

The role of professional educator is influential in facilitating a GKT (Chen et al., 2014; Hamdan et al., 2013) (see Subsection 7.4.2). The trainer is recommended to develop his or her attitude and facilitating skills for active learning, such as being positive, inspiring and able to build rapport.

(ii) Learner-Centred

Trainees should be enabled to perform gatekeeping tasks, instead of just listening to training content (Chickering & Gamson, 1987). Thus, feedback on-demand has to be provided to trainees, such as pre-recorded video feedback right after each attempt of a question in an online quiz, verbal feedback by the trainer during the role play workshop and written constructive feedback on trainees' self-reflection to help them improve their performance over time (Chen et al., 2014) (see Section 7.4).

(iii) Perceived Usefulness

To help trainees stay on-task or focus on the training material, the trainer is suggested to enhance the training by bringing in examples from current events. Moreover, the provision of live examples related to the RAs' working environment will make the training more useful (Chen et al., 2014; Davis, 1989; Long et al., 2016; Venkatesh & Davis, 1996; Yoshida, 2016) (see Sections 7.3 & 7.4).

(iv) Ease of Use

User-friendliness of keeping a self-reflective journal is equally important (Davis, 1989; Long et al., 2016; Venkatesh & Davis, 1996). Trainees may have different preferences

for doing reflection (see Section 7.4). It is recommended to offer options of reflection exercise, such as face-to-face meeting to discuss their practicum experience and/or self-reflective writing.

(v) Flexibility via a Diversified Learning Platform

Trainees should be provided flexibility to review training content anytime and anywhere (Chen et al., 2014) (see Section 6.4). Training content can be hosted in the official learning management system of the trainees' institution (e.g. Moodle). This arrangement allows trainees to carry out learning tasks (watch online videos, write reflective journal, review online resources) with their preferred devices, such as desktops, laptops and mobile devices, at their preferred times.

(vi) Sense of Urgency

At the same time, a clearly stated deadline and sense of urgency to access the training material, such as text reminders from the trainer and peers (throughout the training and the practicum period), have to be specified (Yeh, 2015) (see Sections 7.3 & 7.4).

8.3 Strengths and Weaknesses of This Study

8.3.1 Strengths

(i) Innovative Method to Deliver a GKT

The flipped GKT is the first of its kind that promotes trainees' course engagement, and skills development, and transfers learning to practice. In previous research, GKT has been either delivered face-to-face or online, but each mode has its own strengths and

limitations. This study blended the two delivery modes, and incorporated the training with content and active learning elements, thus offering another option.

(ii) Control to Validity and Reliability

This study was endorsed by the heads of the participating colleges in an institution. The researcher is also the person-in-charge of the training affairs of a college. Thus, the researcher had better control of the validity and reliability of the study. For example, the flipped and blended training modes of the current study had a similar mix of participant backgrounds, and both modes comprised the same amount of training, which enabled a clearer comparison of the results.

(iii) Impact on Returning RAs

The current study claims that online GKT, with dramatised videos and interactive and self-reflective activities, revives the knowledge and skills of returning RAs. The study was successful in making an impact on returning RAs, while previous studies on GKT failed to do so (Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015).

(iv) Contributes to the Literature in Local Context

The current study, which was conducted in Macau, successfully replicated the impact of GKT on knowledge, attitude, skills and behaviour in the context outside Western countries (Lipson et al., 2014; Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015). Two scales, SIRI-2 and learner survey, were localised and developed for Chinese participants to measure the RAs' crisis intervention skills and their reasons to engage in a GKT, respectively.

8.3.2 Weaknesses

(i) No New RAs in the Online Mode

It would have been more interesting to include new RAs in the online mode group of this study, but in reality it was not possible to convince their serving colleges to allow their new RAs to take the online training only. The absence of new RAs in the online mode made the comparison of training impact between the online mode and the other two modes less direct. Nevertheless, the result of the online condition can be compared with the results of previous studies about the impact of GKT on returning RAs (Pasco et al., 2012; Taub et al., 2013; Thombs et al., 2015). The present study therefore helps to redeem the value of online mode training.

(ii) Self-reflective Writing Did Not Provide Useful Information As Hoped

Many returning RAs expressed during the focus group interviews that they preferred face-to-face discussion to self-reflective writing. The latter was considered inconvenient, or not conducted at the right period of time, or they simply did not like doing reflection by writing. Thus, the self-reflective writing did not provide useful information for the trainer to evaluate their training impact.

(iii) Not Long Enough to Find Long-Term Benefits

The current study aimed to take a snapshot of how RAs use a GKT training and the training impact in a period of time. Thus, the data collection lasted for a few months only. Long-term benefits of the GKT could therefore not be assessed.

8.4 Power Issue

Chapter 4 discussed the challenges arise from the issue of power distance and an insider research and presented the arrangement and the measures taken to deal with it (e.g. the researcher's attempt to explore participants' discontent about the training and the study). The results described in Chapter 6 support the concept that online participants in individual interviews feel they are able to express negative opinions of the course. In addition, interviewees in the focus groups, regardless of the modes, were more critical and offered relatively more negative comments, for instance, on the tasks about chatting with resident students. Both observations reflect that the interviewees should be made to feel free to express both positive and negative comments.

Value is an indispensable component of educational research because educational researchers are engaging in their work to promote the improvement of education (Carr, 1995). As advocated by Carr, the researcher of the current study examined and justified this value-laden enquiry so that it would foster and promote educational values, instead of avoiding the inclusion of value in the research process. This study has made the best effort to strike a balance between the potential benefit of the researcher's involvement (e.g. bringing insider insight to the study) and the positive and negative impacts that may bring to the study.

8.5 Recommendations for Further Research

The current study investigated how to deliver a GKT in the context of a university in Macau. The results show that flipped training has a positive impact on trainees' knowledge, skills, attitude and behaviour. A follow-up investigation in other local

institutes is therefore suggested. Further study can be carried out in other Chinese-speaking cultures, such as Hong Kong, Taiwan and Singapore.

Evaluation of online GKT with the participation of new RAs can be conducted. Further research questions may include: 'What is the training impact of online GKT on new RAs?', and 'Is there any difference in the training impact between flipped and online training?'.

In the present study, analysis of course system data comprised video viewing time and participation in online platform activities in the form of numbers of clicks. Yet, the researcher did not know if trainees were engaged all the time. Thus, a study about how learners use the online material may provide a more comprehensive picture of their engagement.

Developing pre-class, in-class and after-class learning activities, especially dramatised videos with interactive quizzes, requires time, resources, expertise and commitment. In reality, not every teacher is able to possess all these elements, given his or her regular teaching, research and/or administration workload. In view of this concern, barriers and incentives for teachers to take the initiative to flip their classrooms can be further researched.

8.6 Insights

This study set out to investigate the best way to deliver GKT on a university campus. Reflecting on the entire process of designing and delivering the GKT of this study, I would like to share the following main insights I have gained.

First, I have strengthened my knowledge and skills in designing and delivering GKT for RAs in the local context. In the past, GKT was conducted dominantly in a face-

to-face, especially didactic, approach. Even though there might have been a discussion exercise in the training, students tended to be shy and not very active in engaging in the activity. The training programme of this study therefore adopted other ways to enrich the training by, for example, applying active learning elements, inserting dramatised videos and interactive exercises and providing sufficient practice opportunities through practicum. This active learning approach, regardless of the mode of delivery of the training, proved to be highly effective.

Second, as a trainer and researcher, this training programme and research study has changed my perceptions of different modes of delivery. Before and at the beginning of the study, I believed that there would be no difference between flipped and blended approaches; however, the flipped mode turned out to be more effective than expected. In addition, I initially thought the online mode would be much less effective; yet, the outcome turned out to be better than expected, and this approach was welcomed by returning RAs. All in all, students have different learning styles. Some prefer to discuss their experience face-to-face, rather than doing self-reflective writing in front of computer by themselves. Thus, different learning styles should be considered through varied methods and activities.

Last but not least, while this study concluded that flipped mode is best for new RAs, GKT practitioners must also realise the need of pertinent knowledge, skills, resources and commitment. To encourage teachers to flip their classroom, universities have to provide more support in a range of aspects. These include but are not limited to professional development, seminars, workshops and a peer learning community, which are aimed at forming a culture of continuous learning and sharing of good practice.

References

- Adams, M., & Conway, T. (2014) Eta Squared. In Michalos, A. (Ed.), *Encyclopedia of Quality of Life and Well-Being Research* (pp. 1965-1966). Dordrecht: Springer,
- Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In J. Kuhl & J. Beckmann (Eds.), *Action Control. SSSP Springer Series in Social Psychology* (pp. 11-39). Berlin, Heidelberg: Springer.
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179-211.
- Albert, M., & Beatty, B. (2014). Flipping the Classroom Applications to Curriculum Redesign for an Introduction to Management Course: Impact on Grades. *Journal of Education for Business*, 89(8), 419-424. doi:10.1080/08832323.2014.929559
- Allen, I., Seaman, J., & Garrett, R. (2007). *Blending in. The extent and promise of blended education in the United States*. Retrieved from USA: <https://www.onlinelearningsurvey.com/reports/blending-in.pdf>
- American Psychiatric Association. (2000). *Diagnostic and Statistical Manual of Mental Disorder* (4 ed.). Washington DC: American Psychiatric Association.
- Andersen, R. (1968). *A behavioral model of families' use of health services* (Vol. 25). Chicago, IL: Center for Health Administration Studies, University of Chicago.
- Andersen, R., & Davidson, P. (2001). Improving access to care in America: individual and contextual indicators. In R. Andersen, T. Rice, & E. Kominski (Eds.), *Changing the U.S. health care system: key issues in health services, policy, and management* (pp. 3-30). San Francisco, CA: Jossey-Bass.
- Anderson, L., & Krathwohl, D. (Eds.). (2001). *A Taxonomy for Learning, Teaching, and Assessing: A revision of Bloom's Taxonomy of Educational Objectives (Complete edition)*. New York: Longman.
- Anthony, G. (1996). Active learning in a constructivist framework. *Educational Studies in Mathematics*, 31, 349-369.
- Auerbach, R., Mortier, P., Bruffaerts, R., Alonso, J., Benjet, C., Cuijpers, P., Demyttenaere, K., Ebert, D., Green, J., Hasking, P., Murray, E., Nock, M., Pinder-Amaker, Stephanie, S., Nancy, S., Stein, D., Vilagut, G., Zaslavsky, A., Kessler, R. & Collaborators, WHO. (2018). The WHO World Mental Health Surveys International College Student Project: Prevalence and Distribution of Mental Disorders. *Journal of Abnormal Psychology*, 127 (7). https://www.researchgate.net/publication/324532491_The_WHO_World_Mental_H

Health_Surveys_International_College_Student_Project_Prevalence_and_Distribution_of_Mental_Disorders

- Baker, J. (2000). *The classroom flip: Becoming the guide by the side*. Paper presented at the Council for Christian Colleges & Universities Annual Technology Conference, California.
http://www.classroomflip.com/files/baker_2000_06_23_classroom_flip_CCCU.pdf
- Bantjes, J., Phil, D., Kagee, A., McGowan, T., Steel, H. (2016). Symptoms of posttraumatic stress, depression, and anxiety as predictors of suicidal ideation among South African university students. *Journal of American College Health*, 64(6), 429-437.
<https://www.tandfonline.com/doi/citedby/10.1080/07448481.2016.1178120?scroll=top&needAccess=true>
- Barnes, S., & Lewin, C. (2011). Differences and relationships in quantitative data. In B. Somekh & C. Lewin (Eds.), *Theory and Methods in Social Research*. London: Sage.
- Berger, R. (2015). Now I see it, now I don't: researcher's position and reflexivity in qualitative research. *Qualitative Research*, 15(2), 219-234.
<https://doi.org/10.1177/1468794112468475>
- Bengtsson, M. (2016). How to plan and perform a qualitative study using content analysis. *NursingPlus Open*, 2, 8-14.
- Bergmann, J. (2013). *Flipping 2.0: Practical strategies for flipping your class*. New Berlin, WI: The Bretzmann Group.
- Bergmann, J., & Sams, A. (2012). *Flip Your Classroom*. Washington, DC: International Society for Technology in Education.
- Blanco, C., Okuda, M., Wright, C., Hasin, D., Grant, B., Liu, S., & Olfson, M. (2008). Mental health of college students and their non-college-attending peers: Results from the national epidemiologic study on alcohol and related conditions. *Archives of General Psychiatry*, 65(12), 1429.
- Bliuc, A.-M., Goodyear, P., & Ellis, R. A. (2007). Research focus and methodological choices in studies into students' experiences of blended learning in higher education. *The Internet and Higher Education*, 10(4), 231-244. doi:10.1016/j.iheduc.2007.08.001
- Bloom, B., Engelhart, M., Furst, E., Hill, W., & Krathwohl, D. (1956). *Taxonomy of educational objectives: The classification of educational goals. Handbook I: Cognitive domain*. New York: David McKay Company.
- Bonwell, C., & Eison, J. (1991). Active learning: Creating excitement in the classroom. ERIC
- Brame, C. (2016). Active Learning. Retrieved from <https://cft.vanderbilt.edu/active-learning/>
- Bruner, J. (1968). *Toward a Theory of Instruction*. New York: Norton.

- Brunsell, E., & Horejsi, M. (2013). A flipped classroom in action. *The Science Teacher, 80*, 8.
- Burgess, G. (Ed.) (1984). *In the field: an introduction to field research*. London: Unwin Hyman.
- Buscemi, J., Murphy, J., Martens, M., McDevitt-Murphy, M., Dennhardt, A., & Skidmore, J. (2010). Help-seeking for alcohol-related problems in college students: Correlates and preferred resources. *Psychology of Addictive Behaviors, 24*(4), 571-580.
- Carr, M. (2014). The online university classroom: one perspective for effective student engagement and teaching in an online environment. *The Journal of Effective Teaching, 14*(1), 99-110.
- Carr, W. (1995). Philosophy, values and educational science. In *For Education: Towards Critical Educational Inquiry* (pp. 87-99). Buckingham: Open University Press.
- Chen, Y., Wang, Y., Kinshuk, & Chen, N. (2014). Is FLIP enough? Or should we use the FLIPPED model instead? *Computers & Education, 79*, 16-27. doi:10.1016/j.compedu.2014.07.004
- Chickering, A., & Gamson, Z. (1987). Seven principles for good practice in undergraduate education. *AAHE Bulletin, 3-7*.
- Chu, Y. P. M. (2010). *The relationship among stress, live-up-to parental expectations, and psychological adjustment of college students in Macau - a case study of Univesity of Macau*. University of Macau, Retrieved from http://library.umac.mo/intranet/etheses/b21778620_ft.pdf
- Cimini, M., Rivero, E., Bernier, J., Stanley, J., Murray, A., Anderson, D., . . . Bapat, M. (2014). Implementing an audience-specific small-group gatekeeper training program to respond to suicide risk among college students: a case study. *Journal of American College Health, 62*(2), 92-100. doi:10.1080/07448481.2013.849709
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences*. Hillsdale, NJ: Erlbaum.
- Cooperstein, S., & Kocevar-Weidinger, E. (2004). Beyond active learning: a constructivist approach to learning. *Reference Services Review, 32*(2), 141-148. doi:https://doi.org/10.1108/00907320410537658
- Cornally, N., & McCarthy, G. (2011). Help-seeking behaviour: a concept analysis. *International Journal of Nursing Practice, 17*(3), 280-288. doi:10.1111/j.1440-172X.2011.01936.x
- Creswell, J. (2005). *Educational Research: Planning, conducting, and evaluating quantitative and qualitative research* (2nd ed.). Upper Saddle River, NJ: Pearson Education.
- Creswell, J. (2014). *Research Design: qualitative, quantitative and mixed methods approaches*. London: Sage.
- Creswell, J., & Plano Clark, V. (2007). *Designing and Conducting Mixed Methods Research*. Thousand Oaks, CA: SAGE.

- Critz, C., & Wright, D. (2013). Using the flipped classroom in graduate nursing education. *Nurse Educator, 38*(5), 210–213.
- Cross, W., Matthieu, M. M., Lezine, D., & Knox, K. L. (2010). Does a brief suicide prevention gatekeeper training program enhance observed skills? *Crisis, 31*(3), 149-159. doi:10.1027/0227-5910/a000014
- Crotty, M. (1998). *The Foundations of Social Research: meaning and perspective in the research process*. London: Sage.
- Crouch, C., & Mazur, E. (2001). Peer Instruction: Ten Years of Experience and Results. *American Journal of Physics, 69*, 970–977.
- Cusack, J., Deane, F., Wilson, C., & Ciarrochi, J. (2004). Who influences men to go to therapy? reports from men attending psychological services. *International Journal for the Advancement of Counselling, 26*, 271-283.
- Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly, 13*(3), 319-340.
- Denscombe, M., & Ausbrook, L. (1992). It's just another piece of schoolwork: the ethics of questionnaire research on pupils in schools. *British Educational Research Journal, 18* (2), 113-131.
- Dew, M., Bromet, E., Schulberg, H., Parkinson, D., & Curtis, E. (1991). Factors affecting serice utilization for depression in a white collar population. *Social Psychiatry and Psychiatric Epidemiology, 26*, 230-237.
- Dewey, J. (1938a). *Experience and Education*. New York: Macmillan.
- Dewey, J. (1938b). *Logic: the theory of inquiry*. Oxford: Holt.
- Dixson, D. (2015) Measuring student engagement in the online course: The online student engagement scale (OSE). *Online Learning, 19*(4)
- Dowling, C., Godfrey, J., & Gyles, N. (2010). Do hybrid flexible delivery teaching methods improve accounting students' learning outcomes? *Accounting Education, 12*(373–391).
- Drake, P. (2010). Grasping at methodological understanding: A cautionary tale from insider research. *International Journal of Research & Method in Education, 33*, 85–99.
- Du, C. (2011). A comparison of traditional and blended learning in introductory principles of accounting course. *American Journal of Business Education, 4*, 1–10.
- Eisenberg, D., Hunt, J., Speer, N. (2013). Mental Health in American Colleges and Universities: Variation Across Student Subgroups and Across Campuses, *The Journal of Nervous and Mental Disease, 201*(1), 60-67. https://journals.lww.com/jonmd/Abstract/2013/01000/Mental_Health_in_American_Colleges_and.12.aspx%E2%80%8Bblink

- Eisenberg, D., Speer, N., & Hunt, J. (2012). Attitudes and beliefs about treatment among college students with untreated mental health problems. *Psychiatric Services, 63*(7), 711-713.
- Elo, S., & Kyngäs, H. (2007). The qualitative content analysis process. *Journal of Advanced Nursing, 62*(1), 107-115.
- Ferreri, S., & O'Connor, S. (2013). Redesign of a large lecture course into a small-group learning course. *American Journal of Pharmaceutical Education, 77*(1).
- Field, A. (2013). *Discovering statistics using IBM SPSS Statistics* (2nd ed.). London: Sage.
- Finefter-Rosenbluh, I. (2017). Incorporating perspective taking in reflexivity: A method to enhance insider qualitative research processes. *International Journal of Qualitative Methods*. <https://doi.org/10.1177/1609406917703539>
- Finfgeld-Connett, D. (2010). Generalizability and transferability of meta-synthesis research findings. *Journal of Advanced Nursing, 66*(2), 246-254.
- Fishbein, M., Triandis, H., Kanfer, F., Becker, M., & Middlestadt, S. (2000). In A. Baum, T. Revenson, & J. Singer (Eds.), *Handbook of Health Psychology* (pp. 1-17). New Jersey: Lawrence Erlbaum.
- Flipped Learning Network. (2014). The four pillars of F-L-I-P. Retrieved from <http://www.flippedlearning.org/definition>
- Fok, W., & Chung, R. (2013). *Professional Development and Capacity Building for Residential Education*. The University of Hong Kong. Hong Kong.
- Forsyth, B., Kudela, M., Levin, K., Lawrence, D., & Willis, G. (2007). Methods for translating an English-language survey questionnaire on tobacco use into Mandarin, Cantonese, Korean, and Vietnamese. *Field Methods, 19*(3), 264-283
- Frick, H., Birt, J., & Waters, J. (2017). Enhancing student engagement in large management accounting lectures. *Accounting and Finance*.
- Gannod, G., Burge, J., & Helmick, M. (2008). *Using the inverted classroom to teach software engineering*. Paper presented at the International Conference on Software Engineering, Leipzig, Germany. https://www.researchgate.net/publication/221554491_
- Garey, K., & Givhan, R. (2010). Resident assistant training at urban institutions. *Journal of College and University Student Housing, 37*(1), 24-43.
- Garrison, D. (2012). Theoretical foundations and epistemological insights of the Community of Inquiry. In Z. Akyol & D. Garrison (Eds.), *Educational Communities of Inquiry: Theoretical Framework, Research and Practice* (pp. 1-11). Hershey, PA, USA: Information Science Reference.

- Gilboy, M. B., Heinerichs, S., & Pazzaglia, G. (2015). Enhancing student engagement using the flipped classroom. *Journal of Nutrition Education and Behavior*, 47(1), 109-114. doi:10.1016/j.jneb.2014.08.008
- Glanz, K., Rimer, B., & Viswanath, K. (2008). *Health behavior and health education: Theory, research, and practice* (4th ed.). Hoboken, NJ: Wiley.
- Goodrich, C. (2007). Using web-based software to enhance learning of analytical and critical skills. *Journal of Educational Technology Systems*, 36, 247–253.
- Guillemin, M., & Gillam, L. (2004). Ethics, reflexivity, and “ethically important moments” in research. *Qualitative Inquiry*, 10(2), 261 – 280.
- Guo, X., Chou, U. I., Sou, K., Xiong, P., Shen, Z., & Hall, B. J. (2017). *The influence of a low-intensity mindfulness intervention on university students’ depression, stress, and anxiety*. Paper presented at the STAR conference 2017, Hong Kong SAR, China.
- Hall, B., Lam, A., Wu, T., Hou, W., Latkin, C., & Galea, S. (2017). The epidemiology of current depression in Macau, China: towards a plan for mental health action. *Social Psychiatry and Psychiatric Epidemiology*, 52(10), 1227-1235.
- Hamdan, N., McKnight, P., McKnight, K., & Arfstrom, K. (2013). *The flipped learning model: A white paper based on the literature review*. Retrieved from http://flippedlearning.org/wp-content/uploads/2016/07/WhitePaper_FlippedLearning.pdf
- Hamdan, N., McKnight, P., McKnight, K., & Arfstrom, K. (2014). *A review of flipped learning*. Retrieved from <http://flippedlearning.org/wp-content/uploads/2016/07/Extension-of-FLipped-Learning-Lit-Review-June-2014.pdf>
- House, L., Lynch, J., & Bane, M. (2013). An Evaluation of a Unique Gatekeeper Training for Suicide Prevention of College Students: Demonstrating Effective Partnering within Student Affairs. *Michigan Journal of Counseling, Research, Theory & Practice*, 40(1), 27-46.
- Ji, Y. (2016). Identifying significant indicators using LMS data to predict course achievement in online learning. *The Internet and Higher Education*, (29), 23-30.
- Johansson, P., & Gardenfors, P. (2005). *Cognition, education, and communication technology*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Johnson, J. (2018, September 10). *Prevalence of mental health issues within the student-aged population*. Education Policy Institute. Retrieved April 22, 2020, from <https://epi.org.uk/publications-and-research/prevalence-of-mental-health-issues-within-the-student-aged-population/>

- Katyal, K., & King, M. (2014). Non-Chinese researchers conducting research in Chinese cultures: critical reflections. *International Journal of Research and Method in Education*, 37(1), 44-62.
- Kerres, M., & De Witt, C. (2003). A didactical framework for the design of blended learning arrangements. *Journal of Educational Media*, 38(2), 101–113.
- Kim, K., & Bonk, C. (2006). The future of online teaching and learning in higher education: The survey says. *Educause Quarterly*, 29, 22-30.
- Kim, S., Khera, O., & Getman, J. (2014). The experience of three flipped classrooms in an urban university: An exploration of design principles. *Internet and Higher Education*, 22, 37–50. doi:0.1016/j.iheduc.2014.04.003
- King, S., & Robinson, C. (2009). Pretty lights' and maths! Increasing student engagement and enhancing learning through the use of electronic voting systems. *Computers & Education*, 53, 189–199.
- Kolb, D. (1984). *Experiential Learning: Experience as the Source of Learning and Development*. Englewood Cliffs, NJ: Prentice-Hall, Inc.
- Krippendorff, K. (1980). Validity in content analysis. In E. Mochmann (Ed.), *Computerstrategien für die kommunikationsanalyse* (pp. 69-112). Frankfurt, Germany: Campus.
- Kubicek, J. (2005). Inquiry-based learning, the nature of science, and computer technology: New possibilities in science education. *Canadian Journal of Learning and Technology*, 31(1).
- Lage, M. J., Platt, G. J., & Treglia, M. (2000). Inverting the Classroom: A Gateway to Creating an Inclusive Learning Environment. *The Journal of Economic Education*, 31(1), 30. doi:10.2307/1183338
- Lam, C., Gandek, B., Ren, X., & Chan, M. (1998). Tests of scaling assumptions and construct validity of the Chinese (HK) version of the SF-36 health survey. *Journal of Clinical Epidemiology*, 51(11), 1139-1147.
- Legard, R., Keegan, J., & Ward, K. (2003). In-depth Interviews In J. Ritchie & J. Lewis (Eds.), *Qualitative Research Practice: a guide for social science students and researchers* (pp. 139-168). London: SAGE.
- Lemke, E. (2017). Active learning strategies for the online classroom. *Digital Learning*. Retrieved from <https://digitallearning.northwestern.edu/article/2017/02/13/active-learning-strategies-online-classroom>
- Lewin, C. (2011). Understanding and describing quantitative data. In B. Somekh & C. Lewin (Eds.), *Theory and Methods in Social Research*. London: Sage.

- Li, L.-Y., Tsai, C.-C. (2017), Accessing online learning material: Quantitative behavior patterns and their effects on motivation and learning performance. *Computers & Education*, 114, 286-297.
- Lincoln, Y., & Guba, E. (1985). *Naturalistic Inquiry*. London: SAGE.
- Lipson, S. (2016). *Understanding and addressing unmet need for mental health services in college*. University of Michigan, Retrieved from <https://deepblue.lib.umich.edu/handle/2027.42/133195>
- Lipson, S., Speer, N., Brunwasser, S., Hahn, E., & Eisenberg, D. (2014). Gatekeeper training and access to mental health care at universities and colleges. *Journal of Adolescent Health*, 55(5), 612-619.
- Lo, & Hew. (2017). A critical review of flipped classroom challenges in K-12 education. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6302872/>
- Long, T., & Johnson, M. (2000). Rigour, reliability and validity in qualitative research. *Clinical Effectiveness in Nursing*, 4(1), 30-37.
- Long, T., Logan, J., Cummins, J., & Waugh, M. (2016). Students' and instructor's attitudes and receptions of the viability of using a flipped classroom instructional model in a technology-enabled active learning (TEAL) classroom: A preliminary study. *Journal of Teaching and Learning with Technology*, 5(1), 46-58.
- Lu, F., & Lemonde, M. (2013). A comparison of online versus face-to-face teaching delivery in statistics instruction for undergraduate health science students. *Adv Health Sci Educ Theory Pract*, 18(5), 963-973.
- Macau Youth Research Association. (2006). *Aomen dazhuan xuesheng xinli jiankang diaocha 2006 [Mental Health Survey of Macau College Students 2006]*. Retrieved from <http://www.myra.org.mo/?p=19>
- Macau Youth Research Association. (2018). *Aomen daxuesheng jingshen yali lai yuan diaocha yan jiu baogao [Research Report on the Sources of Macau College Students' Mental Stress]*. Retrieved from <http://www.myra.org.mo/?p=76>
- Marshall, M., Lewis, S., Locwood, A., Drake, R., Jones, P., & Croudace, T. (2005). Association between duration of untreated psychosis and outcome in cohorts of first-episode patients: a systematic review. *Archives of General Psychiatry*, 62, 975-983.
- Mason, G., Shuman, T., & Cook, K. (2013). Comparing the Effectiveness of an Inverted Classroom to a Traditional Classroom in an Upper-Division Engineering Course. *IEEE Transactions on Education*, 56(4), 430-435. doi:10.1109/te.2013.2249066
- McGuire, L., Lay, K., & Peters, J. (2009). Pedagogy of reflective writing in professional education. *Journal of the Scholarship of Teaching and Learning*, 9(1), 93-107

- McLaughlin, J., Griffin, L., Esserman, D., Davidson, C., Glat, D., Roth, M., . . . Mumper, R. (2013). Pharmacy student engagement, performance, and perception in a flipped satellite classroom. *American Journal of Pharmaceutical Education*, 77(9).
- Mercer, J. (2006). The challenges of insider research in educational institutions: wielding a double-edged sword and resolving delicate dilemmas. *Oxford Review of Education*, 33(1), 1-17.
- Michael, J. (2007). Faculty perceptions about barriers to active learning. *College Teaching*, 55(2), 42-47.
- Milman, N. (2012). The flipped classroom strategy. *Distance Learning*, 9, 85-87.
- Missildine, K., Fountain, R., Summers, L., & Gosselin, K. (2013). Flipping the classroom to improve student performance and satisfaction. *The Journal of Nursing Education*, 52(10).
- Morgan, D. (2014). Pragmatism as a paradigm for social research. *Qualitative Inquiry*, 20(8), 1045-1053. doi:10.1177/1077800413513733
- Mulryan-Kyne, C. (2010). Teaching large classes at college and university level: challenges and opportunities. *Teaching in Higher Education*, 15, 175-185.
- Murray, J. L., Kagan, R. S., & Snider, B. R. (2001). The impact of practical and theoretical training on experienced and inexperienced peer helpers. *Journal of Faculty Development*, 18, 101-111.
- Neimeyer, R. A., & Bonnelle, K. (1997). The suicide intervention response inventory: A revision and validation. *Death Studies*, 21, 59-81.
- Nguyen, T. (2015). The Effectiveness of Online Learning: Beyond No Significant Difference and Future Horizons. *Journal of Online Learning and Teaching*, 11(2).
- O'Flaherty, J., & Phillips, C. (2015). The use of flipped classrooms in higher education: A scoping review. *The Internet and Higher Education*, 25, 85-95. doi:10.1016/j.iheduc.2015.02.002
- Oliver, M., & Trigwell, K. (2005). Can 'Blended Learning' be redeemed? *Article in E-Learning*, 2(1), 17-26.
- Pallant, J. (2016). *SPSS Survival Manual: A step by step guide to data analysis using IBM SPSS* (2nd ed.): Allen & Unwin.
- Pardjono, P. (2016). Active learning: the Dewey, Piaget, Vygotsky, and constructivist theory perspectives. *Jurnal Ilmu Pendidikan*, 9.
- Pasco, S., Wallack, C., Sartin, R., & Dayton, R. (2012). The impact of experiential exercises on communication and relational skills in suicide prevention gatekeeper-training program for college resident advisors. *Journal of American College Health*, 60(2), 134-140.

- Petersen, & Gorman. (2014). Strategies to address common challenges when teaching in an active learning classroom. Retrieved from <https://onlinelibrary.wiley.com/doi/full/10.1002/tl.20086>
- Piaget, J. (1950). *The Psychology of Intelligence*. New York: Routledge.
- Pierce, R., & Fox, J. (2012). Vodcasts and active-learning exercises in a "flipped classroom" model of a renal pharmacotherapy module. *American Journal of Pharmaceutical Education*, 76(10).
- Pillow, S. (2003). Confession, catharsis, or care? Rethinking the uses of reflexivity as methodological power in qualitative research. *International Journal of Qualitative Studies in Education*, 16, 175–196.
- Plano Clark, V., & Ivankova, N. (2016). *Mixed Methods Research: A Guide to the Field*. Thousand Oaks, CA: SAGE.
- Prober, C., & Khan, S. (2013). Medical education reimaged: a call to action. *Academic Medicine*, 88(10), 1407-1410. doi:10.1097/ACM.0b013e3182a368bd
- Punch, K. F., & Oancea, A. (2014). *Introduction to Research Methods in Education* (2nd ed.): SAGE.
- Rickwood, D., & Thomas, K. (2012). Conceptual measurement framework for help seeking for mental health problems *Psychology Research and Behavior Management*, 5, 173.
- Ritchhart, R., Church, M., & Morrison, K. (2011). *Making Thinking Visible: How to Promote Engagement, Understanding, and Independence for All Learners*: Jossey-Bass.
- Robson, C. (2011). *Real World research* (3 ed.). Chichester: Wiley.
- Rodgers, B., & Cowles, K. (1993). The qualitative research audit trail: a complex collection of documentation. *Research in Nursing and Health*, 16(3), 219-226.
- Roehl, A., Shweta, R., & Gayla, S. (2013). The flipped classroom: An opportunity to engage millennial students through active learning strategies. *Journal of Family & Consumer Sciences*, 105(2), 44-49.
- Rosenstock, I. (1966). Why people use health services. *The Milbank Memorial Fund Quarterly*, 44(3), 94-127.
- Saunders, S., & Bowersox, N. (2007). The process of seeking treatment for mental health problems. *Mental Health and Learning Disabilities Research and Practice*, 4(2), 99-123.
- Scott, S. (2011). Contemplating a Constructivist Stance for Active Learning within Music Education. *Arts Education Policy Review*, 112(4), 191-198
- Seale, C. (2012a). Chapter 5: Ethics in Social Research. In C. Seale (Ed.), *Researching Society and Culture* (3 ed.). London SAGE.
- Seale, C. (2012b). Chapter 9: Sampling. In C. Seale (Ed.), *Researching Society and Culture* (3 ed.). London: SAGE.

- Simmel, G. (1950). *The Sociology of Georg Simmel*. New York: Free Press.
- Slife, B., & Williams, R. (1995). What's behind the research? Discovering hidden assumptions in the behavioral sciences.
- Snyder, J. (1971). The use of gatekeepers in crisis management. *Bulletin of Suicidology*, 8, 39-44.
- So, S. (2016). Mobile instant messaging support for teaching and learning in higher education. *The Internet and Higher Education*, 31(October 2016), 32-42.
- Statistics and Census Service of Macau SAR Government. (2017). Industrial Structure of Macau 2016. Retrieved from [https://www.dsec.gov.mo/Statistic/NationalAccounts/Gross-Domestic-Product-\(By-Production-Approach\)--A/2016%E5%B9%B4%E6%BE%B3%E9%96%80%E7%94%A2%E6%A5%AD%E7%B5%90%E6%A7%8B.aspx?lang=en-US](https://www.dsec.gov.mo/Statistic/NationalAccounts/Gross-Domestic-Product-(By-Production-Approach)--A/2016%E5%B9%B4%E6%BE%B3%E9%96%80%E7%94%A2%E6%A5%AD%E7%B5%90%E6%A7%8B.aspx?lang=en-US)
- Stillwell, C. (2018). *Active learning for international student users of English as a second language in higher education: Help or hindrance?*. (Doctor of Philosophy in Education), UC Irvine,
- Strayer, J. (2012). How learning in an inverted classroom influences cooperation, innovation and task orientation. *Learning Environments Research*, 15, 171-193.
- Stronach, I., Garratt, D., Pearce, C., Piper, H. (2007). Reflexivity, the picturing of selves, the forging of method. *Qualitative Inquiry*, 13, 179-203.
- Tashakkori, A., & Teddlie, C. (1998). *Mixed methodology: Combining qualitative and quantitative approaches*. Thousand Oaks, CA: SAGE.
- Taub, D., Servaty-Seib, H., Miles, N., Lee, J.-Y., Morris, W., Prieto-Welch, S., & Werden, D. (2013). The Impact of Gatekeeper Training for Suicide Prevention on University Resident Assistants. *Journal of College Counseling*, 16(1), 64-78. doi:10.1002/j.2161-1882.2013.00027.x
- Thai, N., De Wever, & Valcke, M. (2017). The impact of a flipped classroom design on learning performance in higher education : looking for the best “blend” of lectures and guiding questions with feedback. *Computers & Education*.
- The Mental Health Association of Hong Kong. (2011). *Mental Health First Aid Manual* (2nd ed.). Hong Kong: The Mental Health Association of Hong Kong.
- Thombs, D. L., Gonzalez, J. M., Osborn, C. J., Rossheim, M. E., & Suzuki, S. (2015). Resident assistant training program for increasing alcohol, other drug, and mental health first-aid efforts. *Prev Sci*, 16(4), 508-517. doi:10.1007/s11121-014-0515-x

- Thomas, R., West, R., Borup, J. (2017). An analysis of instructor social presence in online text and asynchronous video feedback comments. *The Internet and Higher Education*, 33, 61-73.
- University of Cambridge Local Examinations Syndicate (2017). Active learning. *Cambridge Assessment International Education*. Retrieved from <http://www.cambridgeinternational.org/Images/271174-active-learning.pdf>
- Valles, L. (2017, August 1). Study finds high prevalence of depression among locals. *Macao Daily Times*. Retrieved from <https://macaodailytimes.com.mo/health-study-finds-high-prevalence-depression-among-locals.html>
- Venkatesh, V., & Davis, F. D. (1996). A model of the antecedents of perceived ease of use: development and test. *Decision Sciences*, 27(3), 451-481.
- Vygotsky, L. (1978). *Mind in Society: The Development of Higher Psychological Processes*. Cambridge, MA: Harvard University Press.
- Whitelock, D., & Jelfs, A. (2003). Editorial: Journal of Educational Media special issue on blended learning. *Journal of Educational Media*, 28(2-3), 99–100.
- Wilson, S. (2014). The flipped class: A method to address the challenges of an undergraduate statistics course. *Teaching of Psychology*, 40(3), 193–199.
- Wang, J., & Antonenko, P. (2017). Instructor presence in instructional video: Effects on visual attention, recall, and perceived learning. *Computers in Human Behavior*, 71, 79-89.
- Wong, D., Lau, Y., Kwok, S., Wong, P., & Tori, C. (2017). Evaluating the Effectiveness of Mental Health First Aid Program for Chinese People in Hong Kong. *Research on Social Work Practice*, 27(1), 59-67. doi:10.1177/1049731515585149
- World Health Organization. (2014). Mental health: a state of well-being. Retrieved from https://www.who.int/features/factfiles/mental_health/en/
- Yeh, P. (2015, Tuesday, 19 May, 2015). How to Ensure the Success of Flipped Teaching? Retrieved from <http://cei.ust.hk/event/how-ensure-success-flipped-teaching>
- Yoshida, H. (2016). Perceived Usefulness of “Flipped Learning” on Instructional Design for Elementary and Secondary Education: With Focus on Pre-service Teacher Education. *International Journal of Information and Education Technology*, 6(6).
- Young, T., Bailey, C., Guptil, M., Thorp, A., & Thomas, T. (2015). The flipped classroom: A modality for mixed asynchronous and synchronous learning in a residency program. *Western Journal of Emergency Medicine*, 15(7), 939–944.
- Zak, M. (2015). Exploring the effect of asynchronous video on student learning and engagement in music E-learning (Doctoral dissertation). Retrieved from ProQuest Dissertations & Theses Global. (1686872304).

Zayapragassarazan, Z., & Kumar, S. (2012). Active learning methods. *NTTC Bulletin*, 19(1), 3-5.

Appendix 1. Focus, training content and instrumentation of recent GKT studies

Study	Focus	GKT adopted (Hours)	Instrument
Lipson et al. (2014)	Whether the training impact of Didactic GKT (Knowledge, Attitude, and Self-Efficacy) can be transferred to trainees' mental first-aid effort (behaviour), and help-seeking behaviour of student population	Mental Health First-Aid (12 hours)	<ol style="list-style-type: none"> 1. Mental health survey (self-developed) 2. Discrimination-Devaluation Scale (Link, 1987) 3. Self-efficacy scale (self-developed)
Wong et al. (2017)	Training impact of didactic GKT (Knowledge, Attitude, and Self-efficacy)	Mental Health First-Aid (12 hours)	<ol style="list-style-type: none"> 1. Mental Health Literacy Scale – Chinese version (Adapted from Jorm, 2000) 2. Personal Attributes Scale (Angermeyer & Matschinger, 2003) 3. Social Distance Scale (Link et al., 1999)
Pasco et al. (2012)	Comparison of training impact of GKT (Knowledge, Attitude, and Skills) by different delivery modes (Didactic vs Experiential)	Campus Connect (3 hours)	<ol style="list-style-type: none"> 1. Suicide Intervention Response Inventory-2 (SIRI-2) (Neimeyer & Bonnelle, 1997) Suicide Intervention Training Assessment (SITA) (Developed by Syracuse University)
Taub et al. (2013)	Comparison of training impact of Experiential GKT (Knowledge, Attitude, and Skills) to new and returning RAs	Alive @ Purdue (2 hours)	<ol style="list-style-type: none"> 1. Knowledge of Suicide Scale (Self-developed) 2. SIRI-2 (Neimeyer & Bonnelle, 1997)

House et al. (2013)	Short-term and long-term training impact of Experiential GKT (Attitude and Self-efficacy)	Campus Connect (3 hours)	1. SITA (Developed by Syracuse University)
Cimini et al. (2014)	Short-term and long-term training impact of Experiential GKT (Knowledge, Attitude and Skills)	'An Audience-Specific, Interactive, and Small class Size' GKT (1.5 hours)	1. Survey on Knowledge and Comfort to Deal with Suicidal Crises (Self-developed) 2. Survey on Application of Technique (Self-developed)
Thombs et al. (2015)	Training impact of Online GKT (Attitude, Self-efficacy and Behaviour)	Peer Hero (1.5 hours)	1. Survey on perceived referral barriers, self-efficacy, anxiety, and norm (Glanz et al., 2008)

Appendix 2. Main findings and scopes of recent GKT studies

Study	Main findings	Did the treatment and control group receive equal amount of training?	Delayed training effect?	Different training content was given to Returning RAs?	Measured the Training Completion Rate?
Lipson et al. (2014)	<ol style="list-style-type: none"> 1. Significant positive treatment effects on self-perceived knowledge and self-efficacy 2. No effects on RAs' number of contacts with students in crisis, nor the utilisation of mental health resources by the target student population 	No, treatment group received more training	Yes, the impact was found 2-3 months after the intervention	No	Yes, but only 50% of the RAs completed the training
Wong et al. (2015)	<ol style="list-style-type: none"> 1. Modest to moderate effects on trainees' knowledge and attitude and efficacy 	Yes	Yes, the effect was found 6 months after the intervention	Not measured	Not measured

Pasco et al. (2012)	<ol style="list-style-type: none"> 1. Didactic lecture improved performance on suicide knowledge-related items (of SITA) 2. Experiential exercises brought extra improvement on self-efficacy related items (of SITA), and skills test (SIRI-2) 	Yes	Not measured	No	Not measured
Taub et al. (2013)	<ol style="list-style-type: none"> 1. Significant positive treatment effects for new RAs on objective knowledge and attitudes 2. No effects for returning RAs 3. Improved knowledge does not predict crisis communication skills 	N/A, there was no control group	Not measured	Yes	Not measured, but the returning RAs were observed less engaged in the training
House, Lynch, & Bane (2013)	<ol style="list-style-type: none"> 1. Significant positive treatment effects on self-perceived knowledge, attitudes, and self-efficacy 	N/A, there was no control group	Yes, the impact was maintained 3 months after the intervention	Not measured	Not measured

Cimini et al. (2014)	<ol style="list-style-type: none"> 1. Significant positive treatment effects on self-perceived knowledge and self-efficacy; 2. RAs were satisfied with tailor-made scenarios, and appreciated the opportunity to practice the skills beforehand. 	N/A, there was no control group	Yes, but the impact diminished 3 months after the training	Not measured	Not mentioned
Thombs et al. (2015)	<ol style="list-style-type: none"> 1. Significant positive treatment effects on RAs' attitudes, self-efficacy, and behavioural actions; 2. Did not have any significant effect on trainees' knowledge and attitude. 	No, treatment group received more training	Yes, but the impact was found 6 months since the first intervention	No	High (about 50%)

Appendix 3. Screenshots of the online component

Dramatised video (Unit One)



Interactive quiz



選擇最合適回應：

- 回應1. 你看來沒有事，不過下次不要飲這麼多酒啦，再見。
- 回應2. 既然你不用我幫忙，那麼你要照顧自己啦，拜拜。
- 回應3. 我只是想幫你，但不要緊，你要確定自己沒有事，我先走。
- 回應4. 冇問題，你要確定自己沒有事。我考完試立即回來。

Instant feedbacks



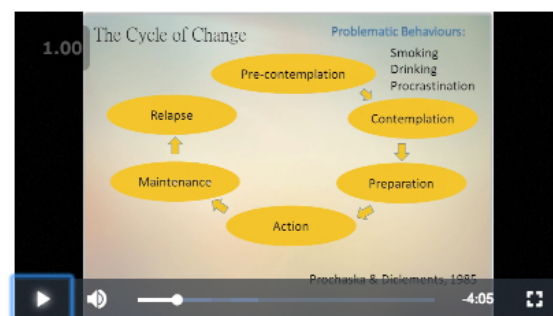
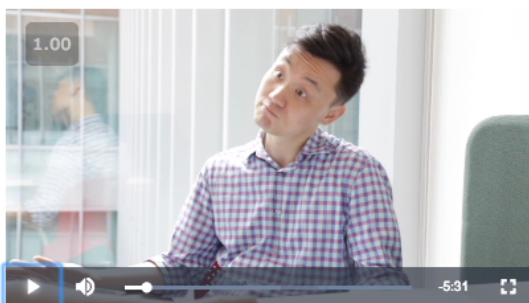
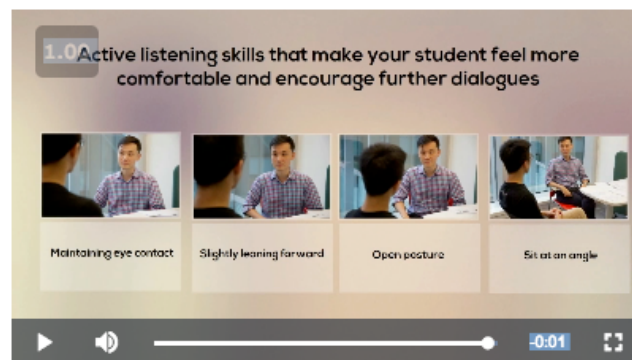
回應1. 你看來沒有事，不過下次不要飲這麼多酒啦，再見。

回應2. 既然你不用我幫忙，那麼你要照顧自己啦，拜拜。

回應3. 我只是想幫你，但不要緊，你要確定自己沒有事，我先走。

回應4. 冇問題，你要確定自己沒有事。我考完試立即回來。

Revision video (Unit Two, for returning RAs)



Users' interface of the online platform

The screenshot shows the Moodle user interface for a course titled "基礎輔導訓練課程 2017". The interface is in Chinese and includes a sidebar with navigation options such as "Participants", "Badges", "Competencies", "Grades", and "My courses". The main content area displays the course title and a list of units and activities with checkboxes for completion.

基礎輔導訓練課程 2017

Dashboard / Courses / RC / RTRA_Training [redacted] N

Your progress ?

通告

單元一：志明與 Ryan (轉介技巧)

- 請選擇視頻語言
 - 第一節 (廣東話)
 - 第一節 (普通話)
 - 第二節 (廣東話)
 - 第二節 (普通話)
 - 第三節 (廣東話)
 - 第三節 (普通話)
 - 第四節 (廣東話)
 - 第四節 (普通話)
- 什麼時候需要將同學轉介給書院RF或大學心理輔導員?

單元二：主動聆聽和適當的回應技巧

- 第一節 主動聆聽和適當的回應技巧 (課堂講義)
- 第二節 如何引導同學作出改變 (只有英語版)
- 家課 (遞交日期: 8月10日)

單元三：實習

- 8-9月談話記錄 (遞交日期: 9月11日) - RT/RA only
- 9-10月談話記錄 (遞交日期: 10月31日) - RT/RA only
- 經驗總結及反思 (遞交日期: 9月11日)

(Note: Information that shows the institute's identity is covered)

Appendix 4. Sample instructions used in role-play

Inappropriate responses:

1. Use 'I understand' to begin all conversations
2. Interrupt your talking partner
3. Frequently use 'You should...' to begin your conversations

Active listening:

1. Keep eye-contacts, and nod your head at the right time
2. Smile and slightly lean your body forward
3. Use open posture (Don't fold your arms or cross legs)

Appendix 5. Learner Survey (Bilingual)

Learners' Survey

Student ID No. (e.. CB - 123456): _____

	1	2	3	4	5
1. The instructor has provided detailed guideline for the following learning activities.	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a A pre-course overview.					
b How to use the course learning platform.					
c How to access the course videos.					
d How to compile the reflective journal of Unit 3.					
e Explained the educational purpose of the reflective journal.					
f I can access the above information from UM Moodle					

	1	2	3	4	5
2. The following teaching and learning activities is helpful for my learning:	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a The pre-course introduction by the instructor.					
b Feedback by the Regina (after each video clip) of Unit 1.					
c Demonstration of the referral skills by the Ah Ming of Unit 1.					
d Role play activities / Refresher videos of Unit 2.					
e Video about guiding a student for a positive change (Unit 2).					
f Self-reflection questions of Unit 3 (Practicum)					

Overall,

g the course progressively develops my knowledge and skills.					
h The contents in Unit 1, Unit 2, and Unit 3 are carefully organised.					

	1	2	3	4	5
3. The course instructor:	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a Uses a positive and inspiring way to interact with students.					
b Builds rapport with students by being encouraging, empathetic and humorous, and by praising students' achievement.					
c Enhances the lesson by bringing in examples from current events of the residential college.					
d Is able to change the teaching content according to students response.					
e Is willing and able to provides students feedback and support.					
f Collaborates with other RFs and SAO Counsellor to prepare and deliver the course.					

	1	2	3	4	5
4. This course encourages students to:	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a Practice the general counselling skills throughout this course.					
b Chat with my floor residents, and to reflect on my practice.					
c Give feedback and share ideas.					
d Raise questions and to solve these questions together.					
e The online videos are fun and interactive.					

		1	2	3	4	5
5. The following reminders/activities are helpful to encourage me to log in the course Moodle and finish the learning tasks:		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a	The clear stated deadline for each learning task.					
b	In order to better engage in the course exercises, e.g. discussion, forum, practicum, etc.					
c	The email from my peers about their completion of task in the course Moodle.					
d	The WeChat text reminders from my instructor/supervisor.					

		1	2	3	4	5
6. I have actively engaged in the following teaching and learning activities:		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a	The videos of the unit one (Referral skills).					
b	The role play exercise (Active Listening and Reponding skills) / videos of Unit 2.					
c	The video of Unit 2 (Guide a student for a positive change).					
d	Chat with the residents I am responsible for.					
e	Reflective journal of Unit 3 (Practicum).					

Overall,

f	When I encounter learning problems, I raise my questions to get help from my instructor or peers.					
g	I have fully engaged in this course.					

		1	2	3	4	5
7. This course is useful because it enhances my following skills:		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a	My general counselling skills.					
b	To communicate with my students more effectively.					
c	To communicate with other RT/RA/HA Officers more effectively.					
d	My job performance as a RT/RA/HA Leader.					

		1	2	3	4	5
8. This course is flexible, because I can:		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a	study this course on smartphones, tablet computer, or desktop computer					
b	study the online component anywhere at my own pace.					
c	Choose the medium of instruction (of online videos) that I prefer.					
d	Use the videos to review what I learned.					
e	Overall, I feel this course is flexible.					

		1	2	3	4	5
9. This course is easy to follow, because:		Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a	The moodle platform of this course is easy to use.					
b	It is easy to review the course content in the moodle system.					
c	The course content is easy to understand.					
d	The medium of instruction is accessible.					

End, thank you very much!

培訓課程問卷

學生證編號（如：CB-123456）：_____

	1	2	3	4	5
1. 教師/本課程有為以下活動提供詳細指引：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 培訓前概述課程內容和學習活動。					
b. 如何使用課程的Moodle。					
c. 如何收看課程視頻					
d. 如何填寫單元三的反思。					
e. 說明反思的教學目的。					
f. 我可以在Moodle找到以上提及的資訊。					

	1	2	3	4	5
2. 以下的教學活動有助我的學習：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 老師的課程簡介					
b. 單元 1 課程視頻中 Regina的反饋					
c. 單元 1 課程視頻中阿明的轉介技巧演示					
d. 單元 2 (主動聆聽和回應) 的角色扮演活動/視頻					
e. 單元 2 (如何引導同學作出改變) 的視頻					
f. 單元 3 (實習) 的自我反思問題					
整體而言：					
g. 此課程循序漸進地培養我的知識和技能。					
h. 單元 1、2、3 的內容是精心組織的。					

	1	2	3	4	5
3. 本課程的教師：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 使用積極和有啟發性的方式與學生互動。					
b. 以鼓勵、同情、幽默、讚美學生的方法與學生建立聯繫。					
c. 引入書院的日常例子去增強教學質素。					
d. 能夠根據學生的反應去調整課程內容。					
e. 樂意和能夠為學生提供意見和支援。					
f. 聯同其他RF和SAO輔導員去準備和執行這課程。					

	1	2	3	4	5
4. 本課程鼓勵學生：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 在課室內外應用基本輔導技巧。					
b. 與樓層同學們談話，並作出反思。					
c. 分享意見和想法。					
d. 提出問題並一起將它們解決。					
e. 以視頻去互動，而且視頻內容是有趣的。					

	1	2	3	4	5
5. 以下的提示／活動有助鼓勵我登入UM Moodle 完成學習任務	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 清晰的死線 (學習任務完成日期)。					
b. 為了更好地投入課程的教學活動，如課堂討論。					
c. 來自同伴完成家課的電郵信息。					
d. 來自老師的微信或電郵溫馨提示。					

	1	2	3	4	5
6. 我很投入參與以下活動：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 單元 1 的視頻 (志明與Ryan)					
b. 單元 2 的角色扮演活動 / 視頻 (主動聆聽和回應)					
c. 單元 2 的視頻 (如何引導同學作出改變)					
d. 和我的小夥伴交談。					
e. 單元 3 自我反思習作。					
整體而言：					
f. 當我在學習中遇到問題時，我會尋找教師 或同伴幫助。					
g. 我完全地投入參與這個課程。					

	1	2	3	4	5
7. 本課程是有用的，因為它幫助我：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 增強基礎輔導技巧。					
b. 有效地跟我的小伙伴溝通。					
c. 有效地和其他RT/RA/HA幹事溝通。					
d. 提升工作表現(作為一個RT/RA/HA領袖)。					

	1	2	3	4	5
8. 本課程是具有彈性的，因為我可以：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 使用不同設備(如手機、桌面電腦、 筆記本電腦)去學習。					
b. 按自己的節奏去學習。					
c. 選擇我喜歡的視頻授課語言。					
d. 用視頻重溫學習。					
e. 總體而言，我覺得本課程是具有彈性的。					

	1	2	3	4	5
9. 本課程容易操作，因為：	Strongly Disagree	Disagree	Neither Disagree nor Agree	Agree	Strong Agree
a. 本課程的UM Moodle是容易使用的。					
b. 我可以容易地重溫課程內容。					
c. 本課程的內容容易理解。					
d. 本課程的授課語言容易理解。					

完，多謝！

Appendix 6. Suicide Intervention Response Inventories – 2 (SIRI-2)

Student ID: _____

Part I

The following items represent a series of conversation taken from counselling session. Each conversation begins with an expression by the client concerning some aspect of the situation he/she faces, followed by two possible helper responses to the client's remark.

You are to rate each response in terms of how appropriate or inappropriate you feel the reply is to the client's comment. In the blank you should record a rating from -3 to +3, corresponding to the chart below. Be sure to respond to each item, and try not to leave any blanks.

- +3 -- Highly appropriate response
- +2 -- Appropriate response
- +1 -- Marginally appropriate response
- 0 -- Neither appropriate nor inappropriate
- 1 -- Marginally inappropriate response
- 2 -- Inappropriate response
- 3 -- Highly inappropriate response

- 1 Client: I decided to call you tonight because I really feel like I might do something to myself...I've been thinking about suicide.
_____ Helper A: You say you're suicidal, but what is that's really bother you?
_____ Helper B: Can you tell me more about your suicidal feelings?
- 2 Client: And now my health is getting bad too, on top of all the rest. Without my husband around to care for me anymore, it just seems like the end of the world.
_____ Helper A: Try not to worry so much about it. Everything will be all right.
_____ Helper B: You must feel pretty lonely and afraid of what might happen.
- 3 Client: But my thoughts have been so terrible... I could never tell them to anybody.
_____ Helper A: You can tell me. I'm a para-professional, and have been trained to be objective about these things.
_____ Helper B: So some of your ideas seems frightening to you, that you imagine other people would be shocked to know you are thinking such things.
- 4 Client: No one can understand the kind of pain I've been facing. Sometimes I just feel like I have to hurt myself, so I cut my wrists.
_____ Helper A: It seems like you've been suffering so much that cutting your wrists is the only way you can make the pain go away.
_____ Helper B: But you're so young, you have so much to live for. How can you think of killing yourself?

- 5 Client: What are you anyway? Are you a doctor? How do you know what I've been facing? I believe you would be pretty weak like I do when you face it.
 _____ Helper A: So you're wondering if I can understand how you feel.
 _____ Helper B: You're not even giving me a chance. I've had a pretty rough life too; you're not the only one who's seen some hard times.
- 6 Client: My life has been worthless ever since my wife, Emma, died four years ago. The kids are grown and married now, and I've been retired from my job at the railroad for some time. It just seems that I'd be better off dead.
 _____ Helper A: But try to think of what Emma would want for you. She'd want you to continue leading a productive life, wouldn't she?
 _____ Helper B: It sounds like everything just collapsed around you when Emma died...But what has happened recently to make things even worse, to make you think that dying is the only solution?
- 7 Client: I really need help...It's just {voice breaks; silence}
 _____ Helper A: It must be hard for you to talk about what's bothering you.
 _____ Helper B: Go on, I'm here to listen to you talk.
- 8 Client: When you sum up my problem like that, it makes it seem less confusing and not so scary.
 _____ Helper A: See, it really isn't so bad after all. It certainly isn't anything you would think of killing yourself over, is it?
 _____ Helper B: Sometimes talking about problems does make them a bit clearer. I think you realise how dangerous your suicidal feelings were, and that's why you decided to contact me.
- 9 Client: You were supposed to help me, but you've only made things worse.
 _____ Helper A: I'm sorry. I was only trying to help.
 _____ Helper B: you sound pretty angry.
- 10 Client: How could you ever help me? Have you ever wanted to kill yourself?
 _____ Helper A: It sounds like you're concerned about whether I can understand and help you.
 _____ Helper B: Sure, I've thought about suicide sometimes. But I always found more realistic solutions to my problems.
- 11 Client: I don't know... this whole thing with my wife really makes me feel upset {to cry noisily, taking in deep breaths}. I try so hard to keep from crying...
 _____ Helper A: Do you think that the reason it's hard for you to cry is because you're a man?
 _____ Helper B: With all the hurt you're feeling, it must be impossible to hold those tears in.

12 Client: How can I believe in God anymore? No God would ever let this happen to me; I've never done anything to deserve what's happened.

Helper A: Things have gotten so bad, that it's difficult to see any meaning in the things that have happened to you.

Helper B: Well, God works in mysterious ways. Maybe this is His way of testing your faith.

13 Client: I don't know why I'm calling you. My family is financially well off, and my husband spends plenty of time with me, even though he has a successful law career. Even my kids have been doing well. They got good marks at school and have lots of free time activities with their friends. But nothing seems to interest me. Life is just a bore...

Helper A: Considering all you have going for you, your problems can't be all that serious. Try to focus more on the positive aspects of your situation.

Helper B: So even though things seem to be going well at one level, life still seems pretty depressing, even if it's hard to say exactly why.

14 Client: Is it really true that many people feel this way? I thought I was the only one who had such dreadful, sinful ideas.

Helper A: No, there are many people who suffer from mental illness. But with appropriate treatment by a qualified physician, some of these patients can be cured.

Helper B: It is true. You're not the only one who has suicidal thoughts. And you can be helped to get through this crisis, just as others have been.

15 Client: I'm so lonely, so tired {crying}. There just isn't anywhere left to turn.

Helper A: You seem so alone, so miserable. Have you been feeling suicidal?

Helper B: Come on now. Things can't be all that bad.

16 Client: {over telephone} it's hard to talk here, with all these people...

Helper A: Would it help if I asked questions?

Helper B: Why don't you call back some other time when you can talk more easily?

17 Client: I have a gun pointed at my head right now, and if you don't help me, I'm going to pull the trigger!

Helper A: You seem to be somewhat upset.

Helper B: I want you to put down the gun so we can talk.

- 18 Client: Why should you care about me, anyway?
_____ Helper A: I've been trained to care about people. That's my job.
_____ Helper B: Because I think your death would be a terrible waste, and it concerns me that things are so that you are considering suicide. You need help to get through this critical period.
- 19 Client: I really hate my father! He's never shown any love for me, just complete disregard.
_____ Helper A: You must really be angry at him for not being there when you need him most.
_____ Helper B: you shouldn't feel that way. After all, he is your father, and he deserves some respect.
- 20 Client: I don't think there's really anyone who cares whether I'm alive or dead.
_____ Helper A: It sounds like you're feeling pretty isolated.
_____ Helper B: Why do you think that no one cares about you anymore?
- 21 Client: I tried going to a therapist once before, but it didn't help... Nothing I do now will change anything.
_____ Helper A: You've got to look on the bright side! There must be something you can do to make things better, isn't there?
_____ Helper B: Okay, so you're feeling hopeless, like even a therapist couldn't help you. But has anyone else been helpful before - maybe a friend, relative, teacher, or clergyman?
- 22 Client: My psychiatrist tells me I have an anxiety neurosis. Do you think that's what's wrong with me?
_____ Helper A: I'd like to know what this means to you, in this present situation. How do you feel about your problem?
_____ Helper B: I'm not sure I agree with that diagnosis. Maybe you should seek out some psychological testing, just to be certain.
- 23 Client: I can't talk to anybody about my situation. Everyone is against me.
_____ Helper A: That isn't true. There are probably lots of people who care about you if you'd only give them a chance.
_____ Helper B: it must be difficult to find help when it's so hard to trust people.
- 24 Client: {Voice slurred, unclear over the telephone}
_____ Helper A: You sound so tired. Why don't you get some sleep and call back in the morning?
_____ Helper B: Your voice sounds so sleepy. Have you taken anything?

- End -

SIRI-2 (Chinese version)

學生證號碼 (如 : CB-40123) : _____

第一部分

以下題目節錄於多個心理輔導環節的對話。每段對話首先由被輔導人士對他/她所面臨的情況作出表達，然後是兩個輔導助理所作的回應。

請您對每個回應在空白處進行評估，適當的回應給+3，不適當的給-3，如此類推..... 詳見下表。請您確保對每個題目做出回應，並盡量不要留空。

- +3 -- 非常適當的回應
- +2 -- 適當的回應
- +1 -- 勉強適當的回應
- 0 -- 非適當、也非不適當的回應
- 1 -- 有點不適當的回應
- 2 -- 不適當的回應
- 3 -- 非常不適當的回應

1	被輔導人士: 今晚我決定打電話給你，因為我真的覺得我會做傻事... 我一直有自殺的念頭。 ____ 輔導助理甲: 你說你有自殺的念頭，但其實是什麼讓你感到煩惱呢？ ____ 輔導助理乙: 你能告訴我更多關於你想自殺的念頭嗎？
2	被輔導人士: 現在我的健康也變得糟糕了，而且還有其他的問題。沒有丈夫在身邊照顧我，我感覺像世界末日一樣。 ____ 輔導助理甲: 盡量不要太擔心，一切都會好起來的。 ____ 輔導助理乙: 你一定感到很孤獨了，而且害怕接下來會發生什麼事情。
3	被輔導人士: 但是我的想法真是太可怕了.....我絕對不可以告訴任何人的。 ____ 輔導助理甲: 你可以告訴我，我是一個經過培訓的輔助專業人員，我能客觀地去處理這些事情。 ____ 輔導助理乙: 嗯...你有些想法似乎令你感到可怕，你怕別人知道你在想這些事情時也會感到震驚。
4	被輔導人士: 沒人能明白我一直面對的痛苦。有時候我感覺需要自殘，所以我會割自己的手腕。 ____ 輔導助理甲: 看起來你已經受了不少痛苦，你覺得割自己的手腕是唯一可以讓痛苦消失的方法。 ____ 輔導助理乙: 但你這麼年輕，你尚有大好時光。你怎可以想自殺呢？

5	<p>被輔導人士: 你是誰啊? 你是醫生嗎? 你怎知道我一直在面對什麼? 我相信當你面對我的情況時, 也會像我一樣脆弱。</p> <p>____ 輔導助理甲: 你在懷疑我是否理解你的感受?</p> <p>____ 輔導助理乙: 你都沒有給我機會。我也曾經有過相當艱難的生活; 你不是唯一一個遇上困難的人。</p>
6	<p>被輔導人士: 自從我的妻子艾瑪四年前去世, 我的生活變得毫無價值。孩子們已經長大了, 結婚了, 我本來是在鐵路局工作, 現在也退休了一段時間。似乎我死了的話會更好。</p> <p>____ 輔導助理甲: 但是試著想想艾瑪想你過得怎樣。她會希望你繼續好好生活, 不是嗎?</p> <p>____ 輔導助理乙: 聽起來當艾瑪死了, 你身邊的所有東西好像都在崩潰... 最近是不是發生了什麼事情, 使你的情況變得更糟, 讓你認為自我了斷是唯一的解決辦法?</p>
7	<p>被輔導人士: 我真的需要幫助... 只是 {聲音停止; 沉默}</p> <p>____ 輔導助理甲: 你覺得很難和別人傾訴你的困擾你吧</p> <p>____ 輔導助理乙: 請繼續, 我在這裡聽你說話。</p>
8	<p>被輔導人士: 你的陳述方式讓我覺得, 我的困難看起來不是那麼混亂和可怕。</p> <p>____ 輔導助理甲: 對, 事情真的不是那麼糟。你不是因為它所以想去自殺吧?</p> <p>____ 輔導助理乙: 有時候把問題拿出來談論可以把它想得更明白。你應該也意識到有自我了斷的想法是多危險, 這就是和我聯繫的原因吧?</p>
9	<p>被輔導人士: 你本應是幫我解決問題, 但你卻把事情弄得更糟。</p> <p>____ 輔導助理甲: 對不起, 我只是想幫忙。</p> <p>____ 輔導助理乙: 你聽起來很生氣。</p>
10	<p>被輔導人士: 你如何幫忙呢? 你有沒有想過自殺嗎?</p> <p>____ 輔導助理甲: 聽起來你擔心我是否能夠理解和幫助你。</p> <p>____ 輔導助理乙: 當然, 我有時也想過自殺。但我總找到更現實的方案來解決問題。</p>
11	<p>被輔導人士: 我不知道... 我妻子的種種事情真的讓我感到不安 {哭泣, 深吸一口氣}。我努力讓自己不哭泣...</p> <p>____ 輔導助理甲: 你認為因為你是男人, 所以不能哭泣?</p> <p>____ 輔導助理乙: 面對你現在所受的一切痛苦, 要控制眼淚是不可能的。</p>

12	<p>被輔導人士: 天啊! 上天不應該讓這發生在我身上的; 我從來沒有做過任何壞事。</p> <p>_____ 輔導助理甲: 在你身上發生的事情變得如此糟糕, 的確很難讓人看到箇中因由。</p> <p>_____ 輔導助理乙: 嗯...上天自有安排。也許這是他測試你信仰的方式。</p>
13	<p>被輔導人士: 我不知道為什麼我打電話給你。我的家境富裕, 丈夫有一個成功的法律事業, 但他也抽很多時間陪伴我。我的孩子亦一直活得很好, 他們在學校成績優異, 並與朋友們參與不少課餘活動。但這些都似乎沒有引起我的興趣。我覺得生活相當乏味...</p> <p>_____ 輔導助理甲: 與你傾訴後, 我覺得你的問題並不那麼嚴重。你可以多嘗試從好的方面去想事情。</p> <p>_____ 輔導助理乙: 嗯...即使種種事情看來挺順利, 生活上好像仍是非常沮喪的, 不知道為什麼。</p>
14	<p>被輔導人士: 難道真的有很多人也有這樣的感覺? 我以為我是唯一一個有這種念頭的人。這種念頭其實挺可怕和令人有罪疚感的。</p> <p>_____ 輔導助理甲: 不, 有很多人都患有精神疾病。但是如果有合格醫師進行適當治療, 其中一些患者是可以治愈的。</p> <p>_____ 輔導助理乙: 這是真的。你不是唯一一個有自殺念頭的人。和其他人一樣, 你也可以接受幫助以克服這場危機。</p>
15	<p>被輔導人士: 我感到很孤單, 很累 {哭泣}。我沒有任何地方可逃。</p> <p>_____ 輔導助理甲: 你看來很孤獨, 很悲慘。你一直有自殺這種念頭?</p> <p>_____ 輔導助理乙: 加油, 事情不會那麼糟糕。</p>
16	<p>被輔導人士: {通話中} 很難在這裡說, 因為這裡的人...</p> <p>_____ 輔導助理甲: 如果我發問問題會有幫助嗎?</p> <p>_____ 輔導助理乙: 不如你在方便說話的時候再回電?</p>
17	<p>被輔導人士: 我現在有一把手槍指著自己的頭, 你不幫我, 我就扣扳機!</p> <p>_____ 輔導助理甲: 你看來挺心煩意亂。</p> <p>_____ 輔導助理乙: 我想你放下手槍, 這樣我們才可談話。</p>

18	<p>被輔導人士: 你為什麼要關心我呢？</p> <p>_____ 輔導助理甲: 我受過訓練去照顧人。這是我的工作。</p> <p>_____ 輔導助理乙: 因為我覺得你死了將是非常可惜。而且你正在考慮自殺，這讓我十分擔心。你需要幫助才能夠經歷這個關鍵時期。</p>
19	<p>被輔導人士: 我很討厭我的父親！他從來沒有對我表現出任何的愛，只是對我完全無視。</p> <p>_____ 輔導助理甲: 當你最需要他的時候他不在那裡，你一定很生他的氣。</p> <p>_____ 輔導助理乙: 你不應該有這樣的感覺。畢竟，他是你的父親，他該得到一些尊重。</p>
20	<p>被輔導人士: 我不認為有任何人會在乎我是活著還是死了。</p> <p>_____ 輔導助理甲: 這聽起來好像你感到很孤獨。</p> <p>_____ 輔導助理乙: 為什麼你認為沒有人關心你？</p>
21	<p>被輔導人士: 我以前曾經看過一位治療師，但是沒有幫助...我現在做什麼都不會有改變的。</p> <p>_____ 輔導助理甲: 你必須思想正面一點！可以做一些東西，把事情變得更好，不是嗎？</p> <p>_____ 輔導助理乙: 明白，所以你感到絕望，就像治療師也不能幫助你。但試想想，以往有哪些人曾幫助你嗎？比方說朋友、親戚、老師或神職人員？</p>
22	<p>被輔導人士: 我的精神科醫生告訴我我有焦慮症。你覺得我有什麼問題嗎？</p> <p>_____ 輔導助理甲: 我想知道這種情況對你來說意味著什麼。對於你的問題，你覺得怎樣？</p> <p>_____ 輔導助理乙: 我不知道我是否同意診斷。也許你應該尋求一些心理測試，以便確定一下。</p>
23	<p>被輔導人士: 我不能跟任何人談論我的情況。每個人都不喜歡我。</p> <p>_____ 輔導助理甲: 那不是真的。如果給他們機會，可能有很多人在乎你。</p> <p>_____ 輔導助理乙: 如果相信別人是如此艱難的話，要找到別人幫助也一定是非常困難的。</p>
24	<p>被輔導人士: {電話語音模糊不清}</p> <p>_____ 輔導助理甲: 你聽起來很累。你為什麼不睡一會兒，在早上再回電話？</p> <p>_____ 輔導助理乙: 你的聲音聽起來很睏。你有服食過任何東西嗎？</p>

- 完 -

Appendix 7. Interview questions of individual and focus group interviews

1. Self-introduction
2. What's your choice of medium of instruction, Cantonese or Putonghua or English? Why?
3. When/ How often do you work with / review the online material? Why?
4. Where do you work with the online material? Mobile, PC at home or computer lab?
5. Is any part of the course you find it particularly useful? Why?
6. Is any part of the course you find it particularly not useful? Why not?
7. How useful is the followings (optional):
8. Do the course improve your skills and confidence when you chat with your students? Why or why not? (Optional)
9. For those say no, is it because you have acquired the skills before the course (optional)?
10. Is the course interface user-friendly?
11. Would you review the material in future? Which part? Why?
12. Suppose there are two study modes for this course - pure online and face-to-face. If you could take this course again, which one do you prefer? Why?
13. Anything can be improved, e.g. how to make it more interesting and engaging?

Appendix 8. Participant pseudonyms and background information

Individual interviews of Flipped condition.

Participant Pseudonym	Origin	Experience	Year of Study
Faline	Macau	New	2
Fanny	Macau	New	3
Fiona	PRC	New	Master Yr2

Individual interviews of Blended condition.

Participant Pseudonym	Origin	Experience	Year of Study
Bella	PRC	New	2
Brielle	Hong Kong	Returning	3

Individual interviews of Online condition.

Participant Pseudonym	Origin	Experience	Year of Study
Olivia	Macau	Returning	4
Octavia	Macau	Returning	3
Otelia	PRC	Returning	3
Orlando	PRC	Returning	4
Oliver	PRC	Returning	Master Yr3

Focus group interviewees of Flipped condition.

Participant Pseudonym	Origin	Experience	Year of Study
Faye	PRC	New	3
Fatima	PRC	New	2
Fernando	Macau	New	2
Felisa	Macau	New	3
Florencia	PRC	New	2
Francis	Macau	Returning	2
Fleta	PRC	New	Master Yr2
Fred	PRC	New	Master Yr2
Fabiana	PRC	New	PhD Yr2

Focus group interviewees of Blended condition.

Participant Pseudonym	Origin	Experience	Year of Study
Bianca	Hong Kong	Returning	Master Yr 2
Ben	Hong Kong	New	3
Betty	Macau	Returning	2

Focus group interviewees of Online condition.

Participant Pseudonym	Origin	Experience	Year of Study
Olga	Hong Kong	Returning	3
Owen	Macau	Returning	2
Orchid	Macau	Returning	3
Oscar	PRC	Returning	Master Yr1
Orson	PRC	Returning	Master Yr2

Appendix 9. Ethics form and approval from Graduate School of Education at University of Bristol

Name(s): Mr. Wai-Kong YEUNG

Proposed research project: Professional Development for Resident Assistants

Proposed funder(s): Nil

Discussant for the ethics meeting: Mr. Indie Chung

Name of supervisor: Professor Sally Barnes

Has your supervisor seen this submitted draft of your ethics application? Yes

Please include an outline of the project or append a short (1 page) summary:

Residential Education in Higher Education

Residential education has been an important component of undergraduate education curriculum of tertiary institutes worldwide, for example, at University of Cambridge, Harvard University, National University of Singapore, Australia National University, The University of Hong Kong, and University of Macau. Residential education normally takes place in residential colleges or student residences.

A residential college is usually led by a housing director/master/warden/dean and is assisted by a deputy master/resident fellow/senior resident tutor. Under them, there are RAs who directly engage with student residents. RAs are mainly postgraduate students, or sophomore, junior and senior undergraduate students. RAs are employed by the university, with duties to provide pastoral care, administrative support and carry out disciplinary action if necessary.

Training of RAs

RAs need to be trained in order to perform their duties well. In general, RAs are just one to few years older than their fellow residents and they do not possess much work experience nor have received related training beforehand. In some universities, there are training sessions for RAs in which they learn about policies, teamwork, and other essential skills. However, existing training programme for RAs are mainly locally derived and without empirical support (Thombs, 2015). Thus, the effectiveness of the training programmes is doubtful. Even, many RAs are undertrained or even untrained before their services (Chung et al, 2015).

An empirically derived professional development programme which brings positive impact on the work performance of RAs is warranted. Thombs et al. (2015) attempted to develop an evident-based online training programme for RAs. The authors point out that well-trained RAs are more sensitive to crisis situations, and have a higher number of referral of potential problem case in the student residences they serve. However, there is deficiency of Thombs' work because the study compared two group of RAs who had received different amount of training. Therefore, the positive training effect, i.e. made more referrals, might be brought by additional training that the intervention group had received. Therefore, this study will rectify the deficiency in research design.

Research Aims and Questions

This study aims to refine and replicate the work of Thombs et al work in Asian context. Also, it aims to compare the users' motivation to take online course and traditional face-to-face workshop. In addition, the training impacts under different training modes will be studied. The research questions are proposed as below:

1. Do RAs prefer online or face-to-face training?
2. How they use the online and face-to-face training?
3. Is there any difference for those who take the face-to-face training and who take the online training?

Research Design

The study will be carried out in residential college(s) at a tertiary institute in East Asia. It will adopt a multiphase mixed method design (Creswell, 2014) with three phases in data collection.

In phase 1, qualitative data will be collected and analysed in order to inform the next phase. In this phase, five RAs and their supervisors (Master, Deputy Master or Senior RTs) will be invited to take a pilot online training course designed for RAs. Afterward, interviews (focus group or individual) involving semi-structured questions will be conducted with them. Questions will focus on (1) feedback on the pilot course, (2) motivation to take the course, (3) engagement with the course, (4) perceived training impacts, and (5) demographic profiles and their training background. The pilot course and interview will be conducted between October 2016 or commence as soon as after the ethics approval and November. Finding from this phase will help provide insights for

the improvement of the training material and the development of the survey questionnaire for phase 2.

In phase 2, quantitative as well as qualitative data will be collected and analysed. A survey questionnaire containing 5-point Likert scale questions and some qualitative questions developed in phase 1 will be conducted to two groups of participants – experimental and control groups. In the experimental group, participants will receive online training (hereafter “Intervention”) around one month before study break in order not to affect their studies. This group will include approximately 30 RAs who are voluntary to take part in the intervention. To avoid confounding effect, participants who receive intervention should not be the participants of phase 1 (Creswell, 2014). The group will be requested to do the survey before and after the intervention. For control group, which consist of another batch of approximately 30 RAs who prefer face-to-face training, and are not involved in the phase 1, will receive face-to-face training one month before study break, and do the same set of pre- and post-course survey. Both the experimental and control groups will use the same set of training material. The difference is the mode of attending – either online or face-to-face in a traditional classroom. Also, data about how the participants engage in the training, e.g. attendance and participation in learning activities will be retrieved from the online course database. Also, the face-to-face training will be video taken in order to improve the accuracy of the data collection. The finding in this phase will inform the data collection plan of the next phase. The phase 2 will take place between December 2016 and March 2017.

In phase 3, qualitative data will be collected in order to follow up the results found in phase 2. Interview (focus group or individual) involving semi-structured questions will be conducted with some of the RAs follow-up on their survey responses and the online course data in phase 2. The interviews will be administered between April and May 2017. Participants of this phase will be drawn from the sample of phase 2. About 5 to 10 RAs will be purposeful selection according to actual need. In addition, interview (focus group or individual) involving semi-structured questions will be conducted with the RAs supervisors and students concerned in order to triangulate the findings. For RAs’ supervisors, questions will focus on performance of their RAs. For students, questions will focus on relationships and interactions with their RAs. The interview will be conducted between June and July 2017.

Ethical issues discussed and decisions taken (see list of prompts overleaf):

1. Researcher access/ exit

Currently, two residential colleges of a tertiary institute have shown interest to the online course and are positive to the study. After seeking ethical approval from UoB and from the institute, RAs will be recruited by email, letter, and/or in person. Masters or supervisors will be requested to promote the study and encourage their RAs to attend. The data collection will be held in the residential college where the RAs are serving. As the majority of participants are from the Mainland China, the medium will be Putonghua and supplemented by Cantonese and English. All the participants are senior undergraduate or postgraduate students who are over 18 of ages.

2. Information given to participants

Participants will be explained about the benefits about their involvement in the study and their rights. The study will provide participants an opportunity to learn from a professional development course specially designed for them. Also they can reflect on their learning experience and allow you to gain better insight through interpretation of the learning experience. In addition, this study will assist the institute in improving residential education and providing current and future tutors with better residential staff experience.

3. Participants' right of withdrawal

Participation of the study is voluntary. To boost the participation rate and minimise the withdrawal rate, the training course content will be tailor-made for the participants' need and context. Also, the learning platform will be designed as interactive and user friendly as possible. Technical support from the researcher will be provided via email, phone, and in-person. Nevertheless, participants can stop taking the training course and research anytime.

4. Informed consent

Before the study, informed consent form which introduces the study, the benefits of involvement, the rights of participant, and the complaint procedure, will be

given and explained to the participants. Signature of the consent form is required to ensure their understanding and agreement. A sample research information and consent form is attached.

5. Complaints procedure

Participants will be clearly informed how and where they can make a complaint. My supervisor email will also be included in the consent form for comments or complaint.

6. Safety and well-being of participants/ researchers

No hazard to the participants and the researcher will occur in this study. Also, the risk of participating in the study is minimal.

7. Anonymity / confidentiality

No individual will be identified or named in any research reports. Pseudonyms will be used where appropriate. Participants may be requested to conduct follow-up interview(s). To do so, each participant will be assigned with a number code in order to protect their identity. Information collected during the research would be encrypted and held in confidence and be used only for the purposes agreed with the participants.

8. Data collection and 9. Data analysis

Data will be collected from questionnaire, personal interview, focus group and the online course database and video record of the face-to-face training sessions. The pilot online course will last for 60 minutes, and interviews and focus group in phase 1 and 3 will last for 45 minutes. Depending on the availability of the participants, the interview may be conducted face-to-face or through telephone on the campus. Voice or video recording will only be done with interviewees' consent. The recording will be transcribed in order to facilitate data analysis. In phase 2, the training course will last for 15-20 minutes each week for six consecutive weeks, excluding long holiday and mid-term breaks. The phase 2 survey will take about 15-20 minutes to complete and will be conducted on the campus or anywhere the

participants find it convenient. Also, how the RAs participated in the training course, e.g. attendance and participation in concept-check questions and discussion, will be extracted from the online course database / video record.

The researcher is the staff of the institute and one of the advisors of the RAs to be researched. To address this potential conflict of interest, the researcher will not be involved in the data collection from his RAs. A research assistant will be employed to collect data from the participants concerned. Also, the following statement will be added to the consent forms of the interviews and questionnaires: *"Data collected will only be used for research and for the improvement of residential education. Your performance evaluation as a RT/RA will not be affected in any by your participation, refusal to participate in this study or withdrawal from it."*

10. Data storage and 11. Data Protection Act

Data will be encrypted and stored safely in researcher's office and personal computer. Data will be obtained only for the purposes agreed and data held for the stated research purpose exclusively. The data will be disposed five years after publication of the relevant research result.

12. Feedback

Participants can review their own performance of the training course. Also, instance feedback will be provided for concept-check questions. It is also expected that participants would receive feedback their peers in the discussion forum of the online course / during the face-to-face training. For the online course, training material will be retained in the learning platform for an academic year for participant retrieval.

13. Responsibilities to colleagues/ academic community

The study is original and is expected to bring positive contribution to residential education staff training and e-learning development.

14. Reporting

The result of the study will be used for the training course improvement and doctoral dissertation, academic research, and conference(s) only. The attendance and performance in the training course of individual participant will not be revealed to their supervisors.

If you feel you need to discuss any issue further, or to highlight difficulties, please contact the GSoE's ethics co-ordinators who will suggest possible ways forward.

Signed: Edmond Yeung (Researcher)

Signed: Indie Chung (Discussant)

Date: 21 Aug 2016 (1st meeting)

1 Sep 2016 (2nd meeting)

Approved on 21 Oct 2016 (Approval ID: 39981)

Appendix 10. Sample research information and content Form



Dear Resident Assistants,

Research Information and Consent for Participation: 'Professional Development for Resident Assistants'

You are invited to participate in a research study about professional development for RAs. The study is led by Mr. Edmond Yeung and supervised by Professor Sally Barnes of Graduate School of Education at University of Bristol. They can be contacted via email: [REDACTED] and sally.barnes@bristol.ac.uk.

The study aims to investigate your motivation of taking an online training development course; examine how you use the online course; and measure the effects of the online course on you. You will be asked to take a training course, either online or flipped (online and face-to-face), and participate in an individual interview in a normal class/meeting/conference room. The training course and the individual interview will last for 180 and 45 minutes respectively. The training course consists of video lectures, concept check questions, and discussion. In the interview, you will be invited to describe (1) your feedback on the online course, (2) motivation to take the course, (3) engagement with the course, (4) perceived training impacts, and (5) demographic profiles and training background. Also, data on how you engage in the online course activities will be extracted from the course database. Findings from stage 1 will help provide insights into the development of survey questionnaires of stage 2. Participants of stage 1 and 2 maybe invited for follow-up interview in stage 3.

Participation in the study will provide you an opportunity to learn from a training course specially designed for RAs. You can reflect on your residential education experience and to allow you to gain better insight through interpretation of the experience. In addition, this study will assist the College in improving residential education and providing

current and future RAs with better residential staff experience. The risk of participating in this study is minimal.

To ensure the reliability of research findings, your information provided in the interview will be recorded in full either by audio recording or by written notes. You may also review the recording and erase part of or the entire recording. Although audio recording is advantageous for its accuracy and convenience, you are free to choose recording by written notes if this is more comfortable for you. Please indicate your preference regarding the method of recording in the last section of this form.

Please be assured that the information obtained in this study will remain confidential and will only be used for research purpose. No individual will be identified or named in any research reports. Pseudonyms will be used where appropriate. The audio-recording will be stored in the researcher's personal computer and will be disposed of five years after publication of the relevant research results. Data will be transcribed into archives with all personal identifiers removed and be kept indefinitely. All data stored electronically will be encrypted.

Your participation of this research study is purely on voluntary basis. This means that you can choose to stop at any time. In case you want to withdraw from the study, you can inform the researcher anytime and he will stop using your information in the research from that time onward. Should you have any questions or concerns about the research, please feel free to contact the undersigned by Tel: 6291-0515/ Email: yeungwk@gmail.com or the research supervisor Professor Sally Barnes by Email: sally.barnes@bristol.ac.uk. Thank you for your attention and interest to take part in this study.

Yours sincerely,

A solid black rectangular box used to redact the signature of Mr. Edmond Yeung.

Mr. Edmond Yeung

Candidate of Doctor of Education, University of Bristol

Consent Form

Please indicate your agreement with participation in this study, and the data collection methods by ticking (✓) the appropriate box below.

- I understand the procedures described above and agree to participate in this study.
- I agree to have my learning record in the training course ACCESSED and ANALYSED by the researcher.
- I agree to have my interview recorded by VIDEO and AUDIO RECORDING.
- I agree to have my interview recorded by WRITTEN NOTES.

Signature

Date

Name

Appendix 11. Medians and modes of individual items of Learner Survey

		Flipped (n=23)	Blended (n=29)	Online (n=15)
IC1 Course overview	Median	5	4	5
	Mode	5	4	5
IC2 Usage of course learning platform	Median	5	4	4
	Mode	5	4	5
IC3 Lecture video / Role play exercise	Median	5	4	4
	Mode	5	4	4
IC4 Monthly chat record and reflective questions	Median	5	4	4
	Mode	5	4	5
IC5 Educational purpose of the tasks	Median	5	4	4
	Mode	5	4	5
IC6 All guidelines are accessible online	Median	5	4	5
	Mode	5	4	5
PA1 Course overview	Median	4	4	4
	Mode	4	4	4
PA2 Feedback (Dramatic videos)	Median	4	4	4
	Mode	4	4	4
PA3 Demonstration (Dramatic videos)	Median	4	4	4
	Mode	4	4	4
PA4 Lecture videos / Role play exercise	Median	4	4	4
	Mode	4	4	4
PA5 Lecture video (English)	Median	4	4	4
	Mode	4	4	4
PA6 Self-reflection questions	Median	4	4	4
	Mode	4	4	4
PA7 Progressively develops my knowledge and skills	Median	4	4	4
	Mode	4	4	4
PA8 All units are carefully organised	Median	5	4	4
	Mode	5	4	4
PE1 Positive and inspiring	Median	5	4	4

	Mode	5	4	4
PE2 Build rapport	Median	5	4	4
	Mode	5	4	4
PE3 Bringing current and relevant examples	Median	5	4	4
	Mode	5	4	4
PE4 Adapts teaching according to students	Median	5	4	4
	Mode	5	4	3
PE5 Provides feedback and support	Median	5	4	4
	Mode	5	4	4
PE6 Collaborate with other instructors and tutors	Median	5	4	4
	Mode	5	4	4
LC1 Practice the skills	Median	4	4	4
	Mode	4	4	4
LC2 Apply and reflect	Median	4	4	4
	Mode	4	4	4
LC3 Give feedback and share ideas	Median	4	4	4
	Mode	4	4	4
LC4 Raise and solve questions together	Median	4	4	4
	Mode	4	4	4
LC5 Online videos are fun and interactive	Median	5	4	4
	Mode	5	4	4
FE1 Learn this course in different devices	Median	5	4	4
	Mode	5	4	4
FE2 Learn at my own pace	Median	4	4	4
	Mode	4	4	4
FE3 Choose my preferred medium of instruction	Median	5	4	5
	Mode	5	4	5
FE4 Review what I learned	Median	5	4	5
	Mode	5	4	5
FE5 Overall, the course is flexible	Median	5	4	5
	Mode	5	4	5
EU1 The course platform is easy to use	Median	5	4	5
	Mode	5	4	5
	Median	5	4	5

EU2 Easy to retrieve / review content from the platform	Mode	5	4	5
EU3 Course content is easy to understand	Median	5	4	5
	Mode	5	4	5
EU4 The medium of instruction is accessible	Median	5	4	5
	Mode	5	4	5
SU1 Clearly stated deadlines	Median	5	4	4
	Mode	5	4	4
SU2 In order to better engage in the course	Median	4	4	4
	Mode	4	4	4
SU3 Email from peers	Median	4	4	4
	Mode	4	4	5
SU4 Text reminders from instructor / supervisor	Median	4	4	5
	Mode	4	4	5
EG1 Dramatic videos	Median	4	4	4
	Mode	5	4	4
EG2 Role play exercise / Lecture videos*	Median	4	4	4
	Mode	4	4	4
EG3 Lecture video (English)	Median	4	4	4
	Mode	4	4	4
EG4 Chatting with residents	Median	4	4	4
	Mode	4	4	4
EG5 Monthly chat log	Median	4	4	4
	Mode	4	4	4
EG6 Self-reflection question	Median	4	4	4
	Mode	4	4	3
EG7 Fully engaged in this course	Median	4	4	4
	Mode	4	4	3
PU1 General Counselling skills	Median	4	4	4
	Mode	4	4	4
PU2 Communication with students	Median	4	4	4
	Mode	4	4	4
PU3 Communication with peers	Median	4	4	4
	Mode	4	4	3

PU4 Job performance as a RT/RA	Median	4	4	4
	Mode	4	4	4

** The role play exercise (EG2) is only available for the flipped and blended conditions. In online condition, the role play exercise was replaced by a refresher video that summarises the key concept delivered in the role play exercise.*

Appendix 12. Descriptive statistics of subscales of Learner Survey

		N	Mean	S.D.	Std. Err.	95% Confidence Interval for Mean		Min.	Max.
						Lower Bound	Upper Bound		
Engagement (Subscale)	Flipped	23	4.22	.511	.107	4.00	4.44	3	5
	Blended	29	3.84	.571	.106	3.62	4.06	2	5
	Online	15	3.98	.551	.142	3.67	4.28	3	5
Flexible Environment (Subscale)	Flipped	23	4.56	.418	.087	4.38	4.74	4	5
	Blended	29	4.03	.469	.087	3.86	4.21	3	5
	Online	15	4.44	.422	.109	4.21	4.67	4	5
Learner- Centred (Subscale)	Flipped	23	4.43	.425	.089	4.25	4.62	4	5
	Blended	29	4.12	.528	.098	3.92	4.32	3	5
	Online	15	4.33	.398	.103	4.11	4.55	4	5
Intentional Content (Subscale)	Flipped	23	4.52	.467	.097	4.32	4.72	4	5
	Blended	29	4.08	.449	.083	3.91	4.25	3	5
	Online	15	4.34	.711	.184	3.95	4.74	3	5
Professional Educator (Subscale)	Flipped	23	4.56	.470	.098	4.35	4.76	4	5
	Blended	29	4.22	.526	.098	4.02	4.42	3	5
	Online	15	4.28	.474	.122	4.02	4.54	4	5
Progressive Activities (Subscale)	Flipped	23	4.31	.497	.104	4.09	4.52	3	5
	Blended	29	4.05	.510	.095	3.85	4.24	3	5
	Online	15	4.17	.628	.162	3.82	4.51	3	5
Perceived Usefulness (Subscale)	Flipped	23	4.42	.436	.091	4.24	4.61	4	5
	Blended	29	3.90	.577	.107	3.68	4.12	2	5
	Online	15	3.93	.616	.159	3.59	4.27	3	5
Ease of Use (Subscale)	Flipped	23	4.54	.481	.100	4.34	4.75	4	5
	Blended	29	4.03	.570	.106	3.82	4.25	3	5
	Online	15	4.60	.524	.135	4.31	4.89	4	5
Sense of Urgency (Subscale)	Flipped	23	4.32	.454	.095	4.12	4.51	4	5
	Blended	29	3.88	.577	.107	3.66	4.10	2	5
	Online	15	4.20	.599	.155	3.87	4.53	3	5

Appendix 13. ANOVA of the subscales of Learner Survey

		Sum of Squares	df	Mean Square	F	Sig.
Engagement (Subscale)	Between Groups	1.889	2	.944	3.160	.049
	Within Groups	19.127	64	.299		
	Total	21.015	66			
Flexible Environment (Subscale)	Between Groups	3.851	2	1.925	9.859	.000
	Within Groups	12.498	64	.195		
	Total	16.349	66			
Learner- Centred (Subscale)	Between Groups	1.298	2	.649	2.971	.058
	Within Groups	13.979	64	.218		
	Total	15.276	66			
Intentional Content (Subscale)	Between Groups	2.553	2	1.276	4.662	.013
	Within Groups	17.522	64	.274		
	Total	20.075	66			
Professional Educator (Subscale)	Between Groups	1.532	2	.766	3.113	.051
	Within Groups	15.753	64	.246		
	Total	17.285	66			
Progressive Activities (Subscale)	Between Groups	.883	2	.442	1.549	.220
	Within Groups	18.248	64	.285		
	Total	19.132	66			
Perceived Usefulness (Subscale)	Between Groups	4.017	2	2.008	6.836	.002
	Within Groups	18.802	64	.294		
	Total	22.819	66			
Ease of Use (Subscale)	Between Groups	4.672	2	2.336	8.296	.001
	Within Groups	18.022	64	.282		
	Total	22.694	66			
Sense of Urgency (Subscale)	Between Groups	2.628	2	1.314	4.454	.015
	Within Groups	18.880	64	.295		
	Total	21.507	66			

Appendix 14. Post-hoc Tukey HSD test of the subscales of Learner Survey

Dependent Variable	(I) Condition	(J) Condition	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Engagement (Subscale)	Flipped	Blended	.382*	.153	.039	.02	.75
		Online	.248	.181	.365	-.19	.68
	Blended	Flipped	-.382*	.153	.039	-.75	-.02
		Online	-.134	.174	.721	-.55	.28
	Online	Flipped	-.248	.181	.365	-.68	.19
		Blended	.134	.174	.721	-.28	.55
Flexible Environment (Subscale)	Flipped	Blended	.522*	.123	.000	.23	.82
		Online	.117	.147	.708	-.24	.47
	Blended	Flipped	-.522*	.123	.000	-.82	-.23
		Online	-.406*	.141	.015	-.74	-.07
	Online	Flipped	-.117	.147	.708	-.47	.24
		Blended	.406*	.141	.015	.07	.74
Learner-Centred (Subscale)	Flipped	Blended	.311	.130	.052	.00	.62
		Online	.101	.155	.791	-.27	.47
	Blended	Flipped	-.311	.130	.052	-.62	.00
		Online	-.209	.149	.343	-.57	.15
	Online	Flipped	-.101	.155	.791	-.47	.27
		Blended	.209	.149	.343	-.15	.57
Intentional Content (Subscale)	Flipped	Blended	.441*	.146	.010	.09	.79
		Online	.177	.174	.566	-.24	.59
	Blended	Flipped	-.441*	.146	.010	-.79	-.09
		Online	-.264	.166	.259	-.66	.14
	Online	Flipped	-.177	.174	.566	-.59	.24
		Blended	.264	.166	.259	-.14	.66
Professional Educator (Subscale)	Flipped	Blended	.334*	.139	.049	.00	.67
		Online	.280	.165	.212	-.11	.68
	Blended	Flipped	-.334*	.139	.049	-.67	.00
		Online	-.054	.158	.938	-.43	.32

	Online	Flipped	-.280	.165	.212	-.68	.11
		Blended	.054	.158	.938	-.32	.43
Progressive Activities (Subscale)	Flipped	Blended	.262	.149	.191	-.10	.62
		Online	.143	.177	.700	-.28	.57
	Blended	Flipped	-.262	.149	.191	-.62	.10
		Online	-.119	.170	.763	-.53	.29
	Online	Flipped	-.143	.177	.700	-.57	.28
		Blended	.119	.170	.763	-.29	.53
Perceived Usefulness (Subscale)	Flipped	Blended	.527*	.151	.003	.16	.89
		Online	.491*	.180	.022	.06	.92
	Blended	Flipped	-.527*	.151	.003	-.89	-.16
		Online	-.037	.172	.975	-.45	.38
	Online	Flipped	-.491*	.180	.022	-.92	-.06
		Blended	.037	.172	.975	-.38	.45
Ease of Use (Subscale)	Flipped	Blended	.509*	.148	.003	.15	.86
		Online	-.057	.176	.945	-.48	.37
	Blended	Flipped	-.509*	.148	.003	-.86	-.15
		Online	-.566*	.169	.004	-.97	-.16
	Online	Flipped	.057	.176	.945	-.37	.48
		Blended	.566*	.169	.004	.16	.97
Sense of Urgency (Subscale)	Flipped	Blended	.436*	.152	.015	.07	.80
		Online	.115	.180	.799	-.32	.55
	Blended	Flipped	-.436*	.152	.015	-.80	-.07
		Online	-.321	.173	.160	-.74	.09
	Online	Flipped	-.115	.180	.799	-.55	.32
		Blended	.321	.173	.160	-.09	.74

*. The mean difference is significant at the 0.05 level.